MATTERS TO BE CONSIDERED:

1. Approval of Minutes of Previous Closed Meeting.
2. Central Liquidity Facility Lines of Credit for Fiscal Year 1991. Closed pursuant to exemptions (4) and (9)(A)(ii).
3. Administrative Action under Part 745 of the NCUA Rules and Regulations. Closed pursuant to exemptions (6) and (8).
4. Administrative Action under Section 206 of the Federal Credit Union Act. Closed pursuant to exemptions (5), (8), (9)(A)(ii), and (9)(B).
5. Administrative Action under Sections 116 and 208 of the Federal Credit Union Act. Closed pursuant to exemptions (8) and (9)(A)(ii).
6. Administrative Actions under Section 208 of the Federal Credit Union Act. Closed pursuant to exemptions (8) and (9)(A)(ii).

FOR FURTHER INFORMATION CONTACT: Becky Baker, Secretary of the Board, Telephone (202) 682–9600.

Becky Baker,
Secretary of the Board.

[FR Doc. 90–21176 Filed 9–5–90; 1:56 pm]

BILLING CODE 7535–01–M

OVERSEAS PRIVATE INVESTMENT CORPORATION

Meeting of the Board of Directors

TIME AND DATE: 1 p.m. (closed portion), 3:30 p.m. (open portion), Tuesday, September 18, 1990.

PLACE: Offices of the Corporation, fourth floor Board Room, 1615 M Street, NW., Washington, DC.

STATUS: The first part of the meeting from 1 p.m. to 3:30 p.m. will be closed to the public. The open portion of the meeting will commence at 3:30 p.m. (approximately).

MATTERS TO BE CONSIDERED: (Closed to the public 1:00 p.m. to 3:30 p.m.):

1. President's Report
2. Policy Revision on "Country List" and "High Income" Country Designations
3. Finance and Insurance project in Venezuela
4. Insurance Project in Argentina
5. Insurance Project in Malaysia
6. Insurance Project in Pakistan
7. Insurance Project in Philippines
8. Insurance Project in Chile
9. Insurance Project in Argentina
10. Claims Report
11. Finance and Insurance Reports
12. Approval of 7/10/90 Minutes (Closed Portion)

FURTHER MATTERS TO BE CONSIDERED: (Open to the Public 3:30 p.m.)

1. Approval of 7/10/90 Minutes (Open Portion)
2. Allocation of Retained Earnings
3. Information Reports
4. Reconfirmation of meetings schedule for remainder of 1990

CONTACT PERSON FOR INFORMATION: Information with regard to the meeting may be obtained from the Secretary of the Corporation on (202) 457–7007.

Dated: September 4, 1990.

Dennis K. Dolan,
OPIC Corporate Secretary.

[FR Doc. 90–21170 Filed 9–5–90; 1:24 pm]

BILLING CODE 3210–01–M

Corrections

Federal Register
Vol. 55, No. 174
Friday, September 7, 1990

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL 2960-5]

RIN 2060-AA30

Standards of Performance for New Stationary Sources; Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Processes

Correction

In rule document 90-14263 beginning on page 26912 in the issue of Friday, June 29, 1990, make the following corrections:

1. On page 26922, in the first column, above the signature line, the dated line should read "June 13, 1990".

§ 60.611 [Corrected]

2. On the same page, in the third column, in § 60.611 under the definition for "*Air Oxidation Reactor*", in the third line, "combine" should read "combined".

§ 60.614 [Corrected]

3. On page 26928, in § 60.614 in Table 2, in the third column, the second entry should read "0.0619".

§ 60.615 [Corrected]

4. In § 60.615(b)(3), on page 26929, in the first column, in the 4th complete paragraph, in the 12th line "records" was misspelled.

BILLING CODE 1505-01-D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL 2960-6]

RIN 2060-AA35

Standards of Performance for New Stationary Sources; Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

Correction

In rule document 90-14265 beginning on page 26931 in the issue of Friday, June 29, 1990, make the following correction:

§ 60.665 [Corrected]

In § 60.665(g)(4), on page 26950, in the first column, in the first and second lines of the sixth paragraph, the words "adsorber" and "absorber" were transposed.

BILLING CODE 1505-01-D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 421

[OW-FRL-3729-8]

RIN 2040-AB31

Nonferrous Metals Manufacturing Point Source Category Effluent Limitations Guidelines, Pretreatment Standards and New Source Performance Standards

Correction

In rule document 90-17782 beginning on page 31692, in the issue of Friday, August 3, 1990, make the following corrections:

§ 421.152 [Corrected]

1. In § 421.152(m), on page 31698, in the first column, in the second column of the table, the fourth entry, "2.117" should read "2.118".

§ 421.263 [Corrected]

2. On page 31708, in the first column, in § 421.263(j), the first word, "Platinum" should read "Palladium".

3. On page 31712, in the first column, under [6] **421.266 [Corrected]**, in amendatory instruction 109, in the next to last line remove the text following "metals" and insert "to read as follows:".

BILLING CODE 1505-01-D

FEDERAL MARITIME COMMISSION

46 CFR Part 580

[Docket No. 88-19]

Rule on Effective Date of Tariff Changes

Correction

In rule document 90-20084 beginning on page 34929, in the issue of Monday, August 27, 1990, make the following correction:

On page 34931, in the third column, in the last line, "October 20, 1990." should read "October 26, 1990."

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

Statement of Organization, Functions, and Delegations of Authority

Correction

In notice document 90-18425 appearing on page 32149, in the issue of Tuesday, August 7, 1990, make the following correction:

On page 32149, in the third column, under "B. Office of the Attorney Advisor (FA-2)", in the 12th and 13th lines, "Section 1886(d)(1)(C)(iii)(II)" should read "section 1886(d)(10)(C)(iii)(II)".

BILLING CODE 1505-01-D

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 20

RIN 1018-AA24

Migratory Bird Hunting; Early Seasons, and Bag and Possession Limits for Certain Migratory Game Birds in the Contiguous United States, Alaska, Hawaii, Puerto Rico, and the Virgin Islands

Correction

In rule document 90-20242 beginning on page 35266 in the issue of Tuesday, August 28, 1990, make the following correction:

§ 20.105 [Corrected]

In § 20.105(d), on page 35278, in the first column of the table "Florida" should have appeared above the first entry "Wood ducks".

BILLING CODE 1505-01-D

federal register

Friday
September 7, 1990

Part II

Department of Agriculture

Rural Electrification Administration

7 CFR Part 1767
Accounting Requirements for REA Electric Borrowers; Proposed Rule

DEPARTMENT OF AGRICULTURE

Rural Electrification Administration

7 CFR Part 1767

RIN 0572-AA23

Accounting Requirements for REA Electric Borrowers

AGENCY: Rural Electrification Administration, USDA.

ACTION: Proposed rule.

SUMMARY: The Rural Electrification Administration (REA) proposes to amend 7 CFR chapter XVII by adding a new part, part 1767, Accounting Requirements for REA Electric Borrowers, and a new subpart, subpart B, Uniform System of Accounts. Current REA policy on this subject is set forth in REA Bulletin 181–1, Uniform System of Accounts Prescribed for Electric Borrowers of the Rural Electrification Administration and REA Bulletin 181–3, Accounting Interpretations for REA Electric Borrowers. REA is proposing a Uniform System of Accounts (USoA) and is prescribing specific accounting procedures to be followed by REA electric borrowers in certain circumstances.

DATES: Public comments must be received or postmarked no later than November 6, 1990.

ADDRESSES: Submit written comments to Mr. William E. Davis, Director, Borrower Accounting Division, Rural Electrification Administration, room 2231, South Building, U.S. Department of Agriculture, Washington, DC, 20250–1500. All written submissions made pursuant to this action will be made available for public inspection during regular business hours at the above address. REA requests an original and two copies of all comments.

FOR FURTHER INFORMATION CONTACT: Mr. William E. Davis, Director, Borrower Accounting Division, Rural Electrification Administration, room 2231, South Building, U.S. Department of Agriculture, Washington, DC 20250, telephone number (202) 382–9450.

SUPPLEMENTARY INFORMATION: Pursuant to the Rural Electrification Act, as amended (7 U.S.C. 901 et seq.), REA proposes to amend 7 CFR chapter XVII by adding a new part, Part 1767, Accounting Requirements for REA Electrification Borrowers, and a new subpart, subpart B, Uniform System of Accounts. This proposed action has been reviewed in accordance with Executive Order 12291, Federal Regulation. The action will not (1) Have an annual effect on the economy of $100 million or more; (2) result in major increases in costs or prices for consumers, individual industries, Federal, State or local government agencies, or geographic regions; or (3) result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of the United States-based enterprises to Compete with foreign-based enterprises in domestic or export markets and, therefore, has been determined to be "not major". This action does not fall within the scope of the Regulatory Flexibility Act. REA has concluded that promulgation of this rule would not represent a major Federal action significantly affecting the quality of the human environment under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and, therefore, does not require an environmental impact statement or an environmental assessment. The reporting and/or recordkeeping requirements contained in these proposed rules have been submitted for approval to the Office of Management and Budget in accordance with the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). They will not be effective until approved by OMB. Public reporting burden for this collection of information is estimated to average 260 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this correction of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Office, OIRM, room 404–W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0572–0002), Washington, DC 20503. The program listed in the Catalog of Federal Domestic Assistance that is impacted is 10.850—Rural Electric Loans and Loan Guarantees. For reasons set forth in the Final Rule related Notice to 7 CFR part 3015, subpart V (50 FR 47034, November 14, 1985) this program is excluded from the scope of Executive Order 12372 which requires intergovernmental consultation with State and local officials.

Background

In order to facilitate the effective and economical operation of a business enterprise, adequate and reliable financial records must be maintained. Accounting records must provide a clear and accurate picture of the enterprise's current economic condition from which management can make informed decisions in charting the company's future. An electric utility, because of the rate regulated environment in which it operates, possesses an even greater need for financial information that is accurate, complete, and comparable with that generated by other electric utilities.

REA, as a federal lender and mortgagee, and in furthering the objectives of the Rural Electrification Act, has a financial interest in requiring adequate records to be maintained. In order to provide REA with financial information that can be analyzed and compared with the operations of other borrowers in the REA program, all REA borrowers must maintain financial records that utilize uniform accounts and uniform accounting policies and procedures. The standard REA mortgage requires borrowers to maintain its accounts in accordance with the USoA prescribed by REA for its electric borrowers. This regulation implements those requirements by requiring borrowers to maintain their accounts in accordance with this part 1767. Because of the cooperative organizational structure of REA borrowers, REA is prescribing a USoA that must be maintained and is proposing to set forth specific accounting procedures to be followed for certain circumstances that either the USoA does not specifically address or for which REA has specific accounting procedures that it requires. The USoA and required accounting procedures will provide the financial information necessary to operate a rural electric cooperative. The uniformity of the accounts and accounting procedures prescribed will enable REA to make determinations concerning the current financial stability of REA borrowers.

Due to the importance of uniform financial information, REA has revised its previous policy of requiring REA borrowers to keep accounts and records in conformity with the rules and regulations prescribed by a state regulatory commission. In accordance with this part 1767, REA borrowers are required to account for all transactions as prescribed herein. REA borrowers must receive REA's written approval prior to requesting any deviations from a state regulatory commission or the Tennessee Valley Authority. The information proposed in this part 1767 is now contained in REA Bulletins 181–1 and 181–3. These bulletins will be rescinded, if this proposal is published as a final rule.

List of Subjects in 7 CFR Part 1767

Accounting.

In view of the above, REA proposes to add a new part 1767, Accounting Requirements for REA Electric Borrowers, consisting at this time of subpart B, Uniform System of Accounts, to 7 CFR chapter XVII to read as follows:

PART 1767—ACCOUNTING REQUIREMENTS FOR REA ELECTRIC BORROWERS

Subpart A—General Provisions

§ 1767.1–1767.9 [Reserved]

Subpart B—Uniform System of Accounts

§ 1767.10, Definitions.
§ 1767.11, Purpose.
§ 1767.12, Accounting System Requirements.
§ 1767.13, Deviations.
§ 1767.14, Interpretation of the REA Uniform System of Accounts.
§ 1767.15, General Instructions.
§ 1767.16, Electric Plant Instructions.
§ 1767.17, Operating Expense Instructions.
§ 1767.18, Accounts Required of All REA Borrowers.
§ 1767.19–1767.20 [Reserved]
§ 1767.21, Accounting Methods and Procedures Required of All REA Borrowers.
§ 1767.22–1767.25 [Reserved]

Subpart C—Depreciation Rates and Procedures

§ 1767.26–1767.45 [Reserved]

Subpart D—Preservation of Records

§ 1767.46–1767.65 [Reserved]

Authority: 7 U.S.C. 901 et seq.

Subpart A—General Provisions

§§ 1767.1–1767.9 [Reserved]

Subpart B—Uniform System of Accounts

§ 1767.10 Definitions.

(a) When used in this subpart and in the REA USoA:

(1) *Accounting borrower* shall mean REA borrower.

(2) *Accounts* are the accounts prescribed in this system of accounts.

(3) *Actually issued*, as applied to securities issued or assumed by the utility, are those which have been sold to bona fide purchasers for a valuable consideration, those issued as dividends on stock, and those which have been issued in accordance with contractual requirements direct to trustees of sinking funds.

(4) *Actually outstanding*, as applied to securities issued or assumed by the utility, are those which have been actually issued and are neither retired nor held by or for the utility; *Provided, however*, That securities held by trustees shall be considered as actually outstanding.

(5) *Amortization* is the gradyal extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized.

(6) *Associated (affiliated) companies* are companies or persons that directly, or indirectly through one or more intermediaries, control, or are controlled by, or under common control with, the accounting company.

(7) *Book cost* means the amount at which property is recorded in these accounts without deduction of related provisions for accrued depreciation, amortization, or for other purposes.

(8) *Capital lease* is a lease of property used in utility or nonutility operations, which meets one or more of the criteria stated in § 1767.15(s).

(9) *CFC* shall mean the National Rural Utilities Cooperative Finance Corporation.

(10) *Continuing property records* are company plant records for retirement units and mass property that provide, as either a single record, or in separate records readily obtainable by references made in a single record, the following information:

(i) For each retirement unit:

(A) The name or description of the unit, or both;

(B) The location of the unit;

(C) The date the unit was placed in service;

(D) The cost of the unit as set forth in § 1767.16 (b) and (c) of this system; and

(E) The plant control account to which the cost of the unit is charged; and

(ii) For each category of mass property:

(A) A general description of the property and quantity;

(B) The quantity placed in service by vintage year;

(C) The average cost as set forth in § 1767.16 (b) and (c) of this system; and

(D) The plant control account to which the costs are charged.

(11) *Control* (including the terms *controlling, controlled by,* and *under common control with*) is the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a company, whether such power is exercised through one or more intermediary companies, or alone, or in conjunction with, or pursuant to an agreement, and whether such power is established through a majority or minority ownership or through voting of securities; common directors, officers, or stockholders; voting trusts; holding trusts; associated companies; contracts; or any other direct or indirect means.

(12) *Cost* is the amount of money actually paid for property or services. When the consideration given is other than cash in a purchase and sale transaction, as distinguished from a transaction involving the issuance of common stock in a merger or a pooling of interest, the value of such consideration shall be determined on a cash basis.

(13) *Cost of removal* is the cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including the cost of transportation and handling incidental thereto.

(14) *Customer* shall mean consumer or patron.

(15) *Debt expense* includes all expenses incurred in connection with the issuance and initial sale of evidence of debt, such as fees for drafting mortgages and trust deeds; fees and taxes for issuing or recording evidences of debt; costs of engraving and printing bonds and certificates of indebtedness; fees paid to trustees' specific costs of obtaining governmental authority; fees for legal services; fees and commissions paid underwriters, brokers, and salesmen for marketing such evidences of debt; fees and expenses of listing on exchanges; and other like costs.

(16) *Depreciation*, as applied to depreciable electric plant, is the loss in service value, not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.

(17) *Discount*, as applied to the securities issued or assumed by the utility, is the excess of the par (stated value of no-par stocks) or face value of the securities plus interest or dividends accrued at the date of the sale over the cash value of the consideration received from their sale.

(18) *FASB* shall mean the Financial Accounting Standards Board.

(19) *G&T* shall mean generation and transmission cooperative.

(20) *Investment advances* are advances, represented by notes or by book accounts only, with respect to which it is mutually agreed or intended between the creditor and debtor that they shall be settled by the issuance of securities or shall not be subject to current settlement.

(21) *Minor items of property* are the associated parts or items of which retirement units are composed.

(22) *Net salvage value* is the salvage value of property retired less the cost of removal.

(23) *Nominally issued,* as applied to securities issued or assumed by the utility, are those which have been signed, certified, or otherwise executed, and placed with the proper officer for sale and delivery, or pledged, or otherwise placed in some special funds of the utility, but which have not been sold, or issued direct to trustees of sinking funds in accordance with contractual requirements.

(24) *Nominally outstanding,* as applied to securities issued or assumed by the utility, are those which, after being actually issued, have been reacquired by or for the utility under circumstances which require them to be considered as held alive and not retired: *Provided, however,* That securities held by trustees shall be considered as actually outstanding.

(25) *NRECA* shall mean the National Rural Electric Cooperative Association.

(26) *Operating lease* is a lease of property used in utility or nonutility operations, which does not meet any of the criteria stated in § 1767.15(s).

(27) *Original cost,* as applied to electric plant, is the cost of such property to the person first devoting it to public service.

(28) *Person* is an individual, a corporation, a partnership, an association, a joint stock company, a business trust, or any organized group of persons, whether incorporated or not, or any receiver or trustee.

(29) *Premium,* as applied to securities issued or assumed by the utility, is the excess of the cash value of the consideration received from their sale over the sum of their par (stated value of no-par stocks) or face value and interest or dividends accrued at the date of sale.

(30) *Project* is a complete unit of improvement or development, consisting of a power house, all water conduits, all dams and appurtenant works and structures (including navigation structures) which are a part of said unit, and all storage, diverting, or forebay reservoirs directly connected therewith, the primary line or lines transmitting power therefrom to the point of junction with the distribution system or with the interconnected primary transmission system, all miscellaneous structures used and useful in connection with said unit or any part thereof, and all water rights, rights of way, ditches, dams, reservoirs, lands, or interest in lands the use and occupancy of which are necessary or appropriate in the maintenance and operation of such unit.

(31) *Property retired,* as applied to electric plant, is property which has been removed, sold, abandoned, destroyed, or which for any cause has been withdrawn from service.

(32) *REA USoA* shall mean the USoA prescribed in this subpart.

(33) *Replacing (including replacement)* when not otherwise indicated in the context, is the construction or installation of electric plant in place or property retired, together with the removal of the property retired.

(34) *Research, Development, and Demonstration* (RD&D) includes all expenditures incurred by borrowers either directly or through another person or organization (such as a research institute, industry association, foundation, university, engineering company or similar contractor) in pursuing research, development, and demonstration activities including experiment, design, installation, construction, or operation. This definition includes expenditures for the implementation or development of new and/or existing concepts until technically feasible and commercially feasible operations are verified. Such research, development, and demonstration costs should be reasonably related to the existing or future utility business, broadly defined, of the borrower or in the environment in which it operates or expects to operate. The term includes, but is not limited to, all such costs incidental to the design, development or implementation of an experimental facility, a plant process, a product, a formula, an invention, a system or similar items, and the improvement of already existing items of a like nature; amounts expended in connection with the proposed development and/or proposed delivery of alternate sources of electricity; and the costs of obtaining its own patent, such as attorney's fees expended in making and perfecting a patent application. The term includes preliminary investigations and detailed planning of specific projects for securing for customers non-conventional electric power supplies that rely on technology that has not been verified previously to be feasible. The term does not include expenditures for efficiency surveys; studies of management, management techniques, and organization; or consumer surveys, advertising, promotions, or items of a like nature.

(35) *Retirement units* are those items of electric plant which, when retired with or without replacement, are accounted for by crediting the book cost thereof to the electric plant accounts in which included.

(36) *Salvage value* is the amount received for property retired, less any expenses incurred in connection with the sale or in preparing the property for sale; or, if retained, the amount at which the material recovered is chargeable to materials and supplies, or other appropriate accounts.

(37) *Service life* is the time between the date electric plant is includible in electric plant in service, or electric plant leased to others, and the date of its retirement. If depreciation is accounted for on a production basis rather than on a time basis, service life should be measured in terms of the appropriate unit of production.

(38) *Service value* is the difference between original cost and net salvage value of electric plant.

(39) *State* is a State admitted to the Union, the District of Columbia, and any organized Territory of the United States.

(40) *Subsidiary company* is a company which is controlled by the utility through ownership of voting stock. (See § 1767.10 (a)(11).) A corporate joint venture in which a corporation is owned by a small group of businesses as a separate and specific business or project for the mutual benefit of the members of the group is a subsidiary company for the purposes of this system of accounts.

(41) *Utility* shall mean accounting borrower, REA borrower.

(42) *Work order* shall mean an order authorizing the construction of utility plant. It serves as the basis for the accounts or subaccounts in which costs are recorded.

§ 1767.11 Purpose.

The standard form of REA loan documents for electric borrowers requires that the borrower keep books, records, and accounts in which full and true entries will be made of all of the dealings, business and affairs of the borrower in accordance with the methods and principles of accounting in the REA USoA. This subpart implements these provisions of the REA loan documents by prescribing the REA USoA for electric borrowers and by providing accounting methodologies and procedures which are applicable to particular situations.

§ 1767.12 Accounting system requirements.

(a) Each REA electric borrower shall maintain and keep its books of accounts and all other books and records which support the entries in such books of accounts in accordance with § 1767.18,

Accounts Required of All REA Borrowers, herein.

(b) Each REA electric borrower shall maintain and keep its books of accounts and all other books and records which support the entries in such books of accounts in accordance with § 1767.21, Accounting Methods and Procedures Required of All REA Borrowers, herein, which prescribes accounting principles to be applied to specific factual circumstances.

§ 1767.13 Deviations.

(a) No deviations are to be made the REA USoA without the prior written approval of REA.

(b) No REA borrower subject to the jurisdiction of a state regulatory authority with jurisdiction over rates and/or accounting for electric utilities shall, without the prior written approval of REA:

(1) Request approval of such authority to use accounting methods and principles inconsistent with the provisions herein; or

(2) File with such authority any documents or information, including without limitation, any filings associated with the borrower's rates, based upon accounting methods and principles inconsistent with the provisions herein.

(c) If any state regulatory authority with jurisdiction over an REA borrower shall prescribe for the borrower, accounting methods or principles which are inconsistent with the provisions herein, the borrower shall immediately notify REA and provide REA with such documents, information, and reports as REA may request in order to evaluate the impacts that such accounting may have on the interests of REA. If REA determines that the accounting methods and principles will not adversely effect REA interests, REA shall permit the borrower to use the accounting methods and principles as prescribed in complying with the provisions of the REA loan documents. If REA determines that the accounting methods and principles may adversely effect REA's interests, REA may require that, for the purposes of complying with provisions of the REA loan documents, including, without limitation, those provisions relating to financial coverage standards (e.g. "TIER"), the borrower continue to maintain its books, records, and accounts in accordance with this subpart. REA may, however, approve requests by the borrower to maintain such additional books, records, and accounts as necessary to comply with the requirements of the state regulatory authority; such approval shall not waive, modify or amend the requirements of the REA loan documents or of this subpart.

(d) REA borrowers shall not take any action to implement the provisions of Statement of Financial Accounting Standards (SFAS) No. 71, Accounting for the Effects of Certain Types of Regulation, SFAS No. 90, Regulated Enterprises—Accounting for Abandonments and Disallowances of Plant Costs, SFAS No. 92, Regulated Enterprises—Accounting for Phase-in Plans, without the prior written approval of REA.

§ 1767.14 Interpretations of the REA Uniform System of Accounts.

To maintain uniformity in accounting, borrowers shall submit questions of doubtful interpretations of the REA USoA to REA for consideration and decision.

§ 1767.15 General instructions.

(a) *Records.* (1) Each utility shall keep its books of account, and all other books, record, and memoranda which support the entries in such books of account so as to be able to furnish readily full information as to any item included in any account. Each entry shall be supported by such detailed information as will permit ready identification, analysis, and verification of all facts relevant thereto.

(2) The books and records referred to herein include not only accounting records in a limited technical sense, but all other records, such as minute books, stock books, reports, correspondence, memoranda, etc., which may be useful in developing the history of or facts regarding any transaction.

(3) No utility shall destroy any such books or records unless the destruction thereof is permitted by the rules and regulations of REA.

(4) In addition to the prescribed accounts, clearing accounts, temporary or experimental accounts, and subdivisions of any accounts may be kept, provided the integrity of the prescribed accounts is not impaired.

(5) All amounts included in the accounts prescribed herein for electric plant and operating expenses shall be just and reasonable and any payments or accruals by the utility in excess of just and reasonable charges shall be included in account 426.5, Other Deductions.

(6) The arrangement or sequence of the accounts prescribed herein shall not be controlling as to the arrangement or sequence in report forms which may be prescribed by REA.

(b) *Numbering system.* (1) The account numbering plan used herein consists of a system of three-digit whole numbers as follows:

100–199 Assets and other debits.
200–299 Liabilities and other credits.
300–399 Plant accounts.
400–432, 434–435 Income accounts.
433, 436–439 Retained earnings accounts.
440–459 Revenue accounts.
500–599 Production, transmission, and distribution expenses.
900–949 Customer accounts, customer service and informational, sales, and general and administrative expenses.

(2) In certain instances, numbers have been skipped in order to allow for possible later expansion or to permit better coordination with the numbering system for other utility departments.

(3) The numbers prefixed to account titles are to be considered as parts of the titles. Each utility, however, may adopt, for its own purposes, a different system of account numbers provided that the numbers herein prescribed shall appear in the descriptive headings of the ledger accounts and in the various sources of original entry; however, if a utility uses a different group of account numbers and it is not practicable to show the prescribed account numbers in the various sources of original entry, such reference to the prescribed account numbers may be omitted from the various sources of original entry. Moreover, each utility using different account numbers for its own purposes shall keep readily available, a list of such account numbers which it uses and a reconciliation of such account numbers with the account numbers provided herein. It is intended that the utility's records shall be so kept as to permit ready analysis by prescribed accounts (by direct reference to sources of original entry to the extent practicable) and to permit preparation of financial and operating statements directly from such records at the end of each accounting period according to the prescribed accounts.

(c) *Accounting period.* Each utility shall keep its books on a monthly basis so that for each month, all transactions applicable thereto, as nearly as may be ascertained, shall be entered in the books of the utility. Amounts applicable or assignable to specific utility departments shall be so segregated monthly. Each utility shall close its books at the end of each fiscal year unless otherwise authorized by REA.

(d) *Submission of questions.* To maintain uniformity of accounting, utilities shall submit questions of

doubtful interpretation to REA for consideration and decision.

(e) *Item lists.* Lists of "items" appearing in the texts of the accounts or elsewhere herein are for the purpose of more clearly indicating the application of the prescribed accounting. The lists are intended to be representative, but not exhaustive. The appearance of an item in a list warrants the inclusion of the item in the account mentioned only when the text of the account also indicates inclusion inasmuch as the same item frequently appears in more than one list. The proper entry in each instance must be determined by the texts of the accounts.

(f) *Extraordinary items.* It is the intent that net income shall reflect all items of profit and loss during the period with the exception of prior period adjustments as described in § 1767.15(g)(1) and long-term debt as described in § 1767.15(q) below. Those items related to the effects of events and transactions which have occurred during the current period and which are not typical or customary business activities of the company shall be considered extraordinary items. Accordingly, they will be events and transactions of significant effect which would not be expected to recur frequently and which would not be considered as recurring factors in any evaluation of the ordinary operating processes of business. (In determining significance, items of a similar nature should be considered in the aggregate. Dissimilar items should be considered individually; however, if they are few in number, they may be considered in the aggregate.) To be considered as extraordinary under the above guidelines, an item should be more than approximately 5 percent of income, computed before extraordinary items. REA approval must be obtained to treat an item of less than 5 percent, as extraordinary. (See Accounts 434 and 435.)

(g) *Prior period items.* (1) Items of profit and loss related to the following shall be accounted for as prior period adjustments and excluded from the determination of net income for the current year:

(i) Correction of an error in the financial statements of a prior year.

(ii) Adjustments that result from realization of income tax benefits of preacquisition operating loss carryforwards of purchased subsidiaries.

(2) All other items of profit and loss recognized during the year shall be included in the determination of net income for that year.

(h) *Unaudited items.* Whenever a financial statement is required by REA, if it is known that a transaction has occurred which affects the accounts but the amount involved in the transaction and its effect upon the accounts cannot be determined with absolute accuracy, the amount shall be estimated and such estimated amount included in the proper accounts. The utility is not required to anticipate minor items which would not appreciably affect the accounts.

(i) *Distribution of pay and expenses of employees.* Charges to electric plant, operating expense, and other accounts for services and expenses of employees engaged in activities chargeable to various accounts, such as construction, maintenance, and operations, shall be based upon the actual time engaged in the respective classes of work, or in case that method is impracticable, upon the basis of a study of the time actually engaged during a representative period.

(j) *Payroll distribution.* Underlying accounting data shall be maintained so that the distribution of the cost of labor charged direct to the various accounts will be readily available. Such underlying data shall permit a reasonably accurate distribution to be made of the cost of labor charged initially to clearing accounts so that the total labor cost may be classified among construction, cost of removal, electric operating functions (steam generation, nuclear generation, hydraulic generation, transmission, distribution, etc.) and nonutility operations.

(k) *Accounting on an accrual basis.* (1) The utility is required to keep its accounts on the accrual basis. This requires the inclusion, in its accounts, of all known transactions of appreciable amount which affect the accounts. If bills covering such transactions have not been received or rendered, the amounts shall be estimated and appropriate adjustments made when the bills are received.

(2) When payments are made in advance for items such as insurance, rents, taxes, or interest, the amount applicable to future periods shall be charged to Account 165, Prepayments, and spread over the periods to which applicable, by credits to Account 165, and charges to the accounts appropriate for the expenditure.

(l) *Records for each plant.* Separate records shall be maintained by electric plant accounts of the book cost of each plant owned, including additions by the utility to plant leased from others, and of the cost of operating and maintaining each plant owned or operated. The term "plant" as used herein includes each generating station and each transmission line or appropriate group of transmission lines.

(m) *Accounting for other departments.* If the utility also operates other utility departments, such as gas or water, it shall keep such accounts for the other departments as may be prescribed by proper authority and in the absence of prescribed accounts, it shall keep such accounts as are proper or necessary to reflect the results of operating each such department. It is not intended that proprietary and similar accounts which apply to the utility as a whole shall be departmentalized.

(n) *Transactions with associated companies.* Each utility shall keep its accounts and records so as to be able to furnish accurately and expeditiously statements of all transactions with associated companies. The statements may be required to show the general nature of the transactions, the amounts involved therein and the amounts included in each account prescribed herein with respect to such transactions. Transactions with associated companies shall be recorded in the appropriate accounts for transactions of the same nature. Nothing herein contained, however, shall be construed as restraining the utility from subdividing accounts for the purpose of recording separately transactions with associated companies.

(o) *Contingent assets and liabilities.* Contingent assets represent a possible source of value to the utility contingent upon the fulfillment of conditions regarded as uncertain. Contingent liabilities include items which may, under certain conditions, become obligations of the utility but which are neither direct nor assumed liabilities at the date of the balance sheet. The utility shall be prepared to give a complete statement of significant contingent assets and liabilities (including cumulative dividends on preference stock) in its annual report and at such other times as may be requested by REA.

(p) *Separate accounts or records for each licensed project.* The accounts or records of each borrower shall be so kept as to show for each project (including pumped storage) under license:

(1) The actual legitimate original cost of the project, including the original cost of the original project, the original cost of additions thereto and betterments thereof, and credits for property retired from service, as determined under REA's regulations;

(2) The charges for operation and maintenance of the project property directly assignable to the project;

(3) The credits and debits to the depreciation and amortization accounts, and the balances in such accounts; and

(4) The credits and debits to the operating revenue, income, and retained earnings accounts that can be identified with and directly assigned to the project.

Note: The purpose of this instruction is to insure that accounts or records are currently maintained by each borrower from which reports may be made to REA for use in determining the net investment in each licensed project. The instruction covers only the debit and credit items appearing in the borrower's accounts which may be identified with and assigned directly to any project. In the determination of the net investment, allocations of items affecting the net investment may be required where direct assignment is not practicable.

(q) *Long-term debt.* Premium, Discount and Expense, and Gain or Loss on Reacquisition.

(1) Premium, discount and expense. A separate premium, discount and expense account shall be maintained for each class and series of long-term debt (including receivers' certificates) issued or assumed by the utility. The premium will be recorded in Account 225, Unamortized Premium on Long-Term Debt, the discount will be recorded in Account 226, Unamortized Discount on Long-Term Debt—Debit, and the expense of issuance shall be recorded in Account 181, Unamortized Debt Expense. The premium, discount and expense shall be amortized over the life of the respective issues under a plan which will distribute the amounts equitably over the life of the securities. The amortization shall be charged or credited on a monthly basis with the amounts relating to discount and expense charged to Account 428, Amortization of Debt Discount and Expense. The amounts relating to premium shall be credited to Account 429, Amortization of Premium on Debt—Credit.

(2) Reacquisition, without refunding. When long-term debt is reacquired or redeemed without being converted into another form of long-term debt and when the transaction is not in connection with a refunding operation (primarily redemptions for sinking fund purposes), the difference between the amount paid upon reacquisition and the face value; plus any unamortized premium less any related unamortized debt expense and reacquisition costs; or less any unamortized discount, related debt expense and reacquisition costs applicable to the debt redeemed, retired and cancelled, shall be included in account 189, Unamortized Loss on Reacquired Debt, or Account 257, Unamortized Gain on Reacquired Debt, as appropriate. The utility shall amortize the recorded amounts equally on a monthly basis over the remaining life of the respective security issues (old original debt). The amount so amortized shall be charged to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt—Credit, as appropriate.

(3) Reacquisition, with refunding. When the redemption of one issue or series of bonds or other long-term obligations is financed by another issue or series before the maturity date of the first issue, the difference between the amount paid upon refunding and the face value; plus any unamortized premium less related debt expense or less any unamortized discount and related debt expense, applicable to the debt refunded, shall be included in Account 189, Unamortized Loss on Reacquired Debt, or Account 257, Unamortized Gain on Reacquired Debt, as appropriate. The utility may elect to account for such amounts as follows:

(i) Write them off immediately when the amounts are insignificant.

(ii) Amortize them by equal monthly amounts over the remainder of the original life of the issue retired, or

(iii) Amortize them by equal monthly amounts over the life of the new issue.

Once an election is made, it shall be applied on a consistent basis. The amounts in paragraph (q)(3) (i), (ii), or (iii) of this section shall be charged to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt—Credit, as appropriate.

(4) Under methods paragraph (q)(3) (ii) and (iii) of this section, the increase or reduction in current income taxes resulting from the reacquisition should be apportioned over the remainder of the original life of the issued retired or over the life of the new issue, as appropriate, as directed more specifically in paragraphs (q) (5) and (6) of this section.

(5) When the utility recognizes the loss in the year of reacquisition as a tax deduction, Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, shall be debited and Account 283, Accumulated Deferred Income Taxes—Other, shall be credited with the amount of the related tax effect, such amount to be allocated to the periods affected in accordance with the provisions of Account 283.

(6) When the utility chooses to recognize the gain in the year of reacquisition as a taxable gain, Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, shall be debited with the amount of the related tax effect, such amount to be allocated to the periods affected in accordance with the provisions of Account 190, Accumulated Deferred Income Taxes.

(7) When the utility chooses to use the optional privilege of deferring the tax on the gain attributable to the reacquisition of debt by reducing the depreciable basis of utility property for tax purposes, pursuant to section 108 of the Internal Revenue Code, the related tax effects shall be deferred as the income is recognized for accounting purposes, and the deferred amounts shall be amortized over the life of the associated property on a vintage year basis. Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, shall be debited, and Account 282, Accumulated Deferred Income Taxes—Other Property, shall be credited with an amount equal to the estimated income tax effect applicable to the portion of the income, attributable to reacquired debt, recognized for accounting purposes during the period. Account 282 shall be debited and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, shall be credited with an amount equal to the estimated income tax effects, during the life of the property, attributable to the reduction in the depreciable basis for tax purposes.

(8) The tax effects relating to gain or loss shall be allocated as above to utility operations except in cases where a portion of the debt reacquired is directly applicable to nonutility operations. In that event, the related portion of the tax effects shall be allocated to nonutility operations. Where it can be established that reacquired debt is generally applicable to both utility and nonutility operations, the tax effects shall be allocated between utility and nonutility operations based on the ratio of net investment in utility plant to net investment in nonutility plant.

(9) Premium, discount, or expense on debt shall not be included as an element in the cost of construction or acquisition of property (tangible or intangible), except under the provisions of Account 432, Allowance for Borrowed Funds Used During Construction—Credit.

(10) Alternate method. Where a regulatory authority or a group of regulatory authorities having prime rate jurisdiction over the utility specifically disallows the rate principle of amortizing gains or losses on reacquisition of long-term debt without refunding, and does not apply the gain

or loss to reduce interest charges in computing the allowed rate of return for rate purposes, the following alternate method may be used to account for gains or losses relating to reacquisition of long-term debt, with or without refunding:

(i) The difference between the amount paid upon reacquisition of any long-term debt and the face value, adjusted for unamortized discount, expenses or premium, as the case may be, applicable to the debt redeemed shall be recognized currently in income and recorded in Account 421, Miscellaneous Nonoperating Income, or Account 426.5, Other Deductions.

(ii) When this alternate method of accounting is used, the utility shall include a footnote to each financial statement, prepared for public use, explaining why this method is being used along with the treatment given for ratemaking purposes.

(r) *Comprehensive interpreted income tax allocation.* (1) Where there are timing differences between the periods in which transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income, the income tax effects of such transactions are to be recognized in the periods in which the differences between book accounting income and taxable income arise and in the periods in which the differences reverse using the deferred tax method. In general, comprehensive interperiod tax allocation should be followed whenever transactions enter into the determination of pretax accounting income for the period even though some transactions may affect the determination of taxes payable in a different period, as further qualified below.

(2) Utilities are not required to utilize comprehensive interperiod income tax allocation until the deferred income taxes are included as an expense in the rate level by the regulatory authority having rate jurisdiction over the utility. Where comprehensive interperiod tax allocation accounting is not practiced the utility shall include as a note to each financial statement, prepared for public use, a footnote explanation setting forth the utility's accounting policies with respect to interperiod tax allocation and describing the treatment for rate making purposes of the tax timing differences by regulatory authorities having rate jurisdiction.

(3) Should the utility be subject to more than one agency having rate jurisdiction, its accounts shall appropriately reflect the ratemaking treatment (deferral or flow through) of each jurisdiction.

(4) Once comprehensive interperiod tax allocation has been initiated either in whole or in part it shall be practiced on a consistent basis and shall not be changed or discontinued without prior REA approval.

(5) Tax effects deferred currently will be recorded as deferred debits or deferred credits in Accounts 190, Accumulated Deferred Income Taxes; 281, Accumulated Deferred Income Taxes—Accelerated Amortization Property; 282, Accumulated Deferred Income Taxes—Other Property, and 283, Accumulated Deferred Taxes—Other, as appropriate. The resulting amounts recorded in these accounts shall be disposed of as prescribed in this system of accounts or as otherwise authorized by REA.

(s) *Criteria for classifying leases.* (1) If, at its inception, a lease meets one or more of the following criteria, the lease shall be classified as a capital lease:

(i) The lease transfers ownership of the property to the lessee by the end of the lease term.

(ii) The lease contains a bargain purchase option.

(iii) The lease term is equal to 75 percent or more of the estimated economic life of the leased property. However, if the beginning of the lease term falls within the last 25 percent of the total estimated economic life of the leased property, including earlier years of use, this criterion shall not be used for purposes of classifying the lease.

(iv) The present value at the beginning of the lease term of the minimum lease payments, excluding that portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by the lessor, including any profit thereon, equals or exceed 90 percent of the excess of the fair value of the leased property to the lessor at the inception of the lease over any related investment tax credit retained by the lessor and expected to be realized by lessor. However, if the beginning of the lease term falls within the last 25 percent of the total estimated economic life of the leased property, including earlier years of use, this criterion shall not be used for purposes of classifying the lease. The lessee utility shall compute the present value of the minimum lease payments using its incremental borrowing rate, unless it is practicable for the utility to learn the implicit rate computed by the lessor, and the implicit rate computed by the lessor is less than the lessee's incremental borrowing rate. If both of those conditions are met, the lessee shall use the implicit rate.

(2) If, at any time, the lessee and lessor agree to change the provisions of the lease, other than by renewing the lease or extending its term, in a manner that would have resulted in a different classification of the lease under the criteria in paragraph A had the changed terms been in effect at the inception of the lease, the revised agreement shall be considered as a new agreement over its term, and the criteria in paragraph (1) shall be applied for purpose of the expiration of the existing lease term, such as the exercise of a lease renewal option other than those already included in the lease term, shall be considered as a new agreement and shall be classified according to the above provision. Changes in estimates (for example, changes in estimates of the economic life or of the residual value of the leased property) or changes in circumstances (for example, default by the lessee) shall not give rise to a new classification of a lease for accounting purposes.

(t) *Accounting for leases.* (1) All leases shall be classified as either capital or operating leases.

(2) The utility shall record a capital lease as an asset in Account 101.1, Property Under Captial Leases, and Account 120.6, Nuclear Fuel Under Capital Leases; as appropriate, and an obligation in Account 227, Obligations Under Capital Leases—Noncurrent, or Account 243, Obligations Under Capital Leases—Current, at an amount equal to the present value at the beginning of the lease term of minimum lease payments during the lease term, excluding that portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by the lessor, together with any profit thereon. However, if the amount so determined exceeds the fair value of the leased property at the inception of the lease, the amount recorded as the asset and obligation shall be the fair value.

(3) Rental payments on all leases shall be charged to rent expense, fuel expense, construction work in progress, or other appropriate accounts as they become payable.

(4) For a capital lease, for each period during the lease term, the amounts recorded for the asset and obligation shall be reduced by an amount equal to the portion of each lease payment that would have been allocated to the reduction of the obligation, if the payment had been treated as a payment on an installment obligation (liability) and allocated between interest expense and a reduction of the obligation so as to produce a constant periodic rate of interest on the remaining balance.

§ 1767.16 Electric plant instructions

(a) *Classification of electric plant at effective date of system of accounts.* (1) The electric plant accounts provided herein are the same as those contained in the prior system of accounts except for inclusion of accounts for nuclear production plant and some changes in classification in the general equipment accounts. Except for these changes, the balances in the various plant accounts, as determined under the prior system of accounts, should be carried forward. Any remaining balance of plant which has not yet been classified, pursuant to the requirements of the prior system, shall be classified in accordance with the following instructions.

(2) The cost to the utility of its unclassified plant shall be ascertained by analysis of the utility's records. Adjustments shall not be made to record in utility plant accounts amounts previously charged to operating expenses or to income deductions in accordance with the uniform system of accounts in effect at the time or in accordance with the discretion of management as exercised under a uniform system of accounts, or under accounting practices previously followed.

(3) The detailed electric plant accounts (301 to 399, inclusive) shall be stated on the basis of cost to the utility of plant constructed by it and the original cost, estimated if not known, of plant acquired as an operating unit or system. The difference between the original cost, as above, and the cost to the utility of electric plant after giving effect to any accumulated provision for depreciation or amortization shall be recorded in Account 114, Electric Plant Acquisition Adjustments. The original cost of electric plant shall be determined by analysis of the utility's records or those of the predecessor or vendor companies with respect to electric plant previously acquired as operating units or systems and the difference between the original cost so determined, less accumulated provisions for depreciation and amortization and the cost to the utility with necessary adjustments for retirements from date of acquisition, shall be entered in Account 114, Electric Plant Acquisition Adjustments. Any difference between the cost of electric plant and its book cost, when not properly includible in other accounts, shall be recorded in Account 116, Other Electric Plant Adjustments.

(b) *Electric plant to be recorded at cost.* (1) All amounts included in the accounts for electric plant acquired as an operating unit or system, except as otherwise provided in the texts of the intangible plant accounts, shall be stated at the cost incurred by the person who first devoted the property to utility service. All other electric plant shall be included in the accounts at the cost incurred by the utility except for property acquired by lease which qualifies as capital lease property under § 1767.15(s), Criteria for Classifying Leases, and is recorded in Account 101.1, Property Under Capital Lease, or Account 120.6, Nuclear Fuel Under Capital Leases. Where the term "cost" is used in the detailed plant accounts, it shall have the meaning stated in this paragraph.

(2) When the consideration given for property is other than cash, the value of such consideration shall be determined on a cash basis (see, however, § 1767.10(a)(12)). In the entry recording such transition, the actual consideration shall be described with sufficient particularity to identify it. The utility shall be prepared to furnish REA the particulars of its determination of the cash value of the consideration if other than cash.

(3) When property is purchased under a plan involving deferred payments, no charge shall be made to the electric plant accounts for interest, insurance, or other expenditures occasioned solely by such form of payment.

(4) The electric plant accounts shall not include the cost or other value of electric plant contributed to the company. Contributions in the form of money or its equivalent toward the construction of electric plant shall be credited to accounts charged with the cost of such construction. Plant constructed from contributions of cash or its equivalent shall be shown as a reduction to gross plant constructed when assembling cost data in work orders for posting to plant ledgers of accounts. The accumulated gross costs of plant accumulated in the work order shall be recorded as a debit in the plant ledger of accounts along with the related amount of contributions concurrently being recorded as a credit.

(c) *Components of construction cost.* The cost of construction properly includible in the electric plant accounts shall include, where applicable, the direct and overhead costs as listed and defined hereunder:

(1) *Contract work* includes amounts paid for work performed under contract by other companies, firms, or individuals, costs incident to the award of such contracts, and the inspection of such work.

(2) *Labor* includes the pay and expenses of employees of the utility engaged on construction work, and related workmen's compensation insurance, payroll taxes, and similar items of expense. It does not include the pay and expenses of employees which are distributed to construction through clearing accounts nor the pay and expenses included in other items hereunder.

(3) *Materials and supplies* includes the purchase price at the point of free delivery plus customs duties, excise taxes, the cost of inspection, loading and transportation, the related stores expenses, and the cost of fabricated materials from the utility's shop. In determining the cost of materials and supplies used for construction, proper allowance shall be made for unused materials and supplies, for materials recovered from temporary structures used in performing the work involved, and for discounts allowed and realized in the purchase of materials and supplies.

Note: The cost of individual items of equipment of small value (for example, $500 or less) or of short life, including small portable tools and implements, shall not be charged to utility plant accounts unless the correctness of the accounting therefor is verified by current inventories. The cost shall be charged to the appropriate operating expense or clearing accounts, according to the use of such items, or, if such items are consumed directly in the construction work, the cost shall be included as part of the cost of the construction.

(4) *Transportation* includes the cost of transporting employees, materials and supplies, tools, purchased equipment, and other work equipment (when not under own power) to and from points of construction. It includes amounts paid to others as well as the cost of operating the utility's own transportation equipment. (See paragraph (c)(5) of this section.)

(5) *Special machine service* includes the cost of labor (optional), materials and supplies, depreciation, and other expense incurred in the maintenance, operation and use of special machines, such as steam shovels, pile drivers, derricks, ditchers, scrapers, material unloaders, and other labor saving machines; also expenditures for rental, maintenance and operation of machines of others. It does not include the cost of small tools and other individual items of small value or short life which are included in the cost of materials and supplies. (See paragraph (c)(3) of this section.) When a particular construction job requires the use for an extended period of time of special machines, transportation or other equipment, the net book cost thereof, less the appraised or salvage value at time of release from

the job, shall be include in the cost of construction.

(6) *Shop service* includes the proportion of the expense of the utility's shop department assignable to construction work except that the cost of fabricated materials from the utility's shop shall be included in "materials and supplies."

(7) *Protection* includes the cost of protecting the utility's property from fire or other casualties and the cost of preventing damages to others, or to the property of others, including payments for discovery or extinguishment of fires, cost of apprehending and prosecuting incendiaries, witness fees in relation thereto, amounts paid to municipalities and others for fire protection, and other analogous items of expenditures in connection with construction work.

(8) *Injuries and damages* includes expenditures or losses in connection with construction work on account of injuries to persons and damages to the property of others; also the cost of investigation of and defense against actions for such injuries and damages. Insurance recovered or recoverable on account of compensation paid for injuries to persons incident to construction shall be credited to the account or accounts to which such compensation is charged. Insurance recovered or recoverable on account of property damages incident to construction shall be credited to the account or accounts charged with the cost of the damages.

(9) *Privileges and permits* includes payments for and expenses incurred in securing temporary privileges, permits or rights in connection with construction work, such as for the use of private or public property, streets, or highways, but it does not include rents, or amounts chargeable as franchises and consents for which see Account 302, Franchises and Consents.

(10) *Rents* includes amounts paid for the use of construction quarters and office space occupied by construction forces and amounts properly includible in construction costs for such facilities jointly used.

(11) *Engineers and supervision* includes the portion of the pay and expenses of engineers, surveyors, draftsmen, inspectors, superintendents and their assistants applicable to construction work.

(12) *General administration capitalized* includes the portion of the pay and expenses of the general officers and administrative and general expenses applicable to construction work.

(13) *Engineering services* includes amounts paid to other companies, firms, or individuals engaged by the utility to plan, design, prepare estimates, supervise, inspect, or give general advice and assistance in connection with construction work.

(14) *Insurance* includes premiums paid or amounts provided or reserved as self-insurance for the protection against loss and damages in connection with construction, by fire or other casualty, injuries or deaths of persons other than employees, damages to property of others, defalcation of employees and agents, and the nonperformance of contractual obligations of others. It does not include workmen's compensation or similar insurance on employees included as "labor" in paragraph (c)(2) of this section.

(15) *Law expenditures* includes the general law expenditures incurred in connection with construction and the court and legal costs directly related thereto, other than law expenses included in *Protection*, paragraph (c)(7) of this section, and in *Injuries and damages*, paragraph (c)(8) of this section.

(16) *Taxes* includes taxes on physical property (including land) during the period of construction and other taxes properly includible in construction costs before the facilities become available for service.

(17) *Allowance for funds used during construction* includes the net cost for the period of construction of borrowed funds used for construction purposes and a reasonable rate on other funds when so used, not to exceed, without prior approval of REA, allowances computed in accordance with the formula prescribed in paragraph (c)(17)(i) of this section. No allowance for funds used during construction charges shall be included in these accounts upon expenditures for construction projects which have been abandoned.

(i) The formula and elements for the computation of the allowance for funds used during construction shall be:

$$A_t = s\frac{(S)}{(W)} + d\frac{(D)}{(D+P+C)}\cdot\frac{(1-S)}{(W)}$$

$$A_c = \frac{[1-\frac{S}{W}]}{[\frac{}{W}]}\left[p\frac{(P)}{(D+P+C)} + c\frac{(C)}{(D+P+C)}\right]$$

A_t = Gross allowance for borrowed funds used during construction rate.

A_c = Allowance for other funds used during construction rate.

S = Average short-term debt.

S = Short-term debt interest rate.

D = Long-term debt.

d = Long-term debt interest rate.

P = Preferred stock.

P = Preferred stock cost rate.

C = Common equity.

C = Common equity cost rate.

W = Average balance in construction work in progress plus nuclear fuel in process of refinement, conversion, enrichment, and fabrication.

(ii) The rate shall be determined annually. The balance for long-term debt, preferred stock, and common equity shall be the actual book balances as of the end of the prior year. The cost rate for long-term debt and preferred stock shall be the weighted averaged cost. The cost rate for common equity shall be the rate granted common equity in the last rate proceeding before the ratemaking body having primary rate jurisdictions. If such cost rate is not available, the average rate actually earned during the preceding three years shall be used. The short-term debt balances and related cost and the average balance for construction work in progress plus nuclear fuel in process of refinement, conversion, enrichment, and fabrication shall be estimated for the current year with appropriate

adjustments as actual data becomes available.

Note: When only a portion of a plant or project is placed in operation or is completed and ready for service but the construction work as a whole is incomplete, that part of the cost of the property placed in operation or ready for service shall be treated as "Electric Plant in Service," and an allowance for funds used during construction thereon as a charge to construction shall cease. Allowance for funds used during construction on that part of the cost of the plant which is incomplete may continue to be charged to construction until such time as it is placed in operation or is ready for service, except as limited in paragraph (c)(17) of this section.

(18) *Earnings and expenses during construction.* The earnings and expenses during construction shall constitute a component of construction costs.

(i) The earnings shall include revenues received or earned for power produced by generating plants during the construction period and sold or used by the utility. Where such power is sold to an independent purchaser before intermingling with power generated by other plants, the credit shall consist of the selling price of the energy. Where the power generated by a plant under construction is delivered to the utility's electric system for distribution and sale, or is delivered to an associated company, or is delivered to and used by the utility for purposes other than distribution and sale (for manufacturing or industrial use, for example), the credit shall be the fair value of the energy so delivered. Revenue shall also include rentals for lands, buildings, and other property, and miscellaneous receipts not properly includible in other accounts.

(ii) Expenses shall consist of the cost of operating the power plant, and other costs incident to the production and delivery of the power for which construction is credited under paragraph (c)(18)(i) of this section, including the cost of repairs and other expenses of operating and maintaining lands, buildings, and other property, and other miscellaneous and like expenses not properly includible in other accounts.

(19) *Training costs.* When it is necessary that employees be trained to operate or maintain plant facilities that are being constructed and such facilities are not conventional in nature, or are new to the company's operations, these costs may be capitalized as a component of construction cost. Once plant is placed in service, the capitalization of training costs shall cease and subsequent training costs shall be expensed. (See § 1767.17 (d).)

(20) *Studies* includes the costs of studies such as nuclear operational, safety, or seismic studies, or environmental studies mandated by regulatory bodies relative to plant under construction. Studies relative to facilities in service shall be charged to Account 183, Preliminary Survey and Investigation Charges.

(d) *Overhead construction costs.* (1) All overhead construction costs, such as engineering, supervision, general office salaries and expenses, construction engineering and supervision performed by others than the accounting utility, law expenses, insurance, injuries and damages, relief and pensions, taxes and interest, shall be charged to particular jobs or units on the basis of the amounts of such overheads reasonably applicable thereto, to the end that each job or unit shall bear its equitable proportion of such costs and that the entire cost of the unit, both direct and overhead, shall be deducted from the plant accounts at the time the property is retired.

(2) As far as practicable, the determination of payroll charges includible in construction overheads shall be based on time card distributions there. Where this procedure is impractical, special studies shall be made periodically of the time of supervisory employees devoted to construction activities to the end that only such overhead costs as have a definite relation to construction shall be capitalized. The addition to direct construction cost of arbitrary percentages or amounts to cover assumed overhead costs is not permitted.

(3) The records supporting the entries for overhead construction costs shall be so kept as to show the total amount of each overhead for each year, the nature and amount of each overhead expenditure charged to each construction work order and to each electric plant account, and the bases of distribution of such costs.

(e) *Electric plant purchased or sold.* (1) When electric plant constituting an operating unit or system is acquired by purchase, merger, consolidation, liquidation, or otherwise, after the effective date of this system of accounts, the costs of acquisition, including expenses incidental thereto properly includible in electric plant, shall be charged to Account 102, Electric Plant Purchased or Sold.

(2) The accounting for the acquisition shall then be completed as follows:

(i) The original cost of plant, estimated if not known, shall be credited to Account 102, Electric Plant Purchased or Sold, and concurrently charged to the appropriate electric plant in service accounts and to Account 104, Electric Plant Leased to Others; Account 105, Electric Plant Held for Future Use; and Account 107, Construction Work in Progress—Electric, as appropriate.

(ii) The depreciation and amortization applicable to the original cost of the properties purchased shall be charged to Account 102, Electric Plant Purchased or Sold, and concurrently credited to the appropriate account for accumulated provision for depreciation or amortization.

(iii) The cost to the utility of any property includible in Account 121, Nonutility Property, shall be transferred thereto.

(iv) The amount remaining in Account 102, Electric Plant Purchased or Sold, shall then be closed to Account 114, Electric Plant Acquisition Adjustments.

(3) If property acquired in the purchase of an operating unit or system is in such physical condition when acquired that it is necessary to substantially rehabilitate it in order to bring the property up to the standards of the utility, the cost of such work, except replacements, shall be accounted for as a part of the purchase price of the property.

(4) When any property acquired as an operating unit or system includes duplicate or other plant which will be retired by the accounting utility in the reconstruction of the acquired property or its consolidation with previously owned property, the proposed accounting for such property shall be presented to REA.

(5) In connection with the acquisition of electric plant constituting an operating unit or system, the utility shall procure, if possible, all existing records relating to the property acquired or certified copies thereof, and shall preserve such records in conformity with regulations or practices governing the preservation of records of its own construction.

(6) When electric plant constituting an operating unit or system is sold, conveyed, or transferred to another by sale, merger, consolidation, or otherwise, the book cost of the property sold or transferred to another shall be credited to the appropriate utility plant accounts, including amounts carried in Account 114, Electric Plant Acquisition Adjustments, and the amounts (estimated if not known) carried with respect thereto in the accounts for accumulated provision for depreciation and amortization and in Account 252, Customer Advances for Construction, shall be charged to such accounts and contra entries made to Account 102, Electric Plant Purchased or Sold. Unless

otherwise ordered by REA, the difference, if any, between:

(i) The net amount of debits and credits, and

(ii) The consideration received for the property (less commissions and other expenses of making the sale) shall be included in Account 421.1, Gain on Disposition of Property, or Account 421.2, Loss on Disposition of Property. (See Account 102, Electric Plant Purchased or Sold.

Note: In cases where existing utilities merge or consolidate because of financial or operating reasons or statutory requirements rather than as a means of transferring title of purchased properties to a new owner, the accounts of the constitutent utilities, with the approval of REA, may be combined. In the event original cost has not been determined, the resulting utility shall proceed to determine such cost as outlined herein.

(f) *Expenditures on leased property.* (1) The cost of substantial initial improvements (including repairs, rearrangements, additions, and betterments) made in the course of preparing for utility service property leased for a period of more than one year, and the cost of subsequent substantial additions, replacements, or betterments to such property, shall be charged to the electric plant account appropriate for the class of property leased. If the service life of the improvements is terminable by action of the lease, the cost, less net salvage, of the improvements shall be spread over the life of the lease by charges to Account 404, Amortization of Limited-Term Electric Plant. However, if the service life is not terminated by action of the lease but by depreciation proper, the cost of the improvements, less net salvage, shall be accounted for as depreciable plant. The provisions of this paragraph are applicable to property leased under either capital leases or operating leases.

(2) If improvements made to property leased for a period of more than one year are of relatively minor cost, or if the lease is for a period or not more than one year, the cost of the improvements shall be charged to the account in which the rent is included, either directly or by amortization thereof.

(g) *Land and land rights.* (1) The accounts for land and land rights shall include the cost of land owned in fee by the utility and rights, interests, and privileges held by the utility in land owned by others, such as leaseholds, easements, water and water power rights, diversion rights, submersion rights, rights-of-way, and other like interests in land. Do not include in the accounts for land and land rights and rights-of-way costs incurred in connection with first clearing and grading of land and rights-of-way and the damage costs associated with the construction and installation of plant. Such costs shall be included in the appropriate plant accounts directly benefited.

(2) Where special assessments for public improvements provide for deferred payments, the full amount of the assessments shall be charged to the appropriate land account and the unpaid balance shall be carried in an appropriate liability account. Interest on unpaid balances shall be charged to the appropriate interest account. If any part of the cost of public improvements is included in the general tax levy, the amount thereof shall be charged to the appropriate tax account.

(3) The net profit from the sale of timber, cord wood, sand, gravel, other resources or other property acquired with the rights-of-way or other lands shall be credited to the appropriate plant accounts to which related. Where land is held for a considerable period of time and timber and other natural resources on the land at the time of purchase increase in value, the net profit (after giving effect to the cost of the natural resources) from the sale of timber or its products or other natural resources shall be credited to the appropriate utility operating income account when such land has been recorded in Account 105, Electric Plant Held for Future Use, or classified as plant in service, otherwise to Account 421, Miscellaneous Nonoperating Income.

(4) Separate entries shall be made for the acquisition, transfer, or retirement of each parcel of land, and each land right (except rights-of-way for distribution lines), or water right, having a life of more than one year. A record shall be maintained showing the nature of ownership, full legal description, area, map reference, purpose for which used, city, county, and tax district on which situated, from whom purchased or to whom sold, payment given or received, other costs, contract date and number, date of recording of deed, and book and page of record. Entries transferring or retiring land or land rights shall refer to the original entry recording its acquisition.

(5) Any difference between the amount from the sale of land or land rights, less agents' commissions and other costs incident to the sale, and the book cost of such land or rights, shall be included in Account 411.6, Gains from Disposition of Utility Plant, or 411.7, Losses from Disposition of Utility Plant, when such property has been recorded in Account 105, Electric Plant Held for Future Use, otherwise to Account 421.1, Gain on Disposition of Property, or 421.2, Loss on Disposition of Property, as appropriate, unless a reserve therefor has been authorized and provided. Appropriate adjustments of the accounts shall be made with respect to any structures or improvements located on land sold.

(6) The cost of buildings and other improvements (other than public improvements) shall not be included in the land accounts. If, at the time of acquisition of an interest in land, such interest extends to buildings or other improvements (other than public improvements) which are then devoted to utility operations, the land and improvements shall be separately appraised and a cost allocated to land and buildings or improvements on the basis of the appraisals. If the improvements are removed or wrecked without being used in operations, the cost of removing or wrecking shall be charged and the salvage credited to the account in which the cost of land is recorded.

(7) When the purchase of land for electric operations requires the purchase of more land than needed for such purposes, the charge to the specific land account shall be based upon the cost of the land purchased, less the fair market value of that portion of the land which is not to be used in utility operations. The portion of the cost measured by the fair market value of the land not to be used shall be included in Account 105, Electric Plant Held for Future Use, or Account 121, Nonutility Property, as appropriate.

(8) Provisions shall be made for amortizing amounts carried in the accounts for limited-term interest in land so as to apportion equitably the cost of each interest over the life thereof. (See Account 111, Accumulated Provision for Amortization of Electric Utility Plant, and Account 404, Amortization of Limited-Term Electric Plant.)

(9) The items of cost to be included in the accounts for land and land rights are as follows:

(i) Bulkheads, buried, not requiring maintenance or replacement.

(ii) First cost of acquisition including mortgages and other liens assumed (but not subsequent interest thereon).

(iii) [Reserved]

(iv) Condemnation proceedings, including court and counsel costs.

(v) Consents and abutting damages.

(vi) Conveyancers' and notaries' fees.

(vii) Fees, commissions, and salaries to brokers, agents, and other in

connection with the acquisition of the land or land rights.

(viii) [Reserved]

(ix) Leases, cost of voiding upon purchases to secure possession of land.

(x) Removing, relocating, or reconstructing property of others, such as buildings, highways, railroads, bridges, cemeteries, churches, telephone and power lines, etc., in order to acquire quiet possession.

(xi) Retaining walls unless identified with structures.

(xii) Special assessments levied by public authorities for public improvements on the basis of benefits for new roads, new bridges, new sewers, new curbing, new pavements, and other public improvements, but not taxes levied to provide for the maintenance of such improvements.

(xiii) Surveys in connection with the acquisition, but not amounts paid for topographical surveys and maps where such costs are attributable to structures or plant equipment erected or to be erected or installed on such land.

(xiv) Taxes assumed, accrued to date of transfer of title.

(xv) Title, examining, clearing, insuring, and registering in connection with the acquisition and defending against claims relating to the period prior to the acquisition.

(xvi) Appraisals prior to closing title.

(xvii) Cost of dealing with distributees or legatees residing outside of the state or county, such as recording power of attorney, recording will or exemplification of will, recording satisfaction of state tax.

(xviii) Filing satisfaction of mortgage.

(xix) Documentary stamps.

(xx) Photographs of property at acquisition.

(xxi) Fees and expenses incurred in the acquisition of water rights and grants.

(xxii) Cost of fill to extend bulkhead line over land under water, where riparian rights are held, which is not occasioned by the erection of a structure.

(xxiii) Sidewalks and curbs constructed by the utility on public property.

(xxiv) Labor and expenses in connection with securing rights of way, where performed by company employees and company agents.

(h) *Structures and improvements.* (1) The accounts for structures and improvements shall include the cost of all buildings and facilities to house, support, or safeguard property or persons, including all fixtures permanently attached to and made a part of buildings and which cannot be removed therefrom without cutting into the walls, ceilings, or floors, or without in some way impairing the buildings, and improvements of a permanent character on or to land. Also include those costs incurred in connection with the first clearing and grading of land and rights-of-way and the damage costs associated with construction and installation of plant.

(2) The cost of specially provided foundations not intended to outlast the machinery or apparatus for which provided, and the cost of angle irons, and castings installed at the base of an item of equipment, shall be charged to the same account as the cost of the machinery, apparatus, or equipment.

(3) Minor buildings and structures, such as valve towers, patrolmen's towers, telephone stations, fish and wildlife, and recreation facilities which are used directly in connection with or form a part of a reservior, dam or waterway shall be considered a part of the facility in conneciton with which constructed or operated and the cost thereof accounted for accordingly.

(4) Where furnaces and boilers are used primarily for furnishing steam for some particular department and only incidentally for furnishing steam for heating a building and operating the equipment therein, the entire cost of such furnaces and boilers shall be charged to the appropriate plant account, and no part to the building account.

(5) Where the structure of a dam forms also the foundation of the power plant building, such foundation shall be considered a part of the dam.

(6) The cost of disposing of materials excavated in connection with construction of structures shall be considered as a part of the cost of such work, except when such material is used for filling, the cost of loading, hauling, and dumping shall be equitably apportioned between the work in connection with which the removal occurs and the work in connection with which the material is used; and when such material is sold, the net amount realized from such sales shall be credited to the work in connection with which the removal occurs. If the amount realized from the sale of excavated materials exceeds the removal costs and the costs in connection with the sale, the excess shall be credited to the land account in which the site is carried.

(7) Lighting or other fixtures temporarily attached to building for purposes of display or demonstration shall not be included in the cost of the building but in the appropriate equipment account.

(8) The items of cost to be included in the accounts for structures and improvements are as follows:

(i) Architects' plans and specifications including supervision.

(ii) Ash pits (when located within the building).

(iii) Athletic field structures and improvements.

(iv) Boilers, furnaces, piping, wiring, fixtures, and machinery for heating, lighting, signaling, ventilating, and air conditioning systems, plumbing, vacuum cleaning systems, incinerator and smoke pipe, flues, etc.

(v) Bulkheads, including dredging, riprap fill, piling, decking, concrete, fenders, etc., when exposed and subject to maintenance and replacement.

(vi) Chimneys.

(vii) Coal bins and bunkers.

(viii) Commissions and fees to brokers, agents, architects and others.

(ix) Conduit (not to be removed) with its contents.

(x) Damages to abutting property during construction.

(xi) Docks.

(xii) Door checks and door stops.

(xiii) Drainage and sewerage systems.

(xiv) Elevators, cranes, hoists, etc., and the machinery for operating them.

(xv) Excavation, including shoring, bracing, bridging, refill and disposal of excess excavated material, cofferdams around foundation, pumping water from cofferdams during construction and test borings.

(xvi) Fences and fence curbs (not including protective fences isolating items of equipment, which shall be charged to the appropriate equipment accounts).

(xvii) Fire protection systems when forming a part of a structure.

(xviii) Flagpole.

(xix) Floor covering (permanently attached).

(xx) Foundations and piers for machinery, constructed as a permanent part of a building or other item listed herein.

(xxi) Grading and clearing when directly occasioned by the building of a structure.

(xxii) Intrasite communication system, poles, pole fixtures, wires, and cable.

(xxiii) Landscaping, lawns, shrubbery, etc.

(xxiv) Leases, voiding upon purchase to secure possession of structures.

(xxv) Leased property, expenditures on.

(xxvi) Lighting fixtures and outside lighting system.

(xxvii) Mailchutes when part of a building.

(xxviii) Marquee, permanently attached to the building.
(xxix) Painting, first cost.
(xxx) Permanent paving, concrete, brick, flagstone, asphalt, etc., within the property lines.
(xxxi) Partitions, including movable.
(xxxii) Permits and privileges.
(xxxiii) Platforms, railings and gratings when constructed as a part of a structure.
(xxxiv) Power boards for services to a building.
(xxxv) Refrigeration systems for general use.
(xxxvi) Retaining walls except when identified with land.
(xxxvii) Roadways, railroads, bridges, and trestles intrasite except railroads provided for in equipment accounts.
(xxxviii) Roofs.
(xxxix) Scales, connected to and forming a part of a structure.
(xl) Screens.
(xli) Sewer systems, for general use.
(xlii) Sidewalks, culverts, curbs and streets constructed by the utility on its property.
(xliii) Sprinkling systems.
(xliv) Sump pumps and pits.
(xlv) Stacks—brick, steel, or concrete, when set on foundation forming part of general foundation and steelwork of a building.
(xlvi) Steel inspection during construction.
(xlvii) Storage facilities constituting a part of a building.
(xlviii) Storm doors and windows.
(xlix) Subways, areaways, and tunnels, directly connected to and forming part of a structure.
(l) Tanks, constructed as part of a building or as a distinct structural unit.
(li) Temporary heating during construction (net cost).
(lii) Temporary water connection during construction (net cost).
(liii) Temporary shanties and other facilities used during construction (net cost).
(liv) Topographical maps.
(lv) Tunnels, intake and discharge, when constructed as part of a structure, including sluice gates, and those constructed to house mains.
(lvi) Vaults constructed as part of a building.
(lvii) Watchmen's sheds and clock systems (net cost when used during construction only).
(lviii) Water basins or reservoirs.
(lix) Water front improvements.
(lx) Water meters and supply system for a building or for general company purposes.
(lxi) Water supply piping, hydrants, and wells.
(lxii) Wharves.
(lxiii) Window shades and ventilators.
(lxiv) Yard drainage system.
(lxv) Yard lighting system.
(lxvi) Yard surfacing, gravel, concrete, or oil (First cost only).

Note: Structures and improvements accounts shall be credited with the cost of coal bunkers, stacks, foundations, subways, and tunnels, the use of which has terminated with the removal of the equipment with which they are associated even though they have not been physically removed.

(i) *Equipment.* (1) The cost of equipment chargeable to the electric plant accounts, unless otherwise indicated in the text of an equipment account, includes the net purchase price thereof, sales taxes, investigation and inspection expenses necessary to such purchase, expenses of transportation when borne by the utility, labor employed, materials, and supplies consumed, and expenses incurred by the utility in unloading and placing the equipment in readiness to operate. Also include those costs incurred in connection with the first clearing and grading of land and rights-of-way and the damage costs associated with construction and installation of plant.

(2) Exclude from equipment accounts hand and other portable tools, which are likely to be lost or stolen or which have relatively small value (for example, $500 or less) or short life, unless the correctness of the accounting therefor as electric plant is verified by current inventories. Special tools acquired and included in the purchase price of equipment shall be included in the appropriate plant accounts. Portable drills and similar tool equipment when used in connection with the operation and maintenance of a particular plan or department, such as production, transmission, or distribution or in "stores", shall be charged to the plant accounts appropriate for their use.

(3) The equipment accounts shall include angle irons and similar items which are installed at the base of an item of equipment, but piers and foundations which are designed to be as permanent as the buildings which house the equipment, or which are constructed as a part of the building and which cannot be removed without cutting into the walls, ceilings, or floors or, without in some way impairing the building, shall be included in the building accounts.

(4) The equipment accounts shall include the necessary costs of testing or running a plant or parts thereof during an experimental or test period prior to such plant becoming ready for or placed in service. The utility shall furnish REA with full particulars of and justification for any test or experimental run extending beyond a period of 120 days for nuclear plant, and a period of 90 days for all other plant. Such particulars shall include a detailed operational and downtime log showing days of production, gross kilowatts generated by hourly increments, types, and periods of outages by hours with explanation thereof, beginning with the first date the equipment was either tested or synchronized on the line to the end of the test period.

(5) The cost of efficiency or other tests made subsequent to the date equipment becomes available for service shall be charged to the appropriate expense accounts, except that tests to determine whether equipment meets the specifications and requirements as to efficiency, or performance guaranteed by manufacturers, made after operations have commenced and within the period specified in the agreement or contract of purchase, may be charged to the appropriate electric plant accounts.

(j) *Additions and retirements of electric plant.* (1) For the purpose of avoiding undue refinement in accounting for additions to and retirements and replacements of electric plant, all property shall be considered as consisting of retirement units and minor items of property. Each utility shall use such list of retirement units as is in use by it at the effective date hereof or as may be prescribed by REA, with the option, however, of using smaller units, provided the utility's practice in this respect is consistent.

(2) The addition and retirement of retirement units shall be accounted for as follows:

(i) When a retirement unit is added to electric plant, the cost thereof shall be added to the appropriate electric plant account, except that when units are acquired in the acquisition of any electric plant constituting an operating system, they shall be accounted for as provided in § 1767.16(e).

(ii) When a retirement unit is retired from electric plant, with or without replacement, the book cost thereof shall be credited to the electric plant account in which it is included, determined in the manner set forth in item (D), below. If the retirement unit is of a depreciable class, the book cost of the unit retired and credited to electric plant shall be charged to the accumulated provision for depreciation applicable to such property. The cost of removal and the salvage shall be charged or credited, as appropriate, to such depreciation account.

(3) The addition and retirement of minor items of property shall be accounted for as follows:

(i) When a minor item of property which did not previously exist is added to plant, the cost thereof shall be accounted for in the same manner as for the addition of a retirement unit, as set forth in paragraph (j)(2)(i) of this section if a substantial addition results, otherwise the charge shall be to the appropriate maintenance expense account.

(ii) When a minor item of property is retired and not replaced, the book cost thereof shall be credited to the electric plant account in which it is included; and, in the event the minor item is a part of depreciable plant, the account for accumulated provision for depreciation shall be charged with the book cost and cost of removal and credited with the salvage. If, however, the book cost of the minor item retired and not replaced has been or will be accounted for by its inclusion in the retirement unit of which it is a part when such unit is retired, no separate credit to the property account is required when such minor item is retired.

(iii) When a minor item of depreciable property is replaced independently of the retirement unit of which it is a part, the cost of replacement shall be charged to the maintenance account appropriate for the item, except that if the replacement effects a substantial betterment (the primary aim of which is to make the property affected more useful, more efficient, of greater durability, or of greater capacity), the excess cost of the replacement over the estimated cost at current prices of replacing without betterment shall be charged to the appropriate electric plant accounts.

(4) The book cost of electric plant retired shall be the amount at which such property is included in the electric plant accounts, including all components of construction costs. The book cost shall be determined from the utility's records and if this cannot be done, it shall be estimated. When it is impracticable to determine the book cost of each unit, due to the relatively large number or small cost thereof, an appropriate average book cost of the units with due allowance for any differences in size and character, shall be used as the book cost of the units retired.

(5) The book cost of land retired shall be credited to the appropriate land accounts. If the land is sold, the difference between the book cost (less any accumulated provision for depreciation or amortization therefore which has been authorized and provided) and the sale price of the land (less commissions and other expenses of making the sale) shall be recorded in Account 411.6, Gains from Disposition of Utility Plant, or Account 411.7, Losses from Disposition of Utility Plant, when the property has been recorded in Account 105, Electric Plant Held for Future Use, otherwise to Accounts 421.1, Gain on Disposition of Property, or 421.2, Loss on Disposition of Property, as appropriate. If the land is not used in utility service but is retained by the utility, the book cost shall be charged to Account 105, Electric Plant Held for Future Use, or Account 121, Nonutility Property, as appropriate.

(6) The book cost less net salvage of depreciable electric plant retired shall be charged in its entirety to Account 108, Accumulated Provision for Depreciation of Electric Utility Plant in Service. Any amounts which, by approval or order of REA, are charged to Account 182.1, Extraordinary Property Losses, shall be credited to Account 108.

(7) The accounting for the retirement of amounts included in Account 302, Franchises and Consents, and Account 303, Miscellaneous Intangible Plant, and the items of limited-term interest in land included in the accounts for land and land rights, shall be a provided for in the text of Account 111, Accumulated Provision for Amortization of Electric Utility Plant in Service; Account 404, Amortization of Limited-Term Electric Plant; and Account 405, Amortization of Other Electric Plant.

(k) *Work order and property record system required.* (1) Each utility shall record all construction and retirements of electric plant by means of work orders or job orders. Separate work orders may be opened for additions to and retirements of electric plant or the retirements may be included with the construction work order: *Provided, however,* That all items relating to the retirements shall be kept separate from those relating to construction and *Provided, further,* That any maintenance costs involved in the work shall likewise be segregated.

(2) Each utility shall keep its work order systems so as to show the nature of each addition to or retirement of electric plant, the total cost thereof, the source or sources of costs, and the electric plant account or accounts to which charged or credited. Work orders covering jobs of short duration may be cleared monthly.

(3) Each utility shall maintain records in which, for each plant account, the amounts of the annual additions and retirements, subsequent to the effective date of this system of accounts, are classified so as to show the number and cost of the various record units or retirement units.

(l) *Transfers of property.* When property is transferred from one electric plant account to another, from one utility department to another, such as from electric to gas, from one operating division or area to another, to or from Account 101, Electric Plant in Service; Account 104, Electric Plant Leased to Others; Account 105, Electric Plant Held for Future Use, and Account 121, Nonutility Property, the transfer shall be recorded by transferring the original cost thereof from the one account, department, or location to the other. Any related amounts carried in the accounts for accumulated provision for depreciation or amortization shall be transferred in accordance with the segregation of such accounts.

(m) *Common utility plant.* (1) If the utility is engaged in more than one utility service, such as electric, gas, and water, and any of its utility plant is used in common for several utility services or for other purposes to such an extent and in such manner that it is impracticable to segregate it by utility services currently in the accounts, such property, with the approval of REA, may be designated and classified as "common utility plant."

(2) The book amount of utility plant designated as common plant shall be included in Account 118, Other Utility Plant, and if applicable in part to the electric department, shall be segregated and accounted for in subaccounts as electric plant is accounted for in Accounts 101 to 107, inclusive, and electric plant adjustments in Account 116, Other Electric Plant Adjustments; any amounts classifiable as common plant acquisition adjustments or common plant adjustments shall be subject to disposition as provided in Paragraphs C and B of Accounts 114 and 116, respectively, for amounts classified in those accounts. The original cost of common utility plant in service shall be classified according to the detailed utility plant accounts appropriate for the property.

(3) The utility shall be prepared to show, at any time, and to report to REA annually, or more frequently, if required, and by utility plant accounts (301 to 399) the book cost of common utility plant, the allocation of such cost to the respective departments using the common utility plant, and the basis of the allocation.

(4) The accumulated provision for depreciation and amortization of the utility shall be segregated so as to show the amount applicable to the property classified as common utility plant.

(5) The expenses of operation, maintenance, rents, depreciation and

amortization of common utility plant shall be recorded in the accounts prescribed herein, but designated as common expenses, and the allocation of such expenses to the departments using the common utility plant shall be supported in such manner as to reflect readily the basis of allocation used.

(n) *Transmission and distribution plant.* For the purpose of this system of accounts:

(1) *Transmission system* is all land, conversion structures, and equipment employed at a primary source of supply (i.e. generating station, or point of receipt in the case of purchased power) to change the voltage or frequency of electricity for the purpose of its more efficient or convenient transmission; all land, structures, lines, switching and conversion stations, high tension apparatus, and their control and protective equipment between a generating or receiving point and the entrance to a distribution center or wholesale point; and all lines and equipment whose primary purpose is to augment, integrate or tie together the sources of power supply.

(2) *Distribution system* is all land, structures, conversion equipment, lines, line transformers, and other facilities employed between the primary source of supply (i.e. generating station, or point of receipt in the case of purchased power) and of delivery to customers, which are not includible in transmission system, as defined in paragraph (n)(1) of this section, whether or not such land, structures, and facilities are operated as part of a transmission system or as part of a distribution system.

Note: Stations which change electricity from transmission to distribution voltage shall be classified as distribution stations.

(3) Where poles or towers support both transmission and distribution conductors, the poles, towers, anchors, guys, and rights-of-way shall be classified as transmission system. The conductors, cross-arms, braces, grounds, tiewire, and insulators shall be classified as transmission or distribution facilities, according to the purpose for which used.

(4) Where underground conduit contains both transmission and distribution conductors, the underground conduit and right-of-way shall be classified as distribution system. The conductors shall be classified as transmission or distribution facilities according to the purpose for which used.

(5) Land (other than rights-of-way) and structures used jointly for transmission and distribution purposes shall be classified as transmission or distribution according to the major use thereof.

(o) *Hydraulic production plant.* For purpose of this system of accounts hydraulic production plant is all land and land rights, structures and improvements used in connection with hydraulic power generation, reservoirs, dams and waterways, water wheels, turbines, generators, accessory electric equipment, roads, railroads, and bridges and structures and improvements used in connection with fish and wildlife, and recreation.

(p) *Nuclear fuel records required.* Each utility shall keep all the necessary records to support the entries to the various nuclear fuel plant accounts classified under "Assets and Other Debits," Utility Plant Accounts 120.1 through 120.5, inclusive; Account 518, Nuclear Fuel Expense; and Account 157, Nuclear Materials Held for Sale. These records shall be so kept as to readily furnish the basis of the computation of the net nuclear fuel costs.

§ 1767.17 Operating expense instructions.

(a) *Supervision and engineering.* The supervision and engineering includible in the operating expense accounts shall consist of the pay and expenses of superintendents, engineers, clerks, other employees, and consultants engaged in supervising and directing the operation and maintenance of each utility function. Whenever allocations are necessary in order to arrive at the amount to be included in any account, the method and basis of allocation shall be reflected by underlying records.

(1) Labor Items:

(i) Special tests to determine efficiency of equipment operation.

(ii) Preparing or reviewing budgets, estimates, and drawings relating to operation or maintenance for departmental approval.

(iii) Preparing instructions for operations and maintenance activities.

(iv) Reviewing and analyzing operating results.

(v) Establishing organizational setup of departments and executing changes therein.

(vi) Formulating and reviewing routines of departments and executing changes therein.

(vii) General training and instruction of employees by supervisors whose pay is chargeable hereto. Specific instructions and training in a particular type of work is chargeable to the appropriate functional account (See § 1767.16 (c)(19)).

(viii) Secretarial work for supervisory personnel, but not general clerical and stenographic work chargeable to other accounts.

(2) Expense Items:

(i) Consultants' fees and expenses.

(ii) Meals, traveling and incidental expenses.

(b) *Maintenance.* (1) The cost of maintenance chargeable to the various operating expense and clearing accounts includes labor, materials, overheads and other expenses incurred in maintenance work. A list of work operations applicable generally to utility plant is included hereunder. Other work operations applicable to specific classes of plant are listed in functional maintenance expense accounts.

(2) Materials recovered in connection with the maintenance of property shall be credited to the same account to which the maintenance cost was charged.

(3) If the book cost of any property is carried in Account 102, Electric Plant Purchased or Sold, the cost of maintaining such property shall be charged to the accounts for maintenance of property of the same class and use, the book cost of which is carried in other electric plant in service accounts. Maintenance of property leased from others shall be treated as provided in § 1767.17(c).

(i) Items:

(A) Direct field supervision of maintenance.

(B) Inspecting, testing, and reporting on condition of plant specifically to determine the need for repairs, replacements, rearrangements and changes and inspecting and testing the adequacy of repairs which have been made.

(C) Work performed specifically for the purpose of preventing failure, restoring serviceability or maintaining life of plant.

(D) Rearranging and changing the location of plant not retired.

(E) Repairing for reuse materials recovered from plant.

(F) Testing for, locating, and clearing trouble.

(G) Net cost of installing, maintaining, and removing temporary facilities to prevent interruptions in service.

(H) Replacing or adding minor items of plant which do not constitute a retirement unit.

(c) *Rents.* (1) The rent expense accounts provided under the several functional groups of expense accounts shall include all rents, including taxes paid by the lessee on leased property, for property used in utility operations, except minor amounts paid for occasional or infrequent use of any property or equipment and all amounts paid for use of equipment that, if owned, would be includible in plant Accounts

391 to 398 inclusive, which shall be treated as an expense item and included in the appropriate function account and rents which are chargeable to clearing accounts, and distributed therefrom to the appropriate account. If rents cover property used for more than one function such as production and transmission, or by more than one department, the rents shall be apportioned to the appropriate rent expense or clearing accounts of each department on an actual, or if necessary, an estimated basis.

(2) When a portion of property or equipment rented from others for use in connection with utility operations is subleased, the revenue derived from such subleasing shall be credited to the rent revenue account in operating revenues; provided, however, that in case the rent was charged to a clearing account, amounts received from subleasing the property shall be credited to such clearing account.

(3) The cost, when incurred by the lessee, of operating and maintaining leased property, shall be charged to the accounts appropriate for the expense if the property were owned.

(4) The cost incurred by the lessee of additions and replacements to electric plant leased from others shall be accounted for as provided in § 1767.16(f).

(d) *Training costs.* When it is necessary that employees be trained to specifically operate or maintain plant facilities that are being constructed, the related costs shall be accounted for as a current operating and maintenance expense. These expenses shall be charged to the appropriate functional accounts currently as they are incurred. However, when the training costs involved relate to facilities which are not conventional in nature, or are new to the company's operations, see § 1767.16(c)(19), for the accounting.

§ 1767.18 Accounts required of all REA borrowers.

The accounts identified below shall be used by all REA borrowers.

Assets and Other Debits

Utility Plant

101 Electric Plant in Service
101.1 Property Under Capital Leases
102 Electric Plant Purchased or Sold
103 Experimental Electric Plant Unclassified
104 Electric Plant Leased to Others
105 Electric Plant Held for Future Use
106 Completed Construction not Classified—Electric
107 Construction Work in Progress—Electric
107.1 Construction Work in Progress—Contract
107.2 Construction Work in Progress—Force Account
107.3 Construction Work in Progress—Special Equipment
108 Accumulated Provision for Depreciation of Electric Utility Plant
108.1 Accumulated Provision for Depreciation of Steam Production Plant
108.2 Accumulated Provision for Depreciation of Nuclear Production Plant
108.3 Accumulated Provision for Depreciation of Hydraulic Production Plant
108.4 Accumulated Provision for Depreciation of Other Production Plant
108.5 Accumulated Provision for Depreciation of Transmission Plant
108.6 Accumulated Provision for Depreciation of Distribution Plant
108.7 Accumulated Provision for Depreciation of General Plant
108.8 Retirement Work in Progress
109 [Reserved]
110 [Reserved]
111 Accumulated Provision for Amortization of Electric Utility Plant
112 [Reserved]
113 [Reserved]
114 Electric Plant Acquisition Adjustments
115 Accumulated Provision for Amortization of Electric Plant Acquisition Adjustments
116 Other Electric Plant Adjustments
118 Other Utility Plant
119 Accumulated Provision for Depreciation and Amortization of Other Utility Plant
120.1 Nuclear Fuel in Process of Refinement, Conversion, Enrichment, and Fabrication
120.2 Nuclear Fuel Materials and Assemblies—Stock Account
120.3 Nuclear Fuel Assemblies in Reactor
120.4 Spent Nuclear Fuel
120.5 Accumulated Provision for Amortization of Nuclear Fuel Assemblies
120.6 Nuclear Fuel Under Capital Leases

Other Property and Investments

121 Nonutility Property
122 Accumulated Provision for Depreciation and Amortization of Nonutility Property
123 Investment in Associated Companies
123.1 Patronage Capital from Associated Cooperatives
123.11 Investment in Subsidiary Companies
123.21 Subscriptions to Capital Term Certificates—Supplemental Financing
123.22 Investments in Capital Term Certificates—Supplemental Financing
123.23 Other Investments in Associated Organizations
124 Other Investments
125 Sinking Funds
126 Depreciation Fund
128 Other Special Funds

Current and Accrued Assets

131 Cash
131.1 Cash—General
131.12 Cash—General—Economic Development Funds
131.2 Cash—Construction Fund—Trustee
131.3 Cash—Installation Loan and Collection Fund
131.4 Transfer of Cash
132 Interest Special Deposits
133 Dividend Special Deposits
134 Other Special Deposits
135 Working Funds
136 Temporary Cash Investments
141 Notes Receivable
141.1 Accumulated Provision for Uncollectible Notes—Credit
142 Customer Accounts Receivable
142.1 Customer Accounts Receivable—Electric
142.2 Customer Accounts Receivable—Other
143 Other Accounts Receivable
144 Accumulated Provision for Uncollectible Accounts—Credit
144.1 Accumulated Provision for Uncollectible Customer Accounts—Credit
144.2 Accumulated Provision for Uncollectible Merchandising Accounts—Credit
144.3 Accumulated Provision for Uncollectible Accounts, Officers and Employees—Credit
144.4 Accumulated Provision for Other Uncollectible Accounts—Credit
145 Notes Receivable from Associated Companies
146 Accounts Receivable from Associated Companies
151 Fuel Stock
152 Fuel Stock Expenses Undistributed
153 Residuals
154 Plant Materials and Operating Supplies
155 Merchandise
156 Other Materials and Supplies
157 Nuclear Materials Held for Sale
163 Stores Expense Undistributed
165 Prepayments
165.1 Prepayments—Insurance
165.2 Other Prepayments
171 Interest and Dividends Receivable
172 Rents Receivable
173 Accrued Utility Revenues
174 Miscellaneous Current and Accrued Assets

Deferred Debits

181 Unamortized Debt Expense
182.1 Extraordinary Property Losses
182.2 Unrecovered Plant and Regulatory Study Costs
183 Preliminary Survey and Investigation Charges
184 Clearing Accounts
184.1 Transportation Expenses—Clearing
184.2 Clearing Accounts—Other
185 Temporary Facilities
186 Miscellaneous Deferred Debits
187 Deferred Losses from Disposition of Utility Plant
188 Research, Development, and Demonstration Expenditures
189 Unamortized Loss on Reacquired Debt
190 Accumulated Deferred Income Taxes

Liabilities and Other Credits

Margins and Equities

200 Memberships
200.1 Memberships Issued
200.2 Memberships Subscribed But Unissued
201 Patronage Capital
201.1 Patronage Capital Credits
201.2 Patronage Capital Assignable
202 [Reserved]

203 [Reserved]
204 [Reserved]
205 [Reserved]
206 [Reserved]
207 [Reserved]
208 Donated Capital
209 [Reserved]
210 [Reserved]
211 Consumers' Contributions for Debt Service
212 [Reserved]
213 [Reserved]
214 [Reserved]
215 Appropriated Margins
216 [Reserved]
216.1 Unappropriated Undistributed Subsidiary Earnings
217 Retired Capital Credits—Gain
218 Capital Gains and Losses
219 Other Margins and Equities
219.1 Operating Margins
219.2 Nonoperating Margins
219.3 Other Margins
219.4 Other Margins and Equities—Prior Periods

Long-Term Debt

221 Bonds
222 Reacquired Bonds
223 Advances from Associated Companies
224 Other Long-Term Debt
224.1 Long-Term Debt—REA Construction Loan Contract
224.2 REA Loan Contract—Construction—Debit
224.3 Long-Term Debt—REA Construction Notes Executed
224.4 REA Notes Executed—Construction—Debit
224.5 Interest Accrued—Deferred—REA Construction
224.6 Advance Payments Unapplied—REA Long-Term Debt—Debit
224.7 Long-Term Debt—Installation Loan Contract
224.8 REA Loan Contract—Installation—Debit
224.9 Long-Term Debt—Installation Notes Executed
224.10 REA Notes Executed—Installation—Debit
224.11 Other Long-Term Debt—Subscriptions
224.12 Other Long-Term Debt—Supplemental Financing
224.13 Supplemental Financing Notes Executed—Debit
224.14 Other Long-Term Debt—Miscellaneous
224.15 Notes Executed—Other—Debit
224.16 Long-Term Debt—REA Economic Development Notes Executed
224.17 REA Notes Executed—Economic Development—Debit
225 Unamortized Premium on Long-Term Debt
226 Unamortized Discount on Long-Term Debt—Debit

Other Noncurrent Liabilities

227 Obligations Under Capital Leases—Noncurrent
228.1 Accumulated Provision for Property Insurance
228.2 Accumulated Provision for Injuries and Damages
228.3 Accumulated Provision for Pensions and Benefits
228.4 Accumulated Miscellaneous Operating Provisions
229 Accumulated Provision for Rate Refunds

Current and Accrued Liabilities

231 Notes Payable
232 Accounts Payable
232.1 Accounts Payable—General
232.2 Accounts Payable—REA Construction
232.3 Accounts Payable—Other
233 Notes Payable to Associated Companies
234 Accounts Payable to Associated Companies
235 Customer Deposits
236 Taxes Accrued
236.1 Accrued Property Taxes
236.2 Accrued U.S. Social Security Tax—Unemployment
236.3 Accrued U.S. Social Security Tax—F.I.C.A.
236.4 Accrued State Social Security Tax—Unemployment
236.5 Accrued State Sales Tax—Customers
236.6 Accrued Gross Revenue or Gross Receipts Tax
236.7 Accrued Taxes—Other
237 Interest Accrued
238 Patronage Capital and Patronage Refunds Payable
238.1 Patronage Capital Payable
238.2 Patronage Refunds Payable
239 Matured Long-Term Debt
240 Matured Interest
241 Tax Collections Payable
242 Miscellaneous Current and Accrued Liabilities
242.1 Accrued Rentals
242.2 Accrued Payroll
242.3 Accrued Employees' Vacations and Holidays
242.4 Accrued Insurance
242.5 Other Current and Accrued Liabilities
243 Obligations Under Capital Leases—Current

Deferred Credits

251 [Reserved]
252 Customer Advances for Construction
253 Other Deferred Credits
253.1 Other Deferred Credits—Customers' Energy Prepayments
255 Accumulated Deferred Investment Tax Credits
256 Deferred Gains from Disposition of Utility Plant
257 Unamortized Gain or Reacquired Debt
281 Accumulated Deferred Income Taxes—Accelerated Amortization Property
282 Accumulated Deferred Income Taxes—Other Property
283 Accumulated Deferred Income Taxes—Other

Intangible Plant

301 Organization
302 Franchises and Consents
303 Miscellaneous Intangible Plant

Production Plant

Steam Production

310 Land and Land Rights
311 Structures and Improvements
312 Boiler Plant Equipment
313 Engines and Engine Driven Generators
314 Turbogenerator Units
315 Accessory Electric Equipment
316 Miscellaneous Power Plant Equipment

Nuclear Production

320 Land and Land Rights
321 Structures and Improvements
322 Reactor Plant Equipment
323 Turbogenerator Units
324 Accessory Electric Equipment
325 Miscellaneous Power Plant Equipment

Hydraulic Production

330 Land and Land Rights
331 Structures and Improvements
332 Reservoirs, Dams and Waterways
333 Water Wheels, Turbines and Generators
334 Accessory Electric Equipment
335 Miscellaneous Power Plant Equipment
336 Roads, Railroads and Bridges

Other Production

340 Land and Land Rights
341 Structures and Improvements
342 Fuel Holders, Producers and Accessories
343 Prime Movers
344 Generators
345 Accessory Electric Equipment
346 Miscellaneous Power Plant Equipment

Transmission Plant

350 Land and Land Rights
351 [Reserved]
352 Structures and Improvements
353 Station Equipment
354 Tower and Fixtures
355 Poles and Fixtures
356 Overhead Conductors and Devices
357 Underground Conduit
358 Underground Conductors and Devices
359 Roads and Trails

Distribution Plant

360 Land and Land Rights
361 Structures and Improvements
362 Station Equipment
363 Storage Battery Equipment
364 Poles, Towers and Fixtures
365 Overhead Conductors and Devices
366 Underground Conduit
367 Underground Conductors and Devices
368 Line Transformers
369 Services
370 Meters
371 Installations on Customers' Premises
372 Leased Property on Customers' Premises
373 Street Lighting and Signal Systems

General Plant

389 Land and Land Rights
390 Structures and Improvements
391 Office Furniture and Equipment
392 Transportation Equipment
393 Stores Equipment
394 Tools, Shop and Garage Equipment
395 Laboratory Equipment
396 Power Operated Equipment
397 Communication Equipment
398 Miscellaneous Equipment
399 Other Tangible Property

Utility Operating Income

400 Operating Revenues
401 Operation Expense
402 Maintenance Expense
403 Depreciation Expense
403.1 Depreciation Expense—Steam Production Plant
403.2 Depreciation Expense—Nuclear Production Plant
403.3 Depreciation Expense—Hydraulic Production Plant
403.4 Depreciation Expense—Other Production Plant
403.5 Depreciation Expense—Transmission Plant
403.6 Depreciation Expense—Distribution Plant
403.7 Depreciation Expense—General Plant
404 Amortization of Limited—Term Electric Plant
405 Amortization of Other Electric Plant
406 Amortization of Electric Plant Acquisition Adjustments
407 Amortization of Property Losses, Unrecovered Plant and Regulatory Study Costs
408 Taxes Other than Income Taxes
408.1 Taxes—Property
408.2 Taxes—U.S. Social Security—Unemployment
408.3 Taxes—U.S. Social Security—F.I.C.A.
408.4 Taxes—State Social Security—Unemployment
408.5 Taxes—State Sales—Consumers
408.6 Taxes—Gross Revenue or Gross Receipts Tax
408.7 Taxes—Other
409 [Reserved]
409.1 Income Taxes, Utility Operating Income
409.2 Income Taxes, Other Income and Deductions
409.3 Income Taxes, Extraordinary Items
410 [Reserved]
410.1 Provision for Deferred Income Taxes, Utility Operating Income
410.2 Provision for Deferred Income Taxes, Other Income and Deductions
411 [Reserved]
411.1 Provision for Deferred Income Taxes—Credit, Utility Operating Income
411.2 Provision for Deferred Income Taxes—Credit, Other Income and Deductions
411.3 [Reserved]
411.4 Investment Tax Credit Adjustments, Utility Operations
411.5 Investment Tax Credit Adjustments, Nonutility Operations
411.6 Gains from Disposition of Utility Plant
411.7 Losses from Disposition of Utility Plant
412 Revenues from Electric Plant Leased to Others
413 Expenses of Electric Plant Leased to Others
414 Other Utility Operating Income

Other Income and Deductions

415 Revenues from Merchandising, Jobbing, and Contract Work
416 Costs and Expenses of Merchandising, Jobbing, and Contract Work
417 Revenues from Nonutility Operations
417.1 Expenses of Nonutility Operations
418 Nonoperating Rental Income
418.1 Equity in Earnings of Subsidiary Companies
419 Interest and Dividend Income
419.1 Allowance for Funds Used During Construction
420 Investment Tax Credits
421 Miscellaneous Nonoperating Income
421.1 Gain on Disposition of Property
421.2 Loss on Disposition of Property
422 Nonoperating Taxes
423 Generation and Transmission Cooperative Capital Credits
424 Other Capital Credits and Patronage Capital Allocations
425 Miscellaneous Amortization
426 [Reserved]
426.1 Donations
426.2 Life Insurance
426.3 Penalties
426.4 Expenditures for Certain Civic, Political, and Related Activities
426.5 Other Deductions

Interest Charges

427 Interest on Long-Term Debt
427.3 Interest Charged to Construction—Credit
428 Amortization of Debt Discount and Expense
428.1 Amortization of Loss on Reacquired Debt
429 Amortization of Premium on Debt—Credit
429.1 Amortization of Gain on Reacquired Debt—Credit
430 Interest on Debt to Associated Companies
431 Other Interest Expense
432 Allowance for Borrowed Funds Used During Construction—Credit

Extraordinary Items

434 Extraordinary Income
435 Extraordinary Deductions
435.1 Cumulative Effect on Prior Years of a Change in Accounting Principle

Retained Earnings

433 [Reserved]
436 [Reserved]
437 [Reserved]
438 [Reserved]
439 [Reserved]

Operating Revenue

Sales of Electricity

440 Residential Sales
440.1 Residential Sales—Excluding Seasonal
440.2 Residential Sales—Seasonal
441 Irrigation Sales
442 Commercial and Industrial Sales
442.1 Commercial and Industrial Sales—1000 kVA or Less
442.2 Commercial and Industrial Sales—Over 1000 kVA
444 Public Street and Highway Lighting
445 Other Sales to Public Authorities
446 Sales to Railroads and Railways
447 Sales for Resale
447.1 Sales for Resale—REA Borrowers
447.2 Sales for Resale—Other
448 Interdepartmental Sales
449.1 Provision for Rate Refunds

Other Operating Revenues

450 Forfeited Discounts
451 Miscellaneous Service Revenues
453 Sales of Water and Water Power
454 Rent from Electric Property
455 Interdepartmental Rents
456 Other Electric Revenues

Operation and Maintenance Expense Accounts

Power Production Expenses

Steam Power Generation

Operation

500 Operation Supervision and Engineering
501 Fuel
502 Steam Expenses
503 Steam from Other Sources
504 Steam Transferred—Credit
505 Electric Expenses
506 Miscellaneous Steam Power Expenses
507 Rents

Maintenance

510 Maintenance Supervision and Engineering
511 Maintenance of Structures
512 Maintenance of Boiler Plant
513 Maintenance of Electric Plant
514 Maintenance Miscellaneous Steam Plant

Nuclear Power Generation

Operation

517 Operation Supervision and Engineering
518 Nuclear Fuel Expense
519 Coolants and Water
520 Steam Expenses
521 Steam from Other Sources
522 Steam Transferred—Credit
523 Electric Expenses
524 Miscellaneous Nuclear Power Expenses
525 Rents

Maintenance

528 Maintenance Supervision and Engineering
529 Maintenance of Structures
530 Maintenance of Reactor Plant Equipment
531 Maintenance of Electric Plant
532 Maintenance of Miscellaneous Nuclear Plant

Hydraulic Power Generation

Operation

535 Operation Supervision and Engineering
536 Water for Power
537 Hydraulic Expenses
538 Electric Expenses
539 Miscellaneous Hydraulic Power Generation Expenses
540 Rents

Maintenance

541 Maintenance Supervision and Engineering
542 Maintenance of Structures
543 Maintenance of Reservoirs, Dams, and Waterways
544 Maintenance of Electric Plant
545 Maintenance of Miscellaneous Hydraulic Plant

Other Power Generation

Operation

546 Operation Supervision and Engineering
547 Fuel
548 Generation Expenses
549 Miscellaneous Other Power Generation Expenses
550 Rents

Maintenance

551 Maintenance Supervision and Engineering
552 Maintenance of Structures
553 Maintenance of Generating and Electric Equipment
554 Maintenance of Miscellaneous Other Power Generation Plant

Other Power Supply Expenses

555 Purchased Power
556 System Control and Load Dispatching
557 Other Expenses

Transmission Expenses

Operation

560 Operation Supervision and Engineering
561 Load Dispatching
562 Station Expenses
563 Overhead Line Expenses
564 Underground Line Expenses
565 Transmission of Electricity by Others
566 Miscellaneous Transmission Expenses
567 Rents

Maintenance

568 Maintenance Supervision and Engineering
569 Maintenance of Structures
570 Maintenance of Station Equipment
571 Maintenance of Overhead Lines
572 Maintenance of Underground Lines
573 Maintenance of Miscellaneous Transmission Plant

Distribution Expenses

Operation

580 Operation Supervision and Engineering
581 Load Dispatching
582 Station Expenses
583 Overhead Line Expenses
584 Underground Line Expenses
585 Street Lighting and Signal System Expenses
586 Meter Expenses
587 Customer Installations Expenses
588 Miscellaneous Distribution Expenses
589 Rents

Maintenance

590 Maintenance Supervision and Engineering
591 Maintenance of Structures
592 Maintenance of Station Equipment
593 Maintenance of Overhead Lines
594 Maintenance of Underground Lines
595 Maintenance of Line Transformers
596 Maintenance of Street Lighting and Signal Systems
597 Maintenance of Meters
598 Maintenance of Miscellaneous Distribution Plant

Customer Accounts Expenses

Operation

901 Supervision
902 Meter Reading Expenses
903 Customer Records and Collection Expenses
904 Uncollectible Accounts
905 Miscellaneous Customer Accounts Expenses

Customer Service and Informational Expenses

907 Supervision
908 Customer Assistance Expenses
909 Informational and Instructional Advertising Expenses
910 Miscellaneous Customer Service and Informational Expenses

Sales Expenses

Operation

911 Supervision
912 Demonstrating and Selling Expenses
913 Advertising Expenses
916 Miscellaneous Sales Expenses

Administrative and General Expenses

Operation

920 Administrative and General Salaries
921 Office Supplies and Expenses
922 Administrative Expenses Transferred—Credit
923 Outside Services Employed
924 Property Insurance
925 Injuries and Damages
926 Employee Pensions and Benefits
927 Franchise Requirements
928 Regulatory Commission Expenses
929 Duplicate Charges—Credit
930.1 General Advertising Expenses
930.2 Miscellaneous General Expenses
931 Rents

Maintenance

935 Maintenance of General Plant

Assets and Other Debits

Utility Plant

101 *Electric Plant in Service*

A. This account shall include the original cost of electric plant, included in Accounts 301 to 399, prescribed herein, owned and used by the utility in its electric utility operations, and having an expectation of life in service of more than one year from date of installation, including such property owned by the utility but held by nominees.

B. (See also Account 106 for unclassified construction costs of completed plant actually in service.)

C. The cost of additions to and betterments of property leased from others, which are includible in this account, shall be recorded in subdivisions separate and distinct from those relating to owned property. (See § 1767.16(f).)

101.1 *Property Under Capital Leases*

A. This account shall include the amount recorded under capital leases for plant leased from others and used by the utility in its utility operations.

B. The electric property included in this account shall be classified separately according to the detailed accounts (301 to 399) prescribed for electric plant in service.

C. Records shall be maintained with respect to each capital lease reflection: (1) name of lessor, (2) basic details of lease, (3) terminal date, (4) original cost or fair market value of property leased, (5) future minimum lease payments, (6) executory costs, (7) present value of minimum lease payments, (8) the amount representing interest and the interest rate used, and (9) expenses paid.

102 *Electric Plant Purchased or Sold*

A. This account shall be charged with the cost of electric plant acquired as an operating unit or system by purchase, merger, consolidation liquidation, or otherwise, and shall be credited with the selling price of like property transferred to others pending the distribution to appropriate accounts in accordance with § 1767.16(e).

B. Within 6 months from the date of acquisition or sale of property recorded herin, the borrower shall file with REA the proposed journal entries to clear from this account the amounts recorded herein.

103 *Experimental Electric Plant Unclassified*

A. This account shall include the cost of electric plant which was constructed as a research, development, and demonstration plant under the provisions of Paragraph C, Account 107, Construction Work in Progress—Electric, and due to the nature of the plant, it is desirous to operate it for a period of time in an experimental status.

B. Amounts in this account shall be transferred to Account 101, Electric Plant in Service, or Account 121, Nonutility Property, as appropriate when the project is no longer considered as experimental.

C. The depreciation on property in this account shall be charged to Account 403, Depreciation Expense, and credited to Account 108, Accumulated Provision for Depreciation of Electric Utility Plant. The amounts herein shall be depreciated over a period which would correspond to the estimated useful life of the relevant project considering the characteristics involved. However, when projects are transferred to Account 101, Electric Plant in Service, a new depreciation rate based upon the remaining service life and undepreciated amounts, will be established.

D. Records shall be maintained with respect to each unit of experiment so that full details may be obtained as to the cost, depreciation, and the experimental status.

E. Should it be determined that experimental plant recorded in this account will fail to satisfactorily perform its function, the costs thereof shall be accounted for as directed or authorized by REA.

104 *Electric Plant Leased to Others*

A. This account shall include the original cost of electric plant owned by the utility, but leased to others as operating units or systems, where the lessee has exclusive possession.

B. The property included in this account shall be classified according to the detailed accounts (301 to 399) prescribed for electric plant in service and this account shall be maintained in such detail as though the property were used by the owner in its utility operations.

105 *Electric Plant Held for Future Use*

A. This account shall include the original cost of electric plant (except land and land rights) owned and held for future use in electric service under a definite plan for such use, to include: (1) Property acquired (except land and land rights) but never used by the utility in electric service, but held for such service in the future under a definite plan, and (2) property (except land and land rights) previously used by the utility in service but retired from such service and held pending its reuse in the future, under a definite plan, in electric service.

B. This account shall also include the original cost of land and land rights owned and held for future use in electric service under a plan for such use, to include land and land rights: (1) Acquired but never used by the utility in electric service, but held for such service in the future under a plan, and (2) previously held by the utility in service, but retired from such service and held pending its reuse in the future under a plan, in electric service. (See § 1767.16(g).)

C. In the event that property recorded in this account shall no longer be needed or appropriate for future utility operations, the borrower shall notify REA of such condition and request approval of journal entries to remove such property from this account.

D. Gains or losses from the sale of land and land rights or other disposition of such property previously recorded in this account and not placed in utility service shall be recorded directly in Account 411.6 or 411.7, as appropriate, except when determined to be significant by REA. Upon such a determination, the amounts shall be transferred to Account 256, Deferred Gains from Disposition of Utility Plant, or Account 187, Deferred Losses from Disposition of Utility Plant, and amortized to Account 411.6, Gains from Disposition of Utility Plant, or Account 411.7, Losses from Disposition of Utility Plant, as appropriate.

E. The property included in this account shall be classified according to the detail accounts (301 to 399) prescribed for electric plant in service and the account shall be maintained in such detail as though the property were in service.

Note: Materials and supplies, meters and transformers held in reserve, and normal space capacity of plant in service shall not be included in this account.

106 *Completed Construction not Classified—Electric*

At the end of the year or such other date as a balance sheet may be required by REA, this account shall include the total of the balances of work orders for electric plant which has been completed and placed in service but which work orders have not been classified for transfer to the detailed electric plant accounts.

Note: For the purpose of reporting to REA, the classification of electric plant in service by accounts is required, the utility shall also report the balance in this account tentatively classified as accurately as practicable according to prescribed account classifications. The purpose of this provision is to avoid any significant omissions in reported amounts of electric plant in service.

107 *Construction Work in Progress—Electric*

A. This account shall include the total of the balances of work orders for electric plant in process of construction.

B. Work orders shall be cleared from this account as soon as practicable, after completion of the job. Further, if a project, such as a hydroelectric project, a steam station, or a transmission line, is designed to consist of two or more units or circuits which may be placed in service at different dates, any expenditures which are common to and which will be used in the operation of the project as a whole shall be included in electric plant in service upon the completion and the readiness for service of the first unit. Any expenditures which are identified exclusively with units of property not yet in service shall be included in this account.

C. Expenditures on research, development, and demonstration projects for construction of utility facilities are to be included in a separate subdivision in this account. Records must be maintained to show separately each project along with complete detail of the nature and purpose of the research, development, and demonstration project together with the related costs.

D. Account 107 shall be subaccounted as follows:

107.1 Construction Work in Progress—Contract

107.2 Construction Work in Progress—Force Account

107.3 Construction Work in Progress—Special Equipment

108 *Accumulated Provision for Depreciation of Electric Utility Plant*

A. This account shall be credited with the following:

1. Amounts charged to Account 403, Depreciation Expense, or to clearing accounts for current depreciation expense for electric plant in service.

2. Amounts charged to Account 421, Miscellaneous Nonoperating Income, for depreciation expense on property included in Account 105, Electric Plant Held for Future Use. Include, also, the balance of accumulated provision for depreciation on property when transferred to Account 105, Electric Plant Held for Future Use, from other property accounts. Normally, Account 108 will not be used for current depreciation provision because, as provided herein, the service life during which depreciation is computed commences with the date property is included in electric plant in service; however, if special circumstances indicate the property of current accruals for depreciation, such charges shall be made to Account 421, Miscellaneous Nonoperating Income.

3. Amounts charged to Account 413, Expenses of Electric Plant Leased to Others, for electric plant included in Account 104, Electric Plant Leased to Others.

4. Amounts charged to Account 416, Costs and Expenses of Merchandising, Jobbing, and Contract Work, or to clearing accounts for current depreciation expense.

5. Amounts of depreciation applicable to electric properties acquired as operating units or systems. (See § 1767.16 (e).)

6. Amounts charged to Account 182.1, Extraordinary Property Losses, when authorized by REA.

7. Amounts of depreciation applicable to electric plant donated to the utility.

The utility shall maintain separate subaccounts for depreciation applicable to electric plant in service, electric plant leased to others, and electric plant held for future use.)

B. At the time of retirement of depreciable electric utility plant, this account shall be charged with the book cost of the property retired and the cost of removal and shall be credited with the salvage value and any other

amounts recovered, such as insurance. When retirement, costs of removal and salvage are entered originally in retirement work orders, the net total of such work orders may be included in a separate subaccount hereunder. Upon completion of the work order, the proper distribution to subdivisions of this account shall be made as provided in the following paragraph.

C. Account 108 shall be subaccounted as follows:

108.1 Accumulated Provision for Depreciation of Steam Production Plant
108.2 Accumulated Provision for Depreciation of Nuclear Production Plant
108.3 Accumulated Provision for Depreciation of Hydraulic Production Plant
108.4 Accumulated Provision for Depreciation of Other Production Plant
108.5 Accumulated Provision for Depreciation of Transmission Plant
108.6 Accumulated Provision for Depreciation of Distribution Plant
108.7 Accumulated Provision for Depreciation of General Plant
108.8 Retirement Work in Progress

These subsidiary records shall reflect the current credits and debits to this account in sufficient detail to show separately for each such functional classification: (1) the amount of accrual for depreciation, (2) the book cost of property retired, (3) cost of removal, (4) salvage, and (5) other items, including recoveries from insurance.

D. When transfers of plant are made from one electric plant account to another, or from or to another utility department, of from or to nonutility property accounts, the accounting for depreciation shall be as provided in § 1767.16 (1).

E. The utility is restricted in its use of the accumulated provision for depreciation to the purposes set forth above. It shall not transfer any portion of this account to retained earnings or make any other use thereof without authorization by REA.

109 [Reserved]

110 [Reserved]

111 *Accumulated Provision for Amortization of Electric Utility Plant*

A. This account shall be credited with the following:

1. Amounts charged to Account 404, Amortization of Limited-Term Electric Plant, for the current amortization of limited-term electric plant investments.

2. Amounts charged to Account 421, Miscellaneous Nonoperating Income, for amortization expense on property included in Account 105, Electric Plant Held for Future Use. Include also the balance of accumulated provision for amortization on property when transferred to Account 105, Electric Plant Held for Future Use, from other property accounts. See also Paragraph A(2), Account 108, Accumulated Provision for Depreciation of Electric Utility Plant.

3. Amounts charged to Account 405, Amortization of Other Electric Plant.

4. Amounts charged to Account 413, Expenses of Electric Plant Leased to others, for the current amortization of limited-term or other investments subject to amortization included in Account 104, Electric Plant Leased to Others.

5. Amounts charged to Account 425, Miscellaneous Amortization, for the amortization of intangible or other electric plant which does not have a definite or terminable life and is not subject to charges for depreciation expense, with REA approval.

(The utility shall maintain subaccounts of this account for the amortization applicable to electric plant in service, electric plant leased to others and electric plant held for future use.)

B. When any property to which this account applies is sold, relinquished, or otherwise retire from service, this account shall be charged with the amount previously credited in respect to such property. The book cost of the property so retired less the amount chargeable to this account and less the net proceeds realized at retirement shall be included in Account 421.1, Gain on Disposition of Property, or Account 421.2, Loss on Disposition of Property, as appropriate.

C. For general ledger and balance sheet purposes, this account shall be regarded and treated as a single composite provision for amortization. For purposes of analysis, however, each utility shall maintain subsidiary records in which this account is segregated according to the following functional classification for electric plant: (1) Steam production, (2) Nuclear production, (3) Hydraulic production, (4) Other production, (5) Transmission, (6) Distribution, and (7) General. These subsidiary records shall reflect the current credits and debits to this account in sufficient detail to show separately for each such functional classification: (1) the amount of accrual for amortization, (2) the book cost of property retired, (3) cost of removal, (4) salvage, and (5) other items, including recoveries from insurance.

D. The utility is restricted in its use of the accumulated provision for amortization to the purposes set forth above. It shall not transfer any portion of this account to retained earnings or make any other use thereof without authorization by REA.

112 [Reserved]

113 [Reserved]

114 *Electric Plant Acquisition Adjustments*

A. This account shall include the difference between the cost to the accounting utility of electric plant acquired as an operating unit or system by purchase, merger, consolidation, liquidation, or otherwise, and the original cost, estimated, if not known, of such property, less the amount or amounts credited by the accounting utility at the time of acquisition to accumulated provisions for depreciation and amortization and contributions in aid of construction with respect to such property.

B. With respect to acquisitions after the effective date of this system of accounts, this account shall be subdivided so as to show the amounts included herein for each property acquisition and to electric plant in service, electric plant held for future use, and electric plant leased to others. (See § 1767.16 (e).)

C. Debit amounts recorded in this account related to plant and land acquisition may be amortized to Account 425, Miscellaneous Amortization, over a period not longer than the estimated remaining life of the properties to which such amounts relate. Amounts related to the acquisition of land only may be amortized to Account 425 over a period of not more than 15 years. Should a utility wish to account for debit amounts in this account in any other manner, it shall petition REA for authority to do so. Credit amounts recorded in this account shall be accounted for as directed by REA.

115 *Accumulated Provision for Amortization of Electric Plant Acquisition Adjustments*

This account shall be credited or debited with amounts which are includible in Account 406, Amortization of Electric Plant Acquisition Adjustments, or Account 425, Miscellaneous Amortization, for the purpose of providing for the extinguishment of amounts in Account 114, Electric Plant Acquisition Adjustments, in instances where the amortization of Account 114 is not being made by direct write-off of the account.

116 *Other Electric Plant Adjustments*

A. This account shall include the difference between the original cost, estimated if not known, and the book cost of electric plant to the extent that such difference is not properly includible in Account 114, Electric Plant Acquisition Adjustments. (See § 1767.16 (a) (3).)

B. Amounts included in this account shall be classified in such manner as to show the origin of each amount and shall be disposed of as REA may approve or direct.

Note: The provisions of this account shall not be construed as approving or authorizing the recording of appreciation of electric plant.

118 *Other Utility Plant*

This account shall include the balances in accounts for utility plant, other than electric plant, such as gas, or railway.

119 *Accumulated Provision for Depreciation and Amortization of Other Utility Plant*

This account shall include the accumulated provision for depreciation and amortization applicable to utility property other than electric plant.

120.1 *Nuclear Fuel in Process of Refinement, Conversion, Enrichment and Fabrication*

A. This account shall include the original cost to the utility of nuclear fuel materials while in process of refinement, conversion, enrichment, and fabrication into nuclear fuel assemblies and components, including processing, fabrication, and necessary shipping costs. This account shall also include the salvage value of nuclear materials which are actually being reprocessed for use and were transferred from Account 120.5, Accumulated Provision for Amortization of Nuclear Fuel Assemblies. (See § 1767.10 (a) (27).)

B. This account shall be credited and Account 120.2, Nuclear Fuel Materials and Assemblies—Stock Account, shall be debited for the cost of completed fuel assemblies delivered for use in refueling or to be held as spares. In this case of the initial core loading, the transfer shall be made directly to Account 120.3, Nuclear Fuel Assemblies in Reactor, upon the conclusion of the experimental or test period of the plant prior to its becoming available for service.

Items

1. Cost of natural uranium, uranium ores concentrates or other nuclear fuel sources, such as thorium, plutonium, and U–233.
2. Value of recovered nuclear materials being reprocessed for use.
3. Milling process costs.
4. Sampling and weighing, and assaying costs.
5. Purification and conversion process costs.
6. Costs of enrichment by gaseous diffusion or other methods.
7. Costs of fabrication into fuel forms suitable for insertion in the reactor.
8. All shipping costs of materials and components, including shipping of fabricated fuel assemblies to the reactor site.
9. Use charges on leased nuclear materials while in process of refinement, conversion, enrichment, and fabrication.

120.2 *Nuclear Fuel Materials and Assemblies—Stock Account*

A. This account shall be debited and Account 120.1, Nuclear Fuel in Process of Refinement, Conversion, Enrichment and Fabrication, shall be credited with the cost of fabricated fuel assemblies delivered for use in refueling or to be carried in stock as spares. It shall also include the original cost of fabricated fuel assemblies purchased in completed form. This account shall also include the original cost of partially irradiated fuel assemblies being held in stock for reinsertion in a reactor which had been transferred from Account 120.3, Nuclear Fuel Assemblies in Reactor.

B. When fuel assemblies included in this account are inserted in a reactor, this account shall be credited and Account 120.3, Nuclear Fuel Assemblies in Reactor, debited for the cost of such assemblies.

C. This account shall also include the cost of nuclear materials and byproduct materials being held for future use and not actually in process in Account 120.1, Nuclear Fuel in Process of Refinement, Conversion, Enrichment and Fabrication.

120.3 *Nuclear Fuel Assemblies in Reactor*

A. This account shall include the cost of nuclear fuel assemblies when inserted in a reactor for the production of electricity. The amounts included herein shall be transferred from Account 120.2, Nuclear Fuel Materials and Assemblies—Stock Account, except for the initial core loading which will be transferred directly from Account 120.1, Nuclear Fuel in Process of Refinement, Conversion, Enrichment and Fabrication.

B. Upon removal of fuel assemblies from a reactor, the original cost of the assemblies removed shall be transferred to Account 120.4, Spent Nuclear Fuel, or Account 120.2, Nuclear Fuel Materials and Assemblies—Stock Account, as appropriate.

120.4 *Spent Nuclear Fuel*

A. This account shall include the original cost of nuclear fuel assemblies, in the process of cooling, transferred from Account 120.3, Nuclear Fuel Assemblies in Reactor, upon removal from a reactor pending reprocessing.

B. This account shall be credited and Account 120.5, Accumulated Provision for Amortization of Nuclear Fuel Assemblies, debited for fuel assemblies, after the cooling period is over, at the cost recorded in this account.

120.5 *Accumulated Provision for Amortization of Nuclear Fuel Assemblies*

A. This account shall be credited and Account 518, Nuclear Fuel Expense, shall be debited for the amortization of the net cost of nuclear fuel assemblies used in the production of energy. The net cost of nuclear fuel assemblies subject to amortization shall be the original cost of nuclear fuel assemblies, plus or less the expected net salvage value of uranium, plutonium, and other by-products.

B. This account shall be credited with the net salvage value of uranium, plutonium, and other nuclear by-products when such items are sold, transferred or otherwise disposed. Account 120.1, Nuclear Fuel in Process of Refinement, Conversion, Enrichment and Fabrication, shall be debited with the net salvage value of nuclear materials to be reprocessed. Account 157, Nuclear Materials Held for Sale, shall be debited for the net salvage value of nuclear materials not to be reprocessed but to be sold or otherwise disposed of and Account 120.2, Nuclear Fuel Materials and Assemblies—Stock Account, will be debited with the net salvage value of nuclear materials that will be held for future use and not actually in process, in Account 120.1, Nuclear Fuel in Process of Refinement, Conversion, Enrichment, and Fabrication.

C. This account shall be debited and Account 120.4, Spent Nuclear Fuel, shall be credited with the cost of fuel assemblies at the end of the cooling period.

120.6 *Nuclear Fuel Under Capital Leases*

A. This account shall include the amount recorded under capital leases for nuclear fuel leased from others for use by the utility in its utility operations.

B. Records shall be maintained with respect to each capital lease reflecting: (1) Name of lessor, (2) basic details of lease, (3) terminal date, (4) original cost or fair market value of nuclear fuel leased, (5) future minimum lease payments, (6) the amount representing interest and the interest rate used, and (7) expenses paid.

Other Property and Investments

121 *Nonutility Property*

A. This account shall include the book cost of land, structures, equipment, or other tangible or intangible property owned by the utility, but not used in utility service and not properly

includible in Account 105, Electric Plant Held for Future Use.

B. This account shall also include the amount recorded under capital leases for property leased from others and used by the utility in its nonutility operations. Records shall be maintained with respect to each lease reflecting: (1) Name of lessor, (2) basic details of lease, (3) terminal date, (4) original cost or fair market value of property leased, (5) future minimum lease payments, (6) executory costs, (7) present value of minimum lessee payments, (8) the amount representing interest and the interest rate used, and (9) expenses paid.

C. This account shall be subdivided so as to show the amount of property used in operations which are nonutility in character but nevertheless constitute a distinct operating activity of the company (such as operation of an ice department where such activity is not classed as a utility) and the amount of miscellaneous property not used in operations. The records in support of each subaccount shall be maintained so as to show an appropriate classification of the property.

Note: The gain from the sale or other disposition of property included in this account which had been previously recorded in Account 105, Electric Plant Held for Future Use, shall be accounted for in accordance with Paragraph C of Account 105.

122 *Accumulated Provision for Depreciation and Amortization of Nonutility Property*

This account shall include the accumulated provision for depreciation and amortization applicable to nonutility property.

123 *Investment in Associated Companies*

A. This account shall include the book cost of investments in securities issued or assumed by associated companies and investment advances to such companies, including interest accrued thereon when such interest is not subject to current settlement, provided that the investment does not relate to a subsidiary company. (If the investment relates to a subsidiary company, it shall be included in Account 123.11, Investment in Subsidiary Companies.) Include herein the offsetting entry to the recording of amortization of discount or premium on interest bearing investments. (See Account 419, Interest and Dividend Income.)

B. This account shall be maintained in such manner as to show the investment in securities of, and advances to, each associated company together with full particulars regarding any of such investments that are pledged.

Note A: Securities and advances of associated companies owned and pledged shall be included in this account, but such securities, if held in special deposits or in special funds, shall be included in the appropriate deposit or fund account. A complete record of securities pledged shall be maintained.

Note B: Securities of associated companies held as temporary cash investments are includible in Account 136, Temporary Cash Investments.

Note C: Balances in open accounts with associated companies, which are subject to current settlement, are includible in Account 146, Accounts Receivable from Associated Companies.

Note D: The utility may write down the cost of any security in recognition of a decline in the value thereof. Securities shall be written off or written down to a nominal value if there is no reasonable prospect of substantial value. Fluctuations in market value shall not be recorded but a permanent impairment in the value of securities shall be recognized in the accounts. When securities are written off or written down, the amount of the adjustment shall be charged to Account 426.5, Other Deductions, or to an appropriate account for accumulated provisions for loss in value established as a separate subdivision of this account.

C. Account 123 shall be subaccounted as follows:

123.1 Patronage Capital from Associated Cooperatives.
123.11 Investment in Subsidiary Companies.
123.21 Subscriptions to Capital Term Certificates—Supplemental Financing.
123.22 Investments in Capital Term Certificates—Supplemental Financing
123.23 Other Investments in Associated Organizations

123.1 *Patronage Capital from Associated Cooperatives*

This account shall include patronage capital credits allocated to the accounting borrower by G&T cooperatives. It shall also include capital credits, deferred patronage refunds, or like items from other associated cooperatives. The account shall be maintained so as to reflect separately, the allocations of patronage capital and patronage refunds from each organization that makes such allocations to the borrower.

123.11 *Investment in Subsidiary Companies*

A. This account shall include the cost of investments in securities issued or assumed by subsidiary companies and investment advances to such companies, including interest accrued thereon when such interest is not subject to current settlement, plus the equity in indistributed earnings or losses of such subsidiary companies since acquisition. This account shall be credited with any dividends declared by such subsidiaries.

B. This account shall be maintained in such a manner as to show separately for each subsidiary: The cost of such investments in the securities of the subsidiary at the time of acquisition; the amount of equity in the subsidiary's undistributed net earnings or net losses since acquisition; advances or loans to such subsidiary; and full particulars regarding any such investments that are pledged.

123.21 *Subscriptions to Capital Term Certificates—Supplemental Financing*

This account shall include the total subscriptions to capital term certificates of CFC. When subscriptions are paid, this account shall be credited and Account 123.22, Investments in Capital Term Certificates—Supplemental Financing, debited.

123.22 *Investments in Capital Term Certificates—Supplemental Financing*

This account shall include paid subscriptions in capital term certificates of CFC or other supplemental lenders.

123.23 *Other Investments in Associated Organizations*

This account shall include investments in capital stock, securities, membership fees, and investment advances to associated organizations other than provided for elsewhere. This account shall be maintained in such a manner as to show the investment in stock and securities of and advances to each associated organization.

Items

1. Investments in capital stock of associated organizations.
2. Investments in securities issued by associated organizations.
3. Membership fees in associated organizations, including NRECA, and Statewide associations of REA-financed borrowers.
4. Investment advances to associated organizations.

124 *Other Investments*

A. This account shall include the book cost of investments in securities issued or assumed by nonassociated companies, investment advances to such companies, and any investments not accounted for elsewhere. Include also the offsetting entry to the recording of amortization of discount or premium on interest bearing investments. (See Account 419, Interest and Dividend Income.)

B. The records shall be maintained in such manner as to show the amount of each investment and the investment advances to each person.

Note A: Securities owned and pledged shall be included in this account, but securities held in special deposits or in special funds shall be included in appropriate deposit or fund accounts. A complete record of securities pledged shall be maintained.

Note B: Securities held as temporary cash investments shall not be included in this account.

Note C: See Note D of Account 123.

125 *Sinking Funds*

This account shall include the amount of cash and book cost of investments held in sinking funds. A separate account, with appropriate title, shall be kept for each sinking fund. Transfers from this account to special deposit accounts, may be made as necessary for the purpose of paying matured sinking fund obligations, or obligations called for redemption but not presented, or the interest thereon.

126 *Depreciation Fund*

This account shall include the amount of cash and the book cost of investments which have been segregated in a special fund for the purpose of identifying such assets with the accumulated provisions for depreciation.

128 *Other Special Funds*

This account shall include the amount of cash and book cost of investments which have been segregated in special funds for insurance, employee pensions, savings, relief, hospital, and other purposes not provided for elsewhere. A separate account, with appropriate title, shall be kept for each fund.

Note: Amounts deposited with a trustee under the terms of an irrevocable trust agreement for pensions or other employee benefits shall not be included in this account.

Current and Accrued Assets

Current and accrued assets are cash, those assets which are readily convertible into cash or are held for current use in operations or construction, current claims against others, payment of which is reasonably assured, and amounts accruing to the utility which are subject to current settlement, except such items for which accounts other than those designated as current and accrued assets are provided. There shall not be included in the category of accounts designated as current and accrued assets any item, the amount or collectibility of which is not reasonably assured, unless an adequate provision for possible loss has been made therefor. Items of current character but of doubtful value may be written down, and for record purposes carried in these accounts at nominal value.

131 *Cash*

A. This account shall include the amount of current cash funds except working funds.

B. Account 131 shall be subaccounted as follows:

131.1 Cash—General
131.12 Cash—General—Economic Development Funds
131.2 Cash—Construction Fund—Trustee
131.3 Cash—Installation Loan and Collection Fund
131.4 Transfer of Cash

131.1 *Cash—General*

This account shall include all cash of the organization not provided for elsewhere. Separate subaccounts may be maintained for each bank account in which general cash is maintained. Funds held by others for current obligations shall be recorded in Account 134, Other Special Deposits.

131.12 *Cash—General—Economic Development Funds*

This account shall include the cash received from the Rural Electrification Administration for Rural Economic Development Loans. Economic development loan advances shall be charged to this account and credited to Account 224.17, REA Notes Executed—Economic Development—Debit.

131.2 *Cash—Construction Fund—Trustee*

This account shall include the cash received from the Rural Electrification Administration, CFC, and any other source of supplemental financing for financing the construction, purchase, and operation of electric facilities. REA construction loan fund advances shall be charged to this account and credited to Account 224.4, REA Notes Executed—Construction—Debit. CFC and other supplemental lender construction loan fund advances shall be charged to this account and credited to Account 224.13, Supplemental Financing Notes Executed—Debit.

131.3 *Cash—Installation Loan and Collection Fund*

A. This account shall include the cash advanced on installation loans made subsequent to September 13, 1957. Such advances shall be debited to this account as received and credited to Account 224.10, REA Notes Executed—Installation—Debit. This account shall also include interest and principal collections received on consumers' loans financed from REA loans made subsequent to September 13, 1957.

B. Payments shall be made from this account solely for financing consumers' loans for the purpose of wiring of consumers' premises, and the acquisition and installation of electrical and plumbing appliances and equipment by consumers. The cash in this account is also used for the payment of principal and interest on installation loans made by REA, subsequent to September 13, 1957, in accordance with the terms of the loan agreement.

131.4 *Transfer of Cash*

This account shall be used in transferring funds from one bank account to another. This account is charged when the check is drawn for the transfer and entered in the check register, and credited when the amount transferred is entered in the cash receipts book. This account is to be used as a clearing account and should not have a balance at the end of an accounting period.

132 *Interest Special Deposits*

This account shall include special deposits with fiscal agents or others for the payment of interest.

133 *Dividend Special Deposits*

This account shall include special deposits with fiscal agents or others for the payment of dividends.

134 *Other Special Deposits*

This account shall include deposits with fiscal agents or others for special purposes other than the payment of interest and dividends. Such special deposits may include cash deposited with federal, state, or municipal authorities as a guaranty for the fulfillment of obligations; cash deposited with trustees to be held until mortgaged property sold, destroyed, or otherwise disposed of is replaced; and cash realized from the sale of the accounting utility's securities and deposited with trustees to be held until invested in property of the utility. Entries to this account shall specify the purpose for which the deposit is made.

Note: Assets available for general corporate purposes shall not be included in this account. Further, deposits for more than one year, which are not offset by current liabilities, shall not be charged to this account but to Account 128, Other Special Funds.

135 *Working Funds*

This account shall include cash advanced to officers, agents, employees, and others as petty cash or working funds.

136 *Temporary Cash Investments*

A. This account shall include the book cost of investments, such as demand and time loans, bankers' acceptances, United States Treasury certificates, marketable securities, and other similar investments, acquired for the purpose of temporarily investing cash.

B. This account shall be so maintained as to show separately temporary cash

investments in securities of associated companies and of others. Records shall be kept of any pledged investments.

141 *Notes Receivable*

This account shall include the book cost, not includible elsewhere, of all collectible obligations in the form of notes receivable and similar evidences (except interest coupons) of money due on demand or within one year from the date of issue, except, however, notes receivable from associated companies. (See Account 136, Temporary Cash Investments, and Account 145, Notes Receivable from Associated Companies.)

Note: The face amount of notes receivable discounted, sold, or transferred without releasing the utility from liability as endorser thereon, shall be credited to a separate subdivision of this account and appropriate disclosure shall be made in the financial statements of any contingent liability arising from such transactions.

B. Account 141 shall be subaccounted as follows:

141.1 Accumulated Provision for Uncollectible Notes—Credit

141.1 *Accumulated Provision for Uncollectible Notes—Credit*

This account shall be credited with amounts provided for losses on notes receivable which may become uncollectible, and also with collections on notes previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts.

142 *Customer Accounts Receivable*

A. This account shall include amounts due from customers for utility service and for merchandising, jobbing, and contract work. This account shall not include amounts due from associated companies.

B. This account shall be maintained so as to permit ready segregation of the amounts due for merchandising, jobbing, and contract work.

C. Account 142 shall be subaccounted as follows:

142.1 Customer Accounts Receivable—Electric

142.2 Customer Accounts Receivable—Other

142.1 *Customer Accounts Receivable—Electric*

This account shall include amounts due from customers for utility service.

142.2 Customer Accounts Receivable—Other

This account shall include amounts due from customers for merchandising, jobbing, and contract work.

143 *Other Accounts Receivable*

A. This account shall include amounts due the utility upon open accounts, other than amounts due from associated companies and from customers for utility services and merchandising, jobbing and contract work.

B. This account shall be maintained so as to show separately amounts due on subscriptions to capital stock and from officers and employees. The account shall not include amounts advanced to officers or others as working funds. (See Account 135, Working Funds.)

144 *Accumulated Provision for Uncollectible Accounts—Credit*

A. This account shall include amounts provided for losses on accounts receivable which may become uncollectible, and also with collections on accounts previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts, for amounts applicable to utility operations, and to corresponding accounts for other operations. Records shall be maintained so as to show the write-offs of accounts receivable for each utility department.

B. Account 144 shall be subaccounted as follows:

144.1 Accumulated Provision for Uncollectible Customer Accounts—Credit

144.2 Accumulated Provision for Uncollectible Merchandising Accounts—Credit

144.3 Accumulated Provision for Uncollectible Accounts, Officers and Employees—Credit

144.4 Accumulated Provision for Other Uncollectible Accounts—Credit

144.1 *Accumulated Provision for Uncollectible Customer Accounts—Credit*

This account shall be credited with amounts provided for losses on accounts receivable which may become uncollectible, and also with collections on accounts previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts.

144.2 *Accumulated Provision for Uncollectible Merchandising Accounts—Credit*

This account shall be credited with amounts provided for losses on merchandising, jobbing, and contract work which may become uncollectible, and also with collections on accounts previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts, for amounts applicable to utility operations, and to corresponding accounts for other operations.

144.3 *Accumulated Provision for Uncollectible Accounts, Officers and Employees—Credit*

This account shall be credited with amounts provided for losses on accounts receivable from officers and employees which may become uncollectible and also with collections on accounts previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts.

144.4 *Accumulated Provision for Other Uncollectible Accounts—Credit*

This account shall be credited with amounts provided for losses on accounts receivable which may become uncollectible and for which the recording of this credit has not been provided for elsewhere. This account shall also be credited with collections on accounts previously charged hereto. Concurrent charges shall be made to Account 904, Uncollectible Accounts, for amounts applicable to utility operations and to corresponding accounts for other operations.

145 *Notes Receivable From Associated Companies*

This account shall include notes upon which associated companies are liable, and which mature and are expected to be paid in full not later than one year from the date of issue, together with any interest thereon, and debit balances subject to current settlement in open accounts with associated companies. Items which do not bear a specified due date but which have been carried for more than twelve months and items which are not paid within twelve months from due date shall be transferred to Account 123, Investment in Associated Companies.

Note: The face amount of notes receivable discounted, sold or transferred without releasing the utility from liability as endorser thereon, shall be credited to a separate subdivision of this account and appropriate disclosure shall be made in the financial statements of any contingent liability arising from such transactions.

146 *Accounts Receivable From Associated Companies*

This account shall include drafts upon which associated companies are liable, and which mature and are expected to be paid in full not later than one year from the date of issue, together with any interest thereon, and debit balances subject to current settlement in open accounts with associated companies. Items which do not bear a specified due date but which have been carried for more than twelve months and items which are not paid within twelve months from due date shall be transferred to Account 123, Investment in Associated Companies.

Note: On the balance sheet, accounts receivable from an associated company may be offset against accounts payable to the same company.

151 *Fuel Stock*

This account shall include the book cost of fuel on hand.

Items

1. Invoice price of fuel less any cash or other discounts.
2. Freight, switching, demurrage, and other transportation charges, not including, however, any charges for unloading from the shipping medium.
3. Excise taxes, purchasing agents' commissions, insurance and other expenses directly assignable to cost of fuel.
4. Operating, maintenance and depreciation expenses, and ad valorem taxes on utility-owned transportation equipment used to transport fuel from the point of acquisition to the unloading point.
5. Lease or rental costs of transportation equipment used to transport fuel from the point of acquisition to the unloading point.

152 *Fuel Stock Expenses Undistributed*

A. This account may include the cost of labor and of supplies used and expenses incurred in unloading fuel from the shipping medium and in the handling thereof prior to its use, if such expenses are sufficiently significant in amount to warrant being treated as a part of the cost of fuel inventory rather than being charged direct to expense as incurred.

B. Amounts included herein shall be charged to expense as the fuel is used to the end that the balance herein shall not exceed the expenses attributable to the inventory of fuel on hand.

Items

Labor:

1. Procuring and handling of fuel.
2. All routine fuel analyses.
3. Unloading from shipping facility and placing in storage.
4. Moving of fuel in storage and transferring from one station to another.
5. Handling from storage or shipping facility to first bunker, hopper, bucket, tank, or holder of boiler house structure.
6. Operation of mechanical equipment such as locomotives, trucks, cars, boats, barges, and cranes.

Supplies and Expenses:

1. Tools, lubricants and other supplies.
2. Operating supplies for mechanical equipment.
3. Transportation and other expenses in moving fuel.
4. Stores expenses applicable to fuel.

153 *Residuals*

This account shall include the book cost of any residuals produced in the production or manufacturing processes.

154 *Plant Mmaterials and Operating Supplies*

A. This account shall include the cost of materials purchased primarily for use in the utility business for construction, operation and maintenance purposes. It shall also include the book cost of materials recovered in connection with construction, maintenance, or the retirement of property, such materials being credited to construction, maintenance, or accumulated depreciation provision, respectively, and included herein as follows:

1. Reusable materials consisting of large individual items shall be included in this account at original cost, estimated if not known. The cost of repairing such items shall be charged to the maintenance account appropriate for the previous use.
2. Reusable materials consisting of relatively small items, the identity of which (from the date of original installation to the final abandonment or sale thereof) cannot be ascertained without undue refinement in accounting, shall be included in this account at current prices new for such items. The cost of repairing such items shall be charged to the appropriate expense account as indicated by previous use.
3. Scrap and nonusable materials included in this account shall be carried at the estimated net amount realizable therefrom. The difference between the amounts realized for scrap and nonusable materials sold and the net amount at which the materials were carried in this account, as far as practicable, shall be adjusted to the accounts credited when the materials were charged to this account.

B. Materials and supplies issued shall be credited hereto and charged to the appropriate construction, operating expense, or other account on the basis of a unit price determined by the use of cumulative average, first-in-first-out, or such other method of inventory accounting as conforms with accepted accounting standards consistently applied.

Items

1. Invoice price of materials less cash or other discounts.
2. Freight, switching, or other transportation charges when practicable to include as part of the cost of particular materials to which they relate.
3. Customs duties and excise taxes.
4. Costs of inspection and special tests prior to acceptance.
5. Insurance and other directly assignable charges.

Note: Where expenses applicable to materials purchased cannot be directly assigned to particular purchases, they shall be charged to Account 163, Stores Expense Undistributed.

155 *Merchandise*

This account shall include the book cost of materials and supplies and appliances and equipment held primarily for merchandising, jobbing, and contract work. The principles prescribed in accounting for utility materials and supplies shall be observed with respect to items carried in this account.

156 *Other Materials and Supplies*

This account shall include the book cost of materials and supplies held primarily for nonutility purposes. The principles prescribed in accounting for utility materials and supplies shall be observed with respect to items carried in this account.

157 *Nuclear Materials Held for Sale*

This account shall include the net salvage value of uranium, plutonium, and other nuclear materials held by the company for sale or other disposition that are not to be reused by the company in its electric utility operations. This account shall be debited and Account 120.5, Accumulated Provision for Amortization of Nuclear Fuel Assemblies, credited for such net salvage value. Any difference between the amount recorded in this account and the actual amount realized from the sale of materials shall be debited or credited, as appropriate, to Account 518, Nuclear Fuel Expense, at the time of such sale.

163 *Stores Expense Undistributed*

A. This account shall include the cost of supervision, labor, and expenses incurred in the operation of general storerooms, including purchasing, storage, handling, and distribution of materials and supplies.

B. This account shall be cleared by adding to the cost of materials and supplies issued, a suitable loading charge which will distribute the expense equitably over stores issues. The balance in the account at the close of the year shall not exceed the amount of stores expenses reasonably attributable to the inventory of materials and supplies, exclusive of fuel, as any amount applicable to fuel costs should be included in Account 152, Fuel Stock Expenses Undistributed.

Items

Labor:

1. Inspecting and testing materials and supplies when not assignable to specific items.
2. Unloading from shipping facility and placing in storage.

3. Supervision of purchasing and stores department to extent assignable to materials handled through stores.

4. Getting materials from stock and in readiness to go out.

5. Inventorying stock received or stock on hand by stores employees but not including inventories by general department employees as part of internal or general audits.

6. Purchasing department activities in checking material needs, investigating sources of supply, analyzing prices, preparing and placing orders, and related activities to extent applicable to materials handled through stores. (Optional: Purchasing department expenses may be included in administrative and general expenses.)

7. Maintaining stores equipment.

8. Cleaning and tidying storerooms and stores offices.

9. Keeping stock records, including the recording and posting of material receipts and issues and maintaining inventory records of stock.

10. Collecting and handling scrap materials in stores.

Supplies and Expenses:

1. Adjustments of inventories of materials and supplies but not including large differences which can readily be assigned to important classes of materials and equitably distributed among the accounts to which such classes of materials have been charged since the previous inventory.

2. Cash and other discounts not practically assignable to specific materials.

3. Freight and express charges when not assignable to specific items.

4. Heat, light, and power for storerooms and store offices.

5. Brooms, brushes, sweeping compounds and other supplies used in cleaning and tidying storerooms and stores offices.

6. Injuries and damages.

7. Insurance on materials and supplies and on stores equipment.

8. Losses due to breakage, leakage, evaporation, fire or other causes, less credits for amounts received from insurance, transportation companies, or others in compensation of such losses.

9. Postage, printing, stationery, and office supplies.

10. Rent of storage space and facilities.

11. Communication service.

12. Excise and other similar taxes not assignable to specific materials.

13. Transportation expense on inward movement of stores and on transfer between storerooms but not including charges on materials recovered from retirements which shall be accounted for as part of the cost of removal.

Note: A physical inventory of each class of materials and supplies shall be made at least every two years.

165 *Prepayments*

A. This account shall include amounts representing prepayments of insurance, rents, taxes, interest, and miscellaneous items, and shall be kept or supported in such manner as to disclose the amount of each class of prepayment.

B. Account 165 shall be subaccounted as follows:

165.1 Prepayments—Insurance
165.2 Other Prepayments

171 *Interest and Dividends Receivable*

This account shall include the amount of interest on bonds, mortgages, notes, commercial paper, loans, open accounts, and deposits, the payment of which is reasonably assured, and the amount of dividends declared or guaranteed on stocks owned.

Note A: Interest which is not subject to current settlement shall not be included herein but in the account in which the associated principle is recorded.

Note B: Interest and dividends receivable from associated companies shall be included in Account 146, Accounts Receivable from Associated Companies.

172 *Rents Receivable*

This account shall include rents receivable or accrued on property rented or leased by the utility to others.

Note: Rents receivable from associated companies shall be included in Account 146, Accounts Receivable from Associated Companies.

173 *Accrued Utility Revenues*

At the option of the utility, the estimated amount accrued for service rendered, but not billed at the end of any accounting period, may be included herein. If accruals are made for unbilled revenues, accruals shall also be made for unbilled expenses, such as the purchase of energy.

174 *Miscellaneous Current and Accrued Assets*

This account shall include the book cost of all other current and accrued assets, appropriately designated and supported so as to show the nature of each asset included herein.

Deferred Debits

181 *Unamortized Debt Expense*

This account shall include expenses related to the issuance or assumption of debt securities. Amounts recorded in this account shall be amortized over the life of each respective issue under a plan which will distribute the amount equitably over the life of the security. The amortization shall be on a monthly basis, and the amounts thereon shall be charged to Account 428, Amortization of Debt Discount and Expense. Any unamortized amounts outstanding at the time that the related debt is prematurely reacquired shall be accounted for as indicated in § 1767.15(q).

182.1 *Extraordinary Property Losses*

A. When authorized or directed by REA, this account shall include extraordinary losses which could not reasonably have been anticipated and which are not covered by insurance or other provisions, such as unforeseen damages to property.

B. Application to REA for permission to use this account shall be accompanied by a statement giving a complete explanation with respect to the items which it is proposed to include herein, the period over which, and the accounts to which it is proposed to write off the charges, and other pertinent information.

182.2 *Unrecovered Plant and Regulatory Study Costs*

A. This account shall include: (1) Nonrecurring costs of studies and analyses mandated by regulatory bodies related to plants in service, transferred from Account 183, Preliminary Survey and Investigations Charges, and not resulting in construction; and (2) when authorized by REA, significant unrecovered costs of plant facilities where construction has been cancelled or which have been prematurely retired.

B. This account shall be credited and Account 407, Amortization of Property Losses, Unrecovered Plant and Regulatory Study Costs, shall be debited over the period specified by REA.

C. Any additional costs incurred, relative to the cancellation or premature retirement, may be included in this account and amortized over the remaining period of the original amortization period. Should any gains or recoveries be realized relative to the cancelled or prematurely retired plant, such amounts shall be used to reduce the unamortized amount of the costs recorded herein.

D. In the event that the recovery of costs included herein is disallowed in the rate proceedings, the disallowed costs shall be charged to Account 426.5, Other Deductions, in the year of such disallowance.

183 *Preliminary Survey and Investigation Charges*

A. This account shall be charged with all expenditures for preliminary surveys, plans, and investigations made for the purpose of determining the feasibility of utility projects under contemplation. If construction results, this account shall be credited and the appropriate utility

plant account charged. If the work is abandoned, the charge shall be made to Account 426.5, Other Deductions, or to the appropriate operating expense account.

B. This account shall also include costs of studies and analyses mandated by regulatory bodies related to plant in service. If construction results from such studies, this account shall be credited and the appropriate utility plant account charged with an equitable portion of such study costs directly attributable to new construction. The portion of such study costs not attributable to new construction or the entire cost if construction does not result shall be charged to Account 182.2, Unrecovered Plant and Regulatory Study Costs, or the appropriate operating expense account. The costs of such studies relative to plant under construction shall be included directly in Account 107, Construction Work in Progress—Electric.

C. The records supporting the entries to this account shall be so kept that the utility can furnish complete information as to the nature and the purpose of the survey, plans, or investigations, and the nature and amounts of the several charges.

Note: The amount of preliminary survey and investigation charges transferred to utility plant shall not exceed the expenditures which may reasonably be determined to contribute directly and immediately and without duplication to utility plant.

184 *Clearing Accounts*

A. This caption shall include undistributed balances in clearing accounts at the date of the balance sheet. Balances in clearing account shall be substantially cleared not later than the end of the calendar year unless items held therein relate to a future period.

B. Account 184 shall be subaccounted as follows:

184.1 Transportation Expense—Clearing
184.2 Clearing Accounts—Other

185 *Temporary Facilities*

This account shall include amounts shown by work orders for plant installed for temporary use in utility service for periods of less than one year. Such work orders shall be charged with the cost of temporary facilities and credited with payments received from customers and net salvage realized on removal of the temporary facilities. Any net credit or debit resulting shall be cleared to Account 451, Miscellaneous Service Revenues.

186 *Miscellaneous Deferred Debits*

This account shall include all debits not elsewhere provided for, such as miscellaneous work in progress, and unusual or extraordinary expenses, not included in other accounts, which are in process of amortization and items the proper final disposition of which is uncertain.

187 *Deferred Losses from Disposition of Utility Plant*

This account shall include losses from the sale or other disposition of property previously recorded in Account 105, Electric Plant Held for Future Use, under the provisions of Paragraphs B, C, and D thereof, where such losses are significant and are to be amortized over a period of 5 years, unless otherwise authorized by REA. The amortization of the amounts in this account shall be made by debits to Account 411.7, Losses from Disposition of Utility Plant. (See Account 105, Electric Plant Held for Future Use.)

188 *Research, Development, and Demonstration Expenditures*

A. This account shall be charged with the cost of all expenditures coming within the meaning of Research, Development, and Demonstration (RD&D) of this Uniform System of Accounts (See § 1767.10(a)(34)) except those expenditures properly chargeable to Account 107, Construction Work in Progress—Electric.

B. Costs that are minor or of a general or recurring nature shall be transferred from this account to the appropriate operating expense function or if such costs are common to the overall operations or cannot be feasibly allocated to the various operating accounts, such costs shall be recorded in Account 930.2, Miscellaneous General Expenses.

C. In certain instances, a company may incur large and significant research, development, and demonstration expenditures which are nonrecurring and which would distort the annual research, development, and demonstration charges for the period. In such a case, the portion of such amounts that cause the distortion may be amortized to the appropriate operating expense account over a period not to exceed 5 years unless otherwise authorized by REA.

D. The entries in this account must be so maintained as to show separately each project along with complete detail of the nature and purpose of the research, development, and demonstration project together with the related costs.

189 *Unamortized Loss on Reacquired Debt*

This account shall include the losses on long-term debt reacquired or redeemed. The amounts in this account shall be amortized in accordance with § 1767.15(q).

190 *Accumulated Deferred Income Taxes*

A. This account shall be debited and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision for Deferred Income Taxes—Credit, Other Income and Deductions, as appropriate, shall be credited with an amount equal to that by which income taxes payable for the year are higher because of the inclusion of certain items in income for tax purposes, which items for general accounting purposes will not be fully reflected in the utility's determination of annual net income until subsequent years.

B. This account shall be credited and Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 410.2, Provision for Deferred Income Taxes, Other Income and Deductions, as appropriate, shall be debited with an amount equal to that by which income taxes payable for the year are lower because of prior payment of taxes as provided by Paragraph A above, because of difference in timing for tax purposes of particular items of income or income deductions from that recognized by the utility for general accounting purposes. Such credit to this account and debit to Account 410.1 or Account 410.2 shall, in general, represent the effect on taxes payable in the current year of the smaller amount of book income recognized for tax purposes as compared to the amount recognized in the utility's current accounts with respect to the item or class of items for which deferred tax accounting by the utility was authorized by REA.

C. Vintage year records with respect to entries to this account, as described above, and the account balance, shall be so maintained as to show the factor of calculation with respect to each annual amount of the item or class of items for which deferred tax accounting by the utility is utilized.

D. The utility is restricted in its use of this account to the purpose set forth above. It shall not make use of the balance in this account or any portion thereof except as provided in the text of this account, without prior approval of REA. Any remaining deferred tax account balance with respect to an amount for any prior year's tax deferral, the amortization of which or other recognition in the utility's income accounts has been completed, or other disposition made, shall be debited to

Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 410.2, Provision for Deferred Income Taxes, Other Income and Deductions, as appropriate, or otherwise disposed of as REA may authorize or direct. (See § 1767.15(t).)

Liabilities and Other Credits

Margins and Equities

200 *Memberships*

A. This account shall include the total amount of memberships issued and subscribed.

B. Account 200 shall be subaccounted as follows:

200.1 Memberships Issued
200.2 Memberships Subscribed But Unissued

200.1 *Memberships Issued*

A. This account shall include the face value of membership certificates outstanding. A detailed record shall be maintained to show for each member, the name, address, date of payment, amount paid, and certificate number.

B. If membership fees are applied against energy bills, this account shall be debited for the full amount of the membership with the offsetting credit to the appropriate accounts receivable, and to accounts payable for any refundable amounts. Any balances that cannot be refunded, due to inability to locate the member or because of bylaw restrictions, shall be credited to Account 208, Donated Capital. If determination of the ultimate disposition of the fees cannot be made immediately, the amount involved should be transferred to Account 253, Other Deferred Credits, until the determination is made.

C. When a transfer fee is collected, the transaction shall be recorded by debiting Account 131.1, Cash—General, and crediting Account 451, Miscellaneous Service Revenues, with the fee collected.

200.2 *Memberships Subscribed But Unissued*

This account shall include the face value of memberships subscribed for but not issued. When certificates are issued, the amount of the memberships shall be transferred to Account 200.1, Memberships Issued.

201 *Patronage Capital*

A. This account shall include the total amount of patronage capital assignable and assigned.

B. Account 201 shall be subaccounted as follows:

201.1 Patronage Capital Credits
201.2 Patronage Capital Assignable

201.1 *Patronage Capital Credits*

A. This account shall include the amounts of patronage capital which have been assigend to individual patrons. A subsidiary record, "Patronage capital ledger," shall be maintained, containing an account for each patron who has furnished capital under a capital credits plan.

B. When the return of patrons' capital to individual patrons has been authorized by the board of directors (or trustees), the amounts authorized shall be transferred to Account 238.1, Patronage Capital Payable. (See also Account 217, Retired Capital Credits—Gain.)

201.2 *Patronage Capital Assignable*

A. This account shall include all amounts transferred from Account 219.1, Operating Margins; Account 219.2, Nonoperating Margins; Account 219.3, Other Margins; and Account 219.4, Other Margins and Equities—Prior Periods, which are assignable to individual patrons' capital accounts.

B. Entries to this account shall be made so as to clearly disclose the nature and source of each transaction. Amounts so assigned shall be transferred to Account 201.1, Patronage Capital Credits.

202 [Reserved]
203 [Reserved]
204 [Reserved]
205 [Reserved]
206 [Reserved]
207 [Reserved]

208 *Donated Capital*

This account shall include credits arising from forfeiture of membership fees and from donations of capital not otherwise provided for. Entries to this account shall be made so as to clearly disclose the nature and source of each transaction.

209 [Reserved]
210 [Reserved]

211 *Consumers' Contributions for Debt Service*

This account shall include the amounts billed to consumers as "amortization charges" for the purpose of servicing long-term debt.

212 [Reserved]
213 [Reserved]
214 [Reserved]

215 *Appropriated Margins*

This account shall include all amounts appropriated as reserves from margins. The account shall be so maintained as to show the amount of each separate reserve and the nature and amounts of the debits and credits thereto.

216 [Reserved]

216.1 *Unappropriated Undistributed Subsidiary Earnings*

This account shall include the balances, either debit or credit, of undistributed retained earnings of subsidiary companies since their acquisition. When dividends are received from subsidiary companies relating to amounts included in this account, this account shall be debited and Account 219.2, Nonoperating Margins.

217 *Retired Capital Credits—Gain*

A. This account shall include credits resulting from the retirement of patronage capital through settlement of individual patrons' capital credits at less than 100 percent of the capital assigned to the patron. The portion of patronage capital not returned to the patrons, under such settlements, shall be debited to Account 201.1, Patronage Capital Credits, and credited to this account.

B. This account shall also include amounts representing patronage capital authorized to be retired to patrons who cannot be located. Returned checks issued for retirements of patronage capital, after an appropriate waiting period, shall be credited to this account, and a record maintained adequate to enable the cooperative to make payment to the patron if and when a claim has been established by the consumer.

218 *Capital Gains and Losses*

No entries shall be made to this account without the prior approval of REA unless it is to distribute past capital gains and losses as capital credits or to eliminate accumulated capital losses in conformance with the bylaws of the cooperative.

219 *Other Margins and Equities*

A. This account shall include total amount of margins and equities from all sources.

B. Account 219 shall be subaccounted as follows:

219.1 Operating Margins
219.2 Nonoperating Margins
219.3 Other Margins
219.4 Other Margins and Equities—Prior Periods

219.1 *Operating Margins*

This account shall be debited or credited with the balances arising from transactions, the details of which have been recorded in Accounts 400, 401, 402, 403, 404, 405, 406, 407, 408, 412, 413, 414, 423, 424, 425, 426, 427, 428, and 431. Accounts 400, 401, and 402 are control accounts and, at the option of the borrower may or may not be used. If they are not used, the detailed revenue and expense accounts shall be closed directly to this account.

219.2 *Nonoperating Margins*

This account shall be debited or credited with the balances arising from

transactions, the details of which have been recorded in Accounts 415, 416, 417, 417.1, 418, 419, 419.1, 421, 421.1, 421.2, 422, 434, and 435.

219.3 *Other Margins*

No entries shall be made to this account unless it is to distribute or eliminate prior balances in conformance with the bylaws of the cooperative.

219.4 *Other Margins and Equities—Prior Periods*

A. This account shall include significant nonrecurring transactions relating to prior periods. To be significant, the transaction must be of sufficient magnitude to justify redistribution of patronage capital credits already allocated for such prior periods.

B. All entries to this account must receive REA prior approval.

C. These transactions are limited to items to (1) correct an error in the financial statements of a prior year, and (2) make adjustments that result from realization of income tax benefits of preacquisition operating loss carryforwards. This account shall also include the related income taxes (state and Federal) on items included herein.

D. Amounts in this account shall be transferred at the end of the year to Account 219.1, Operating Margins, or Account 219.2, Nonoperating Margins, as appropriate. Also, at the end of the year, these amounts should be transferred from Account 219.1, or Account 219.2 to Account 201.2, Patronage Capital Assignable, when appropriate.

Long-Term Debt

221 *Bonds*

This account shall include, in a separate subdivision for each class and series of bonds, the face value of the actually issued and unmatured bonds which have not been retired or cancelled; also the face value of such bonds issued by others, the payment of which has been assumed by the utility.

222 *Reacquired Bonds*

A. This account shall include the face value of bonds actually issued or assumed by the utility and reacquired by it and not retired or cancelled. The account for reacquired debt shall not include securities which are held by trustees in sinking or other funds

B. When bonds are reacquired, the difference between face value, adjusted for unamortized discount, expenses or premium, and the amount paid upon reacquisition, shall be included in Account 189, Unamortized Loss on Recquired Debt, or Account 257, Unamortized Gain on Reacquired Debt, as appropriate. (See § 1767.15(q).)

223 *Advances from Associated Companies*

A. This account shall include the face value of notes payable to associated companies and the amount of open book accounts representing advances from associated companies. It does not include notes and open accounts representing indebtedness subject to current settlement which are includible in Account 233, Notes Payable to Associated Companies, or Account 234, Accounts Payable to Associated Companies.

B. The records supporting the entries to this account shall be so kept that the utility can furnish complete information concerning each note and open account.

224 *Other Long-Term Debt*

A. This account shall include, until maturity, all long-term debt not otherwise provided for. This covers such items as receivers' certificates, real estate mortgages executed or assumed, assessments for public improvements, notes and unsecured certificates of indebtedness not owned by associated companies, receipts outstanding for long-term debt, and other obligations maturing more than one year from the date of issue or assumption.

B. Account 224 shall be subaccounted as follows:

224.1 Long-Term Debt—REA Construction Loan Contract
224.2 REA Loan Contract—Construction—Debit
224.3 Long-Term Debt—REA Construction Notes Executed
224.4 REA Notes Executed—Construction—Debit
224.5 Interest Accrued—Deferred—REA Construction
224.6 Advance Payments Unapplied—REA Long-Term Dept—Debit
224.7 Long-Term Debt—Installation Loan Contract
224.8 REA Loan Contract—Installation—Debit
224.9 Long-Term Debt—Installation Notes Executed
224.10 REA Notes Executed—Installation—Debit
224.11 Other Long-Term Debt—Subscriptions
224.12 Other Long-Term Debt—Supplemental Financing
224.13 Supplemental Lender Notes Executed—Debit
224.14 Other Long-Term Debt—Miscellaneous
224.15 Notes Executed—Other—Debit
224.16 Long-Term Debt—REA Economic Development Notes Executed
224.17 REA Notes Executed—Economic Development—Debit

224.1 *Long-Term Debt—REA Construction Loan Contract*

A. This account shall include the contractual obligation to REA on construction loans covered by loan contract but not by executed notes.

B. This account is to be used at the option of the borrower.

224.2 *REA Loan Contract—Construction—Debit*

A. This account shall include the total loans (for construction purposes) which are covered by loan contract but not by executed notes.

B. This account is to be used at the option of the borrower.

224.3 *Long-Term Debt—REA Construction Notes Executed*

This account shall include the contractual liability to REA on construction notes executed. Records shall be maintained to show separately for each class of obligation all details as to the date of obligation, date of maturity, interest date and rate, and securities for the obligations.

224.4 *REA Notes Executed—Construction—Debit*

This account shall include the total amount of the unadvanced REA loans for construction purposes, which are covered by executed notes. When advances are received from the REA for construction, this account shall be credited and Account 131.2, Cash—Construction Fund—Trustee, debited with the amount of cash advanced.

224.5 *Interest Accrued—Deferred—REA Construction*

This account shall include interest on REA construction obligations deferred by the terms of mortgage notes or extension agreements.

224.6 *Advance Payments Unapplied—REA Long-Term Debt—Debit*

A. This account shall include principal payments on mortgage notes paid in advance of the date due and not applied to a specific note. Also, include in this account interest savings which are accrued and added to the advance payment unapplied.

B. At such time as these payments are applied to a specific note or loan balances, this account shall be credited and the long-term debt account debited with the amount so applied.

224.7 *Long-Term Debt—Installation Loan Contract*

A. This account shall include the contractual obligation to REA on installation loans covered by loan contract but not covered by executed notes.

B. This account is to be used at the option of the borrower.

224.8 *REA Loan Contract—Installation—Debit*

A. This account shall include the total loans for installation purposes which are covered by loan contract but not by executed notes.

B. This account is to be used at the option of the borrower.

224.9 *Long-Term Debt—Installation Notes Executed*

This account shall include the contractual liability to REA on installation notes executed.

224.10 *REA Notes Executed—Installation—Debit*

This account shall include the total amount of unadvanced loans for installation purposes, which are covered by executed note. When advances are received from REA, this account shall be credited and Account 131.3, Cash—Installation Loan and Collection Fund, debited with the amount of cash advanced.

224.11 *Other Long-Term Debt—Subscriptions*

This account shall include the contractual obligation to purchase CFC Capital Term Certificates and any other similar obligation relating to supplemental financing.

224.12 *Other Long-Term Debt—Supplemental Financing*

This account shall include the contractual liability to CFC or other supplemental lenders for that portion of funds borrowed which mature in more than one year.

224.13 *Supplemental Lender Notes Executed—Debit*

This account shall include the total amount of the unadvanced loans for construction purposes, which are covered by executed notes to CFC or other supplemental lender. This account shall be debited with the face amount of notes executed. When advances are received from a supplemental lender for construction, this account shall be credited and Account 131.2, Cash—Construction Fund—Trustee, debited with the amount of cash advanced.

224.14 *Other Long-Term Debt—Miscellaneous*

This account shall include the amount of other long-term debt not provided for elsewhere.

224.15 *Notes Executed—Other—Debit*

This account shall include the total amount of the unadvanced loans for construction purposes, which are covered by executed notes to others not included in the foregoing accounts. When advances are received from such supplemental lender, this account shall be credited and Account 131.2, Cash—Construction Fund—Trustee, debited with the amount of cash so advanced.

224.16 *Long-Term Debt—REA Economic Development Notes Executed*

This account shall include the contractual liability to REA on rural economic development notes executed. Records shall be maintained to show separately for each class of obligation all details as to the date of obligation, date of maturity, interest date and rate, and securities for the obligation.

224.17 *REA Notes Executed—Economic Development—Debit*

This account shall include the total amount of the unadvanced REA loans for rural economic development purposes, which are covered by executed notes. When advances are received from the REA for rural economic development projects, this account shall be credited and Account 131.12, Cash—General—Economic Development Funds, debited with the amount of cash advanced.

225 *Unamortized Premium on Long-Term Debt*

A. This account shall include the excess of the cash value of consideration received over the face value upon the issuance or assumption of long-term debt securities.

B. Amounts recorded in this account shall be amortized over the life of each respective issue under a plan which will distribute the amount equitably over the life of the security. The amortization shall be on a monthly basis, with the amounts thereof to be credited to Account 429, Amortization of Premium on Debt—Credit. (See § 1767.15 (q).)

226 *Unamortized Discount on Long-Term Debt—Debit*

A. This account shall include the excess of the face value of long-term debt securities over the cash value of consideration received therefor, related to the issue or assumption of all types and classes of debt.

B. Amounts recorded in this account shall be amortized over the life of the respective issues under a plan which will distribute the amount equitably over the life of the securities. The amortization shall be on a monthly basis, with the amounts thereof charged to Account 428, Amortization of Debt Discount and Expense. (See § 1767.15 (q).)

Other Noncurrent Liabilities

227 *Obligations Under Capital Leases—Noncurrent*

This account shall include the portion not due within one year, of the obligations recorded for the amounts applicable to leased property recorded as assets in Account 101.1, Property Under Capital Leases; Account 120.6, Nuclear Fuel Under Capital Leases; or Account 121, Nonutility Property.

228.1 *Accumulated Provisions for Property Insurance*

A. This account shall include amounts reserved by the utility for losses through accident, fire, flood, or other hazards to its own property or property leased from others, not covered by insurance. The amounts charged to Account 924, Property Insurance, or other appropriate accounts to cover such risks shall be credited to this account. A schedule of risks covered shall be maintained, giving a description of the property involved, the character of the risks covered and the rates used.

B. Charges shall be made to this account for losses covered, not to exceed the account balance. Details of these charges shall be maintained according to the year the casualty occurred which gave rise to the loss.

228.2 *Accumulated Provision for Injuries and Damages*

A. This account shall be credited with amounts charged to Account 925, Injuries and Damages, or other appropriate accounts, to meet the probable liability, not covered by insurance, for deaths or injuries to employees and others and for damages to property neither owned nor held under lease by the utility.

B. When liability for any injury or damage is admitted by the utility either voluntarily or because of the decision of a court or other lawful authority, such as a workmen's compensation board, the admitted liability shall be charged to this account and credited to the appropriate current liability account. Details of these charges shall be maintained according to the year the casualty occurred which gave rise to the loss.

Note: Recoveries or reimbursements for losses charged to this account shall be credited hereto; the cost of repairs to property of others, if provided for herein, shall be charged to this account.

228.3 *Accumulated Provision for Pensions and Benefits*

A. This account shall include provisions made by the utility and amounts contributed by employees for pensions, accident and death benefits, savings, relief, hospital, and other provident purposes, where the funds are included in the assets of the utility either

in general or in segregated fund accounts.

B. Amounts paid by the utility for the purpose for which this liability is established shall be charged hereto.

C. A separate account shall be kept for each kind of provision included herein.

Note.—If employee pension or benefit plan funds are not included among the assets of the utility but are held by outside trustees, payments into such funds, or accruals therefor, shall not be included in this account.

228.4 *Accumulated Miscellaneous Operating Provisions*

A. This account shall include all operating provisions which are not provided for elsewhere.

B. This account shall be maintained in such a manner as to show the amount of each separate provision and the nature and amounts of the debits and credits thereto.

Note: This account includes only provisions as may be created for operating purposes and does not include any reservations of income, the credits for which should be recorded in Account 215, Appropriated Margins.

229 *Accumulated Provision for Rate Refunds*

A. This account shall be credited with amounts charged to Account 449.1, Provision for Rate Refunds, to provide for estimated refunds where the utility is collecting amounts in rates subject to refund.

B. When a refund of any amount recorded in this account is ordered by a regulatory authority, such amount shall be charged hereto and credited to Account 242, Miscellaneous Current and Accrued Liabilities.

C. Reports supporting the entries to this account shall be kept so as to identify each amount recorded by the respective rate filing docket number.

Current and Accrued Liabilities

Current and accrued liabilities are those obligations which have either matured or which become due within 1 year from the date thereof; except however, bonds, receivers' certificates, and similar obligations which shall be classified as long-term debt until date of maturity; accrued taxes, such as income taxes, which shall be classified as accrued liabilities even though payable more than one year from date; compensation awards, which shall be classified as current liabilities regardless of date due; and minor amounts payable in installments which may be classified as current liabilities. If a liability is due more than 1 year from the date of issuance or assumption by the utility, it shall be credited to a long-term debt account appropriate for the transaction; except however, the current liabilities previously mentioned.

231 *Notes Payable*

This account shall include the face value of all notes, drafts, acceptances, or other similar evidences of indebtedness, payable on demand or within a time not exceeding 1 year from the date of issue, to other than associated companies.

232 *Accounts Payable*

A. This account shall include all amounts payable by the utility within 1 year, which are not provided for in other accounts.

B. Account 232 shall be subaccounted as follows:

232.1 Accounts Payable—General
232.2 Accounts Payable—REA Construction
232.3 Accounts Payable—Other

233 *Notes Payable to Associated Companies*

This account shall include amounts owing to associated companies on notes, drafts, acceptances, or other similar evidences of indebtedness payable on demand or not more than 1 year from the date of issue or creation.

Note: Notes which are includible in Account 223, Advances from Associated Companies, shall be excluded from this account.

234 *Accounts Payable to Associated Companies*

This account shall include amounts owing to associated companies on open accounts payable on demand.

Note: Accounts which are includible in Account 223, Advances from Associated Companies, shall be excluded from this account.

235 *Customer Deposits*

This account shall include all amounts deposited with the utility by customers as security for the payment of bills.

236 *Taxes Accrued*

A. This account shall be credited with the amount of taxes accrued during the accounting period, corresponding debits being made to the appropriate accounts for tax charges. Such credits may be based upon estimates, but from time to time during the year as the facts become known, the amount of the periodic credits shall be adjusted so as to include, as nearly as can be determined in each year, the taxes applicable thereto. Any amount representing a prepayment of taxes applicable to the period subsequent to the date of the balance sheet, shall be shown under Account 165, Prepayments.

B. If accruals for taxes are found to be insufficient or excessive, correction therefor shall be made through current tax accruals.

C. Accruals for taxes shall be based upon the net amounts payable after credit for any discounts, and shall not include any amounts for interest on tax deficiencies or refunds. Interest received on refunds shall be credited to Account 419, Interest and Dividend Income, and interest paid on deficiencies shall be charged to Account 431, Other Interest Expense.

D. Account 236 shall be subaccounted as follows:

236.1 Accrued Property Taxes
236.2 Accrued U.S. Social Security Tax—Unemployment
236.3 Accrued U.S. Social Security Tax—F.I.C.A.
236.4 Accrued State Social Security Tax—Unemployment
236.5 Accrued State Sales Tax—Consumers
236.6 Accrued Gross Revenue or Gross Receipts Tax
236.7 Accrued Taxes—Other

237 *Interest Accrued*

This account shall include the amount of interest accrued but not matured on all liabilities of the utility not including, however, interest which is added to the principal of the debt on which incurred. Supporting records shall be maintained so as to show the amount of interest accrued on each obligation.

238 *Patronage Capital and Patronage Refunds Payable*

A. This account shall include the total amount of patronage capital authorized to be returned and paid to patrons.

B. Account 238 shall be subaccounted as follows:

238.1 Patronage Capital Payable
238.2 Patronage Refunds Payable

238.1 *Patronage Capital Payable*

This account shall include the amount of patronage capital which has been authorized to be returned to the patron.

238.2 *Patronage Refunds Payable*

This account shall include the amount of patronage refunds which have been authorized to be paid to patrons.

239 *Matured Long-Term Debt*

This account shall include the amount of long-term debt (including any obligation for premiums) matured and unpaid, without specific agreement for extension of the time of payment and bonds called for redemption but not presented.

240 *Matured Interest*

This account shall include the amount of matured interest on long-term debt or other obligations of the utility at the date of the balance sheet unless such interest is added to the principal of the debt on which incurred.

241 *Tax Collections Payable*

This account shall include the amount of taxes collected by the utility through payroll deductions or otherwise, pending transmittal of such taxes to the proper taxing authority.

Note: Do not include liabilities for taxes assessed directly against the utility which are accounted for as part of the utility's own tax expense.

242 *Miscellaneous Current and Accrued Liabilities*

A. This account shall include the amount of all other current and accrued liabilities not provided for elsewhere appropriately designated and supported so as to show the nature of each liability.

B. Account 242 shall be subaccounted as follows:

242.1 Accrued Rentals
242.2 Accrued Payroll
242.3 Accrued Employees' Vacations and Holidays
242.4 Accrued Insurance
242.5 Other Current and Accrued Liabilities

242.1 *Accrued Rentals*

This account shall include unpaid joint use pole rentals and other rentals. The records supporting the entries to this account shall be maintained so as to show for each class of rental, the amount accrued, the basis for the accrual, the accounts to which charged, and the amount of rentals paid.

242.2 *Accrued Payroll*

This account shall include the accrued liability for salaries and wages at the end of an accounting period for which the appropriate expense or other accounts have been charged. This account is to be used whether salaries and wages are paid on a weekly, semimonthly, or monthly basis.

242.3 *Accrued Employees' Vacations and Holidays*

This account shall include the liability for accrued wages for employees' vacation, holidays, and sick leave.

242.4 *Accrued Insurance*

A. This account shall most commonly be used in case of workmen's compensation and public liability insurance for recording the excess amounts of earned premium over the advance premiums. Earned premiums are computed each month by applying the insurance rates to the actual payrolls.

B. Until the amount of the advance premiums is exhausted the earned premium is credited to Account 165, Prepayments. Earned premiums in excess of the advance premiums are credited to this account.

242.5 *Other Current and Accrued Liabilities*

This account shall include current and accrued liabilities not provided for elsewhere.

243 *Obligations Under Capital Leases—Current*

This account shall include the portion, due within 1 year, of the obligations recorded for the amounts applicable to leased property recorded as assets in Account 101.1, Property Under Capital Leases; Account 120.6, Nuclear Fuel Under Capital Leases; or Account 121, Nonutility Property.

Deferred Credits

251 [Reserved]

252 *Customer Advances for Construction*

This account shall include consumer advances for construction which are to be refunded either wholly or in part. When a customer is refunded the entire amount to which he is entitled, according to the agreement or rule under which the advance was made, the balance, if any, remaining in this account shall be credited to the respective plant accounts.

253 *Other Deferred Credits*

This account shall include advance billings and receipts and other deferred credit items, not provided for elsewhere, including amounts which cannot be entirely cleared or disposed of until additional information has been received.

253.1 *Other Deferred Credits—Consumers' Energy Prepayments*

This account shall include the amount of advance payments made by consumers in connection with electric service.

255 *Accumulated Deferred Investment Tax Credits*

A. This account shall be credited with all investment tax credits deferred by companies which have elected to follow deferral accounting, partial or full, rather than recognizing, in the income statement, the total benefits of the tax credit as realized. After such election, a company may not transfer amounts from this account, except as authorized herein and in Account 411.4, Investment Tax Credit Adjustments, Utility Operations; Account 411.5, Investment Tax Credit Adjustments, Nonutility Operations; and Account 420, Investment Tax Credits, or with approval of REA.

B. Where the company's accounting provides that investment tax credits are to be passed on to customers, this account shall be debited and Account 411.4 credited with a proportionate amount determined in relation to the average useful life of electric utility property to which the tax credits relate or such lesser period of time as allowed by a regulatory agency having rate jurisdiction. If, however, the deferral procedure provides that investment tax credits are not to be passed on to customers, the proportionate restorations to income shall be credited to Account 420.

C. Subdivisions of ths account, by department, shall be maintained for deferred investment tax credits that are related to nonelectric utility or other operations. Contra entries affecting such account subdivisions shall be appropriately recorded in Account 413, Expenses of Electric Plant Leased to Others; or Account 414, Other Utility Operating Income. Use of deferral or nondeferral accounting procedures adopted for nonelectric utility or other operations are to be followed on a consistent basis.

D. Separate records for electric and nonelectric utility or other operations shall be maintained identifying the properties giving rise to the investment tax credits for each year with the weighted-average service life of such properties and any unused balances of such credits. Such records are not necessary unless the tax credits are deferred.

256 *Deferred Gains from Disposition of Utility Plant*

This account shall include gains from the sale or other disposition of property previously recorded in Account 105, Electric Plant Held for Future Use, under the provisions of Paragraphs B, C, and D thereof, where such gains are significant and are to be amortized over a period of 5 years, unless otherwise authorized by REA. The authorization of the amounts in this account shall be made by credits to Account 411.6, Gains form Disposition of Utility Plant. (See Account 105, Electric Plant Held for Future Use.)

257 *Unamortized Gain on Reacquired Debt*

This account shall include the amounts of discount realized upon reacquisition or redemption of long-term debt. The amounts in this account shall be amortized in accordance with § 1767.15 (q).

Special Instructions

Accumulated Deferred Income Taxes

Before using the deferred tax accounts provided below, refer to § 1767.15 (r). Comprehensive Interperiod Income Tax Allocation.

The text of these accounts are designed primarily to cover deferrals of Federal income taxes. However, they are also to be used when making

deferrals of state and local income taxes. Public utilities and licensees which, in addition to an electric utility department, have another utility department, gas or water and nonutility property, and which have deferred taxes on income with respect thereto shall separately classify such deferrals in the accounts provided below so as to allow ready identification of items relating to each utility deductions.

281 *Accumulated Deferred Income Taxes—Accelerated Amortization Property*

A. This account shall include tax deferrals resulting from adoption of the principles of comprehensive interperiod tax allocation described in § 1767.15 (s) of this system of accounts that relate to property for which the utility has availed itself of the use of accelerated (5-year) amortization of (1) certified defense facilities as permitted by Section 167 of the Internal Revenue Code, and (2) certified pollution control facilities as permitted by Section 169 of the Internal Revenue Code.

B. This account shall be credited and Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 410.2, Provision for Deferred Income Taxes, Other Income and Deductions, as appropriate, shall be debited with tax effects related to property described in Paragraph A above where taxable income is lower than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

C. This account shall be debited and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision for Deferred Income Taxes-Credit, Other Income and Deductions, as appropriate, shall be credited with taxes related to property described in Paragraph A above where taxable income is higher than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

D. The utility is restricted in its use of this account to the purposes set forth above. It shall not transfer the balance in this account or any portion thereof to retained earnings or make any use thereof except as provided in the text of this account without prior approval of REA. Upon the disposition by sale, exchange, transfer, abandonment, or premature retirement of plant on which there is a related balance therein, this account shall be charged with an amount equal to the related income tax expense, if any, arising from such disposition and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision for Deferred Income Taxes—Credit, Other Income and Deductions, as appropriate, shall be credited. When the remaining balance, after consideration of any related income tax expense, is less than $25,000, this account shall be charged and Account 411.1 or Account 411.2, as appropriate, credited with such balance. If after consideration of any related income tax expense, there is a remaining amount of $25,000 or more, REA shall authorize or direct how such amount shall be accounted for at the time approval for the disposition of accounting is granted. When plant is disposed of by transfer to a wholly owned subsidiary, the related balance in this account shall also be transferred. When the disposition relates to retirement of an item or items under a group method of depreciation where there is no tax effect in the year of retirement, no entries are required in this account if it can be determined that the related balances would be necessary to be retained to offset future group item tax deficiencies.

282 *Accumulated Deferred Income Taxes—Other Property*

A. This account shall include the tax deferrals resulting from adoption of the principle of comprehensive interperiod income tax allocation described in § 1767.15 (r) of this system of accounts which are related to all property other than accelerated amortization property.

B. This account shall be credited and Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 410.2, Provision for Deferred Income Taxes, Other Income and Deductions, as appropriate, shall be debited with tax effects related to property described in Paragraph A above where taxable income is lower than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

C. This account shall be debited and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision for Deferred Income Taxes—Credit, Other Income and Deductions, as appropriate, shall be credited with tax effects related to property described in Paragraph A above where taxable income is higher than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

D. The utility is restricted in its use of this account to the purposes set forth above. It shall not transfer the balance in this account or any portion thereof to retained earnings or make any use thereof except as provided in the text of this account without prior approval of REA. Upon the disposition by sale, exchange, transfer, abandonment, or premature retirement of plant on which there is a related balance herein, this account shall be charged with an amount equal to the related income tax expense, if any, arising from such disposition and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision for Deferred Income Taxes—Credit, Other Income and Deductions, shall be credited. When the remaining balance after consideration of any related tax expenses, is less than $25,000, this account shall be charged and Account 411.1 or Account 411.2, as appropriate, credited with such balance. If after consideration any related income tax expense, there a remaining amount of $25,000 or more, REA shall authorize or direct how such amount shall be accounted for at the time approval for the disposition of accounting is granted. When plant is disposed of by transfer to a wholly owned subsidiary, the related balance in this account shall also be transferred. When the disposition relates to retirement of an item or items under a group method of depreciation where there is no tax effect in the year of retirement, no entries are required in this account if it can be determined that the related balance would be necessary to be retained to offset future group item tax deficiencies.

283 *Accumulated Deferred Income Taxes—Other*

A. This account shall include all credit tax deferrals resulting from the adoption of the principles of comprehensive interperiod income tax allocation described in § 1767.15 (r) of this system of accounts other than those deferrals which are includible in Account 281, Accumulated Deferred Income Taxes—Accelerated Amortization Property, and Account 282, Accumulated Deferred Income Taxes—Other Property.

B. This account shall be credited and Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 410.2, Provision for Deferred Income Taxes, Other Income and Deductions, as appropriate, shall be

debited with tax effects related to items described in Paragraph A above where taxable income is lower than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

C. This account shall be debited and Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income or Account 411.2, Provision for Deferred Income Taxes—Credit, Other Income and Deductions, as appropriate, shall be credited with tax effects related to items described in Paragraph A above where taxable income is higher than pretax accounting income due to differences between the periods in which revenue and expense transactions affect taxable income and the periods in which they enter into the determination of pretax accounting income.

D. Records with respect to entries to this account, as described above, and the account balance, shall be so maintained as to show the factors of calculation with respect to each annual amount of the item or class of items.

E. The utility is restricted in its use of this account to the purposes set forth above. It shall not transfer the balance in the account or any portion thereof to retained earnings or to any other account or make any use thereof except as provided in the text of this account, without prior approval of REA. Upon the disposition by sale, exchange, transfer, abandonment, or premature retirement of items on which there is a related balance herein, this account shall be charged with an amount equal to the related income tax effect, if any, arising from such disposition and Account 411.1, Provision For Deferred Income Taxes—Credit, Utility Operating Income, or Account 411.2, Provision For Deferred Income Taxes—Credit, Other Income and Deductions, as appropriate, shall be credited. When the remaining balance, after consideration of any related tax expenses, is less than $25,000, this account shall be charged and Account 411.1 or Account 411.2, as appropriate, credited with such balance. If after consideration of any related income tax expense, there is a remaining amount of $25,000 or more, REA shall authorize or direct how much amount shall be accounted for at the time approval for the disposition of accounting is granted.

When plant is disposed of by transfer to a wholly owned subsidiary, the related balance in this account shall also be transferred. When the disposition relates to retirement of an item or items under a group method of depreciation where there is no tax effect in the year of retirement, no entries are required in this account if it can be determined that the related balance would be necessary to be retained to offset future group item tax deficiencies.

Intangible Plant

301 *Organization*

This account shall include all fees paid to Federal or state governments for the privilege of incorporation and expenditures incident to organizing the corporation, partnership, or other enterprise and putting it into readiness to do business.

Items

1. Cost of obtaining certificates authorizing an enterprise to engage in the public-utility business.
2. Fees and expenses for incorporation.
3. Fees and expenses for mergers or consolidations.
4. Office expenses incident to organizing the utility.
5. Stock and minute books and corporate seal.

Note A: This account shall not include any discounts upon securities issued or assumed; nor shall it include any costs incident to negotiating loans, selling bonds or other evidences of debt or expenses in connection with the authorization, issuance, or sale of capital stock.

Note B: Exclude from this account and include in the appropriate expense account the cost of preparing and filing papers in connection with the extension of the term of incorporation unless the first organization costs have been written off. When charges are made to this account for expenses incurred in mergers, consolidations, or reorganizations, amounts previously included herein or in similar accounts in the books of the companies concerned shall be excluded from this account.

302 *Franchises and Consents*

A. This account shall include amounts paid to the Federal Government, to a state or to a political subdivision thereof in consideration for franchises, consents, water power licenses, or certificates, running in perpetuity or for a specified term of more than one year, together with necessary and reasonable expenses incident to procuring such franchises, consents, water power licenses, or certificates of permission and approval, including expenses of organizing and merging separate corporations, where statutes require, solely for the purpose of acquiring franchises.

B. If a franchise, consent, water power license, or certificate is acquired by assignment, the charge to this account in respect thereof shall not exceed the amount paid therefor by the utility to the assignor, nor shall it exceed the amount paid by the original grantee, plus the expense of acquisition to such grantee. Any excess of the amount actually paid by the utility over the amount above specified shall be charged to Account 426.5, Other Deductions.

C. When any franchise has expired, the book cost thereof shall be credited hereto and charged to Account 426.5, Other Deductions, or to Account 111, Accumulated Provision for Amortization of Electric Utility Plant, as appropriate.

D. Records supporting this account shall be kept so as to show separately the book cost of each franchise or consent.

Note: Annual or other periodic payments under franchises shall not be included herein but in the appropriate operating expense account.

303 *Miscellaneous Intangible Plant*

A. This account shall include the cost of patent rights, licenses, privileges, and other intangible property necessary or valuable in the conduct of utility operations and not specifically chargeable to any other account.

B. When any item included in this account is retired or expires, the book cost thereof shall be credited hereto and charged to Account 426.5, Other Deductions, or Account 111, Accumulated Provision for Amortization of Electric Utility Plant, as appropriate.

C. This account shall be maintained in such a manner that the utility can furnish full information with respect to the amounts included herein.

Production Plant

Steam Production

310 *Land and Land Rights*

This account shall include the cost of land and land rights used in connection with steam-power generation. (See § 1767.16(g).)

311 *Structures and Improvements*

This account shall include the cost, in place, of structures and improvements used in connection with steam-power generation. (See § 1767.16(h).)

Note: Include steam production roads and railroads in this account.

312 *Boiler Plant Equipment*

This account shall include the cost installed of furnaces, boilers, coal and ash handling and coal preparing equipment, steam and feed water piping, boiler apparatus, and accessories used in the production of steam, mercury, or other vapor, to be used primarily for generating electricity.

Items

1. Ash handling equipment, including hoppers, gates, cars, conveyors, hoists, sluicing equipment, including pumps and motors, sluicing water pipe and fittings, sluicing trenches and accessories, except sluices which are a part of a building.

2. Boiler feed system, including feed water heaters, evaporator condensers, heater drain pumps, heater drainers, deaerators, and vent condensers, boiler feed pumps, surge tanks, feed water regulators, feed water measuring equipment, and all associated drives.

3. Boiler plant cranes and hoists and associated drives.

4. Boilers and equipment, including boilers and baffles, economizers, superheaters, soot blowers, foundations and settings, water walls, arches, grates, insulation, blowdown system, drying out of new boilers, also associated motors or other power equipment.

5. Breeching and accessories, including breeching, dampers, soot spouts, hoppers and gates, cinder eliminators, breeching insulation, soot blowers and associated motors.

6. Coal handling and storage equipment, including coal towers, coal lorries, coal cars, locomotives and tracks when devoted principally to the transportation of coal, hoppers, downtakes, unloading and hoisting equipment, skip hoists and conveyors, weighing equipment, magnetic separators, cable ways, and housing and supports for coal handling equipment.

7. Draft equipment, including air preheaters and accessories, induced and forced draft fans, air ducts, combustion control mechanisms, and associated motors or other power equipment.

8. Gas-burning equipment, including holders, burner equipment and piping, and control equipment.

9. Instruments and devices, including all measuring, indicating, and recording equipment for boiler plant service together with mountings and supports.

10. Lighting systems.

11. Oil-burning equipment, including tanks, heaters, pumps with drive, burner equipment and piping, and control equipment.

12. Pulverized fuel equipment, including pulverizers, accessory motors, primary air fans, cyclones and ducts, dryers, pulverized fuel bins, pulverized fuel conveyors and equipment, burners, burner piping, priming equipment, air compressors, and motors.

13. Stacks, including foundations and supports, stack steel and ladders, stack brickwork, stack concrete, stack lining, stack painting (first), when set on separate foundations, independent of substructures or superstructures of building.

14. Station piping, including pipe, valves, fittings, separators, traps, desuperheaters, hangers, excavation, and covering for station piping system, including all steam, condensate, boiler feed and water piping, but not condensing water, plumbing, building heating, oil, gas, air piping or piping specifically provided for in Account 313.

15. Stoker or equivalent feeding equipment, including stokers and accessory motors, clinker grinders, fans and motors.

16. Ventilating equipment.

17. Water purification equipment, including softeners and accessories, evaporators and accessories, heat exchanges, filters, tanks for filtered or softened water, pumps, and motors.

18. Water-supply systems, including pumps, motors, strainers, raw-water storage tanks, boiler wash pumps, intake and discharge pipes, and tunnels not a part of a building.

19. Wood fuel equipment, including hoppers, fuel hogs and accessories, elevators and conveyors, bins and gates, spouts, measuring equipment and associated drives.

Note: When the system for supplying boiler or condenser water is elaborate, and when it includes a dam, reservoir, canal, pipe line, cooling ponds, or where gas or oil is used as a fuel for producing steam and is supplied through a pipe line system owned by the utility, the cost of such special facilities shall be charged to a subdivision of Account 311, Structures and Improvements.

313 *Engines and Engine Driven Generators*

This account shall include the cost installed of steam engines, reciprocating or rotary, and their associated auxiliaries; and engine-driven main generators, except turbogenerator units.

Items

1. Air cleaning and cooling apparatus, including blowers, drive equipment, air ducts, not a part of building, louvers, pumps, and hoods.

2. Belting, shafting, pulleys, and reduction gearing.

3. Circulating pumps, including connections between condensers and intake and discharge tunnels.

4. Cooling system, including towers, pumps, tank, and piping.

5. Condensers, including condensate pumps, air and vacuum pumps, ejector unloading valves and vacuum breakers, expansion devices, and screens.

6. Cranes and hoists, including items wholly identified with items listed herein.

7. Engines, reciprocating or rotary.

8. Fire-extinguishing systems.

9. Foundations and settings, especially constructed for and not expected to outlast the apparatus for which provided.

10. Generators-Main, a.c. or d.c., including field rheostats and connections for self-excited units, and excitation systems when identified with the generating unit.

11. Governors.

12. Lighting systems.

13. Lubricating systems, including gauges, filters, tanks, pumps, piping, and motors.

14. Mechanical meters, including gauges, recording instruments, sampling and testing equipment.

15. Piping-main exhaust, including connections between generator and condenser and between condenser and hotwell.

16. Piping-main stream, including connections from main throttle valve to turbine inlet.

17. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.

18. Pressure oil system, including accumulators, pumps, piping, and motors.

19. Throttle and inlet valve.

20. Tunnels, intake and discharge, for condenser system, when not a part of a structure.

21. Water screens and motors.

314 *Turbogenerator Units*

This account shall include the cost installed of main turbine-driven units and accessory equipment used in generating electricity by steam.

Items

1. Air leaning and cooling apparatus, including blowers, drive equipment, air ducts not a part of building, louvers, pumps, and hoods.

2. Circulating pumps, including connections between condensers and intake and discharge tunnels.

3. Condensers, including condensate pumps, air and vacuum pumps, ejectors, unloading valves and vacuum breakers, expansion devices, and screens.

4. Generators hydrogen, gas piping, and detrainment equipment.

5. Cooling system, including towers, pumps, tanks, and piping.

6. Cranes and hoists, including items wholly identified with items listed herein.

7. Excitation system, when identified with main generating units.

8. Fire-extinguishing systems.

9. Foundations and settings, especially constructed for and not expected to outlast the apparatus for which provided.

10. Governors.
11. Lighting systems.
12. Lubricating systems, including gauges, filters, water separators, tanks, pumps, piping, and motors.
13. Mechanical meters, including gauges, recording instruments, sampling and testing equipment.
14. Piping-main exhaust, including connections between turbogenerator and condenser and between condenser and hotwell.
15. Piping-main steam, including connections from main throttle valve to turbine inlet.
16. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.
17. Pressure oil systems, including accumulators, pumps, and piping motors.
18. Steelwork, specially constructed for apparatus listed herein.
19. Throttle and inlet valve.
20. Tunnels, intake and discharge, for condenser system, when not a part of structure, and water screens.
21. Turbogenerators-main, including turbine and generator, field rheostats and electric connections for self-excited units.
22. Water screens and motors.
23. Moisture separator for turbine steam.
24. Turbine lubricating oil (initial charge).

315 *Accessory Electric Equipment*

This account shall include the cost installed of auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by steam power, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Such motors shall be included in the account in which the equipment with which they are associated is included.

Items

1. Auxiliary generators, including boards, compartments, switching equipment, control equipment, and connections to auxiliary power bus.
2. Excitation system, including motor, turbine and dual-drive exciter sets and rheostats, storage batteries and charging equipment, circuit breakers, panels and accessories, knife switches and accessories, surge arresters, instrument shunts, conductors and conduit, special supports for conduit, generator field and exciter switch panels, exciter bus tie panels, generator and exciter rheostats and special housing and protective screens.
3. Generator main connections, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, current transformers, potential transformers, protective relays, isolated panels and equipment, conductors and conduit, special supports for generator main leads, grounding switch, and special housings and protective screens.
4. Station buses including main, auxiliary, transfer, synchronizing and fault ground buses, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, reactors and accessories, voltage regulators and accessories, compensators, resistors, starting transformers, current transformers, potential transformers, protective relays, storage batteries and charging equipment, isolated panels and equipment, conductors and conduit, special supports, special housings, concrete pads, general station grounding system, special fire-extinguishing system, and test equipment.
5. Station control system, including station switchboards with panel wiring, panels with instruments and control equipment only, panels with switching equipment mounted or mechanically connected, truck-type boards complete, cubicles, station supervisory control boards, generator and exciter signal stands, temperature recording devices, frequency-control equipment, master clocks, watt-hour meters and synchronoscope in the turbine room, station totalizing wattmeter, boiler-room load indicator equipment, storage batteries, panels and charging sets, instrument transformers for supervisory metering, conductors and conduit, special supports for conduit, switchboards, batteries, special housing for batteries, protective screens, and doors.

Note A: Do not include in this account transformers and other equipment used for changing the voltage or frequency of electricity for the purposes of transmission or distribution.

Note B: When any item of equipment listed herein is used wholly to furnish power to equipment included in another account, its cost shall be included in such other account.

316 *Miscellaneous Power Plant Equipment*

This account shall include the cost installed of miscellaneous equipment in and about the steam generating plant devoted to general station use, and which is not properly includible in any of the foregoing steam-power production accounts.

Items

1. Compressed air and vacuum cleaning systems, including tanks, compressors, exhausters, air filters, and piping.
2. Cranes and hoisting equipment, including cranes, cars, crane rails, monorails, and hoists with electric and mechanical connections.
3. Fire-extinguishing equipment for general station use.
4. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.
5. Locomotives cranes not includible elsewhere.
6. Locomotives not includible elsewhere.
7. Marine equipment, including boats and barges.
8. Miscellaneous belts, pulleys, and countershafts.
9. Miscellaneous equipment, including atmospheric and weather indicating devices, intrasite communication equipment, laboratory equipment, signal systems, callophones, emergency whistles and sirens, fire alarms, insect-control equipment, and other similar equipment.
10. Railway cars not includible elsewhere.
11. Refrigerating systems, including compressors, pumps, and cooling coils.
12. Station maintenance equipment, including lathes, shapers, planers, drill presses, hydraulic presses, and grinders with motors, shafting, hangers, and pulleys.
13. Ventilating equipment, including items wholly identified with apparatus listed herein.

Note: When any item of equipment listed herein is wholly used in connection with equipment included in another account, its cost shall be included in such other account.

Nuclear Production

320 *Land and Land Rights*

This account shall include the cost of land and land rights used in connection with nuclear power generation. (See § 1767.16, (g).)

321 *Structures and Improvements*

This account shall include the costs, in place, of structures and improvements used and useful in connection with nuclear power generation. (See § 1767.16 (h).)

Note: Include vapor containers and nuclear production roads and railroads in this account.

322 *Reactor Plant Equipment*

This account shall include the installed cost of reactors, reactor fuel

handling and storage equipment, pressurizing equipment, coolant charging equipment, purification and discharging equipment, radioactive waste treatment and disposal equipment, boilers, steam and feed water piping, reactor and boiler apparatus and accessories and other reactor plant equipment used in the production of steam to be used primarily for generating electricity, including auxiliary superheat boilers and associated equipment in systems which change temperatures or pressure of steam from the reactor system.

Items

1. Auxiliary superheat boilers and associated fuel storage handling preparation and burning equipment. (See Account 321, Boiler Plant Equipment, for items, but exclude water supply, water flow lines, and steam lines, as well as other equipment not strictly within the superheat function.)
2. Boiler feed system, including feed water heaters, evaporator condensers, heater drain pumps, heater drainers, deaerators, and vent condensers, boiler feed pumps, surge tanks, feed water regulators, feed water measuring equipment, and all associated drivers.
3. Boilers and heat exchangers.
4. Instruments and devices, including all measuring, indicating, and recording equipment for reactor and boiler plant service together with mountings and supports.
5. Lighting systems.
6. Moderators, such as heavy water, and graphite, initial charge.
7. Reactor coolant; primary and secondary systems, initial charge.
8. Radioactive waste treatment and disposal equipment, including tanks, ion exchangers, incinerators, condensers, chimneys, and diluting fans and pumps.
9. Foundations and settings, especially constructed for and not expected to outlast the apparatus for which provided.
10. Reactor including shielding, control rods and mechanisms.
11. Reactor fuel handling equipment, including manipulating and extraction tools, underwater viewing equipment, seal cutting and welding equipment, fuel transfer equipment, and fuel disassembly machinery.
12. Reactor fuel element failure detection system.
13. Reactor emergency poison container and injection system.
14. Reactor pressuring and pressure relief equipment, including pressurizing tanks and immersion heaters.
15. Reactor coolant or moderator circulation charging, purification, and discharging equipment, including tanks, pumps, heat exchangers, demineralizers, and storage.
16. Station piping, including pipes, valves, fittings, separators, traps, desuperheaters, hangers, excavation, and covering for station piping system, including all-reactor coolant, steam, condensate, boiler feed and water supply piping, but not condensing water, plumbing, building heating, oil, gas, or air piping.
17. Ventilating equipment.
18. Water purification equipment, including softeners, demineralizers and accessories, evaporators and accessories, heat exchangers, filters, tanks for filtered or softened water, pumps, and motors.
19. Water supply systems, including pumps, motors, strainers, raw-water storage tanks, boiler wash pumps, intake and discharge pipes and tunnels not a part of a building.
20. Reactor plant cranes and hoists, and associated drives.

Note: When the system for supplying boiler or condenser water is elaborate, as when it includes a dam, reservoir, canal, pipe lines, or cooling ponds, the cost of such special facilities shall be charged to a subdivision of Account 321, Structures and Improvements.

323 *Turbogenerator Units*

This account shall include the cost installed of main turbine-driven units and accessory equipment used in generating electricity by steam.

Items

1. Air cleaning and cooling apparatus, including blowers, drive equipment, air ducts, not a part of building, louvers, pumps, and hoods.
2. Circulating pumps, including connections between condensers, and intake and discharge tunnels.
3. Condensers, including condensate pumps, air and vacuum pumps, ejectors, unloading valves and vacum breakers, expansion devices, and screens.
4. Generator hydrogen gas piping system and hydrogen detrainment equipment, and bulk hydrogen gas storage equipment.
5. Cooling system, including towers, pumps, tanks, and piping.
6. Cranes and hoists, including items wholly identified with items listed herein.
7. Excitation system, when identified with main generating units.
8. Fire extinguishing systems.
9. Foundations and settings, especially constructed for and not expected to outlast the apparatus for which provided.
10. Governors.
11. Lighting systems.
12. Lubricating systems, including gauges, filters, water separators, tanks, pumps, piping, and motors.
13. Mechanical meters, including gauges, recording instruments, sampling and testing equipment.
14. Piping-main steam, including connections between turbogenerator and condenser and between condenser and hotwell.
15. Piping-main steam, including connections from main throttle valve to turbine inlet.
16. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.
17. Pressure oil systems, including accumulators, pumps, piping, and motors.
18. Steelwork, specially constructed for apparatus listed herein.
19. Throttle and inlet valve.
20. Tunnels, intake and discharge, for condenser system, when not a part of structure, and water screens.
21. Turbogenerators-main, including turbine and generator, field rheostats and electric connections for self-excited units.
22. Water screens and motors.
23. Moisture separators for turbine steam.
24. Turbine lubricating oil, initial charge.

324 *Accessory Electric Equipment*

This account shall include the cost installed of auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by nuclear power, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Such motors shall be included in the account in which the equipment with which they are associated is included.

Note: Do not include in this account transformers and other equipment used for changing the voltage or frequency of electric energy for the purpose of transmission or distribution.

Items

1. Auxiliary generators, including boards, compartments, switching equipment, control equipment, and connections to auxiliary power bus.
2. Excitation system, including motor, turbine and dual-drive exciter sets and rheostats, storage batteries, and charging equipment, circuit breakers, panels and accessories, knife switches and accessories, surge arresters, instrument shunts, conductors and conduit, special supports for conduit, generator field and exciter switch

panels, exciter bus tie panels, generator and exciter rheostats and special housing and protective screens.

3. Generator main connections, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, current transformers, potential transformers, protective relays, isolated panels and equipment, conductors and conduit, special supports for generator main leads, grounding switch, special housings and protective screens.

4. Station buses, including main, auxiliary, transfer, synchronizing and fault ground buses, including oil circuit breakers and accessories, operating mechanisms and interlocks, reactors and accessories, voltage regulators and accessories, compensators, resistors, starting transformers, current transformers, potential transformers, protective relays, storage batteries and charging equipment, isolated panels and equipment, conductors and conduit, special supports, special housings, concrete pads, general station grounding system, fire-extinguishing system, and test equipment.

5. Station control system, including station switchboards with panel wiring, panels with instruments and control equipment only, panels with switching equipment mounted or mechanically connected, truck-type boards complete, cubicles, station supervisory control boards, generator and exciter signal stands, temperature recording devices, frequency-control equipment, master clocks, watt-hour meters and synchronoscope in the turbine room, station totalizing wattmeter, boiler-room load indicator equipment, storage batteries, panels and charging sets, instrument transformers for supervisory metering, conductors and conduit, special supports for conduit, switchboards, batteries, special housing for batteries, protective screens, and doors.

Note: When any item of equipment listed herein is used wholly to furnish power to equipment included in another account, its cost shall be included in such other account.

325 *Miscellaneous Power Plant Equipment*

This account shall include the cost installed of miscellaneous equipment in and about the nuclear generating plant devoted to general station use, which is not properly includible in any of the foregoing nuclear-power production accounts.

Items

1. Compressed air and vacuum cleaning systems, including tanks, compressors, exhausters, air filters, and piping.

2. Cranes and hoisting equipment, including cranes, cars, crane rails, monorails, and hoists with electric and mechanical connections.

3. Fire-extinguishing equipment for general station and site use.

4. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.

5. Locomotive cranes not includible elsewhere.

6. Locomotives not included elsewhere.

7. Marine equipment, including boats and barges.

8. Miscellaneous belts, pulleys, and countershafts.

9. Miscellaneous equipment, including atmospheric and weather recording devices, intrasite communication equipment, laboratory equipment, signal systems, callophones, emergency whistles and sirens, fire alarms, insect-control equipment, and other similar equipment.

10. Railway cars or special shipping containers not includible elsewhere.

11. Refrigerating systems, including compressors, pumps, and cooling coils.

12. Station maintenance equipment, including lathes, shapers, planers, drill presses, hydraulic presses, and grinders with motors, shafting, hangers, and pulleys.

13. Ventilating equipment, including items wholly identified with apparatus listed herein.

14. Station and area radiation monitoring equipment.

Note: When any item of equipment listed herein is wholly used in connection with equipment included in another account, its cost shall be included in such other account.

Hydraulic Production

330 *Land and Land Rights*

This account shall include the cost of land and land rights used in connection with hydraulic power generation. (See § 1767.16(g).) It shall also include the cost of land and land rights used in connection with (1) the conservation of fish and wildlife, and (2) recreation. Separate subaccounts shall be maintained for each of the above.

331 *Structures and Improvements*

This account shall include the cost, in place, of structures and improvements used in connection with hydraulic power generation. (See § 1767.16(h).) It shall also include the cost, in place, of structures and improvements used in connection with (1) the conservation of fish and wildlife, and (2) recreation. Separate subaccounts shall be maintained for each of the above.

332 *Reservoirs, Dams, and Waterways*

This account shall include the cost in place of facilities used for impounding, collecting, storage, diversion, regulation, and delivery of water used primarily for generating electricity. It shall also include the cost in place of facilities used in connection with (1) the conservation of fish and wildlife, and (2) recreation. Separate subaccounts shall be maintained for each of the above. (See § 1767.16(h)(3).)

Items

1. Bridges and culverts, when not a part of roads or railroads.

2. Clearing and preparing land.

3. Dams, including wasteways, spillways, flash boards, spillway gates with operating and control mechanisms, tunnels, gate houses, and fish ladders.

4. Dikes and embankments.

5. Electric system, including conductors, control system, transformers, and lighting fixtures.

6. Excavation, including shoring, bracing, bridging, refill, and disposal of excess excavated material.

7. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.

8. Intakes, including trash racks, rack cleaners, control gates and valves with operating mechanisms, and intake house when not a part of station structure.

9. Platforms, railings, steps, and gratings appurtenant to structures listed herein.

10. Power line wholly identified with items included herein.

11. Retaining walls.

12. Water conductors and accessories, including canals, tunnels, flumes, penstocks, pipe conductors, forebays, tailraces, navigation locks and operating mechanisms, water-hammer and surge tanks, and supporting trestles and structures.

13. Water storage reservoirs, including dams, flashboards, spillway gates and operating mechanisms, inlet and outlet tunnels, regulating valves and valve towers, silt and mud sluicing tunnels with valve or gate towers, and all other structures wholly identified with any of the foregoing items.

333 *Water Wheels, Turbines and Generators*

This account shall include the cost installed of water wheels and hydraulic turbines (from connection with penstock or flume to tailrace) and generators driven thereby devoted to the production of electricity by water power

or for the production of power for industrial or other purposes, if the equipment used for such purpose is a part of the hydraulic power plant works.

Items

1. Exciter water wheels and turbines, including runners, gates, governors, pressure regulators, oil pumps, operating mechanisms, scroll cases, draft tubes, and draft-tube supports.
2. Fire-extinguishing equipment.
3. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
4. Generator cooling system, including air cooling and washing apparatus, air fans and accessories, and air ducts.
5. Generators—main, a.c. or d.c., including field rheostats and connections for self-excited units and excitation system when identified with the generating unit.
6. Lighting systems.
7. Lubricating systems, including gauges, filters, tanks, pumps, and piping.
8. Main penstock values and appurtenances, including main valves, control equipment, bypass valves and fittings, and other accessories.
9. Main turbines and water wheels, including runners, gates, governors, pressure regulators, oil pumps, operating mechanisms, scroll cases, draft tubes, and draft-tube supports.
10. Mechanical meters and recording instruments.
11. Miscellaneous water-wheel equipment, including gauges, thermometers, meters, and other instruments.
12. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.
13. Scroll case filling and drain system, including gates, pipe, valves, and fittings.
14. Water-actuated pressure-regulator system, including tanks and housings, pipes, valves, fittings and insulators, piers and anchorage, and excavation and backfill.

334 *Accessory Electric Equipment*

This account shall include the cost installed of auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by hydraulic power and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts, such motors being included in the account in which the equipment with which they are associated is included.

Items

1. Auxiliary generators, including boards, compartments, switching equipment, control equipment, and connections to auxiliary power bus.
2. Excitation system, including motor, turbine, and dual-drive exciter sets and rheostats, storage batteries and charging equipment, circuit breakers, panels and accessories, knife switches and accessories, surge arresters, instrument shunts, conductors and conduit, special supports for conduit, generator field and exciter switch panels, exciter bus tie panels, generator and exciter rheostats and special housings and protective screens.
3. Generator main connections, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, current transformers, potential transformers, protective relays, isolated panels and equipment, conductors and conduit, special supports for generator main leads, grounding switch, and special housings and protective screens.
4. Station buses, including main, auxiliary, transfer, synchronizing, and fault ground buses, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, reactors and accessories, voltage regulators and accessories, compensators, resistors starting transformers, current transformers, potential transformers, protective relays, storage batteries, and charging equipment, isolated panels and equipment, conductors and conduit, special supports, special fire-extinguishing system, and test equipment.
5. Station control system, including station switchboards with panel wiring, panels with instruments and control equipment only, panels with switching equipment mounted for mechanically connected, truck-type boards complete, cubicles, station supervisory control devices, frequency control equipment, master clocks, watt-hour meter, station totalizing watt-meter, storage batteries, panels and charging sets, instrument transformers for supervisory metering, conductors and conduit, special supports for conduit, switchboards, batteries, special housings for batteries, protective screens, and doors.

Note A: Do not include in this account transformers and other equipment used for changing the voltage or frequency of electricity for the purpose of transmission or distribution.

Note B: When any item of equipment listed herein is used wholly to furnish power to equipment, it shall be included in such equipment account.

335 *Miscellaneous Power Plant Equipment*

This account shall include the cost installed of miscellaneous equipment in and about the hydroelectric generating plant which is devoted to general station use and is not properly includible in other hydraulic production accounts. It shall also include the cost of equipment used in connection with (1) the conservation of fish and wildlife, and (2) recreation. Separate subaccounts shall be maintained for each of the above.

Items

1. Compressed air and vacuum cleaning systems, including tanks, compressors, exhausters, air filters, and piping.
2. Cranes and hoisting equipment, including cranes, cars, crane rails, monorails, and hoists with electric and mechanical connections.
3. Fire-extinguishing equipment for general station use.
4. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
5. Locomotive cranes not includible elsewhere.
6. Locomotives not includible elsewhere.
7. Marine equipment, including boats and barges.
8. Miscellaneous belts, pulleys, and countershafts.
9. Miscellaneous equipment, including atmospheric and weather indicating devices. Intrasite communication equipment, laboratory equipment, insect control equipment, signal systems, callophones, emergency whistles and sirens, fire alarms, and other similar equipment.
10. Railway cars, not includible elsewhere.
11. Refrigerating system, including compressors, pumps, and cooling coils.
12. Station maintenance equipment, including lathes, shapers, planers, drill presses, hydraulic presses, and grinders with motors, shafting, hangers, and pulleys.
13. Ventilating equipment, including items wholly identified with apparatus listed herein.

Note: When any item of equipment, listed herein, is used wholly in connection with equipment included in another account, its cost shall be included in such other account.

336 *Roads, Railroads, and Bridges*

This account shall include the cost of roads, railroads, trails, bridges, and trestles used primarily as production facilities. It also includes those roads necessary to connect the plant with

highway transportation systems, except when such roads are dedicated to public use and maintained by public authorities.

Items

1. Bridges, including foundations, piers, girders, trusses, and flooring.
2. Clearing land.
3. Railroads, including grading, ballast, ties, rails, culverts and hoists.
4. Roads, including grading, surfacing, and culverts.
5. Structures, constructed and maintained in connection with items listed herein.
6. Trails, including grading, surfacing, and culverts.
7. Trestles, including foundations, piers, girders, trusses, and flooring.

Note A: Roads intended primarily for connecting employees' houses with the power plant, and roads used primarily in connection with fish and wildlife, and recreation activities, shall not be included herein but in Account 331, Structures and Improvements.

Note B: The cost of temporary roads and bridges necessary during the period of construction but abandoned or dedicated to public use upon completion of the plant, shall not be included herein but shall be charged to the accounts appropriate for the construction.

Other Production

340 *Land and Land Rights*

This account shall include the cost of land and lands rights used in connection with other power generation. (See §1767.16(g).)

341 *Structures and Improvements*

This account shall include the cost in place of structures and improvements used in connection with other power generation. (See §1767.16(h).)

342 *Fuel Holders, Producers, and Accessories*

This account shall include the cost installed of fuel handling and storage equipment used between the point of fuel delivery to the station and the intake pipe through which fuel is directly drawn to the engine, also the cost of gas producers and accessories devoted to the production of gas for use in prime movers driving main electric generators.

Items

1. Blower and fans.
2. Boilers and pumps.
3. Economizers.
4. Exhauster outfits.
5. Flues and piping.
6. Pipe system.
7. Producers.
8. Regenerators.
9. Scrubbers.
10. Steam injectors.
11. Tanks for storage of oil and gasoline.
12. Vaporizers.

343 *Prime Movers*

This account shall include the cost installed of Diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries.

Items

1. Air-filtering system.
2. Belting, shafting, pulleys, and reduction gearing.
3. Cooling system, including towers, pumps, tanks, and piping.
4. Cranes and hoists, including items wholly identified with apparatus listed herein.
5. Engines, Diesel, gasoline, gas, or other internal combustion.
6. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.
7. Governors.
8. Ignition system.
9. Inlet valve.
10. Lighting systems.
11. Lubricating systems, including filters, tanks, pumps, and piping.
12. Mechanical meters, including gauges, recording instruments, sampling, and testing equipment.
13. Mufflers.
14. Piping.
15. Starting systems, compressed air, or other, including compressors and drives, tanks, piping, motors, boards and connections, and storage tanks.
16. Steelwork, specially constructed for apparatus listed herein.
17. Waste heat boilers and antifluctuators.

344 *Generators*

This account shall include the cost installed of Diesel or other power driven main generators.

Items

1. Cranes and hoists, including items wholly identified with such apparatus.
2. Fire-extinguishing equipment.
3. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
4. Generator cooling system, including air cooling and washing apparatus, air fans and accessories, and air ducts.
5. Generators—main, a.c. or d.c., including field rheostats and connections for self-excited units and excitation system when identified with the generating unit.
6. Lighting systems.
7. Lubricating system, including tanks, filters, strainers, pumps, piping, and coolers.
8. Mechanical meters and recording instruments.
9. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.

Note: If prime movers and generators are so integrated that it is not practical to classify them separately, the entire unit may be included in Account 344, Generators.

345 *Accessory Electric Equipment*

This account shall include the cost installed of auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Such motors shall be included in the account in which the equipment with which it is associated is included.

Items

1. Auxiliary generators, including boards, compartments, switching equipment, control equipment, and connections to auxiliary power bus.
2. Excitation system, including motor, turbine and dual-drive exciter sets and rheostats, storage batteries and charging equipment, circuit breakers, panels and accessories, knife switches and accessories, surge arresters, instrument shunts, conductors and conduit, special supports for conduit, generator field and exciter switch panels, exciter bus tie panels, generator and exciter rheostats and special housings and protective screens.
3. Generator main connections, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, current transformers, potential transformers, protective relays, isolated panels and equipment, conductors and conduit, special supports for generator main leads, grounding switch, and special housing and protective screens.
4. Station control system, including station switchboards with panel wiring, panels with instruments and control equipment only, panels with switching equipment mounted or mechanically connected, trunk-type boards complete, cubicles, station supervisory control boards, generator and exciter signal stands, temperature-recording devices, frequency control equipment, master clocks, watt-hour meter, station totalizing wattmeter, storage batteries, panels and charging sets, instrument transformers for supervisory metering, conductors and conduit, special

supports for conduit, switchboards, batteries, special housing for batteries, protective screens, and doors.

5. Station buses, including main, auxiliary, transfer, synchronizing and fault ground buses, including oil circuit breakers and accessories, disconnecting switches and accessories, operating mechanisms and interlocks, reactors and accessories, voltage regulators and accessories, compensators, resistors, starting transformers, current transformers, potential transformers, protective relays, storage batteries and charging equipment, isolated panels and equipment, conductors and conduit, special supports, special housings, concrete pads, general station ground system, special fire-extinguishing system, and test equipment.

Note A: Do not include in this account transformers and other equipment used for changing the voltage or frequency of electric energy for the purpose of transmission or distribution.

Note B: When any item of equipment listed herein is used wholly to furnish power to equipment included in another account, its cost shall be included in such other account.

346 *Miscellaneous Power Plant Equipment*

This account shall include the cost installed of miscellaneous equipment in and about the other power generating plant, devoted to general station use, and not properly includible in any of the foregoing other power production accounts.

Items

1. Compressed air and vacuum cleaning systems, including tanks, compressors, exhausters, air filters, and piping.
2. Cranes and hoisting equipment, including cranes, cars, crane rails, monorails, and hoists with electric and mechanical connections.
3. Fire-extinguishing equipment for general station use.
4. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
5. Miscellaneous equipment, including atmospheric and weather indicating devices, intrasite communication equipment, laboratory equipment, signal systems, callophones, emergency whistles and sirens, fire alarms, and other similar equipment.
6. Miscellaneous belts, pulleys, and countershafts.
7. Refrigerating systems including compressors, pumps, and cooling coils.
8. Station maintenance equipment, including lathes, shapers, planters, drill presses, hydraulic presses, and grinders with motors, shafting, hangers, or pulleys.
9. Ventilating equipment, including items wholly identified with apparatus listed herein.

Note: When any item of equipment, listed herein is used wholly in connection with equipment included in another account, its cost shall be included in such other account.

Transmission Plant

350 *Land and Land Rights*

This account shall include the cost of land and land rights used in connection with transmission operations. (See § 1767.16(g).)

351 [Reserved]

352 *Structures and Improvements*

This account shall include the cost, in place, of structures and improvements used in connection with transmission operations. (See § 1767.16(h).)

353 *Station Equipment*

This account shall include the cost installed of transforming, conversion, and switching equipment used for the purpose of changing the characteristics of electricity in connection with its transmission or for controlling transmission circuits.

Items

1. Bus compartments, concrete, brick, and sectional steel, including items permanently attached thereto.
2. Conduit, including concrete and iron duct runs not a part of a building.
3. Control equipment, including batteries, battery charging equipment, transformers, remote relay boards, and connections.
4. Conversion equipment, including transformers, indoor and outdoor, frequency changers, motor generator sets, rectifiers, synchronous converters, motors, cooling equipment, and associated connections.
5. Fences.
6. Fixed and synchronous condensers, including transformers, switching equipment, blowers, motors and connections.
7. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
8. General station equipment, including air compressors, motors, hoists, cranes, test equipment, and ventilating equipment.
9. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.
10. Primary and secondary voltage connections, including bus runs and supports, insulators, potheads, lighting arresters, cable and wire runs from and to outdoor connections or to manholes and the associated regulators, reactors, resistors, surge arresters, and accessory equipment.
11. Switchboards, including meters, relays, and control wiring.
12. Switching equipment, indoor and outdoor, including oil circuit breakers and operating mechanisms, truck switches, and disconnect switches.
13. Tools and appliances.

354 *Towers and Fixtures*

This account shall include the cost installed of towers and appurtenant fixtures used for supporting overhead transmission conductors.

Items

1. Anchors, guys, and braces.
2. Brackets.
3. Crossarms, including braces.
4. Excavation, backfill, and disposal of excess excavated material.
5. Foundations.
6. Guards.
7. Insulator pins and suspension bolts.
8. Ladder and steps.
9. Railings.
10. Towers.

355 *Poles and Fixtures*

This account shall include the cost installed of transmission line poles, wood, steel, concrete, or other materials, together with appurtenant fixtures used for supporting overhead transmission conductors.

Items

1. Anchors, head arm and other guys, including guy guards, guy clamps, strain insulators, and pole plates.
2. Brackets.
3. Crossarms and braces.
4. Excavation and backfill, including disposal of excess excavated material.
5. Extension arms.
6. Gaining, roofing, stenciling, and tagging.
7. Insulator pins and suspension belts.
8. Paving.
9. Pole Steps.
10. Poles, wood, steel, concrete, or other material.
11. Racks complete with insulators.
12. Reinforcing and stubbing.
13. Settings.
14. Shaving and painting.

356 *Overhead Conductors and Devices*

This account shall include the cost installed of overhead conductors and devices used for transmission purposes.

Items

1. Circuit breakers.
2. Conductors, including insulated and bare wires and cables.
3. Ground wires and ground clamps.

4. Insulators, including pin, suspension, and other types.
5. Lightning arresters.
6. Switches.
7. Other line devices.

357 *Underground Conduit*

This account shall include the cost installed of underground conduit and tunnels used for housing transmission cables or wires. (see § 1767.16(n).)

Items

1. Conduit, concrete, brick or tile, including iron pipe, fiber pipe, Murray duct, and standpipe on pole or tower.
2. Excavation, including shoring, bracing, bridging, backfill, and disposal of excess excavated material.
3. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.
4. Lighting systems.
5. Manholes, concrete or brick, including iron or steel, frames and covers, hatchways, gratings, ladders, cable racks and hangers, permanently attached to manholes.
6. Municipal inspection.
7. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
8. Permits.
9. Protection of street openings.
10. Removal and relocation of subsurface obstructions.
11. Sewer connections, including drains, traps, tide valves, and check valves.
12. Sumps, including pumps.
13. Ventilating equipment.

358 *Underground Conductors and Devices*

This account shall include the cost installed of underground conductors and devices used for transmission purposes.

Items

1. Armored conductors, buried, including insulators, insulating materials, splices, potheads, and trenching.
2. Armored conductors, submarine, including insulators, insulating materials, splices in terminal chambers, and potheads.
3. Cables in standpipe, including pothead and connection from terminal chamber of manhole to insulators on pole.
4. Circuit breakers.
5. Fireproofing, in connection with any items listed herein.
6. Hollow-core oil-filled cable, including straight or stop joints, pressure tanks, auxiliary air tanks, feeding tanks, terminals, potheads and connections, and ventilating equipment.
7. Lead and fabric covered conductors, including insulators, compound filled, oil filled, or vacuum splices, and potheads.
8. Lightning arresters.
9. Municipal inspection.
10. Permits.
11. Protection of street openings.
12. Racking of cables.
13. Switches.
14. Other line devices.

359 *Road and Trails*

This account shall include the cost of roads, trails, and bridges used primarily as transmission facilities.

Items

1. Bridges, including foundation piers, girders, trusses, and flooring.
2. Clearing land.
3. Roads, including grading, surfacing, and culverts.
4. Structures, constructed and maintained in connection with items included herein.
5. Trails, including grading, surfacing, and culverts.

Note: The cost of temporary roads and bridges necessary during the period of construction but abandoned or dedicated to public use upon completion of the plant, shall be charged to the accounts appropriate for the construction.

Distribution Plant

360 *Land and Land Rights*

This account shall include the cost of land and land rights used in connection with distribution operations. (see § 1767.16 (g).)

Note: Do not include the cost of permits to erect poles, or towers or to trim trees in this account. (See Account 364, Poles, Towers and Fixtures, and Account 365, Overhead Conductors and Devices.)

361 *Structures and Improvements*

This account shall include the cost, in place, of structures and improvements used in connection with distribution operations. (See § 1767.16 (h).)

362 *Station Equipment*

This account shall include the cost installed of station equipment, including transformer banks, which are used for the purpose of changing the characteristics of electricity in connection with its distribution.

Items

1. Bus compartments, concrete, brick and sectional steel, including items permanently attached thereto.
2. Conduit, including concrete and iron duct runs not part of building.
3. Control equipment, including batteries, battery charging equipment, transformers, remote relay boards, and connections.
4. Conversion equipment, indoor and outdoor, frequency changers, motor generator sets, rectifiers, synchronous converters, motors, cooling equipment, and associated connections.
5. Fences.
6. Fixed and synchronous condensers, including transformers, switching equipment, blowers, motors and connections.
7. Foundations and settings, specially constructed for and not expected to outlast the apparatus for which provided.
8. General station equipment, including air compressors, motors, hoists, cranes, test equipment, and ventilating equipment.
9. Platforms, railings, steps, and gratings appurtenant to apparatus listed herein.
10. Primary and secondary voltage connections, including bus runs and supports, insulators, potheads, lightning arresters, cable and wire runs from and to outdoor connections or to manholes and the associated regulators, reactors, resistors, surge arresters, and accessory equipment.
11. Switchboards, including meters, relays, and control wiring.
12. Switching equipment, indoor and outdoor, including oil circuit breakers and operating mechanisms, trust switches, disconnect switches.

Note: The cost of rectifiers, series transformers, and other special station equipment devoted exclusively to street lighting service shall not be included in this account, but in Account 373, Street Lighting and Signal Systems.

363 *Storage Battery Equipment*

This account shall include the cost installed of storage battery equipment used for the purpose of supplying electricity to meet emergency or peak demands.

Items

1. Batteries, including elements, tanks, and tank insulators.
2. Battery room connections, including cable or bus runs and connections.
3. Battery room flooring, when specially laid for supporting batteries.
4. Charging equipment, including motor generator sets and other charging equipment and connections, and cable runs from generator or station bus to battery room connections.
5. Miscellaneous equipment, including instruments, and water stills.
6. Switching equipment, including endcell switches and connections, boards and panels, used exclusively for battery control, not part of general station switchboard.

7. Ventilating equipment, including fans and motors, louvers, and ducts not part of building.

Note: Storage batteries used for control and general station purposes shall not be included in this account but in the account appropriate for their use.

364 *Poles, Towers and Fixtures*

This account shall include the cost installed of poles, towers, and appurtenant fixtures used for supporting overhead distribution conductors and service wires.

Items

1. Anchors, head arm, and other guys, including guy guards, guy clamps, strain insulators, and pole plates.
2. Brackets.
3. Crossarms and braces.
4. Excavation and backfill, including disposal of excess excavated material.
5. Extension arms.
6. Foundations.
7. Guards.
8. Insulator pins and suspension bolts.
9. Paving.
10. Permits for construction.
11. Pole steps and ladders.
12. Poles, wood, steel, concrete, or other material.
13. Racks complete with insulators.
14. Railings.
15. Reinforcing and stubbing.
16. Settings.
17. Shaving, painting, gaining, roofing, stenciling, and tagging.
18. Towers.
19. Transformer racks and platforms.

365 *Overhead Conductors and Devices*

This account shall include the cost installed of overhead conductors and devices used for distribution purposes.

Items

1. Circuit breakers.
2. Conductors, including insulated and bare wires and cables.
3. Ground wires and clamps.
4. Insulators, including pin, suspension, and other types, and tie wire or clamps.
5. Lightning arresters.
6. Railroad and highway crossing guards.
7. Splices.
8. Switches.
9. Tree trimming, initial cost including the cost of permits therefor.
10. Other line devices.
11. Oil circuit reclosers (OCR).
12. Sectionalizers.
13. Labor costs for installation of OCRs and Sectionalizers, first only.

Note. The cost of conductors used solely for street lighting or signal systems shall not be included in this account but in Account 373, Street Lighting and Signal Systems.

366 *Underground Conduit*

This account shall include the cost installed of underground conduit and tunnels used for housing distribution cables or wires.

Items

1. Conduit, concrete, brick and tile, including iron pipe, fiber pipe, Murray duct, and standpipe on pole or tower.
2. Excavation, including shoring, bracing, bridging, backfill, and disposal of excess excavated material.
3. Foundations and settings specially constructed for and not expected to outlast the apparatus for which constructed.
4. Lighting systems.
5. Manholes, concrete or brick, including iron or steel frames and covers, hatchways, gratings, ladders, cable racks, and hangers permanently attached to manholes.
6. Municipal inspection.
7. Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks.
8. Permits.
9. Protection of street openings.
10. Removal and relocation of subsurface obstructions.
11. Sewer connections, including drains, traps, tide valves, and check valves.
12. Sumps, including pumps.
13. Ventilating equipment.

Note. The cost of underground conduit used solely for street lighting or signal systems shall be included in Account 373, Street Lighting and Signal Systems.

367 *Underground Conductors and Devices*

This account shall include the cost installed of underground conductors and devices used for distribution purposes.

Items

1. Armored conductors, buried, including insulators, insulating materials, splices, potheads, and trenching.
2. Armored conductors, submarine, including insulators, insulating materials, splices in terminal chamber, and potheads.
3. Cables in standpipe, including pothead and connection from terminal chamber or manhole to insulators on pole.
4. Circuit breakers.
5. Fireproofing, in connection with any items listed herein.
6. Hollow-core oil-filled cable, including straight or stop joints, pressure tanks, auxiliary air tanks, feeding tanks, terminals, potheads and connections.
7. Lead and fabric covered conductors, including insulators, compound-filled, oil-filled or vacuum splices, and potheads.
8. Lightning arresters.
9. Municipal inspection.
10. Permits.
11. Protection of street openings.
12. Racking of cables.
13. Switches.
14. Other line devices.

Note. The cost of underground conductors and devices used solely for street lighting or signal systems shall be included in Account 373, Street Lighting and Signal Systems.

368 *Line Transformers*

A. This account shall include the cost installed of overhead and underground distribution line transformers and pole-type and underground voltage regulators owned by the utility, for use in transforming electricity to the voltage at which it is to be used by the customer, whether actually in service or held in reserve.

B. When a transformer is permanently retired from service, the original installed cost thereof shall be credited to this account.

C. The records covering line transformers shall be so kept that the utility can furnish the number of transformers of various capacities in service and those in reserve, and the location and the use of each transfer.

Items

1. Installation, labor of (first installation only).
2. Transformer cut-out boxes.
3. Transformer lightning arresters.
4. Transformers, line and network.
5. Capacitors.
6. Network protectors.
7. Voltage regulators.

Note. The cost of removing and resetting line transformers shall not be charged to this account but to Account 583, Overhead Line Expenses, or Account 584, Underground Line Expenses, as appropriate. The cost of line transformers used solely for street lighting or signal systems shall be included in Account 373, Street Lighting and Signal Systems.

369 *Services*

This account shall include the cost installed of overhead and underground conductors leading from a point where wires leave the last pole of the overhead system or the distribution box or manhole, or the top of the pole of the distribution line, to the point of connection with the customer's outlet or wiring. Conduit used for underground service conductors shall be included herein.

Items

1. Brackets.
2. Cables and wires.

3. Conduit.
4. Insulators.
5. Municipal inspection.
6. Overhead to underground, including conduit or standpipe and conductor from last splice on pole to connection with customer's wiring.
7. Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks.
8. Permits.
9. Protection of street openings.
10. Service switch.
11. Suspension wire.

370 *Meters*

A. This account shall include the cost installed of meters or devices and appurtenances thereto, for use in measuring the electricity delivered to its users, whether actually in service or held in reserve.

B. When a meter is permanently retired from service, the installed cost included herein shall be credited to this account.

C. The records covering meters shall be so kept that the utility can furnish information as to the number of meters of various capacities in service and in reserve as well as the location of each meter owned.

Items

1. Alternate current, watt-hour meters.
2. Current limiting devices.
3. Demand indicators.
4. Demand meters.
5. Direct current watt-hour meters.
6. Graphic demand meters.
7. Installation, labor of (first installation only).
8. Instrument transformers.
9. Maximum demand meters.
10. Meter badges and their attachments.
11. Meter boards and boxes.
12. Meter fittings, connections, and shelves (first set).
13. Meter switches and cut-outs.
14. Prepayment meters.
15. Protective devices.
16. Testing new meters.

Note A: This account shall not include meters for recording output of a generating station, or substation meters. It includes only those meters used to record energy delivered to customers.

Note B: The cost of removing and resetting meters shall be charged to Account 586, Meter Expenses.

371 *Installations on Customers' Premises*

This account shall include the cost installed of equipment on the customer's side of a meter when the utility incurs such cost and when the utility retains title to and assume full responsibility for maintenance and replacement of such property. This account shall not include leased equipment. (See Account 372, Leased Property on Customers' Premises.)

Items

1. Cable vaults.
2. Commercial lamp equipment.
3. Foundations and settings specially provided for equipment included herein.
4. Frequency changer sets.
5. Motor generator sets.
6. Motors.
7. Switchboard panels, high or low tension.
8. Wire and cable connections to incoming cables.

Note: Do not include in this account any costs incurred in connection with merchandising, jobbing, or contracting work activities.

372 *Leased Property on Customers' Premises*

This account shall include the cost of electric motors, transformers, and other equipment on customers' premises (including municipal corporations), leased or loaned to customers, but not including property held for sale.

Note A: The cost of setting and connecting such appliances or equipment on the premises of customers and the cost of resetting or removal shall not be charged to this account but to operating expenses, Account 587, Customer Installations Expenses.

Note B: Do not include in this account any costs incurred in connection with merchandising, jobbing, or contract work activities..

373 *Street Lighting and Signal Systems*

This account shall include the cost installed of the equipment used wholly for public street and highway lighting or traffic, fire alarm, police, and other signal systems.

Items

1. Armored conductors, buried or submarine, including insulators, insulating materials, splices, and trenching.
2. Automatic control equipment.
3. Conductors, overhead or underground, including lead or fabric covered, parkway cables, including splices, and insulators.
4. Lamps, arc, incandescent, or other types, including glassware, suspension fixtures, and brackets.
5. Municipal inspection.
6. Ornamental lamp posts.
7. Pavement disturbed, including cutting and replacing pavement, pavement base, and sidewalks.
8. Permits.
9. Posts and standards.
10. Protection of street openings.
11. Relays or time clocks.
12. Series contactors.
13. Switches.
14. Transformers, pole or underground.

General Plant

389 *Land and Land Rights*

This account shall include the cost of land and land rights used for utility purposes, the cost of which is not properly includible in other land and land rights accounts. (See § 1767.16(g).)

390 *Structures and Improvements*

This account shall include the cost, in place, of structures and improvements used for utility purposes, the cost of which is not properly includible in other structures and improvements accounts. (See § 1767.16(h).)

391 *Office Furniture and Equipment*

This account shall include the cost of office furniture and equipment owned by the utility and devoted to utility service, and not permanently attached to buildings, except the cost of such furniture and equipment which the utility elects to assign to other plant accounts on a functional basis.

Items

1. Bookcases and shelves.
2. Desks, chairs, and desk equipment.
3. Drafting-room equipment.
4. Filing, storage, and other cabinets.
5. Floor covering.
6. Library and library equipment.
7. Mechanical office equipment, such as accounting machines, and typewriters.
8. Safes.
9. Tables.

392 *Transportation Equipment*

This account shall include the cost of transportation vehicles used for utility purposes.

Items

1. Airplanes.
2. Automobiles.
3. Bicycles.
4. Electrical vehicles.
5. Motor trucks.
6. Motorcycles.
7. Repair cars or trucks.
8. Tractors and trailers.
9. Other transportation vehicles.

393 *Stores Equipment*

This account shall include the cost of equipment used for the receiving, shipping, handling, and storage of materials and supplies.

Items

1. Chain falls.
2. Counters.
3. Cranes (portable).

4. Elevating and stacking equipment (portable).
5. Hoists.
6. Lockers.
7. Scales.
8. Shelving.
9. Storage bins.
10. Trucks, hand and power driven.
11. Wheelbarrows.

394 *Tools, Shop and Garage Equipment*

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or includible in other accounts.

Items

1. Air compressors.
2. Anvils.
3. Automobile repair shop equipment.
4. Battery charging equipment.
5. Belts, shafts and countershafts.
6. Boilers.
7. Cable pulling equipment.
8. Concrete mixers.
9. Drill presses.
10. Derricks.
11. Electric equipment.
12. Engines.
13. Forges.
14. Furnaces.
15. Foundations and settings specially constructed for and not expected to outlast the equipment for which provided.
16. Gas producers.
17. Gasoline pumps, oil pumps, and storage tanks.
18. Greasing tools and equipment.
19. Hoists.
20. Ladders.
21. Lathes.
22. Machine tools.
23. Motor-driven tools.
24. Motors.
25. Pipe threading and cutting tools.
26. Pneumatic tools.
27. Pumps.
28. Riveters.
29. Smithing equipment.
30. Tool racks.
31. Vises.
32. Welding apparatus.
33. Work benches.

395 *Laboratory Equipment*

This account shall include the cost installed of laboratory equipment used for general laboratory purposes and not specifically provided for or includible in other departmental or functional plant accounts.

Items

1. Ammeters.
2. Current batteries.
3. Frequency changers.
4. Galvanometers.
5. Inductometers.
6. Laboratory standard millivolt meters.
7. Laboratory standard volt meters.
8. Meter-testing equipment.
9. Millivolt meters.
10. Motor generator sets.
11. Panels.
12. Phantom loads.
13. Portable graphic ammeters, voltmeters, and wattmeters.
14. Portable loading devices.
15. Potential batteries.
16. Potentiometers.
17. Rotating standards.
18. Standard cell, reactance, resistor, and shunt.
19. Switchboards.
20. Synchronous timers.
21. Testing panels.
22. Testing resistors.
23. Transformers.
24. Voltmeters.
25. Other testing, laboratory, or research equipment not provided for elsewhere.

396 *Power Operated Equipment*

This account shall include the cost of power operated equipment used in construction or repair work exclusive of equipment includible in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted.

Items

1. Air compressors, including driving unit and vehicle.
2. Back filling machines.
3. Boring machines.
4. Bulldozers.
5. Cranes and hoists.
6. Diggers.
7. Engines.
8. Pile drivers.
9. Pipe cleaning machines.
10. Pipe coating or wrapping machines.
11. Tractors—Crawler type.
12. Trenchers.
13. Other power operated equipment.

Note: It is intended that this account include only such large units as are generally self-propelled or mounted on movable equipment.

397 *Communication Equipment*

This account shall include the cost installed of telephone, telegraph, and wireless equipment for general use in connection with utility operations.

Items

1. Antennae.
2. Booths.
3. Cables.
4. Distributing boards.
5. Extension cords.
6. Gongs.
7. Hand sets, manual and dial.
8. Insulators.
9. Intercommunicating sets.
10. Loading coils.
11. Operators' desks.
12. Poles and fixtures used wholly for telephone or telegraph wire.
13. Radio transmitting and receiving sets.
14. Remote control equipment and lines.
15. Sending keys.
16. Storage batteries.
17. Switchboards.
18. Telautograph circuit connections.
19. Telegraph receiving sets.
20. Telephone and telegraph circuits.
21. Testing instruments.
22. Towers.
23. Underground conduit used wholly for telephone or telegraph wires and cable wires.

398 *Miscellaneous Equipment*

This account shall include the cost of equipment, and apparatus used in the utility operations, which is not includible in other accounts.

Items

1. Hospital and infirmary equipment.
2. Kitchen equipment.
3. Employees' recreation equipment.
4. Radios.
5. Restaurant equipment.
6. Soda fountains.
7. Operators' cottage furnishings.
8. Other miscellaneous equipment.

Note: Miscellaneous equipment of the nature indicated above wherever practicable, shall be included in the utility plant accounts on a functional basis.

399 *Other Tangible Property*

This account shall include the cost of tangible utility plant not provided for elsewhere.

Utility Operating Income

400 *Operating Revenues*

There shall be shown under this caption the total amount included in the electric operating revenue accounts provided herein.

401 *Operation Expense*

There shall be shown under this caption the total amount included in the electric operation expense accounts provided herein. (See note to § 1767.17(c).)

402 *Maintenance Expense*

There shall be shown under this caption the total amount included in the electric maintenance expense accounts provided herein.

403 *Depreciation Expense*

A. This account shall include the amount of depreciation expense for all classes of depreciable electric plant in service except such depreciation expense as is chargeable to clearing accounts or to Account 416, Costs and Expenses of Merchandising, Jobbing and Contract Work.

B. The utility shall keep such records of property and property retirements as will reflect the service life of property which has been retired and aid in estimating probable service life by mortality, turnover, or other appropriate methods; and also such records as will reflect the percentage of salvage and costs of removal for property retired from each account, or subdivision thereof, for depreciable electric plant.

Note A: Depreciation expense applicable to property included in Account 104, Electric Plant Leased to Others, shall be charged to Account 413, Expenses of Electric Plant Leased to others.

Note B: Depreciation expenses applicable to transportation equipment, shop equipment, tools, work equipment, power operated equipment, and other general equipment may be charged to clearing accounts as necessary in order to obtain a proper distribution of expenses between construction and operation.

Note C: Depreciation expense applicable to transportation equipment used for transportation of fuel from the point of acquisition to the unloading point shall be charged to Account 151, Fuel Stock.

C. Account 403 shall be subaccounted as follows:

403.1 Depreciation Expense—Steam Production Plant
403.2 Depreciation Expense—Nuclear Production Plant
403.3 Depreciation Expense—Hydraulic Production Plant
403.4 Depreciation Expense—Other Production Plant
403.5 Depreciation Expense—Transmission Plant
403.6 Depreciation Expense—Distribution Plant
403.7 Depreciation Expense—General Plant

404 *Amortization of Limited-Term Electric Plant*

This account shall include amortization charges applicable to amounts included in the electric plant accounts for limited-term franchises, licenses, patent rights, limited-term interests in land, and expenditures on leased property where the service life of the improvements is terminable by action of the lease. The charges to this account shall be such as to distribute the book cost of each investment as evenly as may be over the period of its benefit to the utility. (See Account 111, Accumulated Provision for Amortization of Electric Utility Plant.)

405 *Amortization of Other Electric Plant*

A. When authorized by REA, this account shall include charges for amortization of intangible or other electric utility plant which does not have a definite or terminable life and which is not subject to charges for depreciation expense.

B. This account shall be supported in such detail as to show the amortization applicable to each investment being amortized, together with the book cost of the investment and the period over which it is being written off.

406 *Amortization of Electric Plant Acquisition Adjustments*

This account shall be debited or credited, as appropriate, with amounts includible in operating expenses, pursuant to approval or order of REA, for the purpose of providing for the extinguishment of the amount in Account 114, Electric Plant Acquisition Adjustments.

407 *Amortization of Property Losses, Unrecovered Plant and Recovery Study Costs*

This account shall be charged with amounts credited to Account 182.1, Extraordinary Property Losses, when REA has authorized the amount in the latter account to be amortized by charges to electric operations.

408 *Taxes Other Than Income Taxes*

A. This account shall include the amounts of ad valorem, gross revenue, or gross receipts taxes, state unemployment insurance, franchise taxes, Federal excise taxes, social security taxes, and all other taxes assessed by Federal, state, county, municipal, or other local governmental authorities, except income taxes.

B. These accounts shall be charged in each accounting period with the amounts of taxes which are applicable thereto, with concurrent credits to Account 236, Taxes Accrued, or Account 165, Prepayments, as appropriate. When it is not possible to determine the exact amounts of taxes, the amounts shall be estimated and adjustments made in current accruals as the actual tax levies become known.

C. The charges to these accounts shall be made or supported so as to show the amount of each tax and the basis upon which each charge is made. In the case of a utility rendering more than one utility service, taxes of the kind includible in these accounts shall be assigned directly to the utility department the operation of which gave rise to the tax, in sofar as practicable. Where the tax is not attributable to a specific utility department, it shall be distributed among the utility departments or nonutility operations on an equitable basis after appropriate study to determine such basis.

Note A: Special assessments for street and similar improvements shall be included in the appropriate utility plant or nonutility property account.

Note B: Taxes specifically applicable to construction shall be included in the cost of construction.

Note C: Gasoline and other sales taxes shall be charged as far as practicable to the same account as the materials on which the tax is levied.

Note D: Social security and other forms of payroll taxes shall be distributed to utility departments and to nonutility functions on a basis related to payroll. Amounts applicable to construction shall be charged to the appropriate plant account.

Note E: Interest on tax refunds or deficiencies shall not be included in these accounts but in Account 419, Interest and Dividend Income, or Account 431, Other Interest Expense, as appropriate.

D. Account 408 shall be subaccounted as follows:

408.1 Taxes—Property
408.2 Taxes—U.S. Social Security—Unemployment
408.3 Taxes—U.S. Social Security—F.I.C.A.
408.4 Taxes—State Social Security—Unemployment
408.5 Taxes—State Sales—Consumers
408.6 Taxes—Gross Revenue or Gross Receipts Tax
408.7 Taxes—Other

409 [Reserved]

Special Instructions

Accounts 409.1, 409.2, and 409.3

A. These accounts shall include the amount of local, state, and Federal income taxes on income properly accruable during the period covered by the income statement to meet the actual liability for such taxes. Concurrent credits for the tax accruals shall be made to Account 236, Taxes Accrued, and as the exact amounts of taxes become known, the current tax accruals shall be adjusted by charges or credits to these accounts.

B. The accruals for income taxes shall be apportioned among utility departments and to Other Income and Deductions so that, as nearly as practicable, each tax shall be included in the expenses of the utility department or Other Income and Deductions, the income from which gave rise to the tax. The tax effects relating to interest charges shall be allocated between utility and nonutility operations. The basis for this allocation shall be the ratio of net investment in utility plant to net investment in nonutility plant.

Note A: Taxes assumed by the utility on interest shall be charged to Account 431, Other Interest Expenses.

Note B: Interest on tax refunds or deficiencies shall not be included in these accounts but in Account 419, Interest and Dividend Income, or Account 431, Other Interest Expense, as appropriate.

409.1 *Income Taxes, Utility Operating Income*

This account shall include the amount of those local, state, and Federal income taxes which relate to utility operating income. This account shall be maintained so as to allow ready identification of tax effects (both positive and negative relating to Utility Operating Income (by department), Utility Plant Leased to Others, and Other Utility Operating Income.

409.2 *Income Taxes, Other Income and Deductions*

This account shall include the amount of those local, state, and Federal income taxes (both positive and negative), which relate to Other Income and Deductions.

409.3 *Income Taxes, Extraordinary Items*

This account shall include the amount of those local, state, and Federal income taxes (both positive and negative), which relate to Extraordinary Items.

410 [Reserved]

Special Instructions

Accounts 410.1, 410.2, 411.1, and 411.2

A. Accounts 410.1 and 410.2 shall be debited, and Accumulated Deferred Income Taxes, shall be credited, with amounts equal to any current deferrals of taxes on income at any allocations of deferred taxes originating in prior periods, as provided by the texts of Accounts 190, 281, 282, and 283. There shall not be netted against entries required to be made to these accounts any credit amounts appropriately includible in Account 411.1 or Account 411.2.

B. Accounts 411.1 or 411.2 shall be credited, and Accumulated Deferred Income Taxes, shall be debited, with amounts equal to any allocations of deferred taxes originating in prior periods or any current deferrals of taxes on income, as provided by the texts of Accounts 190, 281, 282, and 283. There shall not be netted against entries required to be made to these accounts any debit amounts appropriately includible in Account 410.1 or Account 410.2.

410.1 *Provision for Deferred Income Taxes, Utility Operating Income*

This account shall include the amounts of those deferrals of taxes and allocations of deferred taxes which relate to Utility Operating Income (by department).

410.2 *Provision for Deferred Income Taxes, Other Income and Deductions*

This account shall include the amounts of those deferrals of taxes and allocations of deferred taxes which relate to Other Income and Deductions.

411 [Reserved]

411.1 *Provision for Deferred Income Taxes—Credit, Utility Operating Income*

This account shall include the amounts of those allocations of deferred taxes and deferrals of taxes, credit, which relate to Utility Operating Income (by department).

411.2 *Provision for Deferred Income Taxes—Credit, Other Income and Deductions*

This account shall include the amounts of those allocations of deferred taxes and deferrals of taxes, credit, which relate to Other Income and Deductions

411.3 [Reserved]

Special Instructions

Accounts 411.4 and 411.5

A. Account 411.4 shall be debited with the amounts of investment tax credits related to electric utility property that are credited to Account 255, Accumulated Deferred Investment Tax Credits, by companies which do not apply the entire amount of the benefits of the investment credit as a reduction of the overall income tax expense in the year in which such credit is realized. (See Account 255).

B. Account 411.4 shall be credited with the amounts debited to Account 255 for proportionate amounts of tax credit deferrals allocated over the average useful life of electric utility property to which the tax credits relate or such lesser period of time as may be adopted and consistently followed by the company.

C. Account 411.5 shall be debited and credited as directed in paragraphs A and B, for investment tax credits related to nonutility property.

411.4 *Investment Tax Credit Adjustments, Utility Operations*

This account shall include the amount of those investment tax credit adjustments related to property used in Utility Operations (by department).

411.5 *Investment Tax Credit Adjustments, Nonutility Operations*

This account shall include the amount of those investment tax credit adjustments related to property used in Nonutility Operations.

411.6 *Gains from Disposition of Utility Plant*

This account shall include, as approved by REA, amounts relating to gains from the disposition of future use utility plant including amounts which were previously recorded in and transferred from Account 105, Electric Plant Held for Future Use, under the Provisions of Paragraphs B, C, and D thereof. Income taxes relating to gains recorded in this account shall be recorded in Account 409.1, Income Taxes, Utility Operating Income.

411.7 *Losses from Disposition of Utility Plant*

This account shall include, as approved by REA, amounts relating to losses from the disposition of future use utility plant including amounts which were previously recorded in and transferred from Account 105, Electric Plant Held for Future Use, under the provisions of Paragraphs B, C, and D thereof. Income taxes relating to losses recorded in this account shall be recorded in Account 409.1, Income Taxes, Utility Operating Income.

412 *Revenues from Electric Plant Leased to Others*

This account shall include revenues from electric property constituting a distinct operating unit or system leased by the utility to others, and which property is properly includible in Account 104, Electric Plant Leased to Others.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.1, Income Taxes, Utility Operating Income, as appropriate.

413 *Expenses of Electric Plant Leased to Others*

A. This account shall include expenses from electric property constituting a distinct operating unit or system leased by the utility to others, and which property is properly includible in Account 104, Electric Plant Leased to Others.

B. The detail of expenses shall be kept or supported so as to show separately the following:

1. Operation.
2. Maintenance.
3. Depreciation.
4. Amortization.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.1, Income Taxes, Utility Operating Income, as appropriate.

414 *Other Utility Operating Income*

A. This account shall include the revenues received and expenses

incurred in connection with the operations of utility plant, the book cost of which is included in Account 118, Other Utility Plant.

B. The expenses shall include every element of cost incurred in such operations, including depreciation, rents, and insurance.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.1, Income Taxes, Utility Operating Income, as appropriate.

Other Income and Deductions

415 *Revenues from Merchandising, Jobbing and Contract Work*

A. This account shall include all revenues derived from the sale of merchandise and jobbing or contract work, including any profit or commission accruing to the utility on jobbing work performed by it as agent under contracts whereby it does jobbing work for another for a stipulated profit or commission. Interest related income from installment sales shall be recorded in Account 419, Interest and Dividend Income.

B. Records in support of this account shall be so kept as to permit ready summarization of revenues by such major items as are feasible.

Note: The classification of revenues of merchandising, jobbing, and contract work as nonoperating, and thus included in this account, is for accounting purposes. It does not preclude consideration of justification to the contrary for ratemaking or other purposes.

Items

1. Revenues from sale of merchandise and from jobbing and contract work.

2. Discounts and allowances made in settlement of bills for merchandise and jobbing work.

416 *Costs and Expenses of Merchandising, Jobbing and Contract Work*

A. This account shall include all expenses derived from the sale of merchandise and jobbing or contract work.

B. Records in support of this account shall be so kept as to permit ready summarization of costs and expenses by such major items as are feasible.

Note: The classification of costs and expenses of merchandising, jobbing, and contract work as nonoperating, and thus included in this account, is for accounting purposes. It does not preclude consideration of justification to the contrary for ratemaking or other purposes.

Items

Labor:

1. Canvassing and demonstrating appliances in homes and other places for the purpose of selling appliances.

2. Demonstrating and selling activities in sales rooms.

3. Installing appliances on customer premises where such work is done only for purchasers of appliances from the utility.

4. Installing wire, piping, or other property work, on a jobbing or contract basis.

5. Preparing and advertising materials for appliance sales purposes.

6. Receiving and handling customer orders for merchandise or for jobbing services.

7. Cleaning and tidying sales rooms.

8. Maintaining display counters and other equipment used in merchandising.

9. Arranging merchandise in sales rooms and decorating display windows.

10. Reconditioning repossessed appliances.

11. Bookkeeping and other clerical work in connection with merchandise and jobbing activities.

12. Supervising merchandise and jobbing operations.

13. Advertising in newspapers, periodicals, radio, and television.

14. Cost of merchandise sold and of materials used in jobbing work.

15. Stores expenses on merchandise and jobbing stocks.

16. Fees and expenses of advertising and commercial artists' agencies.

17. Printing booklets, dodgers, and other advertising data.

18. Premiums given as inducement to buy appliances.

19. Light, heat, and power.

20. Depreciation on equipment used primarily for merchandise and jobbing operations.

21. Rent of sales rooms or of equipment.

22. Transportation expense in delivery and pick-up of appliances by utility's facilities or by others.

23. Stationery and office supplies and expenses.

24. Losses from uncollectible merchandise and jobbing accounts.

417 *Revenues from Nonutility Operations*

This account shall include revenues applicable to operations which are nonutility in character but nevertheless constitute a distinct operating activity of the enterprise as a whole, such as the operation of an ice department where applicable statutes do not define such operation as a utility, or the operation of a servicing organization for furnishing supervision, management, engineering, and similar services to others.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.2, Income Taxes, Other Income and Deductions, as appropriate.

417.1 *Expenses of Nonutility Operations*

A. This account shall include expenses applicable to operations which are nonutility in character but nevertheless constitute a distinct operating activity of the enterprise as a whole, such as the operation of an ice department where applicable statutes do not define such operation as a utility, or the operation of a servicing organization for furnishing supervision, management, engineering, and similar services to others.

B. The expenses shall include all elements of costs incurred in such operations, and the accounts shall be maintained so as to permit ready summarization as follows:

1. Operation.
2. Maintenance.
3. Rents.
4. Depreciation.
5. Amortization.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.2, Income Taxes, Other Income and Deductions, as appropriate.

418 *Nonoperating Rental Income*

A. This account shall include all rent revenues and related expenses of land, buildings, or other property included in Account 121, Nonutility Property, which is not used in operations covered by Account 417 or Account 417.1

B. The expenses shall include all elements of costs incurred in the ownership and rental of property and the accounts shall be maintained so as to permit ready summarization as follows.

1. Operation.
2. Maintenance.
3. Rents.
4. Depreciation.
5. Amortization.

Note: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.2, Income Taxes, Other Income and Deductions, as appropriate.

418.1 *Equity in Earnings of Subsidiary Companies*

This account shall include the utility's equity in the earnings or losses of subsidiary companies for the year.

419 *Interest and Dividend Income*

A. This account shall include interest revenues on securities, loans, notes, advances, special deposits, tax refunds, and all other interest-bearing assets, and dividends on stocks of other companies, whether the securities on

which the interest and dividends are received are carried as investments or included in sinking or other special fund accounts.

Note A: Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.2, Income Taxes, Other Income and Deductions, as appropriate.

Note B: Interest accrued, the payment of which is not reasonably assured, dividends receivable which have not been declared or guaranteed, and interest or dividends upon reacquired securities issued or assumed by the utility shall not be credited to this account.

419.1 *Allowance for Funds Used During Construction*

This account shall include concurrent credits for allowance for funds other than borrowed funds used for construction purposes during the period of construction, based upon a reasonable rate. (See § 1767.16(c)(17).)

420 *Investment Tax Credits*

This account shall be credited as follows with investment tax credit amounts not passed on to customers:

1. By amounts equal to debits to Account 411.4, Investment Tax Credit Adjustments, Utility Operations, and Account 411.5, Investment Tax Credit Adjustments, Nonutility Operations, for investment tax credits used in calculating income taxes for the year when the company's accounting provides for non-deferral of all or a portion of such credits.

2. By amounts equal to debits to Account 255, Accumulated Deferred Investment Tax Credits, for proportionate amounts of tax credit deferrals allocated over the average useful life of the property to which the tax credits relate, or such lesser period of time as may be adopted and consistently used by the company.

421 *Miscellaneous Nonoperating Income*

This income shall include all revenue and expense items, except taxes properly includible in the income account, not provided for elsewhere. Related taxes shall be recorded in Account 408, Taxes Other Than Income Taxes, or Account 409.2, Income Taxes, Other Income and Deductions, as appropriate.

Items

1. Profit on sale of timber. (See § 1767.16(g)(3).)

2. Profits from operations of others realized by the utility under contracts.

3. Gains on disposition of investments. Also, gains on reacquisition and resale or retirement of the utility's debt securities when the gain is not amortized or used by a jurisdictional regulatory agency to reduce embedded debt cost in establishing rates. (See § 1767.15, (q).)

421.1 *Gain on Disposition of Property*

This account shall be credited with the gain on the sale, conveyance, exchange, or transfer of utility or other property to another. Amounts relating to gains on land and land rights held for future use recorded in Account 105, Electric Plant Held for Future Use, will be accounted for as prescribed in Paragraphs B, C, and D thereof. (See § 1767.16(e)(6), (g)(5), and (j)(5).) Income taxes on gains recorded in this account shall be recorded in Account 409.2, Income Taxes, Other Income and Deductions.

421.2 *Loss on Disposition of Property*

This account shall be charged with the loss on the sale, conveyance, exchange, or transfer of utility or other property to another. Amounts relating to losses on land and land rights held for future use recorded in Account 105, Electric Plant Held for Future Use, will be accounted for as prescribed in Paragraphs B, C, and D thereof. (See §1767.16 (e)(6), (g)(5), and (j)(5).) The reduction in income taxes relating to losses recorded in this account shall be recorded in Account 409.2, Income Taxes, Other Income and Deductions.

422 *Nonoperating Taxes*

This account shall be charged with taxes relating to nonoperating income.

423 *Generation and Transmission Cooperative Capital Credits*

This account shall be credited with the annual capital furnished the power supply cooperative through payment of power bills. The amount of capital furnished the power supply cooperative should be recorded in the applicable year even though, in most cases, the power supplier's notice of the allocation will not have been received until after the close of the year to which it relates.

424 *Other Capital Credits and Patronage Capital Allocations*

This account shall be credited with the capital furnished in connection with patronage of cooperative or mutual-type service organization such as CFC and other financing cooperatives, and insurance, oil product, telephone, and data processing cooperatives. This account should be credited in the year in which the notice of the capital credit or patronage capital allocation is received.

425 *Miscellaneous Amortization*

This account shall include amortization charges not includible in other accounts which are properly deductible in determining the income of the utility before interest charges. Charges includible herein, if significant in amount, must be in accordance with an orderly and systematic amortization program.

Items

1. Amortization of utility plant acquisition adjustments, or of intangibles included in utility plant in service when not authorized to be included in utility operating expenses by REA.

2. Other miscellaneous amortization charges allowed to be included in this account by REA.

426 [Reserved]

Special Instructions

Accounts 426.1, 426.2, 426.3, 426.4, and 426.5

These accounts shall include miscellaneous expense items which are nonoperating in nature but which are properly deductible before determining total income before interest charges.

Note: The classification of expenses as nonoperating and their inclusion in these accounts is for accounting purposes. It does not preclude REA consideration of proof to the contrary for ratemaking or other purposes.

426.1 *Donations*

This account shall include all payments or donations for charitable, social, or community welfare purposes.

426.2 *Life Insurance*

This account shall include all payments for life insurance of officers and employees where the company is the beneficiary (net premiums less the increase in the cash surrender value of policies.)

426.3 *Penalties*

This account shall include payments by the company for penalties or fines for violation of any regulatory statutes by the company or its officials.

426.4 *Expenditures for Certain Civic, Political, and Related Activities*

This account shall include expenditures for the purpose of influencing public opinion with respect to the election or appointment of public officials, referenda, legislation, or ordinances (either with respect to the possible adoption of new referenda, legislation or ordinances or repeal or modification of existing referenda, legislation or ordinances) or approval, modification, or revocation of franchises; or for the purpose of influencing the decisions of public officials, but shall not include such expenditures which are directly related to appearances before regulatory or other governmental bodies in connection

with the reporting utility's existing or proposed operations.

426.5 *Other Deductions*

This account shall include other miscellaneous expenses which are nonoperating in nature, but which are properly deductible before determining total income before interest charges.

Items

1. Loss relating to investments in securities written-off or written-down.
2. Loss on sale of investments.
3. Loss on reacquisition, resale, or retirement of the utility's debt securities, when the loss is not amortized and used by a jurisdictional regulatory agency to increase embedded debt cost in establishing rates. (See § 1767.15(q).)
4. Preliminary survey and investigation expenses related to abandoned projects, when not written-off to the appropriate operating expense account.
5. Costs of preliminary abandonment costs recorded in Account 182.1, Extraordinary Property Losses, and Account 182.2, Unrecovered Plant and Regulatory Study Costs, not allowed to be amortized to Account 407, Amortization of Property Losses, Unrecovered Plant and Regulatory Study Costs.

Interest Charges

427 *Interest on Long-Term Debt*

A. This account shall include the amount of interest on outstanding long-term debt issued or assumed by the utility, the liability for which included in Account 221, Bonds, or Account 224, Other Long-Term Debt.

B. This account shall be so kept or supported as to show the interest accruals on each class and series of long-term debt.

Note: This account shall not include interest on nominally issued or nominally outstanding long-term debt, including securities assumed.

427.3 *Interest Charged to Construction—Credit*

This account shall include concurrent credits for interest charged to construction based upon the net cost for the period of construction of borrowed funds used for construction purposes.

428 *Amortization of Debt Discount and Expense*

A. This account shall include the amortization of unamortized debt discount and expense on outstanding long-term debt. Amounts charged to this account shall be credited concurrently to Account 181, Unamortized Debt Expense, and Account 226, Unamortized Discount on Long-Term Debt—Debit.

B. This account shall be so kept or supported as to show the debt discount and expense on each class and series of long-term debt.

428.1 *Amortization of Loss on Reacquired Debt*

A. This account shall include the amortization of the losses on reacquisition of debt. Amounts charged to this account shall be credited concurrently to Account 189, Unamortized Loss on Reacquired Debt.

B. This account shall be maintained so as to allow ready identification of the loss amortized applicable to each class and series of long-term debt reacquired. (See § 1767.15(q).)

429 *Amortization of Premium on Debt—Credit*

A. This account shall include the amortization of unamortized net premium on outstanding long-term debt. Amounts credited to this account shall be charged concurrently to Account 225, Unamortized Premium on Long-Term Debt.

B. This account shall be so kept or supported as to show the premium on each class and series of long-term debt.

429.1 *Amortization of Gain on Reacquired Debt—Credit*

A. This account shall include the amortization of the gains realized from reacquisition of debt. Amounts credited to this account shall be charged concurrently to Account 257, Unamortized Gain on Reacquired Debt.

B. This account shall be maintained so as to allow ready identification of the amortized gains applicable to each class and series of long-term debt reacquired. (See § 1767.15 (q).)

430 *Interest on Debt to Associated Companies*

A. This account shall include the interest accrued on amounts included in Account 223, Advances from Associated Companies, and on all other obligations to associated companies.

B. The records supporting the entries to this account shall be so kept as to show to whom the interest is to be paid, the period covered by the accrual, the rate of interest, and the principal amount of the advances or other obligations on which the interest is accrued.

431 *Other Interest Expense*

This account shall include all interest charges not provided for elsewhere.

Items

1. Interest on notes payable on demand or maturing one year or less from date and on open accounts, except notes and accounts with associated companies.
2. Interest on customers' deposits.
3. Interest on claims and judgments, tax assessments, and assessments for public improvements past due.
4. Income and other taxes levied upon bondholders of the utility and assumed by it.

432 *Allowance for Borrowed Funds Used During Construction—Credit*

This account shall include concurrent credits for allowance for borrowed funds used during construction, not to exceed amounts computed in accordance with the formula prescribed in § 1767.16 (c)(17).

Extraordinary Items

434 *Extraordinary Income*

This account shall be credited with nontypical, noncustomary, infrequently recurring losses which would significantly distort the current year's income computed before extraordinary items, if reported other than as extraordinary items. Income tax relating to the amounts recorded in this account shall be recorded in Account 409.3, Income Taxes, Extraordinary Items. (See § 1767.15 (g).)

435 *Extraordinary Deductions*

This account shall be debited with nontypical, noncustomary, infrequently recurring losses which would significantly distort the current year's income computed before extraordinary items, if reported other than as extraordinary items. Income tax relating to the amounts recorded in this account shall be recorded in Account 409.3, Income Taxes, Extraordinary Items. (See § 1767.15 (f).)

435.1 *Cumulative Effect on Prior Years of a Change in Accounting Principle*

This account shall include the cumulative effect on margins of prior periods as a result of a change in accounting principle from one that is no longer generally accepted to one that is generally accepted.

Retained Earnings Accounts

433 [Reserved]
436 [Reserved]
437 [Reserved]
438 [Reserved]
439 [Reserved]

Operating Revenue Accounts

Sales of Electricity

440 *Residential Sales*

A. This account shall include the net billing for electricity supplied for residential or domestic purposes.

Note: When electricity supplied through a single meter is used for both residential and commercial purposes, the total revenue shall

be included in this account, or Account 442, Commercial and Industrial Sales, according to the rate schedule that is applied. If the same rate schedules apply to residential and commercial and industrial service, classification shall be made according to principal use.

B. Account 440 shall be subaccounted as follows:

440.1 Residential Sales—Excluding Seasonal
440.2 Residential Sales—Seasonal

440.1 *Residential Sales—Excluding Seasonal*

A. This account shall include the net billing for electricity supplied for residential and domestic purposes.

B. This account shall also include net billings for single phase service to schools, churches, lodges, and other public buildings.

C. Records shall be maintained so that the quantity of electricity sold and the revenue received under each rate schedule shall be readily available.

Note: Net billings for multiphase service to schools, churches, lodges, and other public buildings shall be included in the appropriate subaccount of Account 442, Commercial and Industrial Sales.

440.2 *Residential Sales—Seasonal*

This account shall include the net billings for electricity supplied for residential and domestic purposes to seasonal consumers.

441 *Irrigation Sales*

This account shall include the net billings for electricity supplied for irrigation pumping. It need not be used unless such service is provided under a special irrigation rate.

442 *Commercial and Industrial Sales*

A. This account shall include the net billing for electricity supplied to customers for commercial and industrial purposes.

Note A: If the utility classifies large commercial and industrial customers and related revenues on a lesser basis than 1000 kilowatts of demand, or segregates industrial customers and related revenues according to a recognized definition of an industrial customer, such classifications are acceptable in lieu of those otherwise required by the text of this account on the basis of 1000 kilowatts of demand.

Note B: When electricity supplied through a single meter is used for both commercial and residential purposes, the total revenue shall be included in this account, or Account 440, Residential Sales, according to the rate schedule that is applied. If the same rate schedules apply to residential and commercial and industrial service, classification shall be made according to principal use.

B. Account 442 shall be subaccounted as follows:

442.1 Commercial and Industrial Sales—1000 kVA or Less
442.1 Commercial and Industrial Sales—Over 1000 kVA

442.1 *Commerical and Industrial Sales—1000 kVA or Less*

A. This account shall include the net billing for electricity supplied to consumers for commerical and industrial purposes requiring transformer capacity of 1000 kVA or less.

B. Records shall be maintained so that the quantity of electricity sold and the revenue received under each rate schedule shall be readily available.

Note: When electricity supplied through a single meter is used for both commercial and residential purposes, the total revenue shall be included in this account or in Account 440, Residential Sales, based upon primary use.

442.2 *Commercial and Industrial Sales—Over 1000 kVA*

A. This account shall include the net billing for electricity supplied to consumers for commercial and industrial purposes requiring transformer capacity in excess of 1000 kVA.

B. Records shall be maintained so that the quantity of electricity sold and the revenue received under each rate schedule shall be readily available.

444 *Public Street and Highway Lighting*

A. This account shall include the net billing for electricity supplied and services rendered for the purposes of lighting streets, highways, parks, and other public places or for traffic or signal system service, for municipalities or other divisions or agencies of state or Federal governments.

B. Records shall be maintained so that the quantity of electricity sold and the revenue received from each customer shall be readily available. In addition, the records shall be maintained so as to show the revenues from (a) contracts which include both electricity and services, and (b) contracts which include sales of electricity only.

445 *Other Sales to Public Authorities*

A. This account shall include the net billing for electricity supplied to municipalities or divisions or agencies of Federal or state governments, under special contracts or agreements or service classifications applicable only to public authorities, except such revenues as are includible in Account 444 and Account 447.

B. Records shall be maintained so as to show the quantity of electricity sold and the revenues received from each customer.

446 *Sales to Railroads and Railways*

A. This account shall include the net billing for electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

B. Records shall be maintained so that the quantity of electricity sold and the revenue received from each customer shall be readily available.

Note: Revenues from incidental use of electricity furnished under a contract for propulsion of cars or locomotives shall be included herein.

447 *Sales for Resale*

A. This account shall include the net billing for electricity supplied to other electric utilities or to public authorities for resale purposes.

Note: Revenues from electricity supplied to other public utilities for use by them and not for distribution, shall be included in Account 442, Commercial and Industrial Sales, unless supplied under the same contracts as and not readily separable from revenues includible in this account.

B. Account 447 shall be subaccounted as follows:

447.1 Sales for Resale—REA Borrowers
447.2 Sales for Resale—Other

447.1 *Sales for Resale—REA Borrowers*

A. This account shall include the net billing for electricity supplied to REA borrowers for resale.

B. Records shall be maintained so as to show the quantity of electricity sold and the revenue received from each customer.

Note: Revenues from electricity supplied to other public utilities for use by them and not for distribution, shall be included in Account 442, Commercial and Industrial Sales, unless supplied under the same contract as and not readily separable from revenues includible in this account.

447.2 *Sales for Resale—Other*

A. This account shall include the net billing for electricity supplied for resale to utilities not financed by REA.

B. Records shall be maintained so as to show the quantity of electricity sold and the revenue received from each customer.

Note: Revenues from electricity supplied to other public utilities for use by them and not for distribution, shall be included in Account 442, Commercial and Industrial Sales, unless supplied under the same contract as and not readily separable from revenues includible in this account.

448 *Interdepartmental Sales*

A. This account shall include amounts charged by the electric department at

tariff or other specified rates for electricity supplied by it to other utility departments.

B. Records shall be maintained so that the quantity of electricity supplied each other department and the charges therefor shall be readily available.

449.1 *Provision for Rate Refunds*

A. This account shall be charged with provisions for the estimated pretax effects on net income of the portions of amounts being collected subject to refund which are estimated to be required to be refunded. Such provisions shall be credited to Account 229, Accumulated Provision for Rate Refunds.

B. This account shall also be charged with amounts refunded when such amounts had not been previously accrued.

C. Income tax effects relating to the amounts recorded in this account shall be recorded in Account 410.1, Provision for Deferred Income Taxes, Utility Operating Income, or Account 411.1, Provision for Deferred Income Taxes—Credit, Utility Operating Income, as appropriate.

Other Operating Revenues

450 *Forfeited Discounts*

This account shall include the amount of discounts forfeited or additional charges imposed because of the failure of customers to pay their electric bills on or before a specified date.

451 *Miscellaneous Service Revenues*

This account shall include revenues for all miscellaneous services and charges billed to customers which are not specifically provided for in other accounts.

Items

1. Fees for changing, connecting, or disconnecting service.

2. Profit on maintenance of appliances, wiring, piping, or other installations on customers' premises.

3. Net credit or debit (cost less net salvage and less payment from customers) on closing of work orders for plant installed for temporary service of less than one year. (See Account 185, Temporary Facilities.)

4. Recovery of expenses in connection with current diversion cases (billing for the electricity consumed shall be included in the appropriate electric revenue account).

453 *Sales of Water and Water Power*

A. This account shall include revenues derived from the sale of water for irrigation, domestic, industrial, or other uses or for the development by others of water power or for headwater benefits; also, revenues derived from furnishing water power for mechanical purposes when the investment in the property used in supplying such water or water power is carried as electric plant in service.

B. The records for this account shall be kept in such manner as to permit an analysis of the rates charged and the purposes for which the water was used.

454 *Rent from Electric Property*

A. This account shall include rents received for the use by others of land, buildings, and other property devoted to electric operations by the utility.

B. When property owned by the utility is operated jointly with others under a definite arrangement for apportioning the actual expenses among the parties to the arrangement, any amount received by the utility for interest or return or in reimbursement to taxes or depreciation on the property shall be credited to this account.

Note: Do not include in this account rents from property constituting an operating unit or system. (See Account 412, Revenues from Electric Plant Leased to Others.)

455 *Interdepartmental Rents*

This account shall include rents credited to the electric department on account of rental charges made against other departments (gas, water, etc.) of the utility. In the case of property operated under a definite arrangement to allocate the costs among the departments using the property, any reimbursement to the electric department for interest or return and depreciation and taxes shall be credited to this account.

456 *Other Electric Revenues*

This account shall include revenues derived from electric operations not includible in any of the foregoing accounts. It shall also include, in a separate subaccount, revenues received from operation of fish and wildlife and recreation facilities whether operated by the company or by contract concessionaires, such as revenues from leases or rentals of land for cottages, homes, or campsites.

Items

1. Commission on sale or distribution of electricity of others when sold under rates filed by such others.

2. Compensation for minor or incidental services provided for others such as customer billing, and engineering.

3. Profit or loss on the sale of material and supplies not ordinarily purchased for resale and not handled through merchandising and jobbing accounts.

4. Sale of steam, but not including sales made by a steamheating department or transfers of steam under joint facility operations.

5. Revenues from transmission of electricity of others over transmission facilities of the utility.

6. Include in a separate subaccount, revenues in payment for rights and/or benefits received from others which are realized through research, development, and demonstration ventures. In the event the amounts received are so large as to distort revenues for the year in which received (5 percent of net income before application of the benefit), the amounts shall be credited to Account 253, Other Deferred Credits, and amortized by credits to this account over a period not to exceed 5 years.

Operation and Maintenance Expense Accounts

Power Production Expenses

Steam Power Generation

Operation

500 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of steam power generating stations. Direct supervision of specific activities, such as fuel handling, boiler-room operations, and generator operations shall be charged to the appropriate account. (See § 1767.17(a).)

501 *Fuel*

A. This account shall include the cost of fuel used in the production of steam for the generation of electricity, including expenses in unloading fuel from the shipping media and handling thereof up to the point where the fuel enters the first boiler plant bunker, hopper, bucket, tank, or holder of the boiler-house structure. Records shall be maintained to show the quantity, B.t.u. content and cost of each type of fuel used.

B. The cost of fuel shall be charged initially to Account 151, Fuel Stock, and cleared to this account on the basis of the fuel used. Fuel handling expenses may be charged to this account as incurred or charged initially to Account 152, Fuel Stock Expenses Undistributed. In the latter event, they shall be cleared to this account on the basis of the fuel used. Respective amounts of fuel stock and fuel stock expenses shall be readily available.

Items

Labor:

1. Supervising, purchasing, and handling of fuel.

2. All routine fuel analyses.

3. Unloading from shipping facility and placing in storage.
4. Moving of fuel in storage and transferring fuel from one station to another.
5. Handling from storage or shipping facility to first bunker, hopper, bucket, tank, or holder of boiler-house structure.
6. Operation of mechanical equipment, such as locomotives, trucks, cars, boats, barges, and cranes.

Materials and Expenses:

1. Operating, maintenance, and depreciation expenses and ad valorem taxes on utility-owned transportation equipment used to transport fuel from the point of acquisition to the unloading point.
2. Lease or rental costs of transportation equipment used to transport fuel from the point of acquisition to the unloading point
3. Cost of fuel including freight, switching, demurrage, and other transportation charges.
4. Excise taxes, insurance, purchasing commissions, and similar items.
5. Stores expenses to extent applicable to fuel.
6. Transportation and other expenses in moving fuel in storage.
7. Tools, lubricants, and other supplies.
8. Operating supplies for mechanical equipment.
9. Residual disposal expenses less any proceeds from sale of residuals.

Note: Abnormal fuel handling expenses occasioned by emergency conditions shall be charged to expense as incurred.

502 *Steam Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in production of steam for electric generation. This includes all expenses of handling and preparing fuel beginning at the point where the fuel enters the first boiler plant bunker, hopper, tank, or holder of the boiler-house structure.

Items

Labor:

1. Supervising steam production.
2. Operating fuel conveying, storage, weighing, and processing equipment within boiler plant.
3. Operating boiler and boiler auxiliary equipment.
4. Operating boiler feed water purification and treatment equipment.
5. Operating ash-collecting and disposal equipment located inside the plant.
6. Operating boiler plant electrical equipment.
7. Keeping boiler plant log and records and preparing reports on boiler plant operations.
8. Testing boiler water.
9. Testing, checking, and adjusting meters, gauges, and other instruments and equipment in boiler plant.
10. Cleaning boiler plant equipment when not incidental to maintenance work.
11. Repacking glands and replacing gauge glasses where the work involved is of a minor nature and is performed by regular operating crews. Where the work is of a major character, such as that performed on high-pressure boilers, the item should be considered as maintenance.

Materials and Expenses:

1. Chemicals and boiler inspection fees.
2. Lubricants.
3. Boiler feed water purchased and pumping supplies.

503 *Steam from Other Sources*

This account shall include the cost of steam purchased or transferred from another department of the utility or from others under a joint facility operating arrangement for use in prime movers devoted to the production of electricity.

Note: The records shall be so kept as to show separately for each company from which steam is purchased, the point of delivery, the quantity, the price, and the total charge. When steam is transferred from another department or from others under a joint operating arrangement, the utility shall be prepared to show full details of the cost of producing such steam, the basis of the charge to electric generation, and the extent and manner of use by each department or party involved.

504 *Steam Transferred—Credit*

A. This account shall include credits for expenses of producing steam which are charged to others or to other utility departments under a joint operating arrangement. Include also credits for steam expenses chargeable to other electric accounts outside of the steam generation group. Full details of the basis of determination of the cost of steam transferred shall be maintained.

B. If the charges to others or to other departments of the utility include an amount for depreciation, taxes, and return on the joint steam facilities, such portion of the charge shall be credited, in the case of others, to Account 454, Rent from Electric Property, and in the case of other departments of the utility, to Account 455, Interdepartmental Rents.

505 *Electric Expenses*

This account shall include the cost of labor and materials used, and expenses incurred in operating prime movers, generators, and their auxiliary apparatus, switch gear, and other electric equipment to the points where electricity leaves for conversion for transmission or distribution.

Items

Labor:

1. Supervising electric production.
2. Operating turbines, engines, generators, and exciters.
3. Operating condensers, circulating water systems, and other auxiliary apparatus.
4. Operating generator cooling system.
5. Operating lubrication and oil control system, including oil purification.
6. Operating switchboards, switch gear and electric control, and protective equipment.
7. Keeping electric plant log and records and preparing reports on electric plant operations.
8. Testing, checking, and adjusting meters, gauges, and other instruments, relays, controls, and other equipment in the electric plant.
9. Cleaning electric plant equipment when not incidental to maintenance work.
10. Repacking glands and replacing gauge glasses.

Materials and Expenses:

1. Lubricants and control system oils.
2. Generator cooling gases.
3. Circulating water purification supplies.
4. Cooling water purchased.
5. Motor and generator brushes.

506 *Miscellaneous Steam Power Expenses*

This account shall include the cost of labor and materials used and expenses incurred which are not specifically provided for or not readily assignable to other steam generation operation expense accounts.

Items

Labor:

1. General clerical and stenographic work.
2. Guarding and patrolling plant and yard.
3. Building service.
4. Care of grounds including snow removal, and grass cutting.
5. Miscellaneous labor.

Materials and Expenses:

1. General operating supplies, such as tools, gaskets, packing waste, gauge glasses, hose, indicating lamps, record and report forms.
2. First-aid supplies and safety equipment.
3. Employees' service facilities expenses.
4. Building service supplies.
5. Communication service.

6. Miscellaneous office supplies and expenses, printing, and stationery.
7. Transportation expenses.
8. Meals, traveling, and incidental expenses.
9. Research, development, and demonstration expenses.

507 *Rents*

This account shall include all rents of property of others used, occupied or operated in connection with steam power generation. (See § 1767.17(c).)

Maintenance

510 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of maintenance of steam generation facilities. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17(a).)

511 *Maintenance of Structures*

This account shall include the cost of labor and materials used and expenses incurred in the maintenance of steam structures, the book cost of which is includible in Account 311, Structures and Improvements. (See § 1767.17(b).)

512 *Maintenance of Boiler Plant*

A. This account shall include the cost of labor and materials used and expenses incurred in the maintenance of steam plant, the book cost of which is includible in Account 312, Boiler Plant Equipment. (See § 1767.17(b).)

B. For the purpose of making charges hereto and to Account 513, Maintenance of Electric Plant, the point at which steam plant is distinguished from electric plant is defined as follows:

1. Inlet flange of throttle valve on prime mover.
2. Flange of all steam extraction lines on prime mover.
3. Hotwell pump outlet on condensate lines.
4. Inlet flange of all turbine-room auxiliaries.
5. Connection to line side of motor starter for all boiler-plant equipment.

513 *Maintenance of Electric Plant*

This account shall include the cost of labor and materials used and expenses incurred in the maintenance of electric plant, the book of which is includible in Account 313, Engines and Engine-Driven Generators; Account 314, Turbogenerator Units; and Account 315, Accessory Electric Equipment. (See § 1767.17(b) and paragraph B of Account 512.)

514 *Maintenance of Miscellaneous Steam Plant*

This account shall include the cost of labor and materials used and expenses incurred in maintenance of miscellaneous steam generation plant, the book cost of which is includible in Account 316, Miscellaneous Power Plant Equipment. (See § 1767.17 (b).)

Nuclear Power Generation

Operation

517 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of nuclear power generating stations. Direct supervision of specific activities, such as fuel handling, reactor operations, and generator operations shall be charged to the appropriate account. (See § 1767.17(a).)

518 *Nuclear Fuel Expense*

A. This account shall be debited and Account 120.5, Accumulated Provision for Amortization of Nuclear Fuel Assemblies, credited for the amortization of the net cost of nuclear fuel assemblies used in the production of energy. The net cost of nuclear fuel assemblies subject to amortization shall be the cost of nuclear fuel assemblies plus or less the expected net salvage of uranium, plutonium, and other byproducts and unburned fuel. The utility shall adopt the necessary procedures to assure that charges to this account are distributed according to the thermal energy produced in such periods.

B. This account shall also include the costs involved when fuel is leased.

C. This account shall also include the cost of other fuels, used for ancillary steam facilities, including superheat.

D. This account shall be debited or credited as appropriate for significant changes in the amounts estimated as the net salvage value of uranium, plutonium, and other byproducts contained in Account 157, Nuclear Materials Held for Sale, and the amount realized upon the final disposition of the materials. Significant declines in the estimated realizable value of items carried in Account 157 may be recognized at the time of market price declines by charging this account and crediting Account 157. When the declining change occurs while the fuel is recorded in Account 120.3, Nuclear Fuel Assemblies in Reactor, the effect shall be amortized over the remaining life of the fuel.

519 *Coolants and Water*

This account shall include the cost of labor and materials used and expenses incurred for heat transfer materials and water used for steam and cooling purposes.

Items

Labor:
1. Operation of water supply facilities.
2. Handling of coolants and heat transfer materials.

Materials and Expenses:
1. Chemicals.
2. Additions to or refining of, fluids used in reactor systems.
3. Lubricants.
4. Pumping supplies and expenses.
5. Miscellaneous supplies and expenses.
6. Purchased Water.

Note: Do not include in this account water for general station use or the initial charge for coolants, heat transfer, or moderator fluids, chemicals, or other supplies capitalized.

520 *Steam Expenses*

This account shall include the cost of labor and materials used and expenses incurred in production of steam through nuclear processes, and similar expenses for operation of any auxiliary superheat facilities.

Items

Labor:
1. Supervising steam production.
2. Fuel handling including removal, insertion, disassembly, and preparation for cooling operations and shipment.
3. Testing instruments and gauges.
4. Health, safety, monitoring, and decontamination activities.
5. Waste disposal.
6. Operating steam boilers and auxiliary steam, superheat facilities.

Materials and Expenses:
1. Chemical supplies.
2. Charts, and logs.
3. Health, safety, monitoring, and decontamination supplies.
4. Boiler inspection fees.
5. Lubricants.

521 *Steam from Other Sources*

This account shall include the cost of steam purchased or transferred from another department of the utility or from others under a joint facility operating arrangement for use in prime movers devoted to the production of electricity.

Note: The records shall be so kept as to show separately for each company from which steam is purchased, the point of delivery, the quantity, the price, and the total charge. When steam is transferred from another operating department, the utility shall be prepared to show full details of the cost of producing such steam, the basis of the charges to electric generation, and the extent and manner of use by each department involved.

522 *Steam Transferred—Credit*

A. This account shall include credits for expenses of producing steam which are charged to others or to other utility

departments under a joint operating arrangement. Include also credits for steam expenses chargeable to other electric accounts outside of the steam generation group. Full details of the basis of determination of the cost of steam transferred shall be maintained.

B. If the charges to others or to other departments of the utility include an amount for depreciation, taxes, and return on the joint steam facilities, such portion of the charge shall be credited in the case of others, to Account 454, Rent from Electric Property, and in the case of other departments of the utility, to Account 455, Interdepartmental Rents.

523 *Electric Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in operating turbogenerators, steam turbines and their auxiliary apparatus, switch gear, and other electric equipment to the points where electricity leaves for conversion for transmission or distribution.

Items

Labor:

1. Supervising electric production.
2. Operating turbines, engines, generators, and exciters.
3. Operating condensers, circulating water systems, and other auxiliary apparatus.
4. Operating generator cooling system.
5. Operating lubrication and oil control system, including oil purification.
6. Operating switchboards, switch gear, and electric control and protective equipment.
7. Keeping plant log and records and preparing reports on electric plant operations.
8. Testing, checking and adjusting meters, gauges, and other instruments, relays, controls, and other equipment in the electric plant.
9. Cleaning electric plant equipment when not incidental to maintenance.
10. Repacking glands and replacing gauge glasses.

Materials and Expenses:

1. Lubricants and control system oils.
2. Generator cooling gases.
3. Log sheets and charts.
4. Motor and generator brushes.

524 *Miscellaneous Nuclear Power Expenses*

This account shall include the cost of labor, materials used, and expenses incurred which are not specifically provided for or are not readily assignable to other nuclear generation operation accounts.

Items

Labor:

1. General clerical and stenographic work.
2. Plant security.
3. Building service.
4. Care of grounds, including snow removal, and grass cutting.
5. Miscellaneous labor.

Materials and Expenses:

1. General operating supplies, such as tools, gaskets, hose, indicating lamps, records and reports forms.
2. First-aid supplies and safety equipment.
3. Employees' service facilities expenses.
4. Building service supplies.
5. Communication service.
6. Miscellaneous office supplies and expenses, printing and stationery.
7. Transportation expenses.
8. Meals, traveling, and incidental expenses.
9. Research, development, and demonstration expenses.

525 *Rents*

This account shall include all rents of property of others used, occupied, or operated in connection with nuclear generation. (See § 1767.17 (c).)

Maintenance

528 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of maintenance of nuclear generation facilities. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17 (a).)

529 *Maintenance of Structures*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of structures, the book cost of which is includible in Account 321, Structures and Improvements. (See § 1767.17 (b).)

530 *Maintenance of Reactor Plant Equipment*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of reactor plant, the book cost of which is includible in Account 322, Reactor Plant Equipment. (See § 1767.17(b).)

531 *Maintenance of Electric Plant*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of electric plant, the book cost of which is includible in Account 323, Turbogenerator Units, and Account 324, Accessory Electric Equipment. (See § 1767.17(b).)

532 *Maintenance of Miscellaneous Nuclear Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of miscellaneous nuclear generating plant, the book cost of which is includible in Account 325, Miscellaneous Power Plant Equipment. (See § 1767.17(b).)

Hydraulic Power Generation

Operation

535 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of hydraulic power generating stations. Direct supervision of specific activities, such as hydraulic operation, and generator operation shall be charged to the appropriate account. (See § 1767.17(a).)

536 *Water for Power*

This account shall include the cost of water used for hydraulic power generation.

Items

1. Cost of water purchased from others, including water tolls paid reservoir companies.
2. Periodic payments for licenses or permits from any governmental agency for water rights, or payments based on the use of the water.
3. Periodic payments for riparian rights.
4. Periodic payments for headwater benefits or for detriments to others.
5. Cloud seeding.

537 *Hydraulic Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in operating hydraulic works including reservoirs, dams, and waterways, and in activities directly relating to the hydroelectric development outside the generating station. It shall also include the cost of labor, materials used, and other expenses incurred in connection with the operation of (1) fish and wildlife, and (2) recreation facilities. Separate subaccounts shall be maintained for each of the above.

Items

Labor:

1. Supervising hydraulic operation.
2. Removing debris and ice from trash racks, reservoirs, and waterways.
3. Patrolling reservoirs and waterways.
4. Operating intakes, spillways, sluiceways, and outlet works.
5. Operating bubbler, heater, or other deicing systems.
6. Ice and log jam work.

7. Operating navigation facilities.
8. Operations relating to conservation of game, fish, and forests.
9. Insect control activities.

Materials and Expenses:

1. Insect control materials.
2. Lubricants, packing, and other supplies used in the operation of hydraulic equipment.
3. Transportation expense.

538 *Electric Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in operating prime movers, generators, and their auxiliary apparatus, switchgear, and other electric equipment, to the point where electricity leaves for conversion for transmission or distribution.

Items

Labor:

1. Supervising electric production.
2. Operating prime movers, generators, and auxiliary equipment.
3. Operating generator cooling system.
4. Operating lubrication and oil control systems, including oil purification.
5. Operating switchboards, switchgear, and electric control and protection equipment.
6. Keeping plant log and records and preparing reports on plant operations.
7. Testing, checking and adjusting meters, gauges, and other instruments, relays, controls, and other equipment in the plant.
8. Cleaning plant equipment when not incidental to maintenance work.
9. Repacking glands.

Materials and Expenses:

1. Lubricants and control system oils.
2. Motor and generator brushes.

539 *Miscellaneous Hydraulic Power Generation Expenses*

This account shall include the cost of labor, materials used, and expenses incurred which are not specifically provided for or are not readily assignable to other hydraulic generation operation expense accounts.

Items

Labor:

1. General clerical and stenographic work.
2. Guarding and patrolling plant and yard.
3. Building service.
4. Care of grounds including snow removal, and grass cutting.
5. Snow removal from roads and bridges.
6. Miscellaneous labor.

Materials and Expenses:

1. General operating supplies, such as tools, gaskets, packing, waste, hose, indicating lamps, record and report forms.
2. First-aid supplies and safety equipment.
3. Employees' service facilities expenses.
4. Building service supplies.
5. Communication service.
6. Office supplies, printing and stationery.
7. Transportation expenses.
8. Fuel.
9. Meals, traveling, and incidental expenses.
10. Research, development, and demonstration expenses.

540 *Rents*

This account shall include all rents of property of others used, occupied, or operated in connection with hydraulic power generation, including amounts payable to the United States for the occupancy of public lands and reservations for reservoirs, dams, flumes, forebays, penstocks, and power houses but not including transmission right-of-way. (See § 1767.17 (c).)

Maintenance

5451 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the maintenance of hydraulic power generating stations. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17 (a).)

542 *Maintenance of Structures*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of hydraulic structures, the book cost of which is includible in Account 331, Structures and Improvements. (See § 1767.17 (b).) However, the cost of labor, materials used, and expenses incurred in the maintenance of fish and wildlife and recreation facilities, the book cost of which is includible in Account 331, Structures and Improvements, shall be charged to Account 545, Maintenance of Miscellaneous Hydraulic Plant.

543 *Maintenance of Reservoirs, Dams, and Waterways*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant includible in Account 332, Reservoirs, Dams, and Waterways. (See § 1767.17 (b).) However, the cost of labor, materials used, and expenses incurred in the maintenance of fish and wildlife and recreation facilities, the book cost of which is includible in Account 332, Reservoirs, Dams, and Waterways, shall be charged to Account 545, Maintenance of Miscellaneous Hydraulic Plant.

544 *Maintenance of Electric Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant includible in Account 333, Water Wheels, Turbines and Generators, and Account 334, Accessory Electric Equipment. (See § 1767.17 (b).)

545 *Maintenance of Miscellaneous Hydraulic Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant, the book cost of which is includible in Account 335, Miscellaneous Power Plant Equipment, and Account 336, Roads Railroads and Bridges. (See § 1767.17 (b).) It shall also include the cost of labor, materials used, and other expenses incurred in the maintenance of (1) fish and wildlife, and (2) recreation facilities. Separate subaccounts shall be maintained for each of the above.

Other Power Generation

Operation

546 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of other power generating stations. Direct supervision of specific activities, such as fuel handling and engine and generator operation shall be charged to the appropriate account. (See § 1767.17 (a).)

547 *Fuel*

This account shall include the cost delivered at the station (See Account 151, Fuel Stock) of all fuel, such as gas, oil, kerosene, and gasoline used in other power generation.

548 *Generation Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in operating prime movers, generators, and electric equipment in other power generating stations, to the point where electricity leaves for conversion for transmission or distribution.

Items

Labor:

1. Supervising other power generation operation.
2. Operating prime movers, generators, and auxiliary apparatus and switching and other electric equipment.
3. Keeping plant log and records and preparing reports on plant operations.
4. Testing, checking, cleaning, oiling, and adjusting equipment.

Materials and Expenses:

1. Dynamo, motor, and generator brushes.
2. Lubricants and control system oils.
3. Water for cooling engines and generators.

549 *Miscellaneous Other Power Generation Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in the operation of other power generating stations which are not specifically provided for or are not readily assignable to other generation expense accounts.

Items

Labor:

1. General clerical and stenographic work.
2. Guarding and patrolling plant and yard.
3. Building service.
4. Care of grounds, including snow removal, and grass cutting.
5. Miscellaneous labor.

Materials and Expenses:

1. Building service supplies
2. First-aid supplies and safety equipment.
3. Communication service.
4. Employee's service facilities expenses.
5. Office supplies, printing and stationery.
6. Transportation expense.
7. Meals, traveling, and incidental expenses.
8. Fuel for heating.
9. Water for fire protection or general use.
10. Miscellaneous supplies, such as hand tools, drills, saw blades, and files.
11. Research, development, and demonstration expenses.

550 *Rents*

This account shall include all rents of property of other used, occupied, or operated in connection with other power generation. (See § 1767.17 (c).)

Maintenance

551 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the maintenance of other power generating stations. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17 (a).)

552 *Maintenance of Structures*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of facilities used and expenses incurred in maintenance of facilities used in other power generation, the book cost of which is includible in Account 341, Structures and Improvements, and Account 342, Fuel Holders, Producers and Accessories. (See § 1767.17 (b).)

553 *Maintenance of Generating and Electric Equipment*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant, the book cost of which is includible in Account 343, Prime Movers; Account 344, Generators; and Account 345, Accessory Electric Equipment. (See § 1767.17 (b).)

554 *Maintenance of Miscellaneous Other Power Generation Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of other power generation plant, the book cost of which is includible in Account 346, Miscellaneous Power Plant Equipment. (See § 1767.17 (b).)

Other Power Supply Expenses

555 *Purchased Power*

A. This account shall include the cost at point of receipt by the utility of electricity purchased for resale. It shall also include, net settlements for exchange of electricity or power, such as economy energy, off-peak energy for on-peak energy, and spinning reserve capacity. In addition, the account shall include the net settlements for transactions under pooling or interconnection agreements wherein there is a balancing of debits and credits for energy, or capacity. Distinct purchases and sales shall not be recorded as exchanges and net amounts only recorded merely because debit and credit amounts are combined in the voucher settlement.

B. the records supporting this account shall show, by months, the demands and demand charges, kilowatt-hours and prices thereof under each purchase contract and the charges and credits under each exchange or power pooling contract.

556 *System Control and Load Dispatching*

This account shall include the cost of labor and expenses incurred in load dispatching activities for system control. Utilities having an interconnected electric system or operating under a central authority which controls the production and dispatching of electricity may apportion these costs to this account and Account 561, Load Dispatching, and Account 581, Load Dispatching.

Items

Labor:

1. Allocating loads to plants and interconnections with others.
2. Directing switching.
3. Arranging and controlling clearances for construction, maintenance, test, and emergency purposes.
4. Controlling system voltages.
5. Recording loadings, and water conditions.
6. Preparing operating reports and data for billing and budget purposes.
7. Obtaining reports on the weather and special events.

Expenses:

1. Communication service provided for system control purposes.
2. System record and report forms.
3. Meals, traveling, and incidental expenses.
4. Obtaining weather and special events reports.

557 *Other Expenses*

A. This account shall be charged with any production expenses including expenses incurred directly in connection with the purchase of electricity, which are not specifically provided for in other production expense accounts. Charges to this account shall be supported so that a description of each type of charge with be readily available.

B. Recoveries from insurance companies, under use and occupancy provisions of policies, of amounts in reimbursement of excessive or added productions costs for which the insurance company is liable under the terms of the policy shall be credited to this account.

Transmission Expenses

Operation

560 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of the transmission system as a whole. Direct supervision of specific activities, such as station operation and line operation shall be charged to the appropriate account. (See § 1767.17 (a).)

561 *Load Dispatching*

This account shall include the cost of labor, materials used, and expenses incurred in load dispatching operations pertaining to the transmission of electricity.

Items

Labor:

1. Direct switching.

2. Arranging and controlling clearances for construction, maintenance, test, and emergency purposes.

3. Controlling system voltages.

4. Obtaining reports on the weather and special events.

5. Preparing operating reports and data for billing and budget purposes.

Expenses:

1. Communication service provided for system control purposes.

2. System record and report forms.

3. Meals, traveling, and incidental expenses.

4. Obtaining weather and special events reports.

562 *Station Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in operating transmission substations and switching stations. If transmission station equipment is located in or adjacent to a generating station, the expenses applicable to transmission station operations shall nevertheless be charged to this account.

Items

Labor:

1. Supervising station operation.

2. Adjusting station equipment where such adjustment primarily affects performance, such as regulating the flow of cooling water, adjusting current in fields of a machine or changing voltage of regulators, changing station transformer taps.

3. Inspecting, testing, and calibrating station equipment for the purpose of checking its performance.

4. Keeping station log and records and preparing records on station operation.

5. Operating switching and other station equipment.

6. Standing watch, guarding, and patrolling station and station yard.

7. Sweeping, mopping, and tidying station.

8. Care of grounds, including snow removal, and grass cutting.

Materials and Expenses:

1. Building service expenses.

2. Operating supplies, such as lubricants, commutator brushes, water, and rubber goods.

3. Station meter and instrument supplies, such as ink and charts.

4. Station record and report forms.

5. Tool expense.

6. Transportation expenses.

7. Meals, traveling, and incidental expenses.

563 *Overhead Line Expenses*

564 *Underground Line Expenses*

A. These accounts shall include the cost of labor, materials used, and expenses incurred in the operation of transmission lines.

B. If the expenses are not substantial for both overhead and underground lines, these accounts may be combined.

Items

Labor:

1. Supervising line operation.

2. Inspecting and testing lightning arresters, circuit breakers, switches, and grounds.

3. Load tests of circuits.

4. Routine line patrolling.

5. Routine voltage surveys made to determine the condition or efficiency of transmission system.

6. Transferring loads, switching and reconnecting circuits and equipment for operating purposes. (Switching for construction or maintenance purposes is not includible in this account.)

7. Routine inspection and cleaning of manholes, conduit, network, and transformer vaults.

8. Electrolysis surveys.

9. Inspecting and adjusting line-testing equipment, such as voltmeters, ammeters, and wattmeters.

10. Regulation and addition of oil or gas in high-voltage cable systems.

Materials and Expenses:

1. Transportation expenses.

2. Meals, traveling, and incidental expenses.

3. Tool expenses.

4. Operating supplies, such as instrument charts, and rubber goods.

565 *Transmission of Electricity by Others*

This account shall include amounts payable to others for the transmission of the utility's electricity over transmission facilities owned by others.

566 *Miscellaneous Transmission Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in transmission map and record work, transmission office expenses, and other transmission expenses not provided for elsewhere.

Items

Labor:

1. General records of physical characteristics of lines and stations, such as capacities.

2. Ground resistance records.

3. Janitor work at transmission office buildings, including care of grounds, snow removal, and grass cutting.

4. Joint pole maps and records.

5. Line load and voltage records.

6. Preparing maps and prints.

7. General clerical and stenographic work.

8. Miscellaneous labor.

Materials and Expenses:

1. Communication service.

2. Building service supplies.

3. Map and record supplies.

4. Transmission office supplies and expenses, printing and stationery.

5. First-aid supplies.

6. Research, development, and demonstration expenses.

567 *Rents*

This account shall include rents of property of others used, occupied, or operated in connection with the transmission system, including payments to the United States and others for use of public or private lands and reservations for transmission line rights-of-way. (See § 1767.17 (c).)

Maintenance

568 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of maintenance of the transmission system. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17 (a).)

569 *Maintenance of Structures*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of structures, the book cost of which is includible in Account 352, Structures and Improvements. (See § 1767.17 (b).)

570 *Maintenance of Station Equipment*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of station equipment, the book cost of which is includible in Account 353, Station Equipment. (See § 1767.17 (b).)

571 *Maintenance of Overhead Lines*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of transmission plant, the book cost of which is includible in Account 354, Towers and Fixtures; 355, Poles and Fixtures; 356, Overhead Conductors and Devices; and 359, Roads and Trails. (See § 1767.17 (b).)

Items

1. Work of the following character on poles, towers, and fixtures:

a. Installing or removing additional clamps or strain insulators on guys in place.

b. Moving line or guy pole in relocation of the same pole or section of line.

c. Painting poles, towers, crossarms, or pole extensions.

d. Readjusting and changing position of guys or braces.

e. Realigning and straightening poles, crossarms braces, and other pole fixtures.

f. Reconditioning reclaimed pole fixtures.

g. Relocating crossarms, racks, brackets, and other fixtures on poles.

h. Repairing or realigning pins, racks, or brackets.

i. Repairing pole supported platform.

j. Repairs by others to jointly owned poles.

k. Shaving, cutting rot, or testing poles or crossarms in use or salvaged for reuse.

l. Stubbing poles already in service.

m. Supporting fixtures and conductors and transferring them to new poles during pole replacements.

n. Maintenance of pole signs, stencils, and tags.

2. Work of the following character on overhead conductors and devices:

a. Overhauling and repairing line cutouts, line switches, and line breakers.

b. Cleaning insulators and bushings.

c. Refusing cutouts.

d. Repairing line oil circuit breakers and associated relays and control wiring.

e. Repairing grounds.

f. Resagging, retyping, or rearranging position or spacing of conductors.

g. Standing by phones, going to calls, cutting faulty lines clear, or similar activities at times of emergencies.

h. Sampling, testing, changing, purifying, and replenishing insulating oil.

i. Repairing line testing equipment.

j. Transferring loads, switching and reconnecting circuits and equipment for maintenance purposes.

k. Trimming trees and clearing brush.

l. Chemical treatment of right of way areas when occurring subsequent to construction of line.

3. Work of the following character on roads and trails:

a. Repairing roadways and bridges.

b. Trimming trees and brush to maintain previous roadway clearance.

c. Snow removal from roads and trails.

d. Maintenance work on publicly owned roads and trails when done by utility at its expense.

572 *Maintenance of Underground Lines*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of transmission plant, the book cost of which is includible in Accounts 357, Underground Conduit, and Account 358, Underground Conductors and Devices. (See § 1767.17 (b).)

Items

1. Work of the following character on underground conduit:

a. Cleaning ducts, manholes, and sewer connections.

b. Minor alterations of handholes, manholes, or vaults.

c. Refastening, repairing, or moving racks, ladders, hangers in manholes, or vaults.

d. Plugging and shelving or replugging ducts.

e. Repairs to sewers and drains, walls and floors, rings and covers.

2. Work of the following character on underground conductors and devices:

a. Repairing oil circuit breakers, switches, cutouts, and control wiring.

b. Repairing grounds.

c. Retraining and reconnecting cables in manholes, including transfer of cables from one duct to another.

d. Repairing conductors and splices.

e. Repairing or moving junction boxes and potheads.

f. Refireproofing of cables and repairing supports.

g. Repairing electrolysis preventive devices for cables.

h. Repairing cable bonding systems.

i. Sampling, testing, changing, purifying, and replenishing insulating oil.

j. Transferring loads, switching and reconnecting circuits, and equipment for maintenance purposes.

k. Repairing line testing equipment.

l. Repairs to oil or gas equipment in high-voltage cable system and replacement of oil or gas.

573 *Maintenance of Miscellaneous Transmission Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of owned or leased plant which is assignable to transmission operations and is not provided for elsewhere. (See § 1767.17 (b).)

Distribution Expenses

Operation

580 *Operation Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of the distribution system. Direct supervision of specific activities, such as station operation, line operation, and meter department operation shall be charged to the appropriate account. (See § 1767.17 (a).)

581 *Load Dispatching*

This account (the keeping of which is optional with the utility) shall include the cost of labor, materials used, and expenses incurred in load dispatching operations pertaining to the distribution of electricity.

Items

Labor:

1. Direct switching.

2. Arranging and controlling clearances for construction, maintenance, test, and emergency purposes.

3. Controlling system voltages.

4. Preparing operating reports.

5. Obtaining reports on the weather and special events.

Expenses:

1. Communication service provided for system control purposes.

2. System record and report forms.

3. Meals, traveling, and incidental expenses.

582 *Station Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in the operation of distribution substations.

Items

Labor:

1. Supervising station operation.

2. Adjusting station equipment where such adjustment primarily affects performance, such as regulating the flow of cooling water, adjusting current in fields of a machine, changing voltage of regulators, or changing station transformer taps.

3. Keeping station log and records and preparing reports in station operation.

4. Inspecting, testing, and calibrating station equipment for the purpose of checking its performance.

5. Operating switching and other station equipment.

6. Standing watch, guarding, and patrolling station and station yard.

7. Sweeping, mopping, and tidying station.

8. Care of grounds, including snow removal, and grass cutting.

Materials and Expenses:

1. Building service expenses.

2. Operating supplies, such as lubricants, commutator brushes, water, and rubber goods.

3. Station meter and instrument supplies, such as ink and charts.

4. Station record and report forms.

5. Tool expense.

6. Transportation expense.

7. Meals, traveling, and incidental expenses.

Note: If the utility owns storage battery equipment used for supplying electricity to customers in periods of emergency, the cost of operating labor and of supplies, such as acid, gloves, hydrometers, thermometers,

soda, automatic cell fillers, and acid proof shoes shall be included in this account. If significant in amount, a separate subdivision shall be maintained for such expenses.

583 *Overhead Line Expenses*

584 *Underground Line Expenses*

These accounts shall include, respectively, the cost of labor materials used, and expenses incurred in the operation of overhead and underground distribution lines.

Items

Labor:

1. Supervising line operation.
2. Changing line transformer taps.
3. Inspecting and testing lighting arresters, line circuit breakers, switches, and grounds.
4. Inspecting and testing line transformers for the purpose of determining load, temperature, or operation performance.
5. Patrolling lines.
6. Load tests and voltage surveys of feeders, circuits, and line transformers.
7. Removing line transformers and voltage regulators with or without replacement.
8. Installing line transformers or voltage regulators with or without change in capacity provided that the cost of first installation of these items is included in Account 368, Line Transformers.
9. Voltage surveys, either routine or upon request of customers, including voltage tests at customer's main switch.
10. Transferring loads, switching and reconnecting circuits and equipment for operation purposes.
11. Electrolysis surveys.
12. Inspecting and adjusting line testing equipment.

Materials and Expenses:

1. Tool expense.
2. Transportation expense.
3. Meals, traveling, and incidental expenses.
4. Operating supplies, such as instrument charts, and rubber goods.

585 *Street Lighting and Signal System Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in: (1) The operation of street lighting and signal system plant which is owned or leased by the utility; and (2) the operation and maintenance of such plant owned by customers where such work is done regularly as a part of the street lighting and signal system service.

Items

Labor:

1. Supervising street lighting and signal systems operation.
2. Replacing lamps and incidental cleaning of glassware and fixtures in connection therewith.
3. Routine patrolling for lamp outages, extraneous nuisances, or encroachments.
4. Testing lines and equipment including voltage and current measurement.
5. Winding and inspection of time switch and other controls.

Materials and Expenses:

1. Street lamp renewals.
2. Transportation and tool expense.
3. Meals, traveling, and incidental expenses.

586 *Meter Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in the operation of customer meters and associated equipment.

Items

Labor:

1. Supervising meter operation.
2. Clerical work on meter history and associated equipment record cards, test cards, and reports.
3. Disconnecting and reconnecting, removing and reinstalling, sealing and unsealing meters and other metering equipment in connection with initiating or terminating services including the cost of obtaining meter readings, if incidental to such operation.
4. Consolidating meter installations due to elimination of separate meters for different rates of service.
5. Changing or relocating meters, instrument transformers, time switches, and other metering equipment.
6. Resetting time controls, checking operation of demand meters and other metering equipment, when done as an independent operation.
7. Inspecting and adjusting meter testing equipment.
8. Inspecting and testing meters, instrument transformers, time switches, and other metering equipment on premises or in shops excluding inspecting and testing incidental to maintenance.

Materials and Expenses:

1. Meter seals and miscellaneous meter supplies.
2. Transportation expenses.
3. Meals, traveling, and incidental expenses.
4. Tool expenses.

Note. The cost of the first setting and testing of a meter is chargeable to utility plant, Account 370, Meters.

587 *Customer Installations Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in work on customer installations in inspecting premises and in rendering services to customers of the nature of those indicated by the list of items hereunder.

Items

Labor:

1. Supervising customer installations work.
2. Inspecting premises, including the check of wiring for code compliance.
3. Investigating, locating, and clearing grounds on customers' wiring.
4. Investigating service complaints, including load tests of motors and lighting and power circuits on customers' premises; field investigations of complaints on bills or of voltage.
5. Installing, removing, renewing, and changing lamps and fuses.
6. Radio, television, and similar interference work including erection of new aerials on customers' premises and patrolling of lines, testing of lightning arresters, inspection of pole hardward, and examination on or off premises of customers' appliances, wiring, or equipment to locate cause of interference.
7. Installing, connecting, reinstalling, or removing leased property on customers' premises.
8. Testing, adjusting, and repairing customers' fixtures and appliances in the shop or on premises.
9. Cost of changing customers' equipment due to changes in service characteristics.
10. Investigation of current diversion including setting and removal of check meters and securing special readings thereon; special calls by employees in connection with discovery and settlement of current diversion; changes in customer wiring; and any other labor cost identifiable as caused by current diversion.

Materials and Expenses:

1. Lamp and fuse renewals.
2. Materials used in servicing customers' fixtures, appliances, and equipment.
3. Power, light, heat, telephone, and other expenses of the appliance repair department.
4. Tool expense.
5. Transportation expense, including pickup and delivery charges.
6. Meals, traveling, and incidental expenses.
7. Rewards paid for discovery of current diversion.

Note A: Amounts billed customers for any work, the cost of which is charged to this account, shall be credited to this account. Any excess over costs resulting therefrom, shall be transferred to Account 451, Miscellaneous Service Revenues.

Note B: Do not include in this account expenses incurred in connection with merchandising, jobbing, and contract work.

588 *Miscellaneous Distribution Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in distribution system operation not provided for elsewhere.

Items

Labor:

1. General records of physical characteristics of lines and substations, such as capacities.
2. Ground resistance records.
3. Joint pole maps and records.
4. Distribution system voltage and load records.
5. Preparing maps and prints.
6. Service interruption and trouble records.
7. General clerical and stenographic work except that chargeable to Account 586, Meter Expenses.

Expenses:

1. Operating records covering poles, transformers, manholes, cables, and other distribution facilities. Exclude meter records chargeable to Account 586, Meter Expenses, and station records chargeable to Account 582, Station Expenses, and stores records chargeable to Account 163, Stores Expense Undistributed.
2. Janitor work at distribution office buildings including snow removal and grass cutting.
3. Communication service.
4. Building service expenses.
5. Miscellaneous office supplies and expenses, printing and stationery, maps and records, and first-aid supplies.
6. Research, development, and demonstration expenses.

589 *Rents*

This account shall include rents of property of others used, occupied, or operated in connection with the distribution system, including payments to the United States and others for the use and occupancy of public lands and reservations for distribution line rights of way. (See § 1767.17(c).)

Maintenance

590 *Maintenance Supervision and Engineering*

This account shall include the cost of labor and expenses incurred in the general supervision and direction of maintenance of the distribution system. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See § 1767.17(a).)

591 *Maintenance of Structures*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of structures, the book cost of which is includible in Account 361, Structures and Improvements. (See § 1767.17(b).)

592 *Maintenance of Station Equipment*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant, the book cost of which is includible in Account 362, Station Equipment, and Account 363, Storage Battery Equipment. (See § 1767.17(b).)

593 *Maintenance of Overhead Lines*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of overhead distribution line facilities, the book cost of which is includible in Account 364, Poles, Towers and Fixtures; Account 365, Overhead Conductors and Devices; and Account 369, Services. (See § 1767.17(b).)

Items

1. Work of the following character on poles, towers, and fixtures:
   a. Installing additional clamps or removing clamps or strain insulators on guys in place.
   b. Moving line or guy pole in relocation of pole or section of line.
   c. Painting poles, towers, crossarms, or pole extensions.
   d. Readjusting and changing position of guys or braces.
   e. Realigning and straightening poles, crossarms, braces, pins, racks, brackets, and other pole fixtures.
   f. Reconditioning reclaimed pole fixtures.
   g. Relocating crossarms, racks, brackets, and other fixtures on poles.
   h. Repairing pole supported platform.
   i. Repairs by others to jointly owned poles.
   j. Shaving, cutting rot, or treating poles or crossarms in use or salvaged for reuse.
   k. Stubbing poles already in service.
   l. Supporting conductors, transformers, and other fixtures and transferring them to new poles during pole replacements.
   m. Maintaining pole signs, stencils, and tags.
2. Work of the following character on overhead conductors and devices:
   a. Overhauling and repairing line cutouts, line switches, line breakers, and capacitor installations.
   b. Cleaning insulators and bushings.
   c. Refusing line cutouts.
   d. Repairing line oil circuit breakers and associated relays and control wiring.
   e. Repairing grounds.
   f. Resagging, retying, or rearranging position or spacing of conductors.
   g. Standing by phones, going to calls, cutting faulty lines clear, or similar activities at times of emergency.
   h. Sampling, testing, changing, purifying, and replenishing insulating oil.
   i. Transferring loads, switching, and reconnecting circuits and equipment for maintenance purposes.
   j. Repairing line testing equipment.
   k. Trimming trees and cleaning brush.
   l. Chemical treatment of right-of-way area when occurring subsequent to construction of line.
3. Work of the following character on overhead services:
   a. Moving position of service either on pole or on customers' premises.
   b. Pulling slack in service wire.
   c. Retying service wire.
   d. Refastening or tightening service bracket.

594 *Maintenance of Underground Lines*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of underground distribution line facilities, the book cost of which is includible in Account 366, Underground Conduit; Account 367, Underground Conductors and Devices; and Account 369, Services. (See § 1767.17 (b).)

Items

1. Work of the following character on underground conduit:
   a. Cleaning ducts, manholes, and sewer connections.
   b. Moving or changing position of conduit or pipe.
   c. Minor alterations of handholes, manholes, or vaults.
   d. Refastening, repairing, or moving racks, ladders, or hangers in manholes or vaults.
   e. Plugging and shelving ducts.
   f. Repairs to sewers, drains, walls, and floors, rings, and covers.
2. Work of the following character on underground conductors and devices:
   a. Repairing circuit breakers, switches, cutouts, network protectors, and associated relays and control wiring.
   b. Repairing grounds.
   c. Retraining and reconnecting cables in manholes including transfer of cables from one duct to another.
   d. Repairing conductors and splices.
   e. Repairing or moving junction boxes and potheads.
   f. Refireproofing cables and repairing supports.
   g. Repairing electrolysis preventive devices for cables.
   h. Repairing cable bonding systems.

i. Sampling, testing, changing, purifying, and replenishing insulating oil.

j. Transferring loads, switching and reconnecting circuits and equipment for maintenance purposes.

k. Repairing line testing equipment.

l. Repairing oil or gas equipment in high voltage cable systems and replacement of oil or gas.

3. Work of the following character on underground services:

a. Cleaning ducts.

b. Repairing any underground service plant.

595 *Maintenance of Line Transformers*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of distribution line transformers, the book cost of which is includible in Account 368, Line Transformers. (See § 1767.17 (b).)

596 *Maintenance of Street Lighting and Signal Systems*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant, the book cost of which is includible in Account 373, Street Lighting and Signal Systems. (See § 1767.17 (b).)

597 *Maintenance of Meters*

This account shall include the cost of labor, materials used, and expenses incurred in the maintenance of meters and meter testing equipment, the book cost of which is includible in Account 370, Meters, and Account 395, Laboratory Equipment, respectively. (See § 1767.17(b).)

598 *Maintenance of Miscellaneous Distribution Plant*

This account shall include the cost of labor, materials used, and expenses incurred in maintenance of plant, the book cost of which is includible in Account 371, Installations on Customers' Premises, and Account 372, Leased Property on Customers' Premises, and any other plant the maintenance of which is assignable to the distribution function and is not provided for elsewhere. (See § 1767.17 (b).)

Items

1. Work of similar nature to that listed in other distribution maintenance accounts.

2. Maintenance of office furniture and equipment used by distribution system department.

Customer Accounts Expenses

Operation

901 *Supervision*

This account shall include the cost of labor and expenses incurred in the general direction and supervision of customer accounting and collecting activities. Direct supervision of a specific activity shall be charged to Account 902, Meter Reading Expenses, or Account 903, Customer Records and Collection Expenses, as appropriate. (See 1767.17 (a).)

902 *Meter Reading Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in reading customer meters, and determining consumption when performed by employees engaged in reading meters.

Items

Labor:

1. Addressing forms for obtaining meter readings by mail.

2. Changing and collecting meter charts used for billing purposes.

3. Inspecting time clocks and checking seals when performed by meter readers and the work represents a minor activity incidental to regular meter reading routine.

4. Reading meters, including demand meters, and obtaining load information for billing purposes. Exclude and charge to Account 586, Meter Expenses, or to Account 903, Customer Records and Collection Expenses, as applicable, the cost of obtaining meter readings, first and final, if incidental to the operation of removing or resetting, sealing or locking, and disconnecting or reconnecting meters.

5. Computing consumption from meter reader's book or from reports by mail when done by employees engaged in reading meters.

6. Collecting from prepayment meters when incidental to meter reading.

7. Maintaining record of customers' keys.

8. Computing estimated or average consumption when performed by employees engaged in reading meters.

Materials and Expenses:

1. Badges, lamps, and uniforms.

2. Demand charts, meter books and binders and forms for recording readings, but not the cost of preparation.

3. Postage and supplies used in obtaining meter readings by mail.

4. Transportation, meals, and incidental expenses.

903 *Customer Records and Collection Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in work on customer applications, contracts, orders, credit investigations, billing and accounting, collections and complaints.

Items

Labor:

1. Receiving, preparing, recording, and handling routine orders for service, disconnections, transfers or meter tests initiated by the customer, excluding the cost of carrying out such orders, which is chargeable to the account appropriate for the work called for by such orders.

2. Investigations of customers' credit and keeping of records pertaining thereto, including records of uncollectible accounts written off.

3. Receiving, refunding, or applying customer deposits and maintaining customer deposit, line extension, and other miscellaneous records.

4. Checking consumption shown by meter readers' reports where incidental to preparation of billing date.

5. Preparing address plates and addressing bills and delinquent notices.

6. Preparing billing data.

7. Operating billing and bookkeeping machines.

8. Verifying billing records with contracts or rate schedules.

9. Preparing bills for delivery and mailing or delivering bills.

10. Collecting revenues, including collection from prepayment meters, unless incidental to meter-reading operations.

11. Balancing collections, preparing collections for deposit, and preparing cash reports.

12. Posting collections and other credits or charges to customer accounts and extending unpaid balances.

13. Balancing customer accounts and controls.

14. Preparing, mailing, or delivering delinquent notices and preparing reports of delinquent accounts.

15. Final meter reading of delinquent accounts when done by collectors incidental to regular activities.

16. Disconnecting and reconnecting service because of nonpayment bills.

17. Receiving, recording, and handling of inquiries, complaints, and requests for investigations from customers, including preparation of necessary orders, but excluding the cost of carrying out such orders, which is chargeable to the account appropriate for the work called for by such orders.

18. Statistical and tabulating work on customer accounts and revenues, but not including special analyses for sales department, rate department, or other general purposes, unless incidental to regular customer accounting routines.

19. Preparing and periodically rewriting meter reading sheets.

20. Determining consumption and computing estimated or average consumption when performed by employees other than those engaged in reading meters.

Materials and Expenses:

1. Address plates and supplies.
2. Cash overages and shortages.
3. Commissions or fees to others for collecting.
4. Payments to credit organizations for investigations and reports.
5. Postage.
6. Transportation expenses, including transportation of customer bills and meter books under centralized billing procedures.
7. Transportation, meals, and incidental expenses.
8. Bank charges, exchange, and other fees for cashing and depositing customers' checks.
9. Forms for recording orders for services, or removals.
10. Rent of mechanical equipment.

Note: The cost of work on meter history and meter location records is chargeable to Account 586, Meter Expenses.

904 *Uncollectible Accounts*

This amount shall be charged with amounts sufficient to provide for losses from uncollectible utility revenues. Concurrent credits shall be made to Account 144, Accumulated Provision for Uncollectible Accounts—Credit. Losses from uncollectible accounts shall be charged to Account 144.

905 *Miscellaneous Customer Accounts Expenses*

This account shall include the cost of labor, materials used, and expenses incurred not provided for in other accounts.

Items

Labor:

1. General clerical and stenographic work.
2. Miscellaneous labor.

Materials and Expenses:

1. Communication service.
2. Miscellaneous office supplies and expenses and stationery and printing other than those specifically provided for in Account 902 and Account 903.

Customer Service and Informational Expenses

Operation

907 *Supervision*

This account shall include the cost of labor and expenses incurred in the general direction and supervision of customer service activities, the object of which is to encourage safe, efficient, and economical use of the utility's service. Direct supervision of a specific activity within customer service and informational expense classification shall be charged to the account wherein the costs of such activity are included. (See § 1767.17 (a).)

908 *Customer Assistance Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in providing instructions or assistance to customers, the object of which is to encourage safe, efficient, and economical use of the utility's service.

Items

Labor:

1. Direct supervision of department.
2. Processing customer inquiries relating to the proper use of electric equipment, the replacement of such equipment, and information related to such equipment.
3. Advice directed to customers as to how they may achieve the most efficient and safest use of electric equipment.
4. Demonstrations, exhibits, lectures, and other programs designed to instruct customers in the safe, economical, or efficient use of electric service, and/or oriented toward conservation of energy.
5. Engineering and technical advice to customers, the object of which is to promote safe, efficient, and economical use of the utility's service.

Materials and Expenses:

1. Supplies and expenses pertaining to demonstrations, exhibits, lectures, and other programs.
2. Loss in value on equipment and appliances used for customer assistance programs.
3. Office supplies and expenses.
4. Transportation, meals, and incidental expenses.

Note: Do not include in this account expenses that are provided for elsewhere, such as Accounts 416, Costs and Expenses of Merchandising, Jobbing, and Contract Work; 587, Customer Installations Expenses; and 912, Demonstrating and Selling Expenses.

909 *Informational and Instructional Advertising Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in activities which primarily convey information as to what the utility urges or suggests customers should do in utilizing electric service to protect health and safety, to encourage environmental protection, to utilize their electric equipment safely and economically, or to conserve electric energy.

Items

Labor:

1. Direct supervision of information activities.
2. Preparing informational materials for newspapers, periodicals, and billboards and preparing and conducting informational motion pictures, radio and television programs.
3. Preparing informational booklets and bulletins used in direct mailings.
4. Preparing informational window and other displays.
5. Employing agencies, selecting media, and conducting negotiations in connection with the placement and subject matter of information programs.

Materials and Expenses:

1. Use of newspapers, periodicals, billboards, and radio for informational purposes.
2. Postage on direct mailings to customers exclusive of postage related to billings.
3. Printing of informational booklets, dodgers, and bulletins.
4. Supplies and expenses in preparing informational materials by the utility.
5. Office supplies and expenses.

Note A: Exclude from this account and charge to Account 930.2, Miscellaneous General Expenses, the cost of publication of stockholder reports, dividend notices, bond redemption notices, financial statements, and other notices of a general corporate character. Also exclude all expenses of a promotional, institutional, goodwill, or political nature, which are includible in such accounts as 913, Advertising Expenses; 930.1, General Advertising Expenses; and 426.4, Expenditures for Certain Civic, Political and Related Activities.

Note B: Entries relating to informational advertising included in this account shall contain or refer to supporting documents which identify the specific advertising message. If references are used, copies of the advertising message shall be readily available.

910 *Miscellaneous Customer Service and Informational Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in connection with customer service and informational activities which are not includible in other customer information expense accounts.

Items

Labor:

1. General clerical and stenographic work not assigned to specific customer service and informational programs.
2. Miscellaneous labor.

Materials and Expenses:

1. Communication service.
2. Printing, postage, and office supplies expenses.

Sales Expenses

Operation

911 *Supervision*

This account shall include the cost of labor and expenses incurred in the general direction and supervision of sales activities, except merchandising. Direct supervision of a specific activity, such as demonstrating, selling, or advertising shall be charged to the

account wherein the costs of such activity are included. (See § 1767.17 (a).)

912 *Demonstrating and Selling Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in promotional, demonstrating, and selling activities, except by merchandising, the object of which is to promote or retain the use of utility services by present and prospective customers.

Items

Labor:

1. Demonstrating uses of utility services.
2. Conducting cooking schools, preparing recipes, and related home service activities.
3. Exhibitions, displays, lectures, and other programs designed to promote use of utility services.
4. Experimental and development work in connection with new and improved appliances and equipment, prior to general public acceptance.
5. Solicitation of new customers or of additional business from old customers, including commissions paid employees.
6. Engineering and technical advice to present or prospective customers in connection with promoting or retaining the use of utility services.
7. Special customer canvasses when their primary purpose is the retention of business or the promotion of new business.

Materials and Expenses:

1. Supplies and expenses pertaining to demonstration, experimental, and development activities.
2. Booth and temporary space rental.
3. Loss in value on equipment and appliances used for demonstration purposes.
4. Transportation, meals, and incidental expenses.

913 *Advertising Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in advertising designed to promote or retain the use of utility service, except advertising the sale of merchandise by the utility.

Items

Labor:

1. Direct supervision of department.
2. Preparing advertising material for newspapers, periodicals, and billboards, and preparing and conducting motion pictures, radio, and television programs.
3. Preparing booklets and bulletins used in direct mail advertising.
4. Preparing window and other displays.
5. Clerical and stenographic work.
6. Investigating advertising agencies and media and conducting negotiations in connection with the placement and subject matter of sales advertising.

Materials and Expenses:

1. Advertising in newspapers, periodicals, billboards, and radio for sales promotion purposes, but not including institutional or goodwill advertising includible in Account 930.1, General Advertising Expenses.
2. Materials and services given as prizes or otherwise in connection with civic lighting contests, canning, or cooking contests, and bazaars in order to publicize and promote the use of utility services.
3. Fees and expenses of advertising agencies and commercial artists.
4. Novelties for general distribution.
5. Postage on direct mail advertising.
6. Premiums distributed generally, such as recipe books when not offered as inducement to purchase appliances.
7. Printing booklets, dodgers, and bulletins.
8. Supplies and expenses in preparing advertising material.
9. Office supplies and expenses.

Note A: The cost of advertisements which set forth the value or advantages of utility service without reference to specific appliances, or, if reference is made to appliances, invites the reader to purchase appliances from his dealer or refer to appliances not carried for sale by the utility, shall be considered sales promotion advertising and charged to this account. However, advertisements which are limited to specific makes of appliances sold by the utility and price and terms, thereof, without referring to the value or advantages of utility service, shall be considered as merchandise advertising and the cost shall be charged to Costs and Expenses of Merchandising, Jobbing and Contract Work, Account 416.

Note B: Advertisements which substantially mention or refer to the value or advantages of utility service, together with specific reference to makes of appliance sold by the utility and the price, and terms, thereof, and designed for the joint purpose of increasing the use of utility service and the sales of appliances, shall be considered as a combination advertisement and the costs shall be distributed between this account and Account 416 on the basis of space, time, or other proportional factors.

Note C: Exclude from this account and charge to Account 930.2, Miscellaneous General Expenses, the cost of publication of stockholder reports, dividend notices, bond redemption notices, financial statements, and other notices of a general corporate character. Also exclude all institutional or goodwill advertising. (See Account 930.1, General Advertising Expenses.)

916 *Miscellaneous Sales Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in connection with sales activities, except merchandising, which are not includible in other sales expense accounts.

Items

Labor:

1. General clerical and stenographic work not assigned to specific functions.
2. Special analysis of customer accounts and other statistical work for sales purposes not a part of the regular customer accounting and billing routine.
3. Miscellaneous labor.

Materials and Expenses:

1. Communication service.
2. Printing, postage, office supplies, and expenses applicable to sales activities, except those chargeable to Account 913, Advertising Expenses.

Administrative and General

Operation

920 *Administrative and General Salaries*

A. This account shall include the compensation (salaries, bonuses, and other consideration for services, but not including directors' fees) of officers, executives, and other employees of the utility properly chargeable to utility operations and not chargeable directly to a particular operating function.

B. This account may be subdivided in accordance with a classification appropriate to the departmental or other functional organization of the utility.

921 *Office Supplies and Expenses*

A. This account shall include office supplies and expenses incurred in connection with the general administration of the utility's operations which are assignable to specific administrative or general departments and are not specifically provided for in other accounts. This includes the expenses of the various administrative and general departments, the salaries and wages of which are includible in Account 920.

B. This account may be subdivided in accordance with a classification appropriate to the departmental or other functional organization of the utility.

Note: Office expenses which are clearly applicable to any category of operating expenses other than the administrative and general category shall be included in the appropriate account in such category. Further, general expenses which apply to the utility as a whole rather than to a particular administrative function, shall be included in Account 930.2, Miscellaneous General Expenses.

Items

1. Automobile service, including charges through clearing account.

2. Bank messenger and service charges.

3. Books, periodicals, bulletins, and subscriptions to newspapers, newsletters, and tax services.

4. Building service expenses for customer accounts, sales, and administrative and general purposes.

5. Communication service expenses.

6. Cost of individual items of office equipment used by general departments which are of small value or short life.

7. Membership fees and dues in trade, technical, and professional associations paid by a utility for exployees. (Company memberships are includible in Account 930.2.)

8. Office supplies and expenses.

9. Payment of court costs, witness fees, and other expenses of legal department.

10. Postage, printing, and stationery.

11. Meals, traveling, and incidental expenses.

922 *Administrative Expenses Transferred—Credit*

This account shall be credited with administrative expenses recorded in Account 920 and Account 921 which are transferred to construction costs or to nonutility accounts. (See § 1767.16(d).)

923 *Outside Services Employed*

A. This account shall include the fees and expenses of professional consultants and others for general services which are not applicable to a particular operating function or other accounts. It shall include also the pay and expenses of persons engaged for a special or temporary administrative or general purpose in circumstances where the person so engaged is not considered as an employee of the utility.

B. This account shall be so maintained as to permit ready summarization according to the nature of service and the person furnishing the same.

Items

1. Fees, pay, and expenses of accountants and auditors, actuaries, appraisers, attorneys, engineering consultants, management consultants, negotiators, public relations counsel, and tax consultants.

2. Supervision fees and expenses paid under contracts for general management services.

Note: Do not include inspection and brokerage fees and commissions chargeable to other accounts or fees and expenses in connection with security issues which are includible in the expenses of issuing securities.

924 *Property Insurance*

A. This account shall include the cost of insurance or reserve accruals to protect the utility against losses and damages to owned or leased property used in its utility operations. It shall also include the cost of labor and related supplies and expenses incurred in property insurance activities.

B. Recoveries from insurance companies or others for property damages shall be credited to the account charged with the cost of the damage. If the damaged property has been retired, the credit shall be to the appropriate account for accumulated provision for depreciation.

C. Records shall be kept so as to show the amount of coverage for each class of insurance carried, the property covered, and the applicable premiums. Any dividends distributed by mutual insurance companies shall be credited to the accounts to which the insurance premiums were charged.

Items

1. Premiums payable to insurance companies for fire, storm, burglary, boiler explosion, lightning, fidelity, riot, and similar insurance.

2. Amounts credited to Account 228.1, Accumulated Provision for Property Insurance, for similar protection.

3. Special costs incurred in procuring insurance.

4. Insurance inspection service.

5. Insurance counsel, brokerage fees, and expenses.

Note A: The cost of insurance or reserve accruals capitalized, shall be charged to construction either directly or by transfer to construction work orders from this account

Note B: The cost of insurance or reserve accruals for the following classes of property shall be charged as indicated.

1. Materials, supplies, and stores equipment to Account 163, Stores Expense Undistributed, or appropriate materials account.

2. Transportation and other general equipment to appropriate clearing accounts that may be maintained.

3. Electric plant leased to others to Account 413, Expenses, of Electric Plant Leased to Others.

4. Nonutility property to the appropriate nonutility income account.

5. Merchandise and jobbing property to Account 416, Costs and Expenses of Merchandising, Jobbing and Contract Work.

Note C: The cost of labor and related supplies and expenses of administrative and general employees who are only incidentally engaged in property insurance work may be included in Account 920 and Account 921, as appropriate.

925 *Injuries and Damages*

A. This account shall include the cost of insurance or reserve accruals to protect the utility against injuries and damages claims of employees or others, losses of such character not covered by insurance, and expenses incurred in settlement of injuries and damages claims. It shall also include the cost of labor, related supplies, and expenses incurred in injuries and damages activities.

B. Reimburements from insurance companies or others for expenses charged hereto on account of injuries, damages, and insurance dividends or refunds shall be credited to this account.

Items

1. Premiums payable to insurance companies for protection against claims from injuries and damages by employees or others, such as public liability, property damages, casualty, employee liability, etc., and amounts credited to Account 228.2, Accumulated Provision for Injuries and Damage, for similar protection.

2. Losses not covered by insurance or reserve accruals on account of injuries or deaths to employees or others and damages to the property of others.

3. Fees and expenses of claim investigators.

4. Payment of awards to claimants for court costs and attorneys' services.

5. Medical and hospital service and expenses for employees as the result of occupational injuries or resulting from claims of others.

6. Compensation payments under workmen's compensation laws.

7. Compensation paid while incapacitated as the result of occupational injuries. (See Note A.)

8. Cost of safety, accident prevention, and similar educational activities.

Note A: Payments to or in behalf of employees for accident or death benefits, hospital expenses, medical expenses, or for salaries while incapacitated for service or on leave of absence beyond periods normally allowed, when not the result of occupational injuries, shall be charged to Account 926, Employee Pensions and Benefits. (See also Note B of Account 926.)

Note B: The cost of injuries and damages or reserve accruals capitalized shall be charged to construction directly or by transfer to construction work orders from this account.

Note C: Exclude herefrom the time and expenses of employees (except those engaged in injuries and damages activities) spent in attendance at safety and accident prevention educational meetings, if occurring during the regular work period.

Note D: The cost of labor and related supplies and expenses of administrative and general employees who are only incidentally engaged in injuries and damages activities, may be included in Account 920 and Account 921, as appropriate.

926 *Employee Pensions and Benefits*

A. This account shall include pensions paid to or on behalf of retired employees or accruals to provide for pensions or payments for the purchase of annuities for this purpose, when the utility has definitely, by contract, commmitted itself to a pension plan under which the pension funds are irrevocably devoted to pension purposes and payments for employee accident, sickness, hospital, and death benefits, or insurance therefor. Include, also, expenses incurred in medical, educational, or recreational activities for the benefit of employees and administrative expenses in connection with employee pensions and benefits.

B. The utility shall maintain a complete record of accruals or payments for pensions and be prepared to furnish full information to REA of the plan under which it has created or proposes to create a pension fund and copy of the declaration of trust or resolution under which the pension plan is established.

C. There shall be credited to this account the portion of pensions and benefits expenses which is applicable to nonutility operations or which is charged to construction unless such amounts are distributed directly to the accounts involved and are not included herein in the first instance.

D. Records in support of this account shall be so kept that the total pensions expense, the total benefits expense, the administrative expenses included herein, and the amounts of pensions and benefits expenses transferred to construction or other accounts will be readily available.

Items

1. Payment of pensions under a nonaccrual or nonfunded basis.

2. Accruals for or payments to pension funds or to insurance companies for pension purposes.

3. Group and life insurance premiums (credit dividends received).

4. Payments for medical and hospital services and expenses of employees when not the result of occupational injuries.

5. Payments for accident, sickness, hospital, and death benefits or insurance.

6. Payments to employees incapacitated for service or on leave of absence beyond periods normally allowed when not the result of occupational injuries or in excess of statutory awards.

7. Expenses in connection with educational and recreational activities for the benefit of employees.

Note A: The cost of labor and related supplies and expenses of administrative and general employees who are only incidentally engaged in employee pension and benefit activities may be included in Account 920 and Account 921, as appropriate.

Note B: Salaries paid to employees during periods of nonoccupational sickness may be charged to the appropriate labor account rather than to employee benefits.

927 *Franchise Requirements*

A. This account shall include payments to municipal or other governmental authorities and the cost of materials, supplies, and services furnished such authorities without reimbursement in compliance with franchise, ordinance, or similar requirements; provided, however, that the utility may charge to this account at regular tariff rates, instead of cost, utility service furnished without charge under provisions of franchises.

B. When no direct outlay is involved, concurrent credit for such charges shall be made to Account 929, Duplicate Charges—Credit.

C. The account shall be maintained so as to readily reflect the amounts of cash outlays, utility service supplied without charge, and other items furnished without charge.

Note A: Franchise taxes shall not be charged to this account, but to Account 408.1, Taxes Other Than Income Taxes, Utility Operating Income.

Note B: Any amount paid as initial consideration for a franchise running for more than one year shall be charged to Account 302, Franchises and Consents.

928 *Regulatory Commission Expenses*

A. This account shall include all expenses (except pay of regular employees only incidentally engaged in such work) properly includible in utility operating expenses, incurred by the utility in connection with formal cases before regulatory commissions or other regulatory bodies or cases in which such a body is a party, including payments made to a regulatory commission for fees assessed against the utility for pay and expenses of such commission, its officers, agents, and employees, and also including payments made to the United States for the administration of the Federal Power Act.

B. Amounts of regulatory commission expenses which, by approval or direction of REA, are to be spread over future periods shall be charged to Account 186, Miscellaneous Deferred Debits, and amortized by charges to this account.

C. The utility shall be prepared to show the cost of each formal case.

Items

1. Salaries, fees, retainers, and expenses of counsel, solicitors, attorneys, accountants, engineers, clerks, attendants, witnesses, and others engaged in the prosecution of or defense against petitions or complaints presented to regulatory bodies or in the valuation of property owned or used by the utility in connection with such cases.

2. Office supplies and expenses, payments to public service or other regulatory commissions, stationery and printing, traveling expenses, and other expenses incurred directly in connection with formal cases before regulatory commissions.

Note A: Exclude from this account and include in other appropriate operating expense accounts, expenses incurred in the improvement of service, additional inspection, or rendering reports which are made necessary by the rules and regulations, or orders, of regulatory bodies.

Note B: Do not include in this account amounts includible in Account 302, Franchises and Consents; Account 181, Unamortized Debt Expense; or Account 214, Capitol Stock Expenses.

1929 *Duplicate Charges—Credit*

This account shall include concurrent credits for charges which may be made to operating expenses or to other accounts for the use of utility service from its own supply. Include, also, offsetting credits for any other charges made to operating expenses for which there is no direct money outlay.

930.1 *General Advertising Expenses*

This account shall include the cost of labor, materials used, and expenses incurred in advertising and related activities, the cost of which by their content and purpose are not provided for elsewhere.

Items

Labor:

1. Supervision.

2. Preparing advertising material for newspapers, periodicals, and billboards and preparing or conducting motion pictures, radio, and television programs.

3. Preparing booklets and bulletins used in direct mail advertising.

4. Preparing window and other displays.

5. Clerical and stenographic work.

6. Investigating and employing advertising agencies, selecting media, and conducting negotiations in connection with the placement and subject matter of advertising.

Materials and Expenses:

1. Advertising in newspapers, periodicals, billboards, and radios.
2. Advertising matter such as posters, bulletins, booklets, and related items.
3. Fees and expenses of advertising agencies and commercial artists.
4. Postage and direct mail advertising.
5. Printing of booklets, dodgers, and bulletins.
6. Supplies and expenses in preparing advertising materials.
7. Office supplies and expenses.

Note A: Properly includible in this account is the cost of advertising activities on a local or national basis of a goodwill or institutional nature, which is primarily designed to improve the image of the utility or the industry, including advertisements which inform the public concerning matters affecting the company's operations, such as, the cost of providing service, the company's efforts to improve the quality of service, and the company's efforts to improve and protect the environment. Entries relating to advertising included in this account shall contain or refer to supporting documents which identify the specific advertising message. If references are used, copies of the advertising message shall be readily available.

Note B: Exclude from this account and include in Account 426.4, Expenditures for Certain Civic, Political and Related Activities, expenses for advertising activities, which are designed to solicit public support or the support of public officials in matters of a political nature.

930.2 *Miscellaneous General Expenses*

This account shall include the cost of labor and expenses incurred in connection with the general management of the utility not provided for elsewhere.

Items

Labor:

1. Miscellaneous labor not elsewhere provided for.

Expenses:

1. Industry association dues for company memberships.
2. Contributions for conventions and meetings of the industry.
3. Research, development, and demonstration expenses not charged to other operation and maintenance expense accounts on a functional basis.
4. Communication service not chargeable to other accounts.
5. Trustee, registrar, and transfer agent fees and expenses.
6. Stockholders meeting expenses.
7. Dividend and other financial notices.
8. Printing and mailing dividend checks.
9. Directors' fees and expenses.
10. Publishing and distributing annual reports to stockholders.
11. Public notices of financial, operating, and other data required by regulatory statutes, not including, however, notices required in connection with security issues or acquisitions of property.

931 *Rents*

This account shall include rents properly includible in utility operating expenses for the property of others used, occupied, or operated in connection with the customer accounts, customer service and informational, sales, general, and administrative functions of the utility. (See § 1767.17(c).)

Maintenance

935 *Maintenance of General Plant*

A. This account shall include the cost assignable to customer accounts, sales, administrative, and general functions of labor, materials used, and expenses incurred in the maintenance of property, the book cost of which is includible in Account 390, Structures and Improvements; Account 391, Office Furniture and Equipment; Account 397, Communication Equipment; and Account 398, Miscellaneous Equipment. (See § 1767.17(b).)

B. Maintenance expenses on office furniture and equipment used elsewhere than in general, commercial, and sales offices shall be charged to the following accounts:

1. Steam Power Generation, Account 514
2. Nuclear Power Generation, Account 532
3. Hydraulic Power Generation, Account 545
4. Other Power Generation, Account 554
5. Transmission, Account 573
6. Distribution, Account 598
7. Merchandise and Jobbing, Account 416
8. Garages, Shops, etc., Appropriate clearing account, if used.

Note: Maintenance of plant included in other general equipment accounts shall be included herein unless charged to clearing accounts or to the particular functional maintenance expense account indicated by the use of the equipment.

§§ 1767.19–1767.20 [Reserved]

§ 1767.21 Accounting Methods and Procedures Required of All REA Borrowers

All REA borrowers shall maintain and keep their books of accounts and all other books and records which support the entries in such books of accounts in accordance with the accounting principles prescribed herein.

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101 *Work Order Procedures*

When a minor item of property is removed from service and not replaced, a retirement work order is not required except in the case of a conductor. The cost of the minor item shall remain in the appropriate plant account until the retirement unit, of which it is a part, is retired. However, as conductor is recorded in feet and is not part of any specific retirement unit, conductor shall be retired even though the amount taken down and not replaced is less than a retirement unit (two spans).

When minor items of plant are removed and not replaced, material salvaged shall be recorded on a material salvage ticket. Items of material recorded on this ticket shall be charged to the materials and supplies acount and credited in the miscellaneous columns of the Materials Register to the Accumulated Provision for Depreciation. In this example, it is assumed that the cost of removal is nil. If, however, costs are incurred during the removal of minor items of plant, these costs shall reduce the credit to the Accumulated Provision for Depreciation.

When a staking sheet supporting a single work order reflects a combination of new construction and replacements, or system improvements, the predominant cost shall be the governing factor in determining the amount of cost REA will finance. To illustrate, assume that a service is to be run to a new home near the end of an existing line. On inspection, the pole from which the service is to be run is found to be in very poor physical condition and must be replaced. In addition, a single span of wire and a service are presently connected to this pole which serve no purpose. The home originally served has been demolished and the existing span, pole, and service were retired. In other words, what started out to be simply the installation of a new service now includes the retirement of a span of wire, a pole, and a service; the replacement of a pole; and the running of a new service. Assuming the replacement of the pole is the costliest part of this project, the construction and retirement activity shall be classified as an ordinary replacement even though the work includes new construction and retirements without replacement.

102 *Line Conversion*

If it is necessary to move a conductor from one location to another on a pole assembly during the conversion of a line from one phase to another phase, the cost of moving the conductor is capitalizable as a system improvement.

103 *Sacrificial Anodes and the Replacement of a Neutral*

Many utilities conduct studies to determine whether sacrificial anodes are needed to protect underground cable against corrosion. The following procedures shall be followed to account for sacrificial anodes and the replacement of a neutral:

1. If the study results in the installation of sacrificial anodes, the cost of the study shall be capitalized to Account 367, Underground Conductors and Devices. If the study does not result in the installation of anodes, the cost shall be charged to Account 594, Maintenance of Underground Lines.

2. Costs incurred in the first installation are capitalizable even though anodes are considered minor items of property. However, only the first costs of installation shall be capitalized. All subsequent replacements of anodes shall be expensed.

3. Sacrificial anodes do not constitute a record unit; therefore, the cost of anodes shall be added to the cost of the underground cable unit.

4. Because a neutral is part of an underground cable record unit, and is not, in and of itself, a record unit, the cost to replace a corroded neutral shall be charged to Account 594, Maintenance of Underground Lines.

104 *Terminal Facilities*

Borrowers are sometimes required to construct terminal facilities in the transmission line of another utility in order to receive power from their power supplier. The document executed between the borrower and the utility is normally referred to as a "License Agreement." The license agreement may stipulate that certain items of the terminal facilities are to be transferred to, and become the property of, the other utility upon completion of the construction. The accounting for this type of transaction shall be as follows:

1. All construction costs incurred shall be charged to a work order. Upon completion of the construction and accumulation of all costs, the cost of the facilities that become the property of another utilty shall be transferred from construction work-in-progress to Account 186, Miscellaneous Deferred Debits. The cost of the plant for which the borrower retains title shall be charged to the appropriate plant accounts.

2. The cost of the facilities recorded in Account 186, Miscellaneous Deferred Debits, shall be amortized to Account 557, Other Expenses, over the estimated useful service life of the plant. If the related contract or contracts for this power supply are terminated, the unamortized balance shall be expensed, in the current period, in Account 557.

105 *Pole Top Disconnect Switch*

The installation of pole top service disconnect switches, where title is retained by the utility, shall be capitalized in Account 371, Installations on Customers' Premises. If a switch cabinet is purchased with a current transformer included as an integral part of the cabinet, the entire cost of the switch shall be charged to Account 371. If the current transformer is installed outside of the switch cabinet, the transformer, meter, and meter base, together with the first installation costs, shall be capitalized, upon purchase, in Account 370, Meters.

Payments received from the customer toward construction costs shall be credited to Account 371, Installations on Customers' Premises. Such payments, together with any amount not financed by REA, shall be entered in column 9 of the REA Form 219, Inventory of Work Orders. The associated maintenance costs shall be charged to Account 587, Customer Installations Expenses, or to

Account 597, Maintenance of Meters, as appropriate.

When pole top disconnect switches are installed and title is held by the customer, the cost of the material shall be charged to Account 456, Other Electric Revenues and the receipts from the sale of line material shall be credited to Account 456. The portion of the receipts for resale material as well as that for installation shall be credited to Account 415, Revenues from Merchandising, Jobbing, and Contract Work. The cost of resale material sold and the cost of installation shall be charged to Account 416, Costs and Expenses of Merchandising, Jobbing and Contract Work.

Future maintenance costs incurred by the cooperative that are not billed to the customer shall be charged to Account 587, Customer Installations Expenses.

106 *Steel Pole Reinforcers*

The cost associated with the purchase and installation of steel pole reinforcers shall be charged to Account 593, Maintenance of Overhead Lines.

107 *Mobile Substations*

Mobile substations shall be accounted for in a manner similar to that for a spare and are, therefore, included as part of transmission or distribution station equipment, depending upon the use of the mobile substation. The mobile substation, together with the trailer on which it is permanently mounted, shall be capitalized upon purchase. A general purpose truck or tractor used to relocate a mobile substation and trailer shall be classified as transportation equipment.

The composite depreciation rate used for transmission plant or distribution plant, as appropriate, shall be applied to the mobile substation.

108 *Security Lights*

Where a pole supports both a secondary wire and a security light, the cost of the pole shall be charged to Account 364, Poles, Towers, and Fixtures, even though the plant investment in security lights is recorded in Account 371, Installations on Customers' Premises.

109 *Joint Use*

There are many cases in which an electric utility and a communications utility enter into an agreement that provides for joint use of poles. Under the terms of these agreements, either utility may occupy the poles of the other upon payment of a stipulated annual rental. If such joint occupancy necessitates the use of a higher than standard pole, the new pole shall be provided at the expense of the utility having the need for the higher pole.

When an electric utility replaces, at its own expense, a standard pole belonging to the communications utility with a higher pole, the cost of the higher pole, less net salvage (if any) of the pole replaced, shall be charged to the account in which the pole rental is included.

Contributions made to an electric utility by a communications utility for the costs incurred in stubbing joint use electric poles shall be credited to Account 593, Maintenance of Overhead Lines. The cost of pole stubbing on electric plant distribution facilities shall be charged to Account 593.

An investment in outside plant that is held in joint ownership shall be recorded in the appropriate plant accounts at its cost to the utility. For continuing property record purposes, jointly owned property units shall be priced at their cost to the utility and shall be appropriately segregated in the CPRs to indicate joint ownership.

110 *First Clearing and Grading of Land and Rights of Way*

Utility accounting practice requires the costs associated with the first clearing and grading of land and rights of way and any resulting damage thereto, to be included in the accounts for structures and improvements or equipment to which such costs relate. Since the first clearing, as well as clearing which is "directly occasioned by the building of a structure," is done, not for the purpose of enhancing the value of the land or the rights of way, but for the purpose of constructing plant, these costs are more directly related to the construction of plant than to the purchase of land or rights of way. The accounts shall be charged as follows:

1. For overhead transmission pole lines, Account 356, Overhead Conductors and Devices;

2. For overhead distribution lines, Account 365, Overhead Conductors and Devices; and

3. For underground distribution lines, Account 366, Underground Conduit, for a conduit installation; or Account 367, Underground Conductors and Devices, for a direct burial installation.

111 *Engineering Contracts for System Planning*

Engineering costs for long-range system plans shall be charged to Account 183, Preliminary Survey and Investigation Charges, as incurred. The cost of engineering services incurred in preparing a long-range system plan represents a legitimate component of the total cost of construction of all system improvements detailed in the plan. The amount of engineering costs to be associated with any specific system improvement is the annual costs incurred up to the time of the allocation (not previously allocated), plus that portion of the initial cost which relates to the particular construction in question. If any major system improvement included in the engineering plan is not constructed, or if the study is superceded by another complete study, the cost of that portion of the original study not resulting in construction shall be charged to Account 182.2, Unrecovered Plant and Regulatory Study Costs, if the costs are to be recovered through future rates. Costs recorded in Account 182.2 shall be amortized to Account 407, Amortization of Property Losses, Unrecovered Plant and Regulatory Study Costs, as the costs are recovered through the rates. Any costs included in Account 182.2 that are disallowed for rate-making purposes shall be charged to Account 426.5, Other Deductions.

The allocation of engineering services to the various construction projects requires the exercise of judgment. In some cases, system improvements are continuous over a period of months or years, thus permitting the engineering cost to be spread monthly as overhead in relation to the direct costs incurred in construction. (If a substantial amount of retirement work is performed in connection with system improvements, a proportionate share of the engineering cost shall be allocated on the basis of direct retirement labor.) If the system improvements detailed in the plan are not performed in a continuous manner, the engineering cost shall be allocated on the basis of the estimated costs of the various larger system improvement projects which result from the long-range plan.

If construction is performed by contract, the engineering cost applicable thereto shall be transferred from Account 183 to Account 107, Construction Work-in-Progress—Electric, and thereby spread to the appropriate plant accounts on the basis of contract costs.

In the case of system improvement construction performed on the basis of work orders, engineering costs shall be transferred to Account 107, Construction Work-in-Progress—Electric, and included in total work order costs as either overhead or special services. If engineering services are not readily identifiable with individual work orders, they shall be capitalized as overhead. If engineering costs for each work order are readily separable from the engineering costs for all other work orders, they shall be capitalized as special services.

In summarizing system improvement work orders on the REA Form 219, Inventory of Work Orders, the amount of engineering costs previously approved for advance on the long range plan, if any, shall be deducted to determine the balance of loan funds subject to advance by REA.

112 *Determination of Availability of Service*

Costs relating to the determination of availability of service, rates, and similar items for individual applicants shall be charged to Account 912, Demonstrating and Selling Expenses. If it is expected that construction will result, the costs incurred to provide service, including staking, shall be charged to Account 107, Construction Work-in-Progress—Electric. If construction does not result, Account 107 shall be credited and Account 426.5, Other Deductions, shall be charged.

113 *Temporary Facilities (Services)*

Plant installed for temporary use, a period of less than 1 year, shall be recorded in Account 185, Temporary Facilities, net of any payments received from customers. Upon retirement, this net cost plus cost of removal, less any salvage value, shall be cleared to Account 451, Miscellaneous Service Revenues.

When a temporary service is installed at the site of a building under construction, the location of the permanent service entrance and the load and its characteristics are usually known. The temporary service is of the proper capacity and is so located or has sufficient slack, that it can be relocated to serve the new building as a permanent service. Under these conditions, the service shall be charged to Account 369, Services, when first installed. The cost of moving and attaching the service to the permanent service entrance shall be charged to Account 593, Maintenance of Overhead Lines or Account 594, Maintenance of Underground Lines, as appropriate.

114 *Construction Work-in-Progress Damaged or Destroyed by Storm*

When installed plant, not yet completed or completed but not yet placed in service, has been damaged or destroyed by storm, the cost of the repair and restoration shall be added to the cost of construction and capitalized if the plant was constructed under force account or work order construction, and the utility paid for the cost of the repairs. If the plant was constructed under contract, the contractor is required to deliver the plant in new condition. Therefore, any repairs required prior to the completion of construction and acceptance by the utility, are ordinarily borne by the contractor.

115 *Liquidated Damages*

Liquidated damages are amounts paid by or assessed against contractors for the completion of construction after an agreed upon date. Liquidated damages shall be credited to Account 107, Construction Work-in-Progress—Electric. Since these damages accrue during the construction period, they become one of the components of construction cost. Even though a portion of these damages may compensate the utility for costs which are not "identifiable," no portion of the damages shall be credited to revenue or expense.

When a contractor has been paid in full from loan funds or from funds to be reimbursed by loan funds without a deduction for liquidated damages, the amount of liquidated damages received shall be deposited in the Construction Fund. This amount shall be reflected by a decrease in column 5, "Total Expenditures to Date," of the REA Form 595, Financial Requirement and Expenditure Statement, and as an increase in column 6, "Cash Balance." If liquidated damages are obtained by withholding an equivalent amount from the contractor's payment, the net result will be the same.

116 *Nonrefundable Payments for Construction*

Nonrefundable payments (contributions) from customers and developers for underground construction shall first be credited to Account 107.2, Construction Work-in-Progress—Force Account. When the constructed plant is unitized and distributed to the individual plant accounts, the contributions shall be credited to those plant accounts which gave rise to the contribution.

When a customer or developer furnishes a trench or other service in connection with buried plant, the cooperative shall debit Account 107.2 with the actual or estimated cost of the service performed, and account for the credit as set forth above.

117 *Refunds of Overpayments for Materials and Equipment*

Refunds of overpayments for materials and equipment previously purchased are occasionally received as the result of legal action brought against electrical suppliers for price fixing in violation of antitrust laws. Such refunds shall be accounted for as follows:

1. The refund shall first be applied to any litigation costs that were incurred.

2. Refunds for special equipment items shall be accounted for, in detail, on the Summary of Special Equipment Costs and credited against the appropriate plant accounts.

3. Other materials or equipment items that were installed through work orders or a materials furnished contract shall be adjusted on an amended work order. The amended work order shall include full details of the refund.

4. Continuing property records shall be adjusted to reflect the above transactions.

5. Amounts approved for advance on the REA Form 595, Financial Requirement and Expenditure Statement, and on the loan budget records, shall be adjusted. For special equipment items, the adjustment shall be requested in a letter to REA. For materials installed by work order or contract, the adjustments shall be made through credits shown on the REA Form 219, Inventory of Work Orders.

6. Refunds for material currently in stock shall be credited to Account 154, Plant Materials and Operating Supplies.

7. If the material was used in maintenance activities or operations, the refund shall be credited to the appropriate maintenance or operations expense account.

8. Refunds for materials or equipment financed from loan funds shall be deposited in the Construction Fund—Trustee Account or remitted to REA as a special payment on a note. Other refunds shall be deposited in the general funds.

118 *Load Control Equipment*

The primary purpose of a Load Management System is to optimize load dispatch and to reduce or minimize system peaks in order to reduce purchases of power or to delay or eliminate the need for construction of new plant. A Load Management System may be used on integrated systems, or on generation, transmission, or distribution systems separately. The telemetry equipment used for data acquisition and interpretation may be included at various points on a system, such as generation, transmission, or distribution substation, switchyards or on consumers' premises.

An effective load control program should be coordinated with the G&T and requires full participation of all member distribution systems. The G&T monitors the power load of the total member distribution system to predict the time of the system's peak load. An optimal load control strategy is developed by the G&T and is passed on from the G&T computer system to the load control computer systems of the member distribution cooperatives.

The equipment at the member distribution system level is the type actually being used by an integrated power system to operate a load control program. The equipment used may vary from one integrated power system to another. The selection of equipment used is determined by the information needs of the integrated power system, and the methods selected to operate the load control system.

Some equipment performs only SCADA-type functions. This equipment is included with the equipment that performs only load control functions because SCADA-type equipment is an integral part of a load control program. An effective load control strategy requires current information on loads so that member distribution systems can determine the actual loads to be shed and the duration of the load control.

The function and location of the load control equipment are the primary factors in determining the account in which the equipment shall be recorded. The following example depicts a common load control system and the associated accounting. Equipment type may vary, thereby necessitating the use of accounts not prescribed below. In all instances, however, the function and location of the equipment shall dictate the appropriate account classification.

G&T Borrower

1. *Coordinating System Equipment.*

Coordinating System Equipment is the data acquisition, processing and control hardware and software used to coordinate the load control efforts of the member distribution system. Generally, this equipment is dedicated to load control use and is not shared with other electric utility activities.

The purpose of the G&T load control computer system is to reduce or minimize the peak power requirements of the entire member distribution system. This involves load dispatching to control transmission circuits and breakers. The computer system for load control shall, therefore, be recorded in Account 353, Station Equipment, with the associated operating expenses recorded in Account 561, Load Dispatching, and maintenance expenses recorded in Account 570, Maintenance of Station Equipment.

2. *Coordinating System Communications Link.*

The G&T load control computer system is usually linked to the load control computer system for each member distribution system by a radio or telephone link that is dedicated to that purpose and is not shared with other communication activities. Under such circumstances, communications equipment shall be classified in Account 353, Station Equipment. If the communications equipment is shared with general use or voice communications equipment, however, the equipment shall be classified in Account 397, Communication Equipment.

3. *Depreciation.*

Load control equipment shall be recorded in separate subaccounts of the primary plant accounts detailed above and shall be depreciated based upon the owner's estimate of the equipment's useful service life.

Distribution Borrower

1. *Member System Equipment.*

Member system equipment is the data acquisition, processing and control hardware and software used as a subset to the overall load control efforts by the integrated power system.

The member system computer for each distribution member system accepts the control strategy from the G&T coordinating system and develops the tables that determine the control loads that are to be shed and the duration of the load control. The member system computer for each distribution system monitors the usage at each of its delivery points. This usage data is then transmitted to the G&T coordinating system for use in developing load projects and evaluating control strategies for the integrated power system. The member system computer is generally dedicated to load control use and is not shared with other electric utility operations.

The member computer system shall be recorded in Account 362, Station Equipment. The associated operating expenses shall be recorded in Account 581, Load Dispatching, and maintenance expenses shall be recorded in Account 592, Maintenance of Station Equipment.

2. *Substation Remote Controllers.*

Substation Remote Controllers are located at the distribution substation. They accept control signals from the member system computer and couple the signal to the portion of the distribution system to which it is connected. Substation Remote Controllers also serve as a receiver of inbound signals from transponders located in the distribution system. They also send data back to the member system computer.

Substation Remote Controllers shall be recorded in Account 362, Station Equipment. The associated operating expenses shall be recorded in Account 582, Station Expenses, and maintenance expenses shall be recorded in Account 592, Maintenance of Station Equipment.

3. *Substation Injection Units.*

Substation Injection Units are used only in power line based systems and are located in distribution substations. A major function of the Substation Injection Unit is to receive load control signals from the member system computer and inject them into the power line based system to be transmitted to the Load Control Receivers. Substation Injection Units can also perform control and SCADA functions similar to those performed by Substation Remote Controllers.

Substation Injection Units shall be recorded in Account 362, Station Equipment. The associated operating expenses shall be recorded in Account 582, Station Expenses, and maintenance expenses shall be recorded in Account 592, Maintenance of Station Equipment.

4. *Remote Terminal Units.*

Remote Terminal Units perform electric utility SCADA functions in a distribution substation or delivery point. These functions include monitoring equipment for abnormal operating conditions, monitoring analog quantities such as conductor voltage or substation load, and controlling of certain equipment within the substation.

Remote Control Units shall be recorded in Account 362, Station Equipment. The associated operating expenses shall be recorded in Account 582, Station Expenses, and maintenance expenses shall be recorded in Account 592, Maintenance of Station Equipment.

5. *Line Device Transponder.*

A Line Device Transponder directly controls a piece of distribution apparatus, such as a voltage regulator or a power factor correction capacitor, located on a distribution feeder and not accessible to a Remote Terminal Unit. The Line Device Transponder actuates the control functions and reports back to the member system computer upon completion of the requested action. This transponder is located at the site of the distribution apparatus being controlled.

Line Device Transponders shall be recorded in Account 368, Line Transformers. The associated operating expense shall be recorded in Account 583, Overhead Line Expenses, or Account 584, Underground Line Expenses, as appropriate, and maintenance expenses shall be recorded in Account 595, Maintenance of Line Transformers.

6. *Communications Verification Transponders.*

Communication Verification Transponders are used to respond to inquiries from Substation Remote Controllers. In power line based systems, these transponders are used to verify the performance of the

communications system. They are also used during adverse system operations to isolate sections of the distribution system that are experiencing an outage.

Communication Verification Transponders shall be recorded in Account 362, Station Equipment. The associated operating expenses shall be recorded in Account 582, Station Expenses, and maintenance expenses shall be recorded in Account 592, Maintenance of Station Equipment.

7. *Load Control Receivers*

The Load Control Receiver is located at the site of the consumer's load. These receivers directly control the electric supply to an end-use appliance, such as an electric water heater, central air conditioning compressor, or irrigation pump. The amount of time that an appliance will be turned off by the load control receiver is preset. When the member system computer determines that load shedding is necessary, it sends a signal to the communication link which then sends signals directly to the Load Control Receivers. In a power line based system, the signal from the communications link is sent by radio or telephone line to the Substation Injection Units, which then signals the Load Control Receivers to shut down the appliances for the present time. In nonpower line based systems, the signal from the communications link is sent by radio directly to the Load Control Receivers.

Load Control Receivers are located on the consumer's side of the meter. When the member distribution system retains title to the Load Control Receivers and assumes full responsibility for maintenance and replacement of the equipment, it shall be classified in Account 371, Installations on Customer's Premises. Load Control Receivers that are donated or given to consumers shall be charged to Account 908, Customer Assistance Expenses.

Operating and maintenance expenses applicable to Load Control Receivers recorded in Account 371 shall be charged to Account 587, Customer Installations Expenses, and Account 598, Maintenance of Miscellaneous Distribution Plant, respectively. Expenses applicable to Load Control Receivers donated or given to consumers shall be recorded in Account 908, Customer Assistance Expenses.

8. *Communication Links*

The communication link in the member distribution systems between the Member System Computer, the Substation Remote Controllers or Substation Injection Units, Remote Terminal Units, Line Device Transponders, Communication Verification Transponders, and Load Control Receivers is usually accomplished by radio, telephone line, or power line based system. The communication links are normally dedicated to the SCADA and load control functions being served. Under such circumstances, communications equipment shall be recorded in Account 362, Station Equipment. If, however, the communication equipment used is shared with general use or voice communications equipment, the equipment shall be charged to Account 397, Communication Equipment.

9. *Depreciation.*

Load control equipment shall be recorded in separate subaccounts of the primary plant accounts detailed above and shall be depreciated based upon the manufacturer's estimate of the equipment's useful service life.

119 *Special Equipment*

Special Equipment items are classified as such because they are continually being moved from one location to another due to load changes and maintenance practices. The Uniform System of Accounts provides accounting that differs from that used for other types of materials. The cost, new, of special equipment items shall be capitalized at the time of purchase; it shall not be charged to Account 154 as is the case with other materials. The first installation cost, as well as all incidental costs necessary to prepare the equipment for use, shall be capitalized with the material upon purchase. All subsequent costs of removing, resetting, changing, renewing oil, and repairing constitute operations and maintenance expenses. The capitalized cost of special equipment items, including the first installation, shall be removed from the electric plant accounts only when the items are abandoned or retired from the system.

Meters, line-type transformers, oil circuit reclosers, sectionalizers, current and potential transformers, meter sockets, and other metering equipment listed in Account 370, Meters, as well as pole-type and underground voltage regulators in Account 368, Line Transformers, are considered to be special equipment items. Transformers, voltage regulators, metering equipment, and current and potential transformers for substations are not.

Special equipment items which are classified as nonusable shall be segregated in the warehouse and retired from service. The Summary of Special Equipment Costs shall be retitled Summary of Special Equipment Costs Retired and used for this purpose. A journal entry reflecting this information shall be prepared and posted to the books. Since loan funds for special equipment, including first installation costs, are approved for advance by REA upon receipt of the borrower's written estimate of funds required, and not on the basis of an Inventory of Work Orders, it is improper to take a credit for any salvage involved in the retirement of special equipment on the Inventory of Work Orders.

120 *Meter Sockets and Meters*

When a utility furnishes meter sockets, ownership by the utility of the meter socket or base, as well as the meter itself, is established by virtue of them being furnished without cost to the consumer by the cooperative. While no agreement as to ownership between the cooperative and the property owner exists, cooperative ownership is implied by long standing practice and tradition in the electric utility industry.

121 *Minimum-Maximum Voltmeters*

A minimum-maximum voltmeter is used to record the minimum and maximum voltages at a specific line location over a period of time. It is normally installed on a pole in connection with a 1½ kVA transformer, a meter base and connecting wires, and other small items of materials. Meter bases are ordinarily set for these voltmeters throughout the system, and a lesser number of voltmeters are rotated among them periodically to obtain voltage readings. An average system may have one voltmeter to two installations, with a maximum of 20 or 25 voltmeters for the whole system.

Minimum-maximum voltmeters shall be recorded, through work orders, in Account 370, Meters, when installed. The cost of the transformers shall remain in Account 368, Line Transformers, with the cost of the meter bases remaining in Account 370, Meters. The miscellaneous material used in installing the transformer and the meter base shall be charged to Account 370, Meters.

Maintenance expense shall be charged to either Account 595, Maintenance of Line Transformers, or Account 597, Maintenance of Meters, as appropriate. Costs associated with reading the voltmeters shall be charged to Account 583, Overhead Line Expenses, and the cost of relocating or changing the complete installation or any part thereof, other than retirement of the meter base, shall be charged to Account 583, Overhead Line Expenses, or Account 586, Meter Expenses.

122 *Retrofitting Demand Meters*

Demand meters perform two functions. They measure the amount of electricity used over a period of time in

kilowatt-hours (kWh), which is recorded on a mechanical register, and they indicate the maximum kilowatts (kw) required at any one time by means of a pointer.

Electronic or solid state demand meters are more expensive than mechanical demand meters; however, they have a direct readout which can read kilowatt demand to two decimal places. The use of a direct readout may result in a revenue enhancement as pointer readings tend to register lower than actual.

Many borrowers have begun the process of retrofitting (replacing the pointer reading with a direct readout) their demand meters. The cost of such a replacement is normally expensed because it is a minor item of property; however, since the use of a direct readout results in a substantial betterment, these replacement costs shall be capitalized.

123 *Transformer Conversions*

The conversion of an overhead transformer to an underground transformer constitutes a betterment and shall, therefore, be capitalized.

124 *Transclosures*

Transclosures are enclosures or cabinets in which line transformers are mounted. The cost of transclosures that are purchased separately from the transformer shall be charged to Account 154, Plant Materials and Operating Supplies, when received, and capitalized, upon installation, to Account 368, Line Transformers, as a separate unit of property. If the case and the transformer are inseparable, the unit is considered a transformer and shall be capitalized upon purchase.

125 *Retirement Units*

Services

A retirement unit shall consist of a complete service rather than the individual wires comprising that service. If each separate wire of a service were treated as a retirement unit, the retirement unit would represent a comparatively small cost. Such a small unit of property would substantially increase the number of retirement work orders. The complete service shall, therefore, be considered a retirement unit.

Minor Items

When minor items of property are added separately from complete retirement units, the costs of these items shall be included in work orders, and by unitizing all costs of completed construction for a month, these minor items shall be spread to the retirement units of which they normally form a part. For example, to convert a two-phase line to a three-phase line requires the addition of a conductor, an insulator and a pole-top pin. A pole-top pin is typically capitalized as a component of the cost of the pole to which it is attached. Assuming this is the only work order for the month, the cost of this pin shall be charged to the conductor, so that its cost is included in the total cost of the project. In actual practice, however, this does not happen as it is normal to have a number of work orders for a given month, which include the setting of poles. In allocating the cost of all construction projects for the month, part of the cost of pole-top pins shall be allocated to poles even though the work orders on which they were capitalized did not include poles.

The retirement and replacement of isolated single retirement units cannot be charged to maintenance; a retirement and construction work order shall be used.

126 *Establishment of Continuing Property Records*

The costs of installing a system of continuing property records shall be charged to Account 930.2, Miscellaneous General Expenses, and may include:

1. Labor and expenses incurred in developing an inventory of property;

2. Labor and material costs incurred in connection with developing pole records including map preparation and pole cards; and

3. Labor and material costs (ledger sheets, etc.) incurred in connection with the installation of the record system.

127 *Continuing Property Records for Buildings*

When establishing continuing property records for a building where there is no detailed breakdown of contract costs, it is necessary to estimate the cost of the each component part. It should be noted that the establishment of continuing property records is not required for buildings; however, if CPRs are not maintained, all repairs including the replacement of major component parts shall be expensed in the period incurred.

128 *Sale of Property*

All proceeds deposited in the Construction Fund Account from the sale of property, regardless of materiality, shall be reflected on the REA Form 595, Financial Requirement and Expenditure Statement. Proceeds from the sale of property shall be reported on the Form 595, by budget purpose, as a reduction in total expenditures to date, column 5; and an increase in the cash balance, column 6.

Proceeds from the sale of property shall not be used to maintain an "Employee Fund." A utility may, pursuant to board policy, use general funds for employee welfare equivalent in amount to proceeds received from the sale of scrap property. If general funds, in an amount equivalent to proceeds received from the sale of scrap property, are used for employee welfare, Account 926, Employee Pensions and Benefits, shall be charged.

129 *Gain or Loss on the Sale of an Office Building*

A gain on the sale of an office building shall be recorded in Account 421.1, Gain on the Disposition of Property, with a loss recorded in Account 421.2, Loss on the Disposition of Property. If the gain or loss will materially distort current year's net margins, such gain or loss is reportable as an extraordinary item in Account 434, Extraordinary Income, or Account 435, Extraordinary Deductions.

130 *Salvage and Obsolete Material*

The value of material salvaged from the retirement of units of property reduces the loss of the retirement and shall be so applied. The value assigned to salvage shall be credited to Account 108.8, Retirement Work-in-Progress, which results in reducing net charges to the provision for depreciation when the work order is completed and cleared.

If salvage is sold, any difference between the realized value and the estimated value of the salvaged material shall be charged or credited to the appropriate provision for depreciation.

Salvage resulting from maintenance where no retirement units are involved shall be debited to the materials and supplies account, and credited to the appropriate maintenance account.

Occasionally, a utility will have a loss due to obsolescence of materials on hand. If the loss is due to obsolescence of new material, the loss shall be charged to Account 426.5, Other Deductions. If the loss is due to obsolescence of used material, the loss shall be charged to the appropriate subaccount of Account 108, Accumulated Provision for Depreciation.

131 *Plant Acquisition Adjustments*

Plant acquisition adjustments shall be amortized to the operating expense accounts. These adjustments are recorded in Account 114, Electric Plant Acquisition Adjustments, and amortized to Account 406, Amortization of Electric Plant Acquisition Adjustments, or Account 425, Miscellaneous Amortization, as required by the regulatory commission having jurisdiction. Accounts 406 and 425 shall be closed to operating margins.

132 *General Plant*

When the unit method of depreciation is used for general plant items, gains and losses on sales, trades or disposals of equipment shall be recorded as such. If the composite method of depreciation is used, gains or losses on the disposal of general plant items shall be recorded in the appropriate depreciation reserve account.

A truck which is used only for transporting power operated equipment mounted thereon shall be charged, together with the installed equipment, to Account 396, Power Operated Equipment. If the same type of truck is used for transporting materials and supplies, tools and work equipment, personnel, or other items, the cost of the truck shall be charged to Account 392, Transportation Equipment.

Depreciation and other expenses relating to power operated equipment shall be accumulated in a subaccount of Account 184, Clearing Accounts, and distributed monthly on an equitable basis to the accounts properly chargeable.

Depreciation expense on vehicles and other work equipment, furniture and office equipment, and other such plant used in the construction of utility plant, is a proper component of construction cost. To avoid a duplicate advance of funds, however, the amount of depreciation on such items that has previously been financed from loan funds shall be deducted from Inventories of Work Orders submitted to REA. This amount shall be specifically identified, and shown either monthly or annually as a single item in column 9 on the REA Form 219, Inventory of Work Orders.

133 *Plant Abandonments and Disallowances of Plant Costs*

In December 1986, the FASB issued Statement of Financial Accounting Standards No. 90, (Statement No. 90), Regulated Enterprises—Accounting for Abandonments and Disallowances of Plant Costs. This section provides an overview of the requirements outlined in Statement No. 90 together with the specific accounts that shall be used to record a plant abandonment or a disallowance of plant costs.

Plant Abandonments

When an abandonment becomes probable, the cost of the abandoned asset shall be removed from Construction Work-in-Progress or Plant-in-Service, as applicable. Before making this transfer, however, a determination must be made as to whether recovery of the allowed cost is likely to be provided with a full return on the investment during the period from the time the abandonment becomes probable, to the time when recovery is completed, or with a partial or no return on the investment. This determination shall be made based upon the facts and circumstances on the specific abandonment, and past practices and current policies of regulatory jurisdiction.

If a full return on the investment is likely to be provided, any disallowance of all or part of the cost of abandoned plant that is both probable and reasonably estimated shall be recognized as a loss in the current year with the carrying basis of the asset reduced by an equal amount. The remaining cost of abandoned plant shall be recorded as a separate new asset.

If partial or no return on the investment is likely to be provided, any disallowance of abandoned plant costs that is both probable and reasonably estimated shall be recognized as a loss. The present value of the future revenues expected to be provided to recover the allowable cost of the abandoned plant and return on the investment, if any, shall be reported as a separate new asset. The discount rate used to compute the present value shall be the borrower's incremental borrowing rate, which is the rate that the borrower would have to pay to borrow an equivalent amount for a period equal to the expected recovery period. In determining the value of expected future revenues, the borrower shall consider the probable time period before the recovery is expected to begin and the probable time period over which recovery is expected to be provided.

The amount of the new asset shall be adjusted from time to time, as necessary, if new information indicates that the estimates used to record the new asset have changed. The carrying value of the new asset, however, shall not be adjusted for changes in the incremental borrowing rate. The amount of any adjustments shall be recorded as a gain or loss.

During the period between the date on which a new asset is recognized and the date on which recovery begins, the carrying amount shall be increased by accruing a carrying charge. The rate used to accrue the carrying charge shall be:

1. If a full return on the investment is likely, a rate equal to the allowed overall cost of capital in the jurisdiction in which recovery is expected to be provided shall be used.

2. If partial or no return is likely, the asset shall be amortized in a manner that will produce a constant return on the unamortized investment in the new asset equal to the rate at which the expected revenues were discounted.

Due to the nonprofit environment in which electric cooperatives operate, full recovery of interest expense on plant related long-term debt equates to full recovery of the rate of return for an investor-owned utility. Therefore, if a cooperative is permitted full recovery of the interest expense incurred on the long-term debt borrowed to finance construction of an abandoned plant, no discounting of the asset is required nor is accrual of the carrying charge permitted.

If, at the time the provisions of FASB No. 90 are first applied, the borrower elects to restate the financial statements, the financial statements for all periods presented shall be restated and the financial statements shall disclose the nature of the restatement and its effect on margins before extraordinary items, net margins, and patronage capital at the beginning of the earliest period presented. If the borrower elects not to restate the financial statements, the effect of applying FASB No. 90 shall be reported as a change in accounting principle and the financial statement shall disclose the nature of the change and the effect of applying Statement No. 90 on margins before extraordinary items and net margins.

The specific accounts that shall be used to record transactions involving plant abandonments are as follows:

1. In the year of the abandonment, the unrecoverable portion of the cost of abandoned plant included in construction work-in-progress shall be recongized as a loss by a charge to Account 426.5, Other Deductions, and a credit to Account 107, Construction Work-in-Progress.

2. The balance of the cost remaining in the construction work-in-progress account shall be credited to Account 107 and charged to Account 182.2, Unrecovered Plant and Regulatory Study Costs.

3. The difference between the charge to Account 182.2 and the present value of expected future revenues for recovery of the new asset, shall be recorded as a credit to Account 182.2 and a debit to Account 426.5. The credit to Account 182.2 shall be segregated from the amount charged to Account 182.2 by the use of a separate subaccount. Statement No. 90 does not require this segregation; however, it is necessary under the Uniform System of Accounts (USoA) to provide for the appropriate segregation of operating and nonoperating income.

4. During the waiting period for recovery of the new asset to begin,

carrying charges shall be accrued by a debit to Account 182.2 with a concurrent credit to Account 421, Miscellaneous Nonoperating Income. Debits to Account 182.2 shall be treated as reductions to the credit subaccount of Account 182.2.

5. The borrower shall amortize the amount debited to Account 182.2 by charges to operating income, consistent with the way the amortized amounts are recovered through rates. These charges to income shall be recorded in Account 407, Amortization of Property Losses, Unrecovered Plant and Regulatory Study Costs.

6. As the recoverable amount recorded in Account 182.2 is recovered through rates, the borrower shall accrue income by charges to Account 182.2 and credits to Account 421, Miscellaneous Nonoperating Income. Accruals shall be computed by applying the same rate used to derive the present value of the asset established in Account 182.2, to the unamortized balance in that account. Accrued amounts charged to Account 182.2 shall be treated as reductions to the credit subaccount within Account 182.2.

Prior to implementing the accounting prescribed above, the borrower shall submit the details of each plant abandonment to REA for approval.

Disallowances of Costs of Recently Completed Plant

When it becomes probable that a portion of the cost of recently completed plant will be disallowed for rate making purposes and a reasonable estimate of the amount of the disallowance can be made, the estimated amount of the probable disallowance shall be deducted from the reported cost of the plant and recognized as a loss. If a portion of the costs is explicitly, but indirectly disallowed, the equivalent amount of the cost shall be deducted from the reported cost of the plant and recognized as a loss.

The specific accounts that shall be used to record transactions involving the disallowance of plant costs are as follows:

1. Estimated disallowed plant costs which the borrower records as a credit to Account 101, Electric Plant-in-Service, shall be charged to Account 426.5, Other Deductions.

2. If the loss qualifies as an extraordinary item under the criteria set forth in General Instruction No. 7 of the USoA, the borrower shall record the loss in Account 435, Extraordinary Deductions. To be considered extraordinary, an item shall be more than five percent of income computed before extraordinary items. If a borrower believes that a loss of less than five percent should be treated as an extraordinary item; the borrower shall, with commission approval, record the loss in Account 435 and report the loss as an extraordinary item. If the borrower is not subject to state commission jurisdiction, REA approval is required.

134 *Utility Plant Phase-in Plans*

In August 1987, the FASB issued Statement of Financial Accounting Standards No. 92 (Statement No. 92), Regulated Enterprises—Accounting for Phase-in Plans. This section provides an overview of the requirements outlined in Statement No. 92.

The term phase-in plan is used to refer to any method of recognition of allowable costs in rates that meets all of the following criteria:

1. The method was adopted by the regulator in connection with a major, newly completed plant of the regulated enterprise or one of its suppliers or a major plant scheduled for completion in the near future.

2. The method defers the rates intended to recover allowable costs beyond the period in which those allowable costs would be charged to expense under generally accepted accounting principles applicable to enterprises in general.

3. The method defers the rates intended to recover allowable costs beyond the period in which those rates would have been ordered under the rate-making methods routinely used prior to 1982 by that regulator for similar allowable costs of that regulated enterprise.

If a phase-in plan is ordered by a regulator in connection with a plant on which no substantial physical construction had been performed before January 1, 1988, none of the allowable costs that are deferred for future recovery by the regulator under the plan for rate-making purposes, shall be capitalized for general-purpose financial reporting purposes (financial reporting).

If a phase-in plan is ordered by a regulator in connection with a plant completed before January 1, 1988, or a plant on which substantial physical construction had been performed before January 1, 1988, the criteria specified below shall be applied to that plan. If the phase-in plan meets all of those criteria, all allowable costs that are deferred for future recovery by the regulator under the plan shall be capitalized for financial reporting purposes as a separate asset (a deferred charge). If any one of those criteria is not met, none of the allowable costs that are deferred for future recovery by the regulator under the plan shall be capitalized for financial reporting. The criteria for determining whether capitalization is appropriate are:

1. The allowable costs in question are deferred pursuant to a formal plan that has been agreed to by the regulator;

2. The plan specifies the timing of recovery of all allowable costs that will be deferred under the plan;

3. All allowable costs deferred under the plan are scheduled for recovery within 10 years of the date when the deferral began; and

4. The percentage increase in rates scheduled under the plan for each future year is no greater than the percentage increase in rates scheduled under the plan for each immediately preceding year. That is, the scheduled percentage increase in year two is no greater than the percentage increase granted in year one, the scheduled percentage increase in year three is no greater than the percentage increase in year two, etc.

By definition, a phase-in plan approved prior to 1982 that contains provisions contrary to those detailed above is not subject to the provisions of Statement No. 92. This exemption, however, only relates to a specific utility and a specific regulator. For example, a utility cannot use a phase-in plan approved by its regulator for a different utility as justification for its phase-in plan exceeding the 10-year limit imposed by Statement No. 92.

A phase-in plan is a method of rate making intended to moderate a sudden increase in rates while providing the regulated enterprise with recovery of its investment and a return on that investment during the recovery period. A disallowance is a rate-making action that prevents the regulated enterprise from recovering either some amount of its investment or some amount of return on its investment. Statement No. 90 specifies the accounting for disallowances of plant costs (see item 133 of this regulation). If a method of rate making that meets the criteria for a phase-in plan includes an indirect disallowance of plant costs, that disallowance shall be accounted for in accordance with Statement No. 90.

Cumulative amounts capitalized under phase-in plans shall be reported as a separate asset in the balance sheet. The net amount capitalized in each period or the net amount of previously capitalized allowable costs recovered during each period shall be reported as a separate item of other income or expense in the income statement. Allowable costs capitalized shall not be reported as reductions of other expenses.

The terms of any phase-in plan in effect during the year or ordered for

future years shall be disclosed in the financial statements. Statement No. 92 does not permit capitalization for financial reporting of allowable costs deferred for future recovery by the regulator pursuant to a phase-in plan that does not meet the criteria or a phase-in plan related to plant on which substantial physical construction was not completed before January 1, 1988. Nevertheless, the financial statements shall include disclosures of the net amount deferred at the balance sheet date for rate-making purposes, and the net change in deferrals for rate-making purposes during the year for those plans.

If the provisions of Statement No. 92 are applied retroactively, the financial statements of all periods presented shall be restated. In addition, the restated financial statements shall, in the year that Statement No. 92 is first applied, disclose the nature of any restatement and its effect on margins before extraordinary items, net margins, and on patronage capital at the beginning of the earliest period presented. If the financial statements for prior years are not restated, the effects of applying Statement No. 92 to existing phase-in plans shall be reported as a change in accounting principle and the financial statements shall disclose the effect of adopting Statement No. 92 on margins before extraordinary items and net margins.

The application of Statement No. 92 to an existing phase-in plan shall be delayed if both of the following conditions are met:

1. The enterprise has filed a rate application to have the plan amended to meet the criteria of Statement No. 92 or intends to do so as soon as practicable; and

2. It is reasonably possible that the regulator will change the terms of the phase-in plan so that it will meet the criteria of Statement No. 92.

If the above conditions are met, the provisions of Statement No. 92 shall be applied to the existing phase-in plan on the earlier of the date when one of the conditions ceases to be met or the date when the final rate order is received, amending or refusing to amend the phase-in plan. However, if the enterprise delays filing its application for the amendment or the regulator does not process the application in the normal period of time, the application of Statement No. 92 shall not be further delayed.

In applying the criteria of Statement No. 92 to a plan that was in existence prior to the first fiscal year beginning after December 15, 1987, and that was revised to meet that criteria, the 10-year criterion and the requirement concerning the percentage increase shall be measured from the date of the amendment rather than from the date of the first scheduled deferrals under the original plan. All phase-in plans must receive REA approval prior to implementation.

135 *Accounting for Removal or Relocation of Electric Facilities Resulting From the Action of Others*

Under arrangements with another party, a borrower agrees, or is obliged, to remove, relocate, rearrange, or otherwise make changes in utility property, other than for the purpose of rendering utility service to the other party, for which the utility is reimbursed for all or a portion of the costs incurred.

Plant Accounting

The relocation of the line shall be accounted for as follows:

a. If all of the assemblies in the line are retired or completely removed and later reinstalled or if the line is constructed in a new location before the old line is removed, construction and retirement work orders shall be prepared except for the costs relating to special equipment items (transformers, oil circuit reclosers, etc.) which shall be charged to operations expense.

b. If a line is moved in its entirety to a new location except for isolated retirement units (such as at the end of the line) or poles not suitable for resetting, the cost of moving the portion of line that is moved intact shall be charged to maintenance expense while the cost related to the change in isolated retirement units or the replacement of poles not suitable for resetting shall be accounted for through use of construction and retirement work orders.

c. If a line is moved intact without any change in assemblies, the cost shall be charged to maintenance expense.

Reimbursement

If the borrower receives reimbursement for the costs related to the relocation of the line, the reimbursement shall be accounted for by crediting operation and maintenance expenses to the extent of actual expenses occasioned by the plant changes and crediting the remainder to the accumulated provision for depreciation, unless contractual terms definitely characterize residual or specific amounts as applicable to the cost of replacement. In the latter event, appropriate credits shall be entered in the plant accounts.

Reimbursement received from a telephone company for adding a pole or replacing a present pole with a taller pole under joint use contracts falls within this latter category. In this instance, appropriate credits are charged against the plant accounts.

Financing

The total reimbursement, less any portion for operations and maintenance costs, shall be entered in the "Contributions in Aid of Construction" section at the bottom of the Construction Work Order. When the Inventory of Work Orders (REA Form 219) is prepared, enter only enough of the contribution in column 9 to reduce to zero the amount in column 10, "Loan Funds Subject to Advance by REA." This entry is made although none of the reimbursement received is recorded in the accounting records as a contribution in aid of construction.

201 *Supplemental Financing*

Many borrowers secure additional financing from sources other than REA. CFC was established to provide a source of supplemental financing. Although the accounting provided in this section refers to CFC, it is applicable to other sources of supplemental financing as well.

1. *Membership Fees*

When a membership fee is paid to CFC, the payment shall be recorded as a debit to Account 123.23, Other Investments in Associated Organizations.

2. *Subscriptions*

The subscription agreement to purchase Capital Term Certificates (CTCs) is a binding obligation to pay an initial subscription in equal annual payments over the first three years and an additional annual subscription payable in the fourth through fifteenth years.

The annual subscriptions to CFC for the fourth through fifteenth years is 2.0 percent of total operating revenues after deducting the cost of power. Using the best data available, each borrower shall estimate the amount of CTCs that are required to be purchased. Estimates are not expected to be precise and adjustments shall be made when future projections indicate a change is needed. When the agreement to purchase CTCs is made, an entry shall be recorded debiting Account 123.21, Subscriptions to Capital Term Certificates—Supplemental Financing, and crediting Account 224.11, Other Long-Term Debit-Subscriptions. When the CTCs are actually purchased, the following entries shall be recorded:

Dr. 224.11, Other Long-Term Debt—Subscriptions. Cr. 131.1, Cash—General

Dr 123.22, Investments in Capital Term Certificates—Supplemental Financing. Cr. 123.21, Subscriptions to Capital Term Certificates—Supplemental Financing.

3. *Interest Receipts*

Interest accrues monthly to the holder of CTCs at a rate in accordance with the terms of the CFC Invitation to Subscribe. The accrual of interest and the receipt of interest proceeds shall be recorded as follows:

Dr. 171, Interest and Dividends Receivable. Cr. 419, Interest and Dividend Income. To the record the monthly accrual of interest.

Dr. 131.1, Cash—General. Cr. 171, Interest and Dividends Receivable. To record the receipt of interest proceeds from the investment in CTCs.

Note: Any amounts received in excess of the previous accruals shall be credited to Account 419.

Interest penalties may be charged by CFC for late payments on any subscription from the date that the payment was due to the date that the payment was actually received. Such charges shall be expensed to Account 431, Other Interest Expense.

4. *Notes*

If a note is due more than one year after the date of the note, the appropriate subaccount of Account 224, Other Long-Term Debt, shall be credited. If the note is due less than one year from the date of the note, Account 231, Notes Payable, shall be credited.

When a loan from CFC has been consummated and a note is executed, Account 224.13, Supplemental Financing Notes Executed—Debit, shall be debited; and Account 224.12, Other Long-Term Debt—Supplemental Financing, credited. When a loan from another source has been consummated, Account 224.15, Notes Executed—Other—Debit, shall be debited; and Account 224.14, Other Long-Term Debt—Miscellaneous, credited.

5. *Loan Proceeds*

Cash proceeds from unsecured short-term loans shall be deposited into the General Fund Account. Cash proceeds from all secured loans shall be deposited into the Construction Fund Trustee Account.

From two to seven percent, depending upon the class of borrower and its debt-equity ratio, of each CFC loan is applied to the purchase of Capital Term Certificates. At the time of a borrower's first requisition under the CFC loan, the following entry shall be recorded:

Dr. 131.21, Cash—Construction Fund—Trustee

Dr. 123.22, Investments in Capital Term Certificates—Supplemental Financing. Cr. 224.13, Supplemental Financing Notes Executed—Debit.

6. *Capital Credits*

As a result of borrowing from CFC or other lenders organized on a cooperative basis, a borrower may receive capital credit allocations. These allocations are usually based upon the borrower's participation in the lending program with participation measured by the amount of interest expense and conversion costs incurred.

To account for patronage capital allocations from cooperative lenders, the following journal entries shall be recorded:

Dr. 123.1, Patronage Capital from Associated Cooperatives. CR 424, Other Capital Credits and Patronage Capital Allocations. To record the allocation of capital credits from a cooperative lender.

Note: If any portion of the interest expense was capitalized as a component of construction cost, a similar portion of the capital credit allocation shall be credited to construction rather than to Account 424. The portion credited to construction shall be determined by applying the percentage of interest expense charged to construction for that particular lender to the interest expense incurred for that lender.

Dr. 131.1, Cash—General Cr. 123.1, Patronage Capital from Associated Cooperatives. To record the cash receipt of patronage capital credits from cooperative lenders.

301 *Forfeited Customers' Deposits*

Customers may be required to make deposits to guarantee payment of amounts billed for electric service. When a customer discontinues service, the customer's deposit shall first be applied to unpaid energy bills, with the balance remitted by check to the customer. If the check is returned, it shall be voided and the original entry that was made when the check was issued shall be reversed.

Unclaimed balances of customer deposits shall remain in Account 235, Customer Deposits, until the legal liability of the cooperative to make such a refund has elapsed. When there is no further legal liability to refund the deposit and if it does not escheat to the state, it shall be transferred to Account 144, Accumulated Provision for Uncollectible Customer Account—Credit, retaining full information of all particulars.

401 *Computer Software Costs*

Computer software consists of programs and routines (sets of computer instructions) which direct the operation of the computer. Software may refer to generalized routines useful in computer operations or to programs for specific applications such as payroll.

The distinction between generalized software and application software is important. Generalized software provides operating support for individual applications. This would include programs for such tasks as making printouts of machine-readable records, sorting records, organizing and maintaining files, translating programs written in a symbolic language into a machine-language instructions, and scheduling jobs through the computer. These programs are generally furnished by the manufacturer.

Application software consists of a set of instructions for performing a particular data processing task. Application programs are generally written by the user installation, but are frequently obtained as prewritten packages from software vendors. Application software includes programs such as payroll, billing, general ledger, as well as engineering or managerial applications.

Costs incurred with the purchase and/or development of computer software shall be accounted for as follows:

1. Capitalize in a subaccount of Account 391, Office Furniture and Equipment, all costs for generalized software. Depreciate the cost over the service life (or remaining life) of the main hardware (i.e., containing central processor). If the purchase invoice does not break out or assign a cost to the "generalized software," it is appropriate to include the full amount in hardware costs. Defer in Account 186, Miscellaneous Deferred Debits, the cost of all applications software determined to have a service life of over one year. Amortize this cost over the estimated useful life of the program. This amortization period shall not exceed five (5) years. We realize, however, that there may be circumstances that justify a useful life longer than 5 years. When this is the case and it is management's intent to utilize these programs over an extended period, written justification shall be submitted to REA for approval.

2. Expense, in the period incurred, all costs associated with the maintenance, updating, and conversion of files or revision of all software, and all costs for software with a useful life of less than 1 year. Also, expense the unamortized cost of all software determined, during the year, to be no longer used by or useful to the cooperative.

In determining the total cost of purchased or internally developed software, the following items shall be included:

a. Costs incurred for feasibility studies if they result in the purchase or development of software;

b. All costs related to the actual purchase or development of the

software. These costs must be specifically identifiable with the software and properly supported by time cards, invoices, or other documents; and

c. All costs incurred in "testing and debugging" the software.

Computer software costs are properly chargeable to Account 107, Construction Work-in-Progress, provided that the following criteria are met:

1. The computer program is specifically dedicated to performing a construction related activity, and

2. The cost of the software is itemized separate and apart from other hardware and software costs.

The cost of software programs meeting the above requirements and having an estimated useful service life in excess of 1 year shall be recorded in Account 186, Miscellaneous Deferred Debits, and amortized to Account 107, Construction Work-in-Progress, over the estimated service life of the program not to exceed 5 years.

All costs related to training personnel in the use of software shall be expensed as incurred.

The accounting in this section is not intended to apply to immaterial amounts. When it is deemed that the costs of the recordkeeping necessary to amortize these costs outweigh the benefits to the patrons, software costs shall be expensed in the year incurred.

For computer costs relating to load control equipment, refer to Item 118 of this section.

402 *Legal Expenses*

Utilities may incur legal expenses which pertain to construction activities, loan activities, or general services. The proper accounting treatment for legal expenses is as follows:

1. Legal fees incurred in connection with a construction project, including the court costs directly related thereto, which can be identified and supported as such, shall be capitalized in Account 107, Construction Work-in-Progress, as a cost of construction.

2. Legal fees specifically identified and properly supported as resulting from activities designed to obtain long-term debt, shall be deferred in Account 181, Unamortized Debt Expense.

3. Legal fees for all other services and fees which cannot be properly identified will require expensing to either Account 417.1, Expenses of Nonutility Operations, or Account 923, Outside Services Employed, as appropriate.

To properly support the capitalization or deferral of legal fees, the attorney shall provide an itemization of services performed and the corresponding costs. Only those costs specifically identified by the attorney as being related to construction or loan activities shall be capitalized or deferred as described above.

403 *Leases*

Lease transactions shall be accounted for as either a capital lease or an operating lease depending upon whether or not the lease meets the criteria for classification as a capital lease. The definitions for capital and operating leases and the criteria used to determine which method shall be used are as follows:

Definitions

1. *Capital Lease:* A lease that transfers substantially all of the benefits and risks inherent in the ownership of the property to the lessee, who accounts for the lease as an acquisition of an asset and the incurrence of a liability.

2. *Operating Lease:* An operating lease is a simple rental agreement which does not meet the criteria for a capital lease. Under the terms of an operating lease, the lessee records the rental payments due over the term of the lease as rent expense.

Criteria

A lease agreement shall be classified as a capital lease if one or more of the following criteria is met:

1. Ownership of the property is transferred to the lessee by the end of the lease term;

2. The lease contains a bargain purchase option;

3. The lease term is equal to 75 percent or more of the estimated useful life of the leased property; or

4. The present value of the lease payments at the inception of the lease equals or exceeds 90 percent of the fair market value of the leased property.

A lease agreement qualifying as a capital lease shall be recorded in either Account 101.1, Property Under Capital Leases; Account 120.6, Nuclear Fuel Under Capital Leases; or Account 121, Nonutility Property, as appropriate, at the present value (at the beginning of the lease term) of the minimum lease payments. If, however, this amount exceeds the fair value of the leased property at the inception of the lease, the asset shall be recorded at its fair market value. An offsetting credit shall be recorded in Account 227, Obligations Under Capital Leases—Noncurrent, with the current portion recorded in Account 243, Obligations Under Capital Leases—Current. Assets recorded in Account 101.1 shall be classified separately according to the detailed accounts (301–399) provided for electric plant in service.

Monthly payments made under the lease obligation shall be charged to rent expense, fuel expense, or construction work-in-progress as they become payable. Similarly, the leased asset and the associated obligation shall be reduced by the current amount due.

The following journal entries shall be used by the lessee to record capital lease transactions:

Dr. 101.1, Property Under Capital Leases
  Cr. 243, Obligations Under Capital Leases—Current
  CR. 227, Obligations Under Capital Leases—Noncurrent
To record the capital lease agreement.
Dr. 550, Rents
  Cr. 232, Accounts Payable
Dr. 243, Obligations Under Capital Leases—Current
  Cr. 101.1, Property Under Capital Leases
To record the monthly rental payment due.
Dr. 232, Accounts Payable
  Cr. 131.1, Cash—General
To record the monthly lease payment.

Operating leases which are simple rental agreements do not require the recording of an asset or a liability. The entries that are required to record an operating lease by the lessee are as follows:

Dr. 550, Rents
  Cr. 232, Accounts Payable
To record the monthly rental payment due.
Dr. 232, Accounts Payable
  Cr. 131.1, Cash—General
To record the monthly lease payment.

501 *Patronage Capital Assignments*

Accounting for patronage capital and margins may vary depending upon the individual cooperative's bylaws. The comments contained in this section relate to the application of the standard bylaw provisions.

The entries required, at year's end, to record patronage capital transactions where there is no major merchandising program are as follows:

Dr. 219.1, Operating Margins
Dr. 219.2, Nonoperating margins
  Cr. 201.2, Patronage Capital Assignable
To record the amount of patronage capital assignable.
Dr. 201.2, Patronage Capital Assignable
  Cr. 201.1, Patronage Capital Credits
To record the allocation of patronage capital to the patrons' accounts.

The procedure for determining the amount of patronage capital assignable to the individual patron on a total dollar basis is as follows:

1. Determine the total amount to be assigned for the year (Account 201.2).

2. Determine patronage from electric service, the total of consumers' billings (Accounts 440–447).

3. Determine the percentage factor to be used in calculating patronage capital

to be credited to each consumer account. Divide "1" by "2".

4. Determine the amount of capital to be credited to each consumer. Multiply the individual consumer's billings for the year by the percentage factor obtained in "3" above.

The procedure for determining the amount of patronage capital assignable to the individual patron on a dollar basis, less the cost of power, is as follows:

1. Determine the total amount to be assigned for the year.

2. Determine the total amount of revenue received from each classification of customers.

3. Determine the total cost of power for each classification of customers (For example, use cost per kWh sold).

4. For each classification of customers subtract the amount obtained in "3" from the amount obtained in "2," to obtain the total amount received, less cost of power, by classification of customers.

5. Add the amounts obtained in "4" to obtain the total amount of revenue, less cost of power.

6. Divide the total amount received, less cost of power for each classification of customers (amounts obtained in "4"), by the total amount received, less cost of power for all customers (amount obtained in "5") to obtain the prorata percentage for each classification of customers.

7. Multiply the total amount to be allocated (amount obtained in "1") by the prorata percentage for each classification of customers (obtained in "6") to obtain the amount to be assigned each classification of customers.

8. Divide the amount to be assigned each classification of customers (amount obtained in "7") by the total amount received from the classification of customers (amount obtained in "2") to obtain the percentage factor for each classification of customers.

9. Determine the total amount received from each individual customer.

10. Multiply the total amount received from each individual customer (amount obtained in "9") by the percentage factor for his classification (amount obtained in "8") to obtain the amount of capital to be assigned each individual customer.

After calculating the patronage capital to be credited to each customer, there is usually a small balance remaining. This small balance shall remain in Account 201.2, Patronage Capital Assignable, and shall be added to the amount to be assigned in the following year.

Proper records shall be maintained to support all capital credit transactions. As a minimum, these records shall show, for each patron, the amount of capital credited for each year as well as the amount and date retired for each year.

The process of transferring capital credits from the Patronage Capital Assignable accounts to the Patrons' Capital Credits Assigned accounts or to the Patrons' Capital Credits accounts and the making of entries to individual patron's records constitutes an assignment of capital credits. This holds true for recordkeeping purposes as well as from a legal point of view. This assignment shall be followed by formal notification to patrons within a reasonable period of time.

In the event that a distribution cooperative incurs a net loss, that loss shall not be allocated to its members (patrons). The loss shall be accumulated and offset by future nonoperating margins.

502 *Patronage Capital Retirements*

As the board of directors has the responsibility for determining whether the financial condition of the cooperative will permit retirement of capital credits and whether the proposed retirement complies with mortgage and bylaw provisions, the authorization for the retirement shall be set forth in the board minutes. The entries to record the general retirement of capital credits shall be as follows:

Dr. 201.1, Patronage Capital Credits
  Cr. 238.1, Patronage Capital Payable
To record the board of directors' authorization to make payments of capital credits.

Dr. 238.1, Patronage Capital Payable
  Cr. 131.1, Cash—General.
To record actual cash payments of capital credits.

Note: To provide better control over the payment of patronage capital credits, a special checking account should be established in an amount equal to the authorized general retirement. Special prenumbered checks shall be used for each general retirement of patronage capital.

To strengthen internal control and to facilitate the settlement of estates, the board should adopt a policy specifying exactly how payments of capital credits shall be made to the estates of deceased patrons. Payments made to estates shall be recorded as follows:

Dr. 201.1, Patronage Capital Credits
  Cr. 131.1, Cash—General
To record the payment of capital credits when an estate is settled by refunding 100 cents on the dollar.

Dr. 201.1, Patronage Capital Credits
  Cr. 131.1, Cash—General
  Cr. 217, Retired Capital Credits—Gain
To record the payment of capital credits when an estate is settled for less than the full amount of capital credited to the deceased customer's account.

Dr. 217, Retired Capital Credits—Gain
  Cr. 201.2, Patronage Capital Assignable
To record the reallocation to current patrons of the amount of the discount, if provided for in the bylaws.

If a capital credit check is returned due to an inability to locate the patron, it shall be held pending a recheck of available records to ascertain the correct address of the patron. If it is determined that the patron cannot be located, the check shall be cancelled and the amount of the check debited to Account 131.1, Cash—General, and credited to Account 217, Retired Capital Credits—Gain. If the State, however, has unclaimed property laws to which the amount is subject, the amount shall be credited to Account 253, Other Deferred Credits, until final disposition has been made. A notation shall be made in the records of the former patron to facilitate payment if his or her whereabouts is subsequently determined.

If the records show that a number of former patrons have moved and left no forwarding address, it is not necessary to prepare a capital credit retirement check for these patrons when a general retirement of capital credits is made. When setting funds aside to make a general retirement, however, appropriate amounts shall be included to cover payments due these patrons. The cooperative shall then make a reasonable effort to locate these patrons through publication of their names in the newsletter or local newspaper. If the patrons are not located, the amounts set aside and the credits to their accounts shall be handled in a manner similar to those for whom payment checks are returned.

Under the standard bylaw provisions recommended by REA, it is not proper to use capital credits that were assigned to former patrons to liquidate their delinquent bills. When the standard bylaws are in effect and collection efforts have failed, the balance of an uncollectible bill, after application of customers deposits and membership fees, shall be charged against the accumulated provision for uncollectible accounts. If the patron has capital credits assigned to him or her, these remain untouched except for a notation to indicate the amount of the unpaid bill. When a general retirement of capital credits is made at some future date, amounts which would otherwise be due the patron may be applied to satisfy the unpaid bill with the balance refunded to him or her.

503 *Operating and Nonoperating Margins*

Occasionally questions arise concerning the accounting for the balances in Accounts 218, Capital Gains and Losses; 219.3, Other Margins; 219.4, Other Margins and Equities—Prior Periods; 434, Extraordinary Income; and 435, Extraordinary Deductions. The balance in these accounts shall be accounted for as follows:

1. The balance in Account 219.4, Other Margins and Equities—Prior Periods, shall be transferred, at year's end, to Account 219.1 or 219.2, as appropriate. Accounts 219.1 and 219.2 are then closed to Account 201.2, Patronage Capital Assignable, unless otherwise provided for in the bylaws.

2. The balances in Account 434, Extraordinary Income, and Account 435, Extraordinary Deductions, shall be cleared to Account 219.2 at year's end.

3. The balances in Account 219.3, Other Margins, and Account 218, Capital Gains and Losses, shall remain in these accounts unless they are allocated to patrons or used to absorb future losses as provided for in the bylaws of the cooperative.

When a cooperative is engaged in a major merchandising activity, all costs properly chargeable to the merchandising activity shall be allocated as such to offset the associated revenue. Nonoperating margins generated from this source shall be prorated annually on a patronage basis and credited to those patrons' accounts from whom such amounts were obtained. Merchandising activities of this nature may require a bylaw provision allowing for the allocation of margins generated by a major merchandising activity separate from other operating or nonoperating margins.

If, at the time of the adoption of the bylaw provisions for the allocation of nonoperating margins, there are prior years' losses resulting in debit balances in Accounts 218, Capital Gains and Losses; 219.1, Operating Margins; 219.2, Nonoperating Margins; or 219.3, Other Margins; the credit balances in Accounts 218, 219.2, or 219.3 resulting from prior years' operations shall be transferred, to the extent necessary, to offset such deficits. If the board determines that amounts shall be allocated to prior years' patrons, the credit balances remaining in these accounts shall be transferred to Account 201.2, Patronage Capital Assignable.

If there are current year's losses resulting in debit balances in either Account 219.1 or 219.2, credit balances in Accounts 219.2, 219.3, and 218 shall be transferred, to the extent necessary, to offset such deficits. Remaining credit balances allocable to patrons shall be transferred to Account 201.2.

504 *Patronage Capital from G&T Cooperatives*

When a cooperative receives capital credits from a G&T cooperative, the transaction shall be recorded as a debit to Account 123.1, Patronage Capital from Associated Cooperatives, and a credit to Account 423, Generation and Transmission Cooperative Capital Credits. This entry shall be made prior to the closing of the cooperative's books even though, in most cases, the notice of the G&T allocation is not received until after the close of the year to which it relates. If precise information cannot be obtained from the G&T within a reasonable time, capital credits shall be recorded on an estimated basis. The difference between the estimated amount and the actual shall be recognized in the following year unless the difference is material.

A distribution cooperative shall not recognize its proportionate share of losses incurred by the G&T. G&T losses shall be accumulated and offset as provided for in the bylaws. Unlike distribution cooperatives, a G&T has the option to offset accumulated losses with future operating and/or nonoperating margins.

505 *Patronage Capital Furnished by Other Cooperative Service Organizations*

Utilities may obtain long-term and short-term loans, telephone or data processing services, or may purchase oil, gasoline, materials, insurance, and various items from cooperative or mutual enterprises. These enterprises often make patronage refunds or provide evidence that an amount equal to such a refund has been credited to the utility as an investment of capital. The refund may be in the form of cash in the year following the purchase or it may be deducted from the next invoice. The notice of patronage credited to the borrower's account may indicate that such capital may be retired at some future date upon certain conditions having been met. The following provides for the accounting journal entries for these types of transactions:

1. Insurance policy refunds from mutual companies, in cash or as credits against subsequent purchases, shall be credited to the appropriate expense account. If sufficient information is not available to credit the refunds to the appropriate expense accounts, they shall be credited to Account 165, Prepayments, and reduce premiums for the current year.

2. Patronage capital allocations from cooperatives, other than mutual insurance companies, shall be credited, in the year that the allocation notice is received, to Account 424, Other Capital Credits and Patronage Allocations, or to construction work-in-progress, as appropriate. The allocation of patronage capital credits between Account 424 and construction work-in-progress shall be made on an equitable basis. For example, patronage capital allocations received from a cooperative money lender are allocated between Account 424 and construction work-in-progress based upon the ratio of interest charged to construction for that particular lender to total interest expense incurred for that lender. Patronage capital allocations received from a material supplier are allocated based upon the ratio of materials charged to construction to total materials purchased.

3. The face amount of patronage capital certificates received by the cooperative from the purchase of goods or services from cooperative money lenders (CFC), oil dealers, material suppliers, pole treating plants, communications services, and others shall be charged to either Account 123.1, Patronage Capital from Associated Cooperatives, or Account 124, Other Investments, as appropriate. Account 123.1 shall include investments in only those cooperatives, or enterprises, that are directly related to the electric utility industry and controlled by the electric cooperatives. These include statewide cooperatives, power cooperatives, and NRECA. Other investments in oil cooperatives and insurance companies shall be charged to Account 124.

506 *Forfeited Membership Fees*

The bylaws of each cooperative prescribe certain rules and regulations concerning membership in the cooperative. Among these are provisions for forfeiture of membership fees. Some bylaws provide for application of membership fees against any unpaid accounts at the time of termination of service. Any remaining balance may be refunded to the member. Balances that cannot be refunded to the member due to an inability to locate the member or due to bylaw restriction, shall be credited to Account 208, Donated Capital, provided they do not escheat to the state. If disposition of the fees cannot be determined immediately, the amount involved shall be transferred to Account 253, Other Deferred Credits, until the determination is made.

601 *Employee Benefits*

The costs of employees' fringe benefits (hospitalization, retirement, holiday, sick and vacation pay, etc.)

shall be accumulated in an appropriate clearing account and allocated monthly on the basis of payroll. Vacation costs shall be accrued monthly by appropriate credits to an accrual account. These monthly accruals shall be allocated on the basis of direct payroll costs to construction and retirement with the expense portion being charged to Account 926, Employee Pensions and Benefits.

Sick leave costs are not normally accrued unless the employee is entitled to be paid for accumulated sick leave at the termination of employment. Salary payments to an employee who is actually sick shall be charged to the same account or accounts to which his or her salary is normally charged.

602 *Compensated Absences*

Statement of Financial Accounting Standards No. 43 requires employers to accrue a liability as an employee earns the right to be paid for future absences. Four criteria were established for this accrual:

1. The employer's obligation for payment for future absences is attributable to employees' services already performed.

2. The obligation relates to employee rights which vest or accumulate. Vested rights are considered those for which the employer is obligated to make payment even if the employee terminates. Rights which accumulate are those earned, but unused rights to compensated absences which may be carried forward to one or more periods subsequent to the period in which they are earned.

3. Payment of the compensation is probable.

4. The amount can be reasonably estimated.

A company's liability shall be estimated based upon payments it expects to make as a result of employees' work already performed. If a reasonable estimate cannot be made, the company shall disclose that fact in the financial statements.

Statement No. 43 does not apply to severance or termination pay, postretirement benefits, deferred compensation, stock or stock options, group insurance, or other long-term fringe benefits.

The entries required to account for the accrual of compensated absences are as follows:

Dr. 435.1, Cumulative Effect on Prior Years of a Change in Accounting Principle
  Cr. 242.3, Accrued Employees' Vacation and Holidays
To record the liability for benefits earned in prior years.
Dr. 107, Construction Work in Progress
Dr. 108.8, Retirement Work in Progress
Dr. 926, Employee Pensions and Benefits
  Cr. 242.3, Accrued Employees Vacation and Holidays
To record the liability for benefits earned in the current period.

603 *Employee Retirement and Group Insurance*

Some borrowers have group insurance or retirement plans or both for their employees. As a general rule the cost of these programs is borne partially by the cooperative and partially by its employees. The cooperative may pay the full cost in advance and recover the employee's share through payroll deductions. The accounting for these transactions is as follows:

.1. The cooperative's advanced payment of premiums on insurance and retirement agreements shall be charged to Account 165, Prepayments, for the employers portion, and Account 143, Other Accounts Receivable, for the employee's portion.

2. The cost of the employer's portion of a retirement and group insurance program shall be charged as follows:

a. If the participating employees work entirely on operations and maintenance, the debit shall be to Account 926, Employees Pensions and Benefits.

b. If the employees' time is charged to construction or retirement activities, the charge shall be prorated between construction, retirement, and Account 926, Employee Pensions and Benefits, in the ratio in which the employees' wages have been distributed.

604 *Deferred Compensation*

Many utilities participate in the NRECA Deferred Compensation Program. Based upon the provisions of the program, the following accounting entries shall be made:

Dr. 186.XX, Miscellaneous Deferred Debits—Deferred Compensation
  Cr. 131.1, Cash—General
To record the annual deposit to NRECA's Deferred Compensation Fund.
Dr. 128, Other Special Funds—Deferred Compensation
  Cr. 128.XX, Special Funds Reserve—Deferred Compensation
To increase the deferred compensation reserve by the amount of the annual deposit to NRECA's Deferred Compensation Fund.
Dr. Construction Work-in-Progress, Retirement Work-in-Progress or Account 926, Employee Pensions and Benefits, as appropriate.
  Cr. 186.XX, Miscellaneous Deferred Debits—Deferred Compensation
To Record monthly accrual of deferred compensation.

Note: If an employee joins the deferred compensation program during the year, use entry #1 to record the additional deposit to the NRECA Deferred Compensation Fund and increase the monthly accrual in entry #2 to reflect this deposit.

NRECA provides an annual statement showing activity in the employee's accounts, units owned and value of units at statement date. Therefore, individual employee records do not have to be maintained.

However, an entry shall be made to show the aggregate change in fund value during the year. This entry can be made by summarizing changes on the individual Statement of Accounts sent by NRECA for distribution to participating employees, as shown:

Value of Units Held in Each Fund −Total Deposits through December 31, 19xx=Change in Fund Value
Dr. 128, Other Special Funds—Deferred Compensation
  Cr., 128.XX, Special Funds Reserve—Deferred Compensation
To record an increase in fund value as of December 31, 19xx.

or

Dr. 128.XX, Special Funds Reserve—Deferred Compensation
  Cr. 128, Other Special Funds—Deferred Compensation
To record a decrease in fund value as of December 31, 19xx.

Payments made to participating employees because of retirement or separation for other reasons shall be recorded using the following entries:

Dr. 131.1, Cash—General
  Cr. 128, Other Special Funds—Deferred Compensation
To record the receipt of funds from NRECA.

or

Dr. 128.XX, Special Funds Reserve—Deferred Compensation
  Cr. 131.1, Cash—General
To record payment to employee for deferred compensation.

If the borrower has elected to bear the market risk of the funds which guarantee that the amount of money an employee receives will not be less than the amount of salary deferred, the following entry shall be recorded if total payment(s) from NRECA are less than the amount of salary deferred:

Dr. 926, Employee Pensions and Benefits
  Cr. 131.1, Cash—General
To record payment to employee for deferred compensation. Payment was made because amount returned did not equal salary deferred.

The amounts included in Account 128, Other Special Funds, are offset by the amounts in Account 128.XX, Special Funds Reserve. The balance sheet presentation shall not, therefore, include the amount held for the NRECA Deferred Compensation Program. Appropriate disclosure of the terms of the program shall be made in the notes to the financial statements.

605 *Life Insurance Premium on Life of a Borrower Employee*

Some borrowers insure the life of the manager and/or key employees with the borrower being named as the beneficiary. Such arrangements shall be accounted for as follows:

1. Charge Account 426.2, Life Insurance, for the net amount of the premium paid each year on the insurance policy.

2. At the anniversary date of the policy each year, charge Account 124, Other Investments, and credit Account 426.2, Life Insurance, with the amount of the annual increase in the cash surrender value of the policy; provided such increase is less than the net premium paid for that year. If the annual increase in the surrender value exceeds the net premium paid for the same year, only that portion of the surrender value increase equal to the net premium paid shall be credited to Account 426.2. The remainder is to be credited to Account 419, Interest and Dividend Income.

3. Upon retirement of the insured employee and surrender of the insurance policy, charge Account 131.1, Cash—General, and credit Account 124, Other Investments, for the amount received from the insurance company. If it is decided to grant to the retiring insured employee all, or any portion, of the cash received upon surrender of the policy, Account 926, Employee Pensions and Benefits, shall be charged and Account 131.1 credited for the amount paid to the retiring employee.

4. If the insured employee dies within his term of service, charge Account 131.1, Cash—General, for the face amount of the policy paid by the insurance company. Credit Account 124, Other Investments, for the cash surrender value previously charged thereto, and credit the remainder to account 421, Miscellaneous Nonoperating Income.

606 *Pension Costs*

With the issuance of Statement of Financial Accounting Standards No. 87, Employers' Accounting for Pension (Statement No. 87), there have been significant changes in the accounting and reporting requirements relating to pension costs. This section will highlight the accounting and reporting requirements for the major types of pension plans. It should be noted, however, that the definitions and accounting procedures outlined in this section relate to financial accounting and they may differ from those used for tax accounting.

Defined Benefit Pension Plans

A defined benefit pension plan is a plan that defines an amount of pension benefit to be provided, usually as a function of one or more factors such as age, years of service, or compensation. In a defined benefit plan, the employer promises to provide, in addition to current wages, retirement income payments in future years after the employee retires or terminates service. Generally, the amount of benefit to be paid depends upon a number of future events that are incorporated into the plan's benefit formula, after including how long the employee and any survivors live, how many years of service the employee renders, and the employee's compensation in the year immediately before retirement or termination.

Under a defined benefit plan, the determination of pension costs, assets, liabilities, and the disclosures in the financial statements require many calculations and assumptions to be made. This section provides a general overview of the accounting and reporting requirements associated with a defined benefit pension plan. Consult Statement No. 87 for guidance in making the necessary calculations and assumptions.

The accounting and reporting requirements related to a defined benefit pension plan are as follows:

1. The following components shall be included in the periodic recognition of net pension cost by an employer sponsoring a defined benefit pension plan:

a. The service cost component recognized in a period shall be determined as the actuarial present value of benefits attributed by the pension plan formula to employee service during that period. The measurement of the service cost component requires use of an attribution method and assumptions.

b. The interest cost component recognized in a period shall be determined as the increase in the projected benefit obligation due to the passage of time. Measuring the projected benefit obligation as a present value requires accrual of an interest cost at rates equal to the assumed discount rates.

c. For a funded plan, the actual return on plan assets, if any, shall be determined based upon the fair value of plan assets at the beginning and the end of the period, adjusted for contributions and benefit payments.

d. Plan amendments (including initiation of a plan) often include provisions that grant increased benefits based upon services rendered in prior period. Because plan amendments are granted with the expectation that the employer will realize economic benefits in future period, Statement No. 87 does not require the cost of providing such retroactive benefits (prior service cost) to be included in net periodic pension cost entirely in the year of the amendment but provides for recognition during the future service periods of those employees active at the date of the amendment who are expected to receive benefits under the plan.

The cost of retroactive benefits (including benefits that are granted to retirees) is the increase in the projected benefit obligation at the date of the amendment. Except as noted below, prior service cost shall be amortized by assigning an equal amount to each future period of service of each employee active at the date of the amendments who is expected to receive benefits under the plan. If all or almost all of the plan's participants are inactive, the cost of retroactive plan amendments affecting benefits of inactive participants shall be amortized based upon the remaining life expectancy of those participants rather than the remaining service period.

To reduce the complexity and detail of the computations required consistent use of an alternative amortization approach that more rapidly reduces the unrecognized cost of retroactive amendments is acceptable. For example, a straight-line amortization of the cost over the average remaining service period of employees expected to receive benefits under the plan is acceptable. The alternative method used shall be disclosed.

In some situations, a history of regular plan amendments and other evidence may indicate that the period during which the employee expects to realize economic benefits from an amendment granting retroactive benefits is shorter than the entire remaining service period of the active employees. Identification of such situations requires an assessment of the individual circumstances and the substance of the particular plan situation. In those circumstances, the amortization of prior service cost shall be accelerated to reflect the more rapid expiration of the employer's economic benefits and to recognize the cost in the periods benefited.

A plan amendment can reduce rather than increase the projected benefit obligation. Such a reduction shall be used to reduce an existing unrecognized prior service cost, and the excess, if any, shall be amortized on the same basis as the cost of benefit increases.

e. Gains and losses are changes in the amount of either the projected benefit obligation or plan assets resulting from experience different from that assumed and changes in assumptions. Gains and losses include amounts that have been realized. Because gains and losses may reflect refinements in estimates as well as real changes in economic values and because some gains in one period may be offset by losses in another or vice versa, the recognition of gains and losses as components of net pension cost of the period in which they arise, is not required.

The expected return on plan assets shall be determined based upon the expected long-term rate of return on plan assets and the market-related value of plan assets. The market-related value of plan assets shall be either fair value or a calculated value that recognizes changes in fair value in a systematic and rational manner over not more than 5 years. Different ways of calculating market-related value may be used for different classes of assets but the manner of determining market-related value shall be applied consistently from year to year for each asset class.

Asset gains and losses are the differences between the actual return on assets during a period and the expected return on assets for that period. Assets gains and losses include both changes reflected in the market-related value of assets and changes not yet reflected in the market-related value (that is, the difference between the fair value of assets and the market-related value). Asset gains and losses not yet reflected in market-related values are not required to be amortized.

As a minimum, amortization of an unrecognized gain or loss (excluding asset gains and losses not yet reflected in market-related value) shall be included as a component of net pension cost for a year if, as of the beginning of the year, that unrecognized net gain or loss exceeds 10 percent of the greater of the projected benefit obligation or the market-related value of plan assets. If amortization is required, the minimum amortization shall be that excess divided by the average remaining service period of active employees expected to receive benefits under the plan. If all or almost all of a plan's participants are inactive, the average remaining life expectancy of the inactive participants shall be used instead of average remaining service life.

Any systematic method of amortization of gains and losses may be used in lieu of the minimum specified in the previous paragraph provided that the minimum is used in any period in which the minimum is greater (reduces the net balance by more), the method is applied consistently, the method is applied similarly to both gains and losses, and the method is disclosed.

The gain or loss component of net periodic pension cost shall consist of the difference between the actual return on plan assets and the expected return on plan assets and amortization of the unrecognized net gain or loss from previous periods.

2. A liability (unfunded accrued pension cost) shall be recognized if net periodic pension cost recognized pursuant to Statement No. 87 exceeds amounts the employer has contributed to the plan. An asset (prepaid pension cost) shall be recognized if net periodic pension cost is less than amounts the employer has contributed to the plan.

If the accumulated benefit obligation exceeds the fair value of plan assets, the employer shall recognize a liability (including unfunded accrued pension cost) that is at least equal to the unfunded accumulated benefit obligation. Recognition of an additional minimum liability is required if an unfunded accumulated benefit obligation exists and an asset has been recognized as a prepaid pension cost, the liability already recognized as unfunded accrued pension cost is less than the unfunded accumulated benefit obligation, or no accrued or prepaid pension cost has been recognized.

If an additional minimum liability is recognized, an equal amount shall be recognized as an intangible asset, provided that the asset does not exceed the amount of unrecognized prior service cost. If an additional liability required to be recognized exceeds unrecognized prior service cost, the excess (which represents a net loss not yet recognized as a net periodic pension cost) shall be reported as a separate component (reduction) of equity.

When a new determination of the amount of additional liability is made to prepare a balance sheet, the related intangible asset and separate component of equity shall be eliminated or adjusted, as necessary.

3. An employer sponsoring a defined benefit pension plan shall disclose the following information:

a. A description of the plan including employee groups covered, type of benefit formula, funding policy, types of assets held and significant nonbenefit liabilities, if any, and the nature and effect of significant matters affecting comparability of information for all periods presented.

b. The amount of net periodic pension cost for the period showing separately the service cost component, the interest cost component, the actual return on assets for the period, and the net total of other components.

c. A schedule reconciling the funded status of the plan with amounts reported in the employer's balance sheet, showing separately, the fair value of plan assets, the projected benefit obligation identifying the accumulated benefit obligation and the vested benefit obligation, the amount of unrecognized prior service cost, the amount of unrecognized net gain or loss including asset gains and losses not yet reflected in market-related value), the amount of any remaining unrecognized net obligation or net asset existing at the date of initial application of Statement No. 87, the amount of any additional liability recognized, and the amount of net pension asset or liability recognized in the balance sheet (which is the net result of combining the previous six items).

d. The weighted-average assumed discount rate and rate of compensation increase (if applicable) used to measure the projected benefit obligation and the weighted-average expected long-term rate of return on plan assets.

e. If applicable, the amount and type of securities of the employer and related parties included in plan assets, and the approximate amount of annual benefits of employees and retirees covered by annuity contracts issued by the employer and related parties. Also, if applicable, the alternative amortization periods used.

f. An employer that sponsors two or more separate defined benefit pension plans shall determine net periodic pension cost, liabilities, and assets by separately applying the provisions of Statement No. 87 to each plan. In particular, unless an employer clearly has a right to use the assets of one plan to pay benefits of another, a liability required to be recognized for one plan shall not be reduced or eliminated because another plan has assets in excess of its accumulated benefit obligation or because the employer has prepaid pension cost related to another plan.

The required disclosures may be aggregated for all of an employer's single-employer defined benefit plans, or plans may be disaggregated into groups so as to provide the most useful information. Plans with assets in excess of the accumulated benefit obligation, however, shall not be aggregated with plans that have accumulated benefit obligations that exceed plan assets.

Annuity Contracts

An annuity contract is a contract in which an insurance company

unconditionally undertakes a legal obligation to provide specified benefits to specific individuals in return for a fixed consideration or premium. An annuity contract is irrevocable and involves the transfer of significant risk from the employer to the insurance company. Some annuity contracts (participating annuity contracts) provide that the purchaser (either the plan or the employer) may participate in the experience of the insurance company. Under these contracts, the insurance company ordinarily pays dividends to the purchaser. If the substance of a participating contract is such that the employer remains subject to all or most of the risks and rewards associated with the benefit obligation covered and the assets transferred to the insurance company, that contract is not an annuity contract for purposes of Statement No. 87.

To the extent that benefits currently earned are covered by annuity contracts, the cost of these benefits shall be the cost of purchasing the contracts, except as noted below. That is, if all benefits attributed by the plan's benefits formula to service in the current period are covered by nonparticipating annuity contracts, the cost of the contracts determines the service cost component of net pension cost for that period.

Benefits provided by the pension benefit formula beyond benefits provided by annuity contracts (for example, benefits related to future compensation levels) shall be accounted for according to the provisions applicable to plans not involving insurance contracts.

Benefits covered by annuity contracts shall be excluded from the projected benefit obligation and the accumulated benefit obligation. Except as noted below, annuity contracts shall be excluded from the projected benefit obligation and the accumulated benefit obligation. Except as noted below, annuity contracts shall be excluded from plan assets.

Some annuity contracts provide that the purchaser (either the plan or the employer) may participate in the experience of the insurance company. Under these contracts, the insurance company ordinarily pays dividends to the purchaser, the effect of which is to reduce the cost of the plan. The purchase price of a participating annuity contract ordinarily is higher than the price of an equivalent contract without participation rights. The cost of the participation right shall be recognized, at the date of purchase, as an asset. In subsequent periods, the participation right shall be measured at its fair value if the contract is such that the fair value is reasonably estimable. Otherwise, the participation right shall be measured at its amortized cost (not in excess of its net realizable value), and the cost shall be amortized systematically over the expected dividend period under the contract.

Other Contracts with Insurance Companies

Insurance contracts that are, in substance, equivalent to the purchase of annuities shall be accounted for as such. Other contracts with insurance companies shall be accounted for as investments and measured at fair value. For some contracts, the best available evidence of fair value may be contract value. If a contract has a determinable cash surrender value or conversion value, that is presumed to be its fair value.

Defined Contribution Plans

A defined contribution pension plan is a plan that provides pension benefits in return for services rendered, provides an individual account for each participant, and has terms that specify how contributions to the individual's accounts are to be determined rather than the amount of pension benefits the individual is to receive. Under a defined contribution plan, the pension benefits a participant will receive depend only upon the amount contributed to the participant's account, the returns earned on investments of those contributions, and forfeitures of other participants' benefits that may be allocated to the participant's account.

To the extent that a plan's defined contributions to an individual's account are to be made for periods in which that individual renders services, the net pension cost for a period shall be the contribution called for in that period. If a plan calls for contributions for periods after an individual retires or terminates, the estimated cost shall be accrued during the employee's service period.

An employer that sponsors one or more defined contribution plans shall disclose the following separately from its defined benefit plan disclosures:

1. A description of the plan(s) including employee groups covered, the basis for determining contributions, and the nature and effect of significant matters affecting comparability of information for all periods presented.

2. The amount of cost recognized during the period.

A pension plan having characteristics of both a defined benefit plan and a defined contribution plan requires careful analysis. If the substance of the plan is to provide a defined benefit, as may be the case with some "target benefit" plans, the accounting and disclosure requirements shall be determined in accordance with the provisions applicable to a defined benefit plan.

Multiemployer Plans

A multiemployer plan is a pension plan to which two or more unrelated employers contribute, usually pursuant to one or more collective-bargaining agreements. A characteristic of multiemployer plans is that assets contributed by one participating employer may be used to provide benefits to employees of other participating employers since assets contributed by an employer are not segregated in a separate account or restricted to provide benefits only to employees of that employer.

An employer participating in a multiemployer plan shall recognize as net pension cost, the required contribution for the period and shall recognize as a liability, any contributions due and unpaid. The required contribution includes both current costs and prior service costs. If an employer elects to fund prior service cost in full at the inception of the plan, the total payment becomes the employer's required contribution, and accordingly, its pension cost for the period.

The following provisions are applicable to REA borrowers participating in a multiemployer pension plan:

1. An electric utility participating in a multiemployer plan may defer current period pension expenses if the provisions of Statement of Financial Accounting Standards No. 71 (Statement No. 71), Accounting for the Effects of Certain Types of Regulation, are applied.

Under the provisions of Statement No. 71, pension costs may be deferred provided such costs are recovered through future rates.

2. An electric utility instituting an amendment to the NRECA Retirement and Security plan enters into a contractual agreement to pay the costs incurred (prior service pension costs) for the amendment. In such cases, the agreement is noncancellable and payable regardless of continued participation in the plan.

Since the utility is unconditionally committed to making these payments and such payments are not contingent upon the utility's continued participation in the plan, the recognition of that liability is appropriate. The costs associated with this liability shall be

expensed, in their entirety, when the liability is recognized.

The accounting journal entries required to record the transactions associated with a multiemployer pension plan are as follows:

Sample 1—Current Pension Expense

The journal entry required to record the normal costs associated with the NRECA Retirement and Security Program is as follows:

(1)
Dr. 926, Employee Pensions and Benefits
Dr. 107, Construction Work-in-Progress
Dr. 108.8, Retirement Work-in-Progress
Cr. 131.1, Cash—General
To record the payment of pension costs to NRECA.

Note: This entry shall not be recorded during the moratorium.

Sample 2—Prior Service Pension Expense

The journal entries required to record the prior service costs associated with the NRECA Retirement and Security Program are as follows:

A. If the REA borrower elects to pay the prior service pension costs in full, and there is no deferral of costs under the provision of Statement No. 71, the following entry shall be recorded:

(1)
Dr. 926, Employee Pensions and Benefits
Dr. 107, Construction Work-in-Progress
Dr. 108.8, Retirement Work-in-Progress
Cr. 131.1, Cash—General
To record the payment of prior service pension costs to NRECA.

Note: During the moratorium, Account 232, Accounts Payable, shall be credited. The following entry shall be recorded after the moratorium is lifted and payment is made to NRECA.

(2)
Dr. 232, Accounts Payable
Cr. 131.1, Cash—General
To record payment of prior service pension costs to NRECA.

B. If the REA borrower elects to finance prior service pension costs over a period of years and there is no deferral of costs under the provisions of Statement No. 71, the following entries shall be recorded:

Dr. 926, Employee Pensions and Benefits
Dr. 107, Construction Work-in-Progress
Dr. 108.8, Retirement Work-in-Progress
Cr. 224, Other Long-Term Debt
To record the liability to NRECA for prior service pension costs.

(2)
Dr. 224.2, Other Long-Term Debt
Dr. 427, Interest on Long-Term Debt
Cr. 131.1, Cash—General
To record the annual payment to NRECA for prior service pension costs.

C. If the REA borrower elects to finance prior service pension costs over a period of years and such costs are being deferred and amortized in accordance with the provisions of Statement No. 71, the following entries shall be recorded:

(1)
Dr. 186, Miscellaneous Deferred Debits
Cr. 224.2, Other Long-Term Debt
To record the liability to NRECA for prior service pension costs.

(2)
Dr. 926, Employee Pension and Benefits
Dr. 107, Construction Work-in-Progress
Dr. 108.8, Retirement Work-in-Progress
Cr. 186, Miscellaneous Deferred Debits
To record the amortization of deferred prior service pension costs.

(3)
Dr. 224.2, Other Long-Term Debt
Dr. 427, Interest on Long-term Debt
Cr. 131.1, Cash—General
To record the annual payment to NRECA for prior service pension costs.

D. If the REA borrower elects to pay the prior service pension costs in full and such costs are being deferred and amortized in accordance with the provisions of Statement No. 71, the following entries shall be recorded:

(1)
Dr. 186, Miscellaneous Deferred Debits
Cr. 131.1, Cash—General
To record the payment to NRECA for prior service pension costs.

(2)
Dr. 926, Employee Pensions and Benefits
Dr. 107, Construction Work-in-Progress
Dr. 108.8, Retirement Work-in-Progress
Cr. 186, Miscellaneous Deferred Debits
To record the amortization of deferred prior service pension costs.

Note. During the moratorium, Account 232, Accounts Payable, shall be credited in Journal Entry No. 1. The following entry shall be recorded after the moratorium is lifted and payment is made to NRECA:

(3)
Dr. 232, Accounts Payable
Cr. 131.1, Cash—General
To record the payment to NRECA for prior service pension costs.

It should be noted that although the above entries relate specifically to the NRECA Retirement and Security Program, they are applicable to all multiemployer pension plans.

An employer that participates in one or more multiemployer plans shall disclose the following separately from disclosures for a single-employer plan:

1. A description of the multiemployer plan(s) including the employee groups covered, the type of benefits provided (defined benefit or defined contribution), and the nature and effect of significant matters affecting comparability of information for all periods presented.

2. The amount of cost recognized during the period.

Multiple-Employer Plans

A multiple-employer plan is, in substance, aggregations of single-employer plans combined to pool their assets for investment purposes to reduce the cost of plan administration. Under a multiple-employer plan, assets are segregated and specifically identified to an employer. In addition, such plans may have features that allow participating employers to have different benefit formulas. Such plans shall be considered single-employer plans for financial accounting purposes and each employer's accounting shall be based upon its respective interest in the plan.

607 *Unproductive Time*

Lost time relating to construction, operations and maintenance shall be allocated on the basis of direct payroll costs to the appropriate construction, operations or maintenance accounts in the month incurred. Lost time is defined as time on duty during which productive work is not performed due to inclement weather conditions, material shortages, machine repairs, or other reasons.

If lost time attributable to construction has a material effect on the construction accounts in any one month, these costs shall be deferred and distributed over a reasonable period of time by means of a predetermined percentage based upon direct labor.

608 *Training Costs, Attendance at Meetings, etc.*

Utilities engage in many types of training programs. Seminars are conducted for directors, managers, office managers, attorneys, engineers, and others. Bookkeepers and office managers attend accountants' meetings. Safety engineers attend safety schools and subsequently conduct regular safety meetings at the cooperative. Costs incurred for the various types of training activities shall be accounted for as follows:

1. Managers' and directors expenses to attend the NRECA national and state conventions shall be charged to Account 930.2, Miscellaneous General Expenses.

2. Management or engineering seminar fees, salary time attending such seminars, and the related per diem and expenses shall be charged to Account 926, Employee Pensions and Benefits, if the meeting is primarily for the benefit of the employee. If the meeting is primarily for the benefit of the employer, the functional expense accounts shall be charged for fees and expenses. Salaries paid to employees shall be charged to the appropriate labor expense accounts rather than to Account 926. Fees and expenses for directors' attendance shall be charged to Account 930.2, Miscellaneous General Expense.

3. When the office manager, bookkeeper, or work order clerk attends a state or regional accounting meeting, their salary time shall be charged to the account to which the employees' time is ordinarily charged.

4. Employees' salary time spent attending regular safety meetings

conducted by the cooperative shall be charged to the account to which the employees' time is ordinarily charged.

5. A safety engineer's salary time spent attending a statewide safety school shall be charged to Account 925, Injuries and Damages.

6. The salary time spent by a manager or line foreman conducting weekly safety meetings shall be charged to the appropriate functional expense accounts including Account 590, Maintenance, Supervision and Engineering, and Account 920, Administrative and General Services.

609 *Maintenance and Operations*

"Operations" is the general term used to describe activities involved in the delivery of electric service, by means of a distribution system, to the end user. It pertains to the use of the utility's electric plant facilities and does not include activities intended to prevent or remedy an impending or actual breakdown of those facilities. These activities are classified as maintenance.

"Maintenance" is the general term used to describe the activities involved in the upkeep and repair, but not the enlargement or improvement, of property owned or leased and operated by the company. It does not include the replacement of retirement units.

610 *Financial Forecast*

Costs incurred and salaries paid to perform a 10-year financial forecast shall be charged to Account 920, Administrative and General Salaries. Related office supplies and expenses shall be charged to Account 921, Office Supplies and Expenses. When a forecast is performed by an outside consultant, the cost shall be charged to Account 923, Outside Services Employed.

611 *Advertising Expense*

The cost of advertising and the cost of informing the public about the electric cooperative's activities shall be charged to Account 930.2, Miscellaneous General Expenses.

Most of a cooperative's advertising is instructional in nature and relates the cooperative's history and current activities. This type of advertising activity should not be confused with that directed towards the enactment of a specific law or laws directed toward obtaining a specific decision from a regulatory body. Political advertising of the type defined above shall be charged to Account 426.4, Expenditures for Certain Civic, Political, and Related Activities.

612 *Special Power Cost Study*

A special power cost study is defined as a study to determine whether sufficient power will be available in the future. If additional power or power sources are needed, the study determines whether generation or purchase will supply the lesser cost. The study also indicates when additional power will be needed. As costs are incurred, they shall be charged to a subaccount of Account 186, Miscellaneous Deferred Debits. Upon completion of the study, the costs shall be charged to Account 557, Other Expenses, or amortized to Account 557 over a period of time not to exceed 5 years.

613 *Mapping Costs*

The purpose of posting completed work orders to system maps is to improve the operation of the system. These costs shall, therefore, be charged to Account 588, Miscellaneous Distribution Expenses. However, the cost of system mapping in the planning stage of construction is an acceptable overhead cost of the resulting construction.

614 *Member Relations Costs*

Many electric cooperatives hire employees whose duties concern a mixture of power use and member relations activities. The salaries for these employees shall be charged to Account 930.2, Miscellaneous General Expenses, except as provided below:

1. Account 912, Demonstrating and Selling Expenses, shall be charged with all labor, material, advertising, and other expenses incurred in promotional, demonstrating, and selling activities; the objective of which is to promote or retain the use of utility services by present or prospective customers.

2. Account 930.1, General Advertising Expenses, shall be charged with labor, material, and other expenses incurred in advertising and related activities, the cost of which by their content and purpose, are not provided for elsewhere.

3. Account 416, Costs and Expenses of Merchandising, Jobbing, and Contract Work, shall be charged with all costs specifically related to merchandising activities when the utility is engaged in a major merchandising program.

4. Account 426.4, Expenditures for Certain Civic, Political, and Related Activities, shall be charged with expenditures for the purpose of influencing public opinion with respect to the election or appointment of public officials, referenda, legislation, or ordinances (either with respect to the possible adoption of new referenda, legislation or ordinances or repeal or modification of existing referenda, legislation or ordinances); or approval, modification, or revocation of franchises; or for the purpose of influencing the decisions of public officials. Account 426.4 shall not include expenditures which are directly related to appearances before regulatory or other governmental bodies in connection with the borrower's existing or proposed operations.

615 *Statewide Fees*

Additional fees collected by a statewide association from its members for construction of a statewide building shall be charged to Account 930.2, Miscellaneous General Expenses. Any amounts that are to be repaid by the state association shall be charged to Account 143, Other Accounts Receivable, or Account 123.23, Other Investments in Associated Organizations, depending upon the terms of the repayment.

616 *Power Supply/Distribution Cooperative Borrowing*

When a power supply cooperative borrows money from a distribution cooperative as the result of a long-term loan agreement, the money shall be recorded on the books of the power supply cooperative as general funds unless restricted to a specific purpose. If restricted, the funds shall be recorded in Account 128, Other Special Funds. The resulting liability shall be recorded in Account 224, Other Long-Term Debt.

The transaction shall be charged to Account 123.23, Other Investments in Associated Organizations, on the books of the distribution cooperative.

617 *Rate Discount Allowed by the Power Cooperative to Distribution Cooperatives Owning Connecting Transmission Lines*

A distribution cooperative purchases power from a power cooperative. The distribution cooperative owns and operates the transmission line between the power cooperative's facilities and the distribution facilities. Because of this, power is sold at the standard rate at which the power cooperative sells to other distribution cooperatives who do not own their transmission lines, less a discount. The discount or reduction in rate is based upon the distribution cooperative's expense in operating and maintaining its transmission facilities. The contract between the power cooperative and the distribution cooperative must specifically state that the member shall receive a reduced rate or discount from the seller's rate to other member cooperatives.

Under this type of arrangement, the distribution cooperative shall record the cost of purchased power by charging the net amount to Account 555, Purchased Power.

618 *Theft Losses not Covered by Insurance*

Utilities may suffer losses as a result of thefts of cash, materials and supplies, equipment, or electric plant-in-service that is not covered by insurance. The charges for nominal uninsured losses shall be recorded in the following accounts:

1. Cash—Account 924, Property Insurance, shall be charged.

2. Plant materials and operating supplies—Account 163, Stores Expense Undistributed, shall be charged.

3. Equipment—Account 163, Stores Expense Undistributed, shall be charged for stores equipment; Account 184, Transportation Expense—Clearing, for transportation and garage equipment; and Account 924, Property Insurance, for all other equipment.

4. Electric Plant-in-Service—A retirement work order shall be prepared for electric plant constituting a unit of property. The loss due to retirement shall be charged to Account 108.6, Accumulated Provision for Depreciation of Distribution Plant. If the plant does not constitute a retirement unit, the loss shall be charged to the appropriate maintenance expense account.

619 *Self Billing*

To maintain the books of accounts on an accrual basis, bills for customers who self bill and have not sent in a reading or remittance, shall be estimated. A journal entry shall be made to record the estimated revenue and kWh sold by debiting accounts receivable and crediting the appropriate revenue accounts. The estimated bill shall be posted to the customer's account and identified by an appropriate symbol indicating that it is an estimate. Reconciliation with the general ledger control is made in the usual manner.

620 *Purchase Rebates*

Some vendors from which electric cooperatives purchase plant materials and supplies and merchandise for resale are making purchase rebates based upon the quantity or dollar volume of purchases. These "quantity discounts" may be in the form of cash or credit memoranda, in the form of prepaid package travel arrangements, or a combination of such methods. The rebate shall be accounted for as a reduction in the cost of the material or appliances upon which it was based.

In some instances, the rebate may be for material or appliances that are no longer in stock or cannot be indentified. If the rebate is based upon the purchase of plant materials and operating supplies that are normally charged to Account 154, Plant Materials and Operating Supplies, a credit shall be made to Account 163, Stores Expense Undistributed. If the rebate is based upon appliances and equipment held for merchandising or contract work, the credit shall be spread over the items in Account 155, Merchandise. To avoid materially distorting the cost of the remaining appliances, if a portion of the items upon which the rebate was based are no longer in stock, a portion of the credit shall be prorated to Account 416, Cost and Expenses of Merchandising, Jobbing, and Contract Work, on the basis of the number of items sold to the quantity remaining in stock.

If the rebate is in the form of a travel package or travel arrangements, the value of the rebate shall be estimated and recorded as a reduction of the cost of the material or appliances upon which it was based in a manner similar to that of the cash rebates discussed above. The beneficiary of the travel or travel allowance shall be designated by or in accordance with policy established by the board of directors. The contra charge to the reduction in cost shall be to an appropriate account depending upon the relationship of the recipient to the cooperative. For employees, this shall be Account 926, Employee Pensions and Benefits; for directors or patrons, Account 930.2, Miscellaneous General Expenses.

621 *Integrity Fund*

The CFC Integrity Fund was established to assist borrowers in their attempts to stop takeover bids by investor-owned utilities. A borrower makes a contribution to the Integrity Fund in the form of cash or patronage capital refunds. CFC retains the contribution for a 5-year period during which time the borrower earns interest on the balance in its account. Each year, the borrower receives a statement indicating (both for the total fund and the individual borrower's share) the amount contributed, interest earned, disbursements made, and the ending balance. The disbursements from the fund are allocated to each contributing borrower's account based upon their individual account balances. At the end of the 5-year period, the balance in the account, if any, is refunded to the contributing borrower.

Since the contributing borrower will receive a refund only if its funds are not totally disbursed, the contribution shall be charged to expense in Account 426.1, Donations. If any part of the contribution is returned at the end of the 5-year period, the refund shall be credited to Account 421, Miscellaneous Nonoperating Income.

622 *In-Substance Defeasance*

An in-substance defeasance has been defined as the process whereby a debtor irrovocably places cash or other assets in a trust to be used solely for the purpose of satisfying scheduled payments of both principal and interest related to a specific debt obligation. Under the structural arrangements of an in-substance defeasance, the probability that the debtor will be required to make additional future debt payments is remote. In these specific circumstances, debt has been determined to be extinguished even though the debtor has not been legally released from his obligations under the debt instrument.

The trust established in a defeasance transaction is restricted as to the nature of the assets held. The trust must be funded with monetary assets that are essentially risk free as to the amount, timing, and collection of interest and principal. For debt denominated in United States dollars, "risk free" assets are limited to:

1. Direct obligations of the United States government;

2. Obligations guaranteed by the United States government; and

3. Securities that are backed by United States government obligations as collateral under an arrangement by which the interest and principal payments on the collateral, flow immediately through to the holder of the security.

The monetary assets of the trust must provide cash flows sufficient to coincide with the scheduled interest and principal payments on the defeased debt. If the trust is expected to pay the costs associated with the defeasance, such as trustee fees, these costs must be considered in determining the amount of funds required by the trust.

The principles of in-substance defeasance apply only to debt with specific maturities and fixed payment schedules and, as such, do not apply to debt with variable terms in which advance determination of debt service requirements is not possible.

Generally accepted accounting principles (GAAP) address the extinguishment of debt in Accounting Principles Board Opinion No. 26, and statement of Financial Accounting Standard No. 76, Extinguishment of Debt. In accordance with these two statements, debt which has been defeased remains recorded in the regulated books of account as do the assets placed in the irrevocable trust. They are not, however, recognized as an asset and liability for financial reporting purposes. The transaction, including the total amount of debt outstanding and the total amount of debt that is considered

extinguished at the end of the period, must be disclosed in the footnotes to the financial statements as long as the debt remains outstanding.

Debt is frequently extinguished in various ways before its scheduled maturity. Debt may be extinguished by the use of the borrower's general funds, or by the reacquisition of another debt issue at a different interest rate or varying terms. As the assets are expected to be revenue productive during those years, both the assets and the revenue they generate may be utilized to meet maturing debt payments. Therefore, assets initially placed in the trust are substantially less than the outstanding principal balance of debt. The difference represents an "economic" gain to the borrower in the year of the defeasance.

The USoA, in General Instruction 17, Long-Term Debt, prescribes the accounting for an early extinguishment of debt. If the debt is extinguished (defeased) with the borrower's own general funds, the USoA requires the gain to be deferred in Account 257, Unamortized Gain on Reacquired Debt, and amortized to Account 429.1, Amortization of Gain on Reacquired Debt-Credit, over the remaining life of the old debt issue. If the old debt is extinguished and new debt is acquired to finance the extinguishment, the USoA requires the gain to be amortized over either the remaining life of the original issue, or the remaining life of the new issue.

623 *Management Incentive (MINT) Plan*

The Management Incentive (MINT) Plan was developed by NRECA to provide additional retirement benefits for senior management employees. In addition to the retirement benefits offered, the plan also includes an optional disability benefit feature.

Originally, the MINT program was offered by the NRECA's Service Center for ELCO Programs, Inc., (NRECA Service Center). Effective December 31, 1989, the MINT program was transferred from the NRECA Service Center to a grantor trust whereby each participating cooperative will be a grantor of the trust and, therefore, will own its prorata share of the trust.

Upon notification from NRECA informing each cooperative of its proportionate share of the trust, the cooperative will adjust its asset (Account 128, Other Special Funds) and record the liability (Account 228.3, Accumulated Provision for Pensions and Benefits). Any difference shall be recorded as an adjustment to pension expense.

Once a cooperative has enrolled into the plan, the following entries shall be recorded:

Dr. 128, Other Special Funds
Dr. 926, Employee Pensions and Benefits
  Cr. 131.1, Cash—General Funds
To record annual payment to the MINT trust. The expenses are calculated as the difference between the cash outlay and the present value of the payment returned at a specified future date.
Dr. 926, Employee Pensions and Benefits
  Cr. 131.1, Cash—General Funds
To record payment for nonrefundable disability benefits.
Dr. 131.1, Cash—General Funds
  Cr. 128, Other Special Funds
  Cr. 242, Miscellaneous Current and Accrued Liabilities
To record funds received from the Trust for the payment of death benefits and refunds to the cooperative.
Dr. 242, Miscellaneous Current and Accrued Liabilities
  Cr. 131.1, Cash—General Funds
To record payment of death benefits to the beneficiary.
Dr. 131.1, Cash—General Funds
  Cr. 128, Other Special Funds
  Cr. 242, Miscellaneous Current and Accrued Liabilities
To record funds received from the Trust for retired employees and refunds to the cooperative.
Dr. 242, Miscellaneous Current and Accrued Liabilities
  Cr. 131.1, Cash—General Funds.
To record payment to retired employees.

Once a year, within not more than 3 months of the participating cooperative's "as of" audit date, the participating cooperative should receive sufficient information from the Trust to allow the cooperative to make the necessary pension disclosures as required by Statement of Financial Accounting Standards No. 87, Employers' Accounting for Pensions. Among the information received should be the amounts relating to the cooperative's share of the Trust's assets and liabilities. When this information is received, the cooperative shall adjust the asset and liability accounts accordingly and any difference shall be recorded as a debit or credit, as appropriate, to pension expense. The pension expense account, however, shall not be reduced below zero. Any credits in excess of the amount of pension expense recorded for the year shall be recorded as a credit to Account 421, Miscellaneous Nonoperating Income.

624 *Satellite or Cable Television Service*

Many electric borrowers have become involved in either providing satellite or cable television services or obtaining satellite or cable television services for their own use. This section outlines the accounting to be followed when recording transactions involving satellite or cable television services.

1. *Separate Subsidiary*

If a borrower provides satellite or cable television services through a separate subsidiary, the investment in the subsidiary shall be recorded in Account 123.11, Investment in Subsidiary Companies. The net income or loss of the subsidiary shall be debited or credited to Account 123.11, as appropriate, with an offsetting entry to Account 418.1, Equity in Earnings of Subsidiary Companies.

2. *Segment of Current Operations*

If a borrower provides satellite or cable television services as part of its normal operations, the investment in satellite or cable television equipment shall be recorded in Account 121, Nonutility Property. All income associated with these services shall be recorded in Account 417, Revenues from Nonutility Operations, and the associated expenses shall be charged to Account 417.1, Expenses of Nonutility Operations.

3. *Sale and Installation of Satellite or Cable Television Equipment*

If a borrower sells or installs satellite or cable television equipment, the equipment purchased for resale shall be recorded in Account 156, Other Materials and Supplies, until sold. The revenues generated from such sales or installations shall be recorded in Account 415, Revenues from Merchandising, Jobbing, and Contract Work, and the associated expenses shall be charged to Account 416, Costs and Expenses of Merchandising, Jobbing, and Contract Work.

4. *Equipment Purchased for Own Use*

If a borrower purchases satellite or cable television equipment for its own use, the investment in the equipment shall be recorded in Account 397, Communication Equipment.

625 *Pollution Control Bonds*

The construction and installation of pollution control facilities are often financed by issuing tax exempt municipal securities. The funds generated from the sale of these securities are deposited into an account that is controlled by a designated trustree. The funds under the control of the trustee are usually invested, earning interest, until they are needed.

Interest expense accrued on the pollution control bonds during the construction period shall be capitalized in Account 107, Construction Work-in-Progress. After construction is complete, all subsequent accruals of interest

expense shall be charged to Account 427, Interest on Long-Term Debt.

Interest income earned during the construction period shall be recorded as a debit to Account 171, Interest and Dividends Receivable, and a credit to Account 107, Construction Work-in-Progress. Upon notification of receipt of the interest in the trustee account, Account 221.XX, Long-Term Debt—Pollution Control Bonds, shall be debited and Account 171, Interest and Dividends Receivable shall be credited. Upon completion of construction, Account 419, Interest and Dividend Income, shall be credited for the amount of interest income earned during the period.

The entries required to account for the transactions associated with the issuance of pollution control bonds are as follows:

Dr. 221.XX, Long-Term Debt—Pollution Control Bonds—Trustee
  Cr. Account 221.X1, Long-Term Debt—Pollution Control Bonds
To record the sale of pollution control bonds.
Dr. 107, Construction Work-in-Progress
  Cr. 232, Accounts Payable
To record costs incurred in construction of pollution control facilities.
Dr. 131.1, Cash—General Funds
  Cr. 221.XX, Long-Term Debt—Pollution Control Bonds—Trustee
To record the transfer of funds from the trustee.
Dr. 107, Construction Work-in-Progress
  Cr. 221.XX, Long-Term Debt—Pollution Control Bonds—Trustee
To record interest expense on pollution control bonds.
Dr. 171, Interest and Dividends Receiveable
  Cr. 107, Construction Work-in-Progress
To record earnings from investments made by the trustee.
Dr. 221.XX, Long-Term Debt—Pollution Control Bonds—Trustee
  Cr. 171, Interest and Dividends Receivable
To record receipt of interest income by the trustee account.
Dr. XXX, Various Plant Accounts
  Cr. 107, Construction Work-in-Progress
To close completed construction to the primary plant accounts.

626 *Prepayment of Debt*

Many REA borrowers have decided to redeem (prepay) their issues of long-term debt. As a result of this redemption, the borrower may incur a gain (discount) or a loss (penalty) on the early extinguishment of debt. The accounting for this gain or loss is highlighted in this section.

If debt is redeemed without refunding (paid with general funds), the gain or loss incurred shall be recorded in Account 189, Unamortized Loss on Reacquired Debt, or Account 257, Unamortized Gain on Reacquired Debt, as appropriate. The borrower shall amortize the recorded deferral on a monthly basis over the remaining life of the old debt issue. Amounts so amortized shall be charged to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reaquired Debt—Credit as appropriate.

If the debt is redeemed with refunds (refinanced), the gain or loss incurred shall be recorded in Account 189 or Account 257, as appropriate. The borrower may elect to account for the deferrals as follows:

1. Write them off immediately when the amounts are insignificant;

2. Amortize them by equal montly amounts over the remaining life of the old debt issue; or

3. Amortize them by equal monthly amounts over the life of the new debt issue.

Once an election has been made, it shall be applied on a consistent basis. Regardless of the option selected, the amortization shall be charged to either Account 428.1 or 429.1, as appropriate.

Where a regulatory authority having jurisdiction over the borrower specifically disallows the rate principle of amortizing gains or losses on the redemption of long-term debt without refunding, and does not apply the gain or loss to interest charges in computing the borrower's rates, the alternative method may be used to account for gains or losses relating to the redemption of long-term debt with or without refunding. The alternative method requires that gains or losses be recorded in Account 421, Miscellaneous Nonoperating Income, or Account 426.5, Other Deductions, as incurred. When the alternative method is used, the borrower shall include a footnote to the financial statements stating the reason for using this method and its treatment for rate making purposes.

627 *Rural Economic Development Loan and Grant Program*

On December 21, 1987, section 313. Cushion of Credits Payments Program, was added to the Rural Electrification Act. Section 313 establishes a Rural Economic Development Subaccount and authorizes the Administrator of the Rural Electrification Administration to provide zero interest loans or grants to RE Act borrowers for the purpose of promoting rural economic development and job creation projects.

On February 15, 1989, REA published its final rule, 7 CFR part 1709, subpart B, Rural Economic Development Loan and Grant Program. This rule outlines the policies and procedures relating to the zero interest loan and grant program.

The accounting journal entries required to record the transactions associated with a Rural Economic Development Loan are as follows:

(1)
Dr. 224.17, REA Notes Executed—Economic Development—Debit
  Cr. 224.16, Long-Term Debt—REA Economic Development Notes Executed
To record the contractual obligation to REA for the Economic Development Notes.

(2)
Dr. 131.12, Cash—General—Economic Development Funds
  Cr. 224.17, REA Notes Executed—Economic Development—Debit
To record the receipt of the economic development loan funds.

(3)
Dr. 123, Investment in Associated Organizations
  or
Dr. 124, Other Investments
  Cr. 131.12, Cash—General
To record the disbursement of economic development loan funds to the project.

(4)
Dr. 131.1, Cash—General Funds
  Cr. 421, Miscellaneous Nonoperating Income
To record payment received from the project for loan servicing charges.

(5)
Dr. 131.12, Cash—General—Economic Development Funds
  Cr. 123, Investment in Associated Organizations
  or
  Cr. 124, Other Investments
To record receipt of the repayment, by the project, of economic development loan funds.

(6)
Dr. 224.16, Long-Term Debt—REA Economic Development Notes Executed
  Cr. 131.12, Cash—General—Economic Development Funds
To record the repayment, to REA, of the economic development loan funds.

§§ 1767.22–1767.25 [Reserved]

Subpart C—Depreciation Rates and Procedures

§§ 1767.26–1767.45 [Reserved]

Subpart D—Preservation of Records

§§ 1767.46–1767.65 [Reserved]

Dated: August 21, 1990

George Pratt,

Acting Administrator.

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Part III

Department of Transportation

Research and Special Programs Administration

49 CFR Part 107 et al.

Requirements for Cargo Tanks; Revisions, Response to Petitions for Reconsideration; Final Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 107, 171, 172, 173, 176, 177, 178 and 180

[Docket Nos. HM-183, 183A; Amdt. Nos. 107-20, 171-100, 172-115, 173-212, 176-27, 177-71, 178-89, 180-2]

RIN 2137-AA42

Requirements for Cargo Tanks; Revisions, Response to Petitions for Reconsideration

AGENCY: Research and Special Programs Administration (DOT).

ACTION: Final rule, delay of effective date, response to petitions for reconsideration and revisions.

SUMMARY: This amendment makes additional revisions to a final rule published in the **Federal Register** under Docket Nos. HM-183, 183A (54 FR 24982, June 12, 1989). The final rule amended requirements in the Hazardous Materials Regulations (HMR) pertaining to the manufacture, qualification, maintenance, and use of cargo tank motor vehicles. The amendments contained in this document are primarily in reponse to petitions for reconsideration received to the final rule. The effective date is delayed from September 1, 1990, to December 31, 1990, to allow sufficient time for distribution of this amendment to persons affected by the final rule.

The intended effect of the final rules published under HM-183/183A is to improve safety in the transportation of bulk quantities of hazardous materials in cargo tank motor vehicles.

DATES: *Effective:* Effective August 31, 1990. The effective date for the final rule published under Docket HM-183/183A on June 12, 1989 (54 FR 24982), the amendments published on May 22, 1990 (55 FR 21035), and those adopted herein, are effective on December 31, 1990. *Compliance:* However, compliance with the regulations is authorized from October 1, 1990.

FOR FURTHER INFORMATION CONTACT:

Charles Hochman, (202) 366-4545, or Hattie Mitchell (202) 366-4488, Office of Hazardous Materials Transportation, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001; or,

Richard Singer (202) 366-2994, Office of Motor Carriers, Federal Highway Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:

Background

On June 12, 1989, the Research and Special Programs Administration (RSPA) published a final rule (Docket HM-183/183A; 54 FR 24982) establishing new standards pertaining to the manufacture, qualification, maintenance, and use of cargo tank motor vehicles. Because of the complexity and impact of issues addressed in the final rule, RSPA extended the period for receiving petitions for reconsideration from the usual 30 days to 150 days to allow persons affected by the final rule sufficient time to review the rules and submit their petitions (September 15, 1989, 54 FR 38233). Similarly, RSPA found it necessary to extend to the effective date of the final rule to allow RSPA and the Federal Highway Administration's Office of Motor Carriers (FHWA) time to evaluate the merits of the petitions received (September 15, 1989, 54 FR 38233; December 6, 1989, 54 FR 50382).

RSPA received over 1,000 petitions for reconsideration in response to the final rule. These petitions were from trade associations, shippers, motor carriers, state government agencies, and manufacturers of cargo tanks, cargo tank parts and equipment. All petitions have been given full consideration by RSPA and FHWA. FHWA has participated in the development of the Notice of Proposed Rulemaking (NPRM) (September 17, 1985, 50 FR 37766; December 5, 1985, 50 FR 49866), the final rule and the amendments issued under Docket HM-183/183A. In the interest of brevity, "we" is used hereinafter to refer to "RSPA and FHWA".

Because of delay in resolving certain issues raised in the petitions, on May 22, 1990, RSPA published an amendment to HM-183/183A (55 FR 21035) which further extended the effective date of the final rule to September 1, 1990. In the May 22 amendment, we specified the compliance dates for various inspections, tests and certain other provisions contained in the final rule, and responded to certain issues raised by petitioners. This amendment contains a review of those compliance dates and discussions, and contains additional revisions to HM-183/183A. Among the more significant changes included in this amendment are revisions—

1. To allow work experience as an alternative to educational experience for certain persons currently performing the prescribed functions of a Registered Inspector or a Design Certifying Engineer;

2. To expand the types of hazardous material authorized for retention in external unprotected piping during transportation (wet lines);

3. To clarify the requirements on pressure relief systems and outlets on new and existing cargo tank motor vehicles;

4. To exclude low pressure cargo tanks from additional portions of the ASME Code;

5. To clarify parameters used in structural integrity calculations for cargo tank motor vehicles;

6. To relax and clarify certain provisions relating to continuing qualification, inspection, and testing of cargo tank motor vehicles.

Several petitions raised issues which were not a part of this rulemaking proceeding. These petitions are discussed in this amendment, and may be made the subject of a separate rulemaking action. Except as adopted herein, all petitions for reconsideration received by RSPA concerning matters covered by the final rule published on June 12, 1989, are hereby denied. Any subsequent submission concerning issues relating to this rulemaking must be filed as petitions for rulemaking in conformance with 49 CFR 106.31.

I. Qualifications of Registered Inspectors and Design Certifying Engineers

To ensure that DOT specification cargo tanks are designed, constructed and maintained in accordance with the applicable specification, the June 12 final rule requires each person who certifies cargo tank motor vehicle design, construction, repair, and testing to meet certain minimum qualifications. These qualification standards are based on the particular function to be performed. Among the most critical functions are those performed by the Design Certifying Engineer and the Registered Inspector. The use of a Design Certifying Engineer is required for certification of each cargo tank motor vehicle design type and the design of a stretched cargo tank motor vehicle. As defined in § 171.8 of the final rule, a "Design Certifying Engineer":

> means a person registered with the Department in accordance with Part 107, Subpart F of this chapter who is an Authorized Inspector and has the knowledge and ability to determine if a cargo tank design meets the applicable DOT specification, or a person other than an Authorized Inspector who has this ability, at least one year of work experience in structural or mechanical design and an engineering degree (such as a professional engineer registered by the appropriate

authority of a State of the United States or a Province of Canada).

Several petitioners took exception to this definition. The National Propane Gas Association (NPGA) and other petitioners argued that (1) not all professional engineers have an engineering degree, (2) both professional engineers and graduate engineers include fields and disciplines of study that are only marginally related to cargo tank motor vehicle design, (3) some Authorized Inspectors are not qualified to make the kinds of judgments required of Design Certifying Engineers, and some are not graduate engineers, and (4) many persons currently performing these functions have no degree and are proficient in cargo tank stress analysis, design, and construction and should be allowed to continue performing these functions. The Truck Trailer Manufacturers Association (TTMA) stated that up to one-quarter of the present cargo tank motor vehicle manufacturers' Chief Engineers would not qualify under the definition as a Design Certifying Engineer. Petitioners requested that RSPA amend the definition to require that a Design Certifying Engineer be a registered professional engineer, a graduate engineer with one year of experience in structural or mechanical design, or a person with five years of relevant work experience and who, in any case, has performed stress analysis for cargo tanks and has the knowledge and ability to determine if a cargo tank design meets the applicable DOT specification. One petitioner pointed out that, in the preamble of the final rule, RSPA stated that a Design Certifying Engineer "must have knowledge and skills in areas such as stress analysis, welding, metallurgy, and recognized good design and quality control practices" but RSPA did not adopt these qualifications into the regulations.

We agree with these petitioners that an Authorized Inspector must have the knowledge and ability to perform stress analysis if that person is to be a Design Certifying Engineer. We agree that work experience in cargo tank motor vehicle design is essential and that there are persons performing these functions who are qualified to do so but do not hold an engineering degree. However, as we stated in the final rule, we believe that a combination of work experience in cargo tank motor vehicle design and education is necessary to ensure that the individual performing the functions of a Design Certifying Engineer has the appropriate knowledge and skills. Therefore, as revised in this amendment, "Design Certifying Engineer" means a person registered with DOT" who has the knowledge and ability to perform stress analysis of pressure vessels and otherwise determine if a cargo tank motor vehicle design and construction meets the applicable DOT specification, and has an engineering degree and one year of work experience in structural or mechanical design." However, at § 107.502, we are permitting persons who do not meet the minimum educational requirements but who have at least three years of work experience in performing design certifying functions before September 1, 1991, to register as a "Design Certifying Engineer" with DOT. Such registration statements must be submitted to DOT before December 31, 1991.

The use of a Registered Inspector is required for certification of specification cargo tank motor vehicle construction, assembly or repair. As defined in § 171.8 of the final rule, a "Registered Inspector":

> means a person registered with the Department in accordance with Part 107, Subpart F of this chapter who is an Authorized Inspector who has the knowledge and ability to determine if a cargo tank conforms with the applicable DOT specification, or a person other than an Authorized Inspector who has this ability and, at a minimum, the following work experience, in cargo tank construction or repair, and education: one year of work experience and an engineering degree, two years of work experience and an associate degree in engineering or three years of work experience and a high school diploma.

Several petitioners also took exception to this definition. NPGA pointed out an inconsistency in that the definition requires a lower level of education and work experience for an Authorized Inspector functioning as a Registered Inspector than is required for a person other than an Authorized Inspector, and recommended that the same level of skills be required in both cases. The National Tank Truck Carriers, Inc. (NTTC) stated "work experience and employee-demonstrated competence" should be the only qualifying criteria for those persons performing testing, inspection, repair and maintenance tasks. Both NTTC and TTMA suggested that an adequate qualification for a Registered Inspector would be five years of relevant work experience with no requirement for a high school diploma. Both petitioners stated that many persons are unable to provide a copy of their high school diplomas. NTTC also requested that, should RSPA deny their request to discontinue the requirement for a high school diploma, a General Equivalency Diploma (GED) be accepted as equivalent to a high school diploma. Finally, several petitioners requested that we accept "inspection" as qualifying work experience for a "Registered Inspector." The petitioners stated that many persons perform no "cargo tank construction or repair" but are otherwise highly qualified to perform the "inspector" functions in § 180.407.

We agree with petitioners that an Authorized Inspector functioning as a Registered Inspector should have the same level of skills as other persons who perform those functions. Unfortunately, this concept was not appropriately conveyed in the regulations adopted in the final rule; this amendment corrects that problem.

With respect to the educational qualifications of a Registered Inspector, we believe that these persons must meet the minimum education qualifications. However, we recognize that many qualified persons who have performed the prescribed functions for many years may not meet these minimum requirements. Therefore, in the final rule, we are allowing persons who do not meet the minimum educational requirements but who have at least three years of work experience in performing the Registered Inspector's functions before September 1, 1991, to register as a "Registered Inspector" with DOT. Such registration statements must be submitted to DOT before December 31, 1991. In addition, we have revised the definition of a "Registered Inspector" to include work experience in cargo tank inspection and to recognize a GED as being equivalent to a high school diploma.

II. Retention of hazardous materials in piping and hoses (wet lines)

RSPA received over 900 petitions from representatives of the propane gas industry who objected to the provisions contained in § 173.33(e) of the final rule. Section 173.33(e) grants a limited exception from the requirement for bottom damage protection devices on cargo tanks transporting fuel metered for road fuel tax purposes. Most petitioners understood § 173.33(e) as prohibiting the retention of all other hazardous materials lading in product piping during transportation.

In the May 22 amendment (55 FR 21036), in responding to petitioners from the propane gas industry, RSPA stated:

> It was intended, in both the proposed rule and the final rule, that this provision apply only to DOT specification cargo tanks used to transport liquid hazardous materials. The current requirements, at 49 CFR 178.337–9 and 178.337–10, require that piping be

protected from accidental damage in all cases and RSPA has no data indicating additional controls are needed. RSPA has informed the National Propane Gas Association of this position in a letter dated March 7, 1990.

Also, the wet line provision in § 173.33(e) does not apply to the transportation of hazardous materials having relatively low hazards which are authorized to be transported in nonspecification cargo tanks, even if a DOT specification cargo tank may be used. For example, § 173.33(e) does not apply to cargo tanks used to transport materials under §§ 173.118a (combustible liquids) and 173.131 (road asphalt, or tar, liquid).

Many petitioners, including the American Petroleum Institute (API), asked that RSPA broaden the exception granted to "fuels metered for road fuel tax purposes" to include other materials. These petitioners stated that many materials are metered for other than tax purposes, and the use of a tax as a criteria for providing exceptions is inappropriate, with no safety basis. Petitioners also pointed out that many other petroleum products are not taxed, and are considered "less hazardous" than gasoline. Finally, petitioners stated that a large percentage of cargo tank motor vehicles, currently transporting materials which are permitted, under the exception, to be retained in the piping, exceed the specified maximum piping volume limitation. These petitioners urged RSPA to grandfather existing cargo tanks transporting gasoline in "wet lines" which exceed the 50 gallon volume limit.

The comments expressed by petitioners asking that the exception in § 173.33(e) be broadened raised new information which was not brought to our attention during the comment period for the NPRM, or during any of the subsequent hearings or public meetings. We now realize that the retention of hazardous materials product in piping during transportation is more prevalent than was indicated earlier during development of the final rule. These petitions are under consideration and will be addressed further in the subsequent document. However, RSPA anticipates certain revisions will be made to the final rule.

RSPA received numerous other objections to § 173.33(e) from representatives of various other industries. Representatives from the crude oil gathering and oil field servicing industry urged RSPA to provide an exception from the prohibition against retention of product in piping for their equipment. They contended that this equipment is operated for the most part in remote locations which are equipped with loading/unloading equipment which could be converted to accommodate top loading. These petitioners also requested that the exception permit a piping diameter of up to 6½ inches, which is the standard for the industry.

We now recognize the substantial burden that a prohibition of wet lines in all services would place on the petroleum industry. It is apparent additional time is needed by the industry to implement design and operational changes before a prohibition against unprotected "wet lines" can be adopted. We believe that any hazardous material product retained in unprotected piping and hoses presents a potential safety hazard during transportation. However, we recognize the inherent difficulties in removing all product from the lines and in maintaining an accurate metering system. The problem of maintaining an accurate metering system lies mainly with the petroleum (flammable liquid) industry. For other hazardous materials, transportation in external unprotected piping is less common and thus the prohibition of such transportation will have a much lower cost impact. Therefore, § 173.33(e) is revised to require accident damage protection devices for piping that may retain poisons, skin corrosives, organic peroxides, or oxidizer liquids during transportation. However, we strongly encourage the petroleum industry to consider the risk it accepts in operating cargo tank motor vehicles over the highway with hazardous materials retained in the piping and that the hazardous materials industry consider and recommend possible alternatives to eliminate this risk in the most cost-effective manner.

III. Pressure relief systems and outlets on existing cargo tank motor vehicles

Numerous petitioners expressed their concerns with certain provisions contained in the part 173 commodity provisions as related to transportation of hazardous materials in cargo tank motor vehicles. Petitioners objected to requirements, contained in many commodity sections, that MC specification cargo tank motor vehicles be equipped with a pressure relief system conforming to that of a DOT 406 or DOT 407 cargo tank, as prescribed in § 178.346–10 or § 178.347–10, respectively. The petitioners stated that many existing MC specification cargo tank motor vehicles would have to be retrofitted because of the different requirements for relief valve set pressures, reclosing pressures, maximum allowable tank pressures, etc. For similar reasons, petitioners objected to other requirements in certain commodity sections that, except for MC 330 and MC 331 cargo tanks, all MC specification cargo tanks with bottom outlets must have the outlets equipped with internal self-closing stop valves meeting the requirements in § 178.345–11. It was not our intention to require existing cargo tanks to be retrofitted with pressure relief devices and outlets meeting the requirements of the new cargo tank motor vehicle specfications. We have clarified the requirements for pressure relief systems in § 173.33(d), which permit the use of a non-reclosing pressure relief device under certain conditions. We also have revised § 173.33(d)(3) to clarify that cargo tank motor vehicles may have pressure relief devices and outlets conforming to the original specification to which the cargo tank motor vehicle was manufactured or be modified to the listed corresponding specification.

IV. Application of the ASME Code to low pressure cargo tank motor vehicles

TTM submitted a list of paragraphs in the ASME Code which they believe should not apply to DOT 406, 407, and 412 cargo tank motor vehicles that are constructed but not certified in accordance with the ASME Code. These paragraphs are as follows: UG–11 (miscellaneous pressure parts), UG–22(g) (impact reactions, UG–23(b) (maximum allowable stress), UG–32(e) (torispherical heads), UG–35 (other types of closures), UG–44 (flanges and pipe fittings), UG–76 (cutting of plates and other stock), UG–79 (forming shell sections and heads), UG–82 (lugs and fitting attachments, UG–83 (tolerance for formed heads), UG–97 (inspection during fabrication), UG–99 (standard hydrostatic test), UG–100 (pneumatic test), UG–116 (required marking), UG–118 (stamping), UG–120 (data reports), UG–125 through UG–136 (pressure relief devices), UW–12 (joined efficiency), and UW–13.1(f) (intermediate head installation).

We have reviewed these paragraphs and agree that certain additional exceptions should be provided for units designed and built to the new DOT specifications but not certified to the ASME Code. We find paragraphs UG–11, UG–22(g), UG–32(e), UG–35, UG–44, UG–76, UG–97 and UW–13.1(f) are not appropriate and have waived compliance with these paragraphs for all DOT 406 cargo tank motor vehicles, and for DOT 407 and 412 cargo tank motor vehicles constructed but not certified in accordance with the ASME Code.

TTMA claimed that paragraph UG–79(a) would require stress relief after forming flanges on carbon or mild steel heads and, therefore, should be excepted in the DOT specifications. We believe the intent of this paragraph is to assure the fabrication process does not unduly impair the physical properties of the materal selected at the thickness employed. In cases where material strength is adversely affected because of the fabrication process, stress relieving

can restore the strength properties to the original levels. If a cargo tank manufacturer can establish that material properties after fabrication are not significantly different from those used in design calculations, the requirements of paragraph UG–79(a) would be satisfied. Therefore, no exception to this paragraph is warranted.

TTMA stated that complying with paragraph UG–79(b) is not practical for cargo tanks with non-circular cross sections. This paragraph requires rolling of shell sections to a preliminary curvature to prevent flat spots along completed joints. An exception to this requirement was included for DOT Specification 406 and 412 cargo tank motor vehicles in the final rule (see §§ 178.346–1 and 178.348–1).

Paragraph UG–23(b) calls for using reduced allowable compressive stress when designing cylindrical shells for a combined longitudinal stress. TTMA claimed the shell thickness of DOT Specification 407 cargo tanks would have to be increased from 0.135 to 0.165 inches, if relief from UG–23(b) is not granted. During the design of a cargo tank motor vehicle, paragraph UG–23(b) must be applied to evaluate compressive stress "at any point" in the cargo tank wall. Any thickness increase resulting from the application of this paragraph is limited to the specific regions of the cargo tank wall where the net longitudinal compressive stress is higher than that given in Appendix 5 of the ASME Code. In typical cargo tanks, any increase in thickness would likely be limited to top and bottom regions near the center section only. Moreover, current cargo tank specifications (see § 178.340–4(a)) stipulate a 5:1 design safety factor for non-ASME Code cargo tank construction, but the final rule provides for a 4:1 safety factor. This 20 percent reduction should offset any thickness and weight penalty due to paragraph UG–23(b). For these reasons, TTMA's request is denied.

TTMA stated that weld joint efficiency factors for DOT 406 and DOT 407 cargo tank motor vehicles should be the same as they presently are for MC 306 and non-ASME Code MC 307 cargo tanks and requested a specific exception to paragraph UW–12. Currently, § 178.340–5 requires a minimum joint efficiency of 85 percent. One of the principal objectives of this rulemaking project was to require all manufacturers of cargo tank motor vehicles to be ASME Code shops and to follow approved quality control procedures. The ASME Code prescribes weld joint efficiency factors based on weld geometry and the degree of weld inspection and provides the level of manufacturing quality control we sought.

While the present method for determining weld joint efficiency (§ 178.340–5(d)) has not resulted in weld failures, we believe that it is not appropriate and that the reduction in required design safety factor from 5:1 to 4:1 produces a greater concern about weld performance. Additionally, TTMA has provided us no data to show that paragraph UW–12 would have any negative impact on the design of DOT specification cargo tank motor vehicles. For these reasons, TTMA's request is denied.

We do not believe that specific exception must be provided for the remaining paragraphs of the ASME Code requested by TTMA for non-code stamped cargo tank motor vehicles. These paragraphs refer either to good engineering practices or general loading and testing requirements, which are specifically prescribed for the DOT cargo tank motor vehicles.

Paragraphs UG–82 and UG–83 contain practices intended to reduce fabrication-related flaws such as alignment and fit, and weld discontinuities. Such conditions can be sources of initiation and propagation of cracks. We believe satisfying these requirements not only is essential but also will help reduce inspection costs. We also believe that the workmanship practices followed by most cargo tank manufacturers will satisfy the requirements of these paragraphs. For these reasons, we have granted no exception to this paragraph.

Because DOT specifications supercede ASME Code requirements in the areas of pressure testing, pressure relief devices, marking, certification, data reports, and nameplates, it is not necessary to grant an exception to paragraphs UG–99, UG–100, UG–116, UG–118, UG–120, and UG–125 through UG–136. The requirements for these areas are found in §§ 178.345–10, 178.345–13, 178.345–14 and the applicable individual specifications.

V. Structural Integrity

We received numerous petitions on the structural integrity requirements prescribed in the final rule for MC 331, MC 338, and DOT 400 series cargo tank motor vehicles. These petitions for reconsideration of various aspects of the requirements indicate considerable confusion in interpreting the structural integrity analysis specified in §§ 178.337–3, 178.338–3 and 178.345–3.

In paragraph (a) in these sections, the statement "stresses due to internal pressure and vertical loadings must be considered in all cases" appears to have caused confusion about the overall stress analysis requirement. Some petitioners wanted to know if ASME design calculations must consider, in addition to internal pressure, all loadings, including dynamic loadings, as opposed to considering structural and lading weight. A petitioner contended that the requirement in this section for determining structural integrity for MC 331 cargo tank is "in reality a trial and error process of finding a shell thickness and diameter combination". The same petitioner suggested that we provide "sample calculations for basic types of MC 331 cargo tanks to bring the cargo tank design to a common and generally accepted basis" for clarification.

We agree the structural integrity analysis requirements, as written in the final rule, may be ambiguous. In addition, we believe the design acceptance and loading requirements need clarification. We do not agree with the petitioner's suggestion that we provide sample calculations because such sample calculations may not cover all aspects of various types of cargo tank designs used to transport hazardous materials. To alleviate confusion and any ambiguity, we have reorganized and revised §§ 178.337–3, 178.338–3, and 178.345–3. In response to various petitioners' arguments about the applicability and severity of various requirements in the final rule, we have adopted certain changes which are discussed later in the section-by-section review in this preamble.

In §§ 178.337–3, 178.338–3, and 178.345–3 of this amendment, paragraph (a)(1) prescribes the overall requirements for the structural integrity calculations and the maximum allowable stresses. Paragraph (a)(2) provides for determining the maximum allowable stresses based on tested properties of materials used, with the restriction that the measured tensile strength used in design shall not exceed 120 percent of the minimum values specified in the ASME Code or the ASTM standard to which the material is manufactured. We have accepted TTMA's request that finite element analysis be permitted for DOT 400 series cargo tanks. We have applied the same provision to the MC 331 and MC 338 cargo tank specifications. Paragraph (a)(3) provides for alternate analytical or test methods to establish stresses at any point in the cargo tank wall provided such methods are accurate and verifiable.

Paragraph (b) specifies the requirements for the basic ASME design calculation to determine the overall geometry and shell and head

thicknesses of the cargo tank. Paragraphs (c) and (d) prescribe various dynamic loadings, and a pressure surge due to sudden deceleration that must be considered in the structural integrity analysis. It must be noted that the dynamic loading conditions for MC 331 and MC 338 cargo tanks have not been changed from those in the final rule. We have not specifically identified the most severe combination of various static and dynamic loadings, as suggested by some petitioners, because the scope of the final rule was limited to correcting the effective stress formula found in the current regulations. Furthermore, the petitioners did not substantiate their suggested combinations of dynamic loading either by providing data, or by means of an industry accepted standard. Based on the petitions received, various changes have been made to the dynamic loading requirements for DOT 406, 407, and 412 cargo tank motor vehicles. These changes are briefly discussed in detail in the section-by-section review later in this preamble.

A petitioner argued that, in paragraph (d), the longitudinal design stress should be the "lesser of the yield strength or 75 percent of the ultimate tensile strength of the materials used," there can be a significant thickness increase in the shell and heads of a cargo tank. This argument is valid particularly for cargo tanks constructed of stainless steels. Therefore, we have relaxed the maximum allowable stress requirement for MC 331, MC 338 and DOT 400 series cargo tank motor vehicles cosntructed of stainless steels.

We have accepted TTMA's suggestion that the "g" loadings specifed in § 178.345–3(d) of the final rule should be reduced for cargo tanks designed with baffles. The suggested reduction of 0.25 "g" for each baffle assembly up to a maximum of 1.0 "g" is reasonable and, therefore, is adopted in § 178.345–3(d).

Paragraph (e) in these sections of this amendment prescribes minimum thickness requirements for cargo tank shell and heads. We have reorganized these requirements and made certain editorial changes.

The structural integrity sections are reorganized and revised in this amendment. Details of these changes are discussed in the section-by-section review of this preamble.

Review by Section

Sections 107.501–107.503

Several revisions have been made to the registration requirements based on the merits of petitions received. Revisions to § 107.501 clarify that the registration requirements apply to persons who assemble a cargo tank to a motor vehicle or to a motor vehicle suspension component. A new paragraph (b) alerts persons engaged in continuing qualification and maintenance of cargo tank motor vehicles that they must be familiar with the requirements set forth in part 180, subpart E.

Section 107.502 is rearranged for clarity. A definition of "assembly" is added in § 107.502(a)(1). In addition, in new paragraph (f), we are allowing persons who have at least three years of experience in performing the functions of a Registered Inspector or Design Certifying Engineer but who do not meet the minimum education requirements to register with DOT. Such registration statements must be submitted to DOT before December 31, 1991. See earlier discussion in this preamble under the heading "Qualification of Registered Inspectors and Design Certifying Engineers." A petitioner requested that § 107.502(d) be revised to stipulate that the Department will send registrants, within 30 days, a letter confirming receipt of the registration application and assigning a registration number. The petitioner cited RSPA's delay in processing registration statements as the reason for the change. RSPA delayed processing the registration statements, pending the disposition of several petitions requesting revisions to the registration requirements. The issues raised in the petitions have been resolved and all registration statements are being processed in a timely manner. We have not adopted the petitioner's suggestion because we believe it is unnecessary.

RSPA has received numerous registration statements that do not contain all the information required by § 107.503. Many of these registration statements do not list the specific functions to be performed as required by paragraph (a)(4), do not contain all required information for each facility for which a registration number is requested, or do not contain an acceptable certification as required by paragraph (a)(3). Section 107.503(a)(3) is revised to reference the limited exception in § 107.502(f) relating to Registered Inspectors and Design Certifying Engineers, and to provide an example of an acceptable certification statement. Applicants are reminded that the certification must be signed by the person who has oversight for ensuring compliance with the applicable requirements.

In paragraph (a)(4), "equipment manufacture" is added to the specific functions for which registration is required. Section 178.320(a)(2) of the final rule requires equipment manufacturers to register under subpart F, part 107. The definition of "manufacture" in § 178.320 is revised in this amendment to clarify which cargo tank equipment manufacturers must register with RSPA.

The May 22 amendment specified a compliance date of December 31, 1991, for repairers to submit a copy of their National Board Certificate of Authorization to RSPA. This same date applies to manufacturers of MC-series cargo tanks which are non-ASME. Paragraphs (b) and (c) are revised to reflect these dates.

A sentence is added in § 107.504(c) to advise that any person registered under § 107.502(f) who is in good standing is eligible for renewal. We have also emphasized that the provisions in subpart F, part 107, cover a registration, not an approval, program. The issuance of a registration number is not an endorsement by the Department of the qualifications of any person to perform the specified functions. Therefore, persons may not represent their operation as being "DOT-approved," as stated in new § 107.504(f) of this amendment. However, we have no objection to persons representing their operation as being "registered" with DOT.

Section 171.8

The definition of "cargo tank" is revised to recognize that these packagings are intended "primarily" for the carriage of liquids or gases, but may be used for carriage of solids. It also clarifies that appurtenances, reinforcements, fittings and closures are included as elements of a cargo tank.

The definitions of "Design Certifying Engineer" and "Registered Inspector" are revised as discussed earlier in this preamble under the heading "Qualifications of Registered Inspectors and Design Certifying Engineers."

Section 172.101

The entry for "Ammonium nitrate solution," is corrected to remove a reference to § 173.154(a)(18). Paragraph (a)(18) was removed under the final rule. Based on a petition for rule change (P–1089), this entry is also revised to reflect that ammonium nitrate solutions with 35% less water do not meet the definition of an oxidizer.

Section 172.203

Paragraph (h)(1)(i) is corrected to reference "§ 173.315(a), Note 14" instead of "§ 173.315(a), Note 15."

Section 173.22

Two petitioners requested that the provisions in paragraph (a)(2), relating to a shipper's responsibility for determining whether a cargo tank is an authorized packaging for a particular hazardous material, be removed from this section and be placed in part 177. One petitioner stated that a person offering a hazardous material for transportation in a cargo tank motor vehicle supplied by a motor carrier is not in a position to validate that the material would not have an adverse effect on the integrity of the cargo tank, or the cargo tank motor vehicle meets the applicable requirements with respect to its design, maintenance and repair. As an example, the petitioner stated a shipper would be unable to validate that a cargo tank presented for transportation of a corrosive material meets the corrosion protection requirements in § 178.345–2(c). The petitioner stated that, in many cases, a shipper provides the carrier with a Material Safety Data Sheet (MSDS) which can be used by the carrier to determine if the particular cargo tank motor vehicle is authorized for that material.

We disagree with these petitioners. We believe that both the shipper and the carrier have certain knowledge concerning the hazardous material and the cargo tank motor vehicle, and that each has responsibility for determining whether a hazardous material is suitable for carriage in the cargo tank motor vehicle. However, paragraph (a)(2) is revised to limit its application to the special commodity requirements in Part 173 and not to the continuing qualification requirements contained in part 180.

Section 173.33

In responding to the provisions in paragraph (a)(2), a petitioner stated:

> It is our belief that RSPA misconstrued the CMA [Chemical Manufacturers Association] comment on the proposed rulemaking. Our interpretation of that comment is that a shipper, when confronted with a compartmented cargo tank tendered at its facility which already contains in one of the compartments a material loaded by another shipper, is often not in a position to know the identity, much less the properties, of the materials loaded by the other shipper. Hence, there is no basis for the second shipper to make a determination as to the compatibility of the material to be loaded with the materials already loaded. We believe that CMA's comment intended to point out that the carrier should be responsible for making the determination as to compatibility in these circumstances. The shipper's responsibility is to ensure that incompatible materials are not loaded in the same cargo tank when all compartments are loaded at the same shipper's facility. This, we believe, was the intent in CMA's comment. We agree with this interpretation and believe that 173.33(a)(2) should be amended to reflect this distinction.

After reviewing the preamble discussion of the final rule, it is apparent we were in error in stating that we agreed collectively with the "commenters." However, the fact remains that, in a case where a motor carrier receives hazardous materials from different shippers, we believe the responsibility for ensuring an unsafe condition is not generated should be a shared responsibility and not the exclusive responsibility of the shipper or the carrier.

As suggested by a petitioner, paragraph (a)(3) is reviewed to clarify that the inspection and retest requirements in part 180 apply only to specification cargo tanks. Also for consistency with § 177.824, we have added a provision stating that the prohibition on offering a cargo tank motor vehicle for transportation after expiration of the retest date does not apply if the cargo tank was filled prior to the retest or inspection due date.

Several petitioners pointed out that paragraph (b)(3) could prohibit the practice of allowing atmospheric air pressure to replace flammable liquid vapors evacuated from cargo tanks during loading and unloading. We agree with the petitioners and have revised the paragraph accordingly.

Paragraph (c)(1), containing requirements linking the maximum lading pressure of liquid hazardous materials to the cargo tank maximum allowable working pressure (MAWP), is revised to clarify that these requirements apply only to materials requiring the use of a specification cargo tank. They do not apply to hazardous materials that are authorized to be transported in a nonspecification cargo tank, even if a DOT specification cargo tank is used.

A petitioner requested that the wording in paragraph (c)(1)(vi) be revised for consistency with § 173.33(b)(4). The petitioner stated that paragraph (c)(1)(vi) limits the loading/unloading pressure to not exceed the MAWP, but paragraph (b)(4) allows the pressure in the tank during loading/unloading up to 130 percent of the MAWP for certain cargo tanks. We disagree wtih the petitioner. Paragraph (c)(1)(vi) relates to pressure within a cargo tank during normal loading or unloading. In contrast, paragraph (b)(4) relates to the maximum surge pressure that may be applied to a tank as the result of an overfill or overpressurization during a loading or unloading accident. There is no inconsistency between these requirements, but we have revised the wording of paragraph (b)(4) to clarify its relation to an accident condition.

Two petitioners stated that, in paragraph (c)(2), the reference to § 178.345–1(k) voids the exception granted in paragraph (c)(1)(iii) for gasoline, and that the requirements in § 173.33(c)(1) are adequate for determining the proper MAWP. We agree with the petitioners and have revised paragraph (c)(2). This reference was also removed from paragraph (c)(3). For this same reason, we also revised paragraph (c)(2) to reference the applicable provision in "paragraph (c)(1)," instead of "paragraph (c)," and revised paragraph (c)(3) to remove another reference to "§ 178.345–1(k)".

With regard to paragraphs (c)(2) and (c)(4), NTTC and the Hazardous Waste Association of California (HWAOC) expressed a concern that their members may incur liabilities as a result of changing the manufacturer's "design" or "test pressure" marked on a cargo tank. Both petitioners stated that we may be forcing a carrier to make a representation to the public for which no technical or design basis may exist. As a result, the carrier may be misleading the public by "certifying" that these cargo tanks meet design criteria which may not be the original criteria by which the cargo tanks were designed. NTTC also claimed that its members do not have sufficient tank trailer design or construction experience to mark or remark trailers.

It is our position that these cargo tanks were required to be tested to at least 3 psig as a condition of the specification under which they were constructed. Cargo tanks marked with a design or test pressure of "none," "0," or "zero" have been tested to at least 3 psig. Although we normally would not allow an owner of a cargo tank to mark a specification plate, we are allowing it in this case. If these cargo tanks are not remarked, they are prohibited by § 173.33(c) from being used for transportation of hazardous materials. Therefore, the requirement that an owner mark these cargo tank motor vehicles is retained in paragraph (c)(3). However, we have revised the provision in paragraph (c)(2) to allow these cargo tanks to be marked with a MAWP or design pressure of 3 psig.

A minor editorial change is made to paragraph (c)(5).

Paragraph (d)(1) is revised, as suggested by a petitioner, to clarify that an existing cargo tank fitted with non-reclosing devices, may continue to be

used in hazardous materials service for which the cargo tank was authorized with those devices.

Paragraphs (d)(1) and (d)(2) are revised to clarify that the pressure relief systems on MC 330, MC 331 and MC 338 cargo tank motor vehicles are not required to conform with the requirements in these paragraphs. Paragraph (d)(3) is revised to clarify that existing cargo tank motor vehicles may have pressure relief devices and outlets conforming to the original specification under which they were constructed or may be modified to conform to a corresponding specification listed in the table in paragraph (d)(3).

Paragraph (e), as revised, requires accident damage protection devices for piping that may retain poisons, skin corrosive, organic peroxide, or oxidizer liquids during transportation. See earlier discussion in this preamble under the heading "Retention of hazardous materials in piping and hoses (wet lines)."

Sections 173.119–173.374

It was not our intention to require retrofit of pressure relief device systems and bottom outlets on all existing cargo tanks. Therefore, various commodity sections are revised to clarify the pressure relief system and outlet requirements on existing cargo tanks. See earlier preamble discussion under the heading "Pressure relief systems and outlets on existing cargo tank motor vehicles".

A petitioner stated that requiring bottom outlets equipped with self-closing stop-valves capable of functioning in the event of a fire or hose rupture (§ 178.345–11(a)) is inappropriate for cargo tanks limited to corrosive liquid service and that an exception to that effect should be included in Part 178. We agree with the petitioner and have revised § 178.345–11.

We wish to alert cargo tank owners and users that certan cargo tanks currently authorized for materials meeting the definition of a material which is toxic by inhalation may no longer be authorized for those materials if a final rule is adopted under Docket HM–181, consistent with the proposals published on May 5, 1987, and November 6, 1987 (52 FR 16482, 52 FR 42773).

Section 173.131

NTTC and TTMA requested that we permit the use of hat shaped or open channel stiffening rings on carbon steel tanks used to transport road asphalt or tar. The petitioners stated that this has been the practice for many years and there have been no problems with corrosion under the hat shaped or open channel rings. The elevated temperatures at which cargo tank motor vehicles in this service operate prevent the accumulation of moisture which can cause corrosion under hat shaped or open channel stiffening rings. We agree with the petitioners and have revised paragraph (a)(2) to provide an exception to the requirements contained in § 178.345–7(d)(5).

TTMA also stated, in part:

> The design stress limits at elevated temperatures as specified in the ASME Code are not applicable to aluminum cargo tanks which transport road asphalt or tar because the ASME design stress limits for aluminum assume continuous operation at the maximum rated temperature for many years. Asphalt tanks are only occasionally operated at their maximum temperature and then only for a few hours.
>
> Application of the ASME design stress limits would reduce the design stress limit for an aluminum tank from 5500 psi to 3000 psi which would result in a severe cost and weight increase.

TTMA further suggested that the following two sentences be added to § 173.131(a)(2):

> Also, the design stress limits at elevated temperatures per the ASME Code are not applicable. The design stress limits shall not exceed 25 percent of the stress limit provided by the Aluminum Association for 0 temper.

We agree with the petitioners that hat shaped or open channel stiffening rings should be allowed on cargo tank motor vehicles used to transport road asphalt or tar. Paragraph (a)(2) is revised to provide an exception to the requirements contained in § 178.345–7(d)(5).

We agree with TTMA that the tensile properties of aluminum contained in the ASME Code differ from those listed in the Aluminum Association Inc. publication entitled "Aluminum Standards and Data". Because aluminum cargo tank motor vehicles used to transport asphalt operate at the maximum design temperature for only a limited period of time, it is reasonable to use the tensile properties listed in the Aluminum Association Inc. at the maximum design temperature of the cargo tank. Therefore, revised paragraph (a)(2) also allows the use of the tensile properties found in this publication.

Section 173.154

Paragraph (a)(4)(i)(C) is corrected by removing the words "transportation by vessel." The requirements covering the carriage of cargo tanks by vessel are contained in paragraph (a)(4)(iv). Additionally, based on a petition for rulechange (P–1089), paragraphs (a)(4) and (a)(17) are revised to reflect that ammonium nitrate solutions with 35% or less water do not meet the definition of an oxidizer.

Section 173.206

Two petitioners pointed out that the provision, in § 173.206(c)(3)(v), requiring pressure relief devices to meet the requirements in § 178.337–9 for metallic sodium, is unnecessary since the material is required to be shipped in a solid state. One petitioner also stated that since sodium is shipped under a nitrogen pad, the pressure relief devices should be sized for the padding gas at its charge pressure. We agree with the petitioners and have revised § 173.206(c)(3)(v) accordingly. The revised wording is consistent with that currently found in 49 CFR 173.206(c)(3).

Section 173.252

Paragraph (a)(4)(ii) is amended by removing the word "cladding" because it may be used to satisfy the minimum thickness requirements.

Section 173.266

The current regulations require, for cargo tanks used in hydrogen peroxide service, that the tank metal identification plate be marked "DOT MC 310–H_2O_2," "DOT MC 312–AL–H_2O_2," or "DOT MC 312–SS–H_2O_2," as appropriate, and that the cargo tank be marked "FOR HYDROGEN PEROXIDE ONLY". The final rule provided for the tank specification plate to be marked with a general statement indicating the tank is in hydrogen peroxide service and for the cargo tank to be marked "FOR HYDROGEN PEROXIDE SERVICE ONLY." Two petitioners questioned the need to revised the currently prescribed marking and requested that the current markings be retained. We agree and have revised paragraph (f)(2)(v) accordingly.

Section 173.272

An editorial correction is made in paragraphs (d), (e), (f), and (g) to include a reference to paragraph (i)(30).

Section 173.276

Authorization for use of the MC 330 and MC 331 cargo tanks was inadvertently omitted in the introductory text to paragraph (a)(6). This amendment corrects this oversight.

Section 173.292

In response to a petition, the description "hexamethylene diamine, is corrected to read "hexamethylenediamine" in the section heading and the introductory text in paragraph (a) for consistency with the

proper shipping name shown in the § 172.101 Table.

Sections 173.315 and 173.318

Sections 173.315(i)(1)(ii) and 173.318(b)(2)(i)(C) and (b)(2)(ii) require that the flow capacity and rating of pressure relief devices be verified and certified by the manufacturer of the device. CGA requested that these devices be rated, tested, and marked in accordance with CGA Pamphlet S–1.2. We have reviewed CGA Pamphlet S–1.2 and have found those provisions to be consistent with those of the final rule. Therefore, these paragraphs are revised as requested by CGA.

Section 173.346

Authorization for use of the MC 330 and MC 331 cargo tanks was inadvertently omitted in the introductory text to paragraph (a)(12). This amendment corrects this oversight.

Section 177.824

This section is revised to clarify that a motor carrier may not operate a specification cargo tank motor vehicle containing a hazardous material unless the cargo tank conforms to be retest and inspection requirements in Part 180.

Section 178.320

Definitions of "cargo tank," "cargo tank motor vehicle," and "cargo tank wall" are added in paragraph (a). The definitions of "cargo tank" and "cargo tank motor vehicle" are the same definitions adopted in § 171.8, and appear in this section as a convenience to users. A definition of "cargo tank wall" was added because the term is used in § 107.503 and in various sections in parts 178 and 180. Because of these additional definitions, paragraph (a) is reorganized for clarity.

A petitioner asked that the definition of "design type" be revised so that minor variations in piping which do not affect the lading retention capabilities of the cargo tank are not considered changes in the "design type." We agree with the petitioner that recertification of the cargo tank motor vehicle by a Design Certifying Engineer should not be required if such variations are made to piping, and have revised the definition of "design type" accordingly.

Another petitioner objected to the limitation of a "design type" to a specific diameter and length, stating that tanks with a larger diameter or shorter length are "stronger tanks." The petitioner also recommended that the definition of "design type" refer to a radius or radii instead of a diameter, to account for non-circular cargo tanks. We do not agree with the petitioner that tanks with a larger diameter or shorter length will always be stronger tanks. We cannot foresee all possible changes to a cargo tank motor vehicle, and how each of these changes will affect the structural integrity of the modified cargo tank motor vehicle. The Design Certifying Engineer must be used to ensure the structural integrity of each different cargo tank motor vehicle design. However, we have modified the definition of "design type" to specify that the cargo tank is made to the same "cross section dimensions" instead of diameter, to account for non-circular cargo tanks.

A number of petitioners asked for clarification regarding which cargo tank equipment manufacturers must register with DOT. The definition of "manufacturer" is revised to clarify that the term applies to persons who manufacture cargo tank equipment which forms part of the cargo tank wall. Therefore, persons who manufacture equipment such as hoses, pumps, placard holders, etc. which have no lading retention capability during transit are not required to register under part 107, subpart F.

A petitioner suggested that paragraph (b)(2) be revised so that the Design Certifying Engineer would furnish a certificate to the assembler and ultimate end user in addition to the manufacturer. The petitioner also suggested that paragraph (b)(3) be revised to require the final assembler and ultimate end user to retain the design certificate. We believe it is unnecessary to revise paragraphs (b)(2) and (b)(3) as suggested. The cargo tank specifications contain certification provisions requiring each manufacturer in a multi-stage manufacture to transfer certificates and drawings to each subsequent manufacturer. Those certification provisions require the manufacturer to supply a certificate to the end user. The issue of whether drawings and calculations must be supplied to the end user is addressed in this amendment in the discussion of § 178.345–15. However, paragraphs (b)(2) and (b)(3) are revised to clarify the requirements for the inclusion of sketches, drawings, and calculations with the certificate. These changes were believed necessary because in many cases, the Design Certifying Engineer is not supplying sketches, drawings, and calculations, but rather is reviewing those supplied by the cargo tank manufacturer.

Sections 178.337–3 and 178.338–3

As discussed earlier in this preamble under the heading "Structural Integrity", we have reorganized these sections for clarity. In the following discussion the paragraph numbers used in the amendment are identical for both §§ 178.337–3 and 178.338–3.

Paragraphs (a), (a)(1), and (a)(2) in the final rule are reorganized into four paragraphs. In §§ 178.337–3(a)(1) and 178.338–3(a)(1) of this amendment, the maximum allowable stresses are the same as those specified in the final rule. We disagree with petitioners who suggested that the maximum allowable stress be 25 percent of the ultimate tensile strength rather than "the lesser of the maximum design stress value specified in the ASME code or 25 percent of the minimum specified tensile strength". We believe the ASME calculations are such that a margin of safety is provided by the maximum allowable stresses specified. If the petitioner's suggestion is adopted, the design stress can be close to yield strength for some pressure vessel steels if those steels have a significant difference between yield and ultimate tensile strengths. However, we have provided a relaxed requirement in paragraph (a)(2), to permit the properties of an authorized material to be established by testing.

To remove any confusion as to the stress analysis required for different loading conditions, we have clarified, in paragraph (a)(3), specific loading requirements that must be considered "separately". We recognize in some cases a more detailed analysis may be necessary to accurately establish the maximum effective stresses. Therefore, we are authorizing the use of other analytical and test methods, provided such methods are accurate and verifiable. We believe this relaxation will help the designer when the ASME calculation procedures are not directly applicable or when additional information is necessary. Several petitioners requested clarification on whether corrosion allowance material is included in the design thickness. We have clarified in paragraph (a)(4) that corrosion allowance material may not be included in design stress calculations.

The requirements in paragraph (b) pertain to the ASME design calculations that must be performed to establish the basic structural integrity of a cargo tank. These requirements are essentially the same as prescribed in paragraph (a)(2) of the final rule.

The intent of paragraph (c) in the final rule is to determine the maximum effective stress (i.e., maximum principal stress) at any point in the cargo tank resulting from various dynamic loadings, or from a combination of loadings. The

effective stress calculation determines additional thickness requirements, if any, at points where the effective stresses are high or at areas prone to fatigue or environmental degradation. A petitioner suggested that the "+/−" sign in the effective stress equation should be only "+". This equation is used to calculate the maximum normal stresses in a material when subjected to any system of loading. The "+" and the "−" signs are used separately to determine the magnitude of the two principal stresses. The requirement for using the effective stress equation is necessary because the designer must calculate both the effective stresses and design for the worst case. The petitioner's suggestion, therefore, is not accepted. A petitioner suggested that the loadings at the fifth wheel for MC 338 cargo tanks be changed for consistency with those specified for MC 331 cargo tanks, because both are expected to be subjected to the same loadings. We disagree with the petitioner. The MC 338 cargo tank design, construction and service requirements are different from those of MC 331 cargo tanks. MC 338 cargo tanks can be single walled or vacuum insulated and can be high pressure or cryogenic cargo tanks. Section 178.338–13 (b) and (c) in the current regulations prescribe different loading conditions for each of these cargo tanks. We believe such a difference in loading requirements is necessary. Therefore, except for correction of a provision in paragraph (c), in which the loading requirements in § 178.338–13 (b) and (c) for calculation of shear stresses for MC 338 cargo tanks are referenced, we have not revised the requirements in the final rule. This correction makes the loading requirements for shear stresses consistent with the loading requirements for calculation of tensile and compressive stresses.

Paragraph (d) is reorganized for clarity and to relax provisions concerning the maximum allowable stress for cargo tanks constructed of stainless steel. For a cargo tank constructed of stainless steel, the calculated longitudinal stress resulting from a 2 "g" decelerative force and the MAWP, shall not be greater than 75 percent of the ultimate tensile strength, rather than the "lesser of the yield strength or 75 percent of the ultimate tensile strength."

The minimum metal thickness requirements for shell and heads for MC 331 and MC 338 specification cargo tanks are found in paragraph (e). These requirements have not been changed from those prescribed in the final rule. Except for editorial changes and minor reorganization, paragraph (g) of the amendment pertaining to the design, construction and installation of any appurtenance to the shell and heads of a cargo tank contains the same requirements that were prescribed in §§ 178.337–3(f) and 178.338–3(e) of the final rule.

Section 178.337–9

A petitioner requested that paragraph (b)(6) be revised to allow all piping, valves, hose, and fittings to be tested for leaks at 80 percent of the design pressure instead of at 100 percent of the design pressure. The petitioner stated the 100 percent test pressure would require removal of the pressure relief valves before testing; whereas, testing at 80 percent would allow these valves to remain in place. Another petitioner requested that a hydrostatic test using a suitable test fluid be recognized as an alternative to a pneumatic test using gas or air pressure. This petitioner stated that water and diesel fuel are two commonly used test fluids for the quinquennial requalification for continued service.

We agree that leakage testing at 80 percent of design pressure can be as effective as testing at 100 percent of design pressure and that conducting the test with hydrostatic pressure should be allowed. We have revised paragraph (b)(6) accordingly.

Section 178.337–18

Paragraph (a) is revised to clarify the respective functions of the Design Certifying Engineer and the Registered Inspector.

Section 178.338–3

Refer to preamble discussion to § 178.337–3.

Section 178.338–17

CGA requested that we revise paragraph (b) to allow the installation of anodized aluminum parts on cargo tanks used to transport oxygen, cryogenic liquid, for consistency with § 173.318. We agree and have revised the paragraph accordingly.

Section 178.338–19

Paragraphs (a) and (b) are revised to clarify the respective functions of the Design Certifying Engineer and the Registered Inspector. These revisions were inadvertently omitted from the final rule.

Section 178.345–1

Petitioners requested revisions to several definitions appearing in this section. In the definition of "flange," several petitioners requested that the following sentence be removed: "For size and shape, see ANSI B16.5." The petitioners stated that the size and shape of a flange should not be constrained by ANSI B16.5. We agree and have revised this definition.

The definition of "internal self-closing stop-valve" is revised to permit location of the valve seat inside the tank, as requested by petitioners.

A petitioner pointed out that a "nozzle" can be a pipe or a tubular section and that the ASME Code does not require a nozzle to be attached to a flange, as represented in the definition. We have revised the definition as suggested by the petitioner.

The definition of "outlet" is revised to exclude a threaded opening securely closed during transportation with a threaded cap, as suggested by a petitioner.

A petitioner stated that a "pipe coupling" has internal, and not external, threads as stated in the definition. We have amended the definition by removing the wording "or external".

In the final rule, "shell" was defined as "the circumferential portion of a tank defined by the basic design radius excluding the closing heads. The definition is revised based on the merit of a petition stating that an oval tank may have too or more radii.

Petitioners' requests to revise the definitions of "constructed in accordance with the ASME Code," "maximum allowable working pressure," "rear bumper," and "sacrificial device" either lack merit or are unnecessary. Therefore, these definitions have not been changed.

Section 178.345–2

Paragraph (a) of the final rule requires a manufacturer to ensure that the materials used to construct the cargo tank wall, bulkheads and baffles are compatible with the lading intended for transportation in the cargo tank. TTMA stated a manufacturer would not always know the intended lading. We agree with TTMA and have revised the requirement. Any design requirements which depend upon the special characteristics of a hazardous material lading are specified in the commodity sections in part 173.

TTMA stated that ASTM 676 steel listed in paragraph (a)(1) should be ASTM 656. In addition, both TTMA and NTTC requested that ASTM A 569 (carbon steel), 570 (carbon steel with properties), 572 (HSLA plate) and 607 (HSLA sheet) steels be authorized for cargo tanks "constructed in accordance with the ASME Code." We agree that

ASTM 569, 570 and 572 steels should be authorized. However, we believe the ultimate to yield strength for ASTM A 607 is too low. Therefore, we have not accepted these steels. The reference to ASTM A 676 steel in the final rule is corrected to read ASTM A 656.

In relation to paragraph (b), NTTC asked if a minimum thickness is required at locations of high stress. Stress at any point on a cargo tank must be calculated as specified in § 178.345–3. We have made an editorial correction to reference "§ 178.345–3" instead of "§ 178.345–3(a), (b), (c), or (d)."

TTMA stated that corrosion and abrasion protection should be covered in Parts 172 and 173 rather than § 178.345–2(c). We intended paragraph (c) to be used only as a guide to manufacturers; therefore, it is revised. We recognize that a cargo tank need only meet the minimum thickness requirement to be in full compliance with the applicable specification. However, if the cargo tank is thinned by corrosion or abrasion below the required minimum thickness, it will no longer be suitable for its intended service. Therefore, this paragraph is retained as written.

Section 178.345–3 (Structural Integrity)

Petitions received addressing this section reflected considerable confusion regarding the structural integrity analysis, and the applicability and exceptions of various design requirements in the ASME Code. Therefore, as in the case of the MC 331 and MC 338 cargo tank specifications, these requirements are reorganized and revised.

Paragraphs (a), (a)(1), and (a)(2) in the final rule are reorganized into four paragraphs in this amendment. Revised paragraph (a)(1) prescribes the general requirements and acceptance criteria. This paragraph requires that the maximum calculated design stress value may not exceed the lesser of the maximum allowable stress value prescribed in Section VIII of the ASME Code, or 25 percent of the tensile strength of the material used. For clarity, the wording "lesser of" is added, as suggested by a petitioner.

In paragraph (a)(2), we have provided for the use of tested properties of the materials so that the Design Certifying Engineer has flexibility to use materials efficiently. We have clarified in paragraph (a)(3) specific loading requirements that must be considered separately to remove confusion regarding the stress analysis. As discussed earlier in this preamble under the heading "Structural Integrity," we are permitting the use of other analytical and test methods provided such methods are accurate and verifiable, as suggested by TTMA. We have clarified, in paragraph (a)(4), that corrosion allowable material may not be included in design calculations, as suggested by several petitioners.

The effective stress calculation requirements prescribed in paragraph (b) of the final rule are revised and appear as paragraph (c) in this amendment. The ASME design calculations prescribed in paragraph (a)(2) of the final rule, have been moved to paragraph (b) in this amendment.

TTMA pointed out that the various dynamic loadings prescribed in paragraph (b) of the final rule must be based on reaction forces rather than the static weight of the fully loaded cargo tank motor vehicle. We generally agree with TTMA, and have incorporated appropriate changes in paragraph (c) of this amendment. Paragraph (c) of this amendment provides a method for determining the maximum effective stress at any point in the cargo tank wall resulting from various dynamic loadings and combinations thereof. These calculations determine thickness requirements if the effective stresses are high at any point, or an area of the cargo tank is prone to fatigue or environmental degradation. However, we do not agree that the horizontal accelerative force to be applied at the pivot (fifth wheel) or the turn table must be 0.75 times the vertical reaction caused by fully loaded cargo tank motor vehicle. TTMA provided no data to support their position and, therefore, the requirement has not been changed. As discussed earlier in this preamble under the heading "Structural Integrity," TTMA's suggestion to revise the "g" loadings for cargo tanks with one or more baffle assemblies is adopted. We have authorized a reduction in the "g" loadings up to a maximum of 1 "g" at a rate of 0.25 "g" per baffle assembly, in paragraph (d).

Provisions contained in paragraph (d) of the final rule concerning calculation of effective stress for a cargo tank supported by a vehicle frame or other form of structural support are revised and moved to paragraph (f) of this amendment. In the revised provisions, we have clarified that, when considering the loading in paragraph (c), the stress analysis may include the contribution of the frame or the integral structural support.

Section 178.345–7 (Circumferential Refinforcements)

Several petitioners pointed out various editorial errors appearing in this section. We have corrected these errors and have made several editorial clarifications. We have removed the first sentence in paragraph (d)(5) to clarify that hat shaped or open channel rings which can be visually inspected are authorized on cargo tank motor vehicles constructed of carbon steel.

Section 178.345–8 (Accident Damage Protection)

Several petitioners objected to the wording in paragraph (a). TTMA stated that requiring a Design Certifying Engineer state that the "cargo tank is designed to minimize loss of lading in an accident taking into account of potential puncture, abrasion, etc. is an impossible liability to assume." We agree the requirement as written is open-ended and have revised it to better state our intention.

A petitioner stated that the loads specified for the design of rollover protection devices are artifically high and that the bending stresses in the tank wall can be as high as three times the maximum allowable stress value. An analysis submitted as part of the petition was based on a somewhat simplified model and consequently appears to result in more severe local stresses. It is clear that concentrated loads must be distributed broadly over the cargo tank wall. This distribution of loads can be accomplished by doubler pads, circumferential rings and other means without undue penalty in weight or fabrication complexity.

Several petitioners stated that the impact load specified in paragraph (d) for rear-end protection devices was excessive and subject to misinterpretation. Some petitioners objected to use of the inboard surface of the device as a dimensional reference point. The impact load is roughly equivalent to backing into a loading dock at five miles per hour. Many DOT specification cargo tank motor vehicles currently have rear structural features capable of withstanding such an impact. We consider this to be a reasonable requirement and have included it in this amendment. The need to refer to a safety factor has been eliminated by specifying design stress level in terms of one-half the ultimate strength of the material. We concur with the views expressed by petitioners concerning the "inboard surface of the device" and that the general wording in the final rule allows more than one interpretation. We have revised paragraphs (d)(1) and (d)(3) for clarity.

Section 178.345–9

Petitioners requested reconsideration of the requirement that only "automatic

means of closure" be used to protect tanks from overpressurization. TTMA stated that a pump equipped with an automatic bypass or pressure relief system designed to prevent pressurization of the cargo tank above its MAWP may be just as effective as "closure" of the line between the pump and the cargo tank. We agree and have revised the requirement to allow other means which are equally effective, such as pressure relief devices and overpressure bypass systems.

In paragraph (b) of the final rule, we required that the designed bursting pressure of a hose coupling be to 120% of the bursting pressure of the hose. Many petitioners objected to the over-designed couplings that would be required on a low pressure cargo tank if the hose used had a large bursting pressure. We agree and have changed the design constraint for the coupling to be a function of the tank MAWP rather than the hose bursting pressure. This requirement has been moved to new paragraph (c) in this amendment.

Several petitioners, including TTMA, noted paragraph (c) of the final rule does not allow slip joints in the design of these cargo tanks. The petitioners argued that slip joints should not be allowed in lines that would retain lading during transportation due to possible leakage of hazardous materials. However, slip joints should be allowed in lines which do not retain lading. We agree with the petitioners and have added the phrase "in lading retention piping." These provisions appear in paragraph (d).

For consistency in the use of nomenclature, in paragraph (h), the term "product retention system" is revised to read "lading retention system."

Section 178.345–10

Numerous petitioners addressed the final rule provisions for pressure relief systems on DOT 400 series cargo tank motor vehicles. These provisions are intended to cover all vacuum and pressure relief functions normally associated with use in cargo tanks and, in addition, to prevent loss of lading through the pressure relief system in the event of vehicle overturn or accident. This requirement for lading retention is to be accomplished in a two-step plan. As set forth in the final rule, these steps were:

1. Within 1.5 years of the effective date, pressure relief valves must reclose after experiencing pressure surges typically encountered in upsets, and leakage must be less than one gallon, and

2. Within 4.5 years of the effective date, pressure relief systems must withstand such pressure surges without leakage regardless of vehicle orientation.

In both stages, the characteristic dynamic pressure surge was defined as being "50 psig applied for at least 300 milliseconds." TTMA Recommended Practice, RP No. 81—"Performance of Spring-Loaded Pressure Relief Valves on MC 306, MC 307, and MC 312 Tanks" was cited as a testing procedure for demonstrating the ability to withstand the characteristic surge. This document describes an Australian test utilizing a drop test device.

Several petitioners suggested revisions in the characterization of the dynamic pressure surge and stated that it would be applied to individual specification units, e.g., only to DOT 406 systems. Generally, their recommendations were based upon studies of overturn events conducted on MC 306 units, or on simulators, reported in 1980 by Dynamic Science and the Highway Safety Research Institute, and upon experience with test equipment similar to the Australian drop-testing devices. All petitioners suggested shortening the 300 millisecond period of surge duration, and generally reducing the magnitude of the pressure surge. We developed the following revision based on data generated by the overturn research cited above and which has been proven to be obtainable with existing drop test equipment:

> Each pressure relief system must be designed to prevent loss of liquid lading due to pressure surges caused by overturn or other accident. This requirement is satisfied by a pressure relief system designed to withstand with no loss of lading a dynamic pressure surge reaching 30 psig above the designed set pressure of the relief system and sustained above the set pressure for at least 60 milliseconds.

The two-step plan for introducing these requirements is retained. Because valve manufacturers presented persuasive evidence that 18 months was insufficient time for development and initial production of a reseating valve, this period has been changed to 2 years. An additional period of 3 years is allowed for the development and production of a valve that meets the "no leakage in any orientation" requirement.

Several petitioners strongly objected to references to TTMA RP 81 on the basis that the wording seemed to imply that only TTMA's method of proof testing would be acceptable. As revised in paragraph (b)(3)(i)(A), the procedures in TTMA RP 81 may be used as one acceptable approach for satisfying the requirement.

A number of petitions were received to the effect that no manufacturer could supply relief valves capable of withstanding the pressure surges described in the final rule. While the final rule characterization of pressure surges was somewhat higher and much longer than surges to be expected typically in overturn accidents, at least one manufacturer can supply valves which satisfy the requirements contained in the final rule.

Several petitioners recommended that non-reclosing frangible devices be allowed on cargo tanks used in certain hazardous materials services, notably on vacuum-loaded cargo tank motor vehicles used in hazardous waste services. We disagree because frangible devices installed singly (i.e., not in series with a reclosing pressure relief valve) may not retain lading in the event of vehicle overturn. Other petitioners stated that the requirement in paragraph (c) that pressure relief devices be located in the center of the cargo tank should not be applied to vacuum-loaded cargo tank motor vehicles which are designed to slope rearward to facilitate unloading. We agree with these petitioners and have revised paragraph (c) accordingly.

Several petitioners pointed out that the controls on relief valve functions, in paragraph (d), are excessive and redundant. We agree and have revised paragraph (d) to eliminate unnecessary controls on performance, and to express opening and closing points as percentages of the MAWP.

In response to several petitions, we have revised paragraph (e) to clarify that the venting capacity of pressure relief system limit the tank internal pressure to not more than the cargo tank test pressure.

Questions raised by petitioners on the pressure relief system requirement found at § 180.405(h) have suggested the need for clarification of our intent. For this reason, and also in order to reflect the changes effected in § 178.345–10, we have revised § 180.405(h).

Section 178.345–11

Paragraph (a) of the final rule requires that all loading/unloading outlets be located as near as possible to the cargo tank wall, and that the remotely activated means of closure for the self-closing system "be more than 10 feet away from the stop-valve." TTMA and several other petitioners strongly objected to requiring external self-closing stop valves on loading/unloading outlets of vacuum-loaded cargo tanks. They argued that many hazardous wastes carried in these cargo tanks contain suspended solids or debris which make it impossible to ensure that

a self-closing stop valve will achieve a leak-tight seal when actuated.

It is our position that loading/unloading outlets must be equipped with internal self-closing stop valves or with external stop-valves which are part of a self-closing system. When an external stop-valve is used, the self-closing system need not be the only means by which the outlets may be closed. During normal operation, the stop-valve can be manually operated but, in the event of an emergency, it must be possible to remotely close the outlet. We agree with the petitioners that, where debris or solids are present, the actuation of a self-closing system may not result in a perfect closure, but lading loss in an emergency will be significantly reduced. We have reorganized this section and adopted use of the term "self-closing system" to further clarify our intention.

A petitioner requested that the requirement for a self-closing system on loading/unloading outlets apply to bottom outlets because no risk of lading exists with top outlets. We believe that, in the case of pressurized unloading of top outlets, there is a significant risk of lading loss in an emergency. Therefore, this paragraph applies to both top and bottom loading/unloading outlets.

Several petitioners expressed concern over use of the phrase "as close as possible to the cargo tank shell" to describe the required location of external stop valves. They requested the word "possible" be replaced with the phrase "practicable, taking into account accident damage protection, durability, lading characteristics and maintenance". API stated that the final rule may be requiring the placement of the valves in a position which is ultimately unsafe. On vacuum loaded cargo tanks, the stop valve is positioned to avoid debris packing in the bonnet, which could cause premature valve failure. Such valves are protected by accident damage devices and/or by the vehicle frame. API stated that they believe self-closing stop valves can be installed in a safe and practical position without being "as close as possible to the cargo tank shell." TTMA suggested we simply use the term "practicable" in place of "possible". We believe the use of the term "praticable" will allow the external self-valves to be placed in safer and more practical positions while maintaining our intent to minimize the distance between the cargo tank wall and the stop-valves. Therefore, we have adopted TTMA's suggested change.

With regard to the provision that the remotely activated means of closure for the self-closing system "be more than 10 feet away from the stop-valve," several petitioners requested that provisions be made for shorter tanks where this minimum distance cannot be achieved. We agree with their position and have provided that the remote activating system can be placed on the end of the tank farthest away from the loading/unloading connection. Several petitioners requested that the remote means of closure be located on the front, driver side of the cargo tank. They stated that this already is common practice in the industry and would provide for uniformity, which may enhance safety in emergency situations. We will not require this location but have no objections to this industry practice.

Paragraph (a)(1) of the final rule required that, in case of fire, "each stop valve" must be activated for closure by thermal means. TTMA suggested that this should apply only to "self-closing" stop valves. It was our intention that this paragraph apply only to self-closing systems. We have added a new paragraph (a)(4)(i) in this amendment to better reflect our intent.

Paragraph (b) of the final rule requires each tank outlet which is not a loading/unloading outlet to be equipped with a stop valve or other leak tight closure, and any extension beyond this closure to be fitted with another stop valve. We did not intend to limit the closure on the extension to a "stop valve" and, therefore, have revised the wording to "stop valve or other leak tight closure", as suggested by TTMA.

Section 178.345–12 (Gauging Devices)

Several petitioners stated that the requirement pertaining to the accuracy of gauging devices that indicate the maximum liquid level was confusing. They suggested that since the intent of the gauge is to prevent overfilling, there is no need for accuracy of the gauging device throughout its range. Two petitioners argued that, because of the diversity of hazardous materials products handled, selection of a gauge for vacuum loaded cargo tanks with an accuracy within 0.5 percent is difficult, but some mechanical gauges are accurate enough to prevent overfilling. The petitioners requested that vacuum-loaded hazardous waste tanks be excepted from this section. We have revised the provisions to reflect our intention that the gauging device need not have the stated accuracy throughout the filling range, but it must be capable of indicating maximum fill level within 0.5 percent of the fill capacity, either by volume or liquid level. Any device, including mechanical gauges meeting this requirement, may be used. Also, we wish to point out that § 178.345–12 applies to all cargo tanks, including vacuum loaded hazardous waste cargo tanks. Therefore, the petitioners' request to exclude waste tanks is denied.

Section 178.345–13 (Pressure and Leakage Tests)

TTMA requested that, in paragraph (b)(2), we limit the pneumatic testing pressure to 6 psig, because pneumatic testing at higher pressures is "not safe".

We agree with the petitioner that pneumatic testing has an inherently higher risk than hydrostatic testing because of the stored energy. However, we do not agree that a psi limit should be established for the test pressure. We believe that if the prescribed test procedure is followed, and adequate safeguards are established, pneumatic testing can be safely performed. When a pneumatic test is performed, the tester should fully consider the potential risks, and take steps to ensure safety to personnel and facilities. Paragraph (b)(2) is revised to emphasize the need for adequate safeguards. Two petitioners questioned the need for applying the leakage test to the entire tank surface, as prescribed in paragraph (b)(2) of the final rule. They suggested that the leak testing by soap solution or other methods be limited to "each joint and crevice". Upon further consideration, we agree with the petitioners and have limited the leakage test to joints.

We intended to permit the use of "air" or an "inert" gas for pressure and leakage tests. Therefore, in paragraph (b)(2), the wording "other similar gases" is revised to read "an inert gas".

Section 178.345–14 (Marking)

TTMA stated that there is no need to braze or weld around the marking plates and requested that the words "around the plate perimeter" be removed. We disagree with TTMA. These plates are required to be "permanently" affixed to the tank or integral supporting structure. This permanency is best achieved by brazing or welding around the entire perimeter of the plate.

TTMA also requested a number of revisions to the required markings on these plates. Most of these suggested changes were to condense the prescribed wording and abbreviations, for example, "water cap." would be "wc" and "Min. thick.-head" would be "Min.H." We believe the wording and abbreviations should not be condensed to a point where a person is unable to readily decipher the information. Therefore, only certain markings are revised.

Section 178.345–15 (Certification)

In the NPRM, design drawings were required as part of the certification provided to the purchaser, but in response to comments this requirement was deleted in the final rule. The final rule required only that the "final manufacturer shall furnish the owner with all certificates, excluding sketches and drawings." A petitioner stated that, unless design drawings are furnished to the owner, a subsequent purchaser of the unit would have no access to significant design information in the event that the original manufacturer has gone out of business. We believe the petitioner raises a valid point, but we believe this matter can be resolved by contractual arrangements between the manufacturer and the purchaser rather than through a requirement in the regulations. We strongly recommend that purchasers obtain documentation, such as sketches, drawings and specifications on dimensions and features, piping, and pressure relief system sufficient to define the configuration of the cargo tank motor vehicle. In the event of subsequent structural modifications, such data can be of essential value to a Design Certifying Engineer in evaluating whether the cargo tank meets the applicable specification.

Section 178.346–1 (General Requirements)

TTMA requested that we establish a MAWP of 3.3 psig for all DOT Specification 406 cargo tanks. TTMA claims that this would accommodate a static head of gasoline of 85 inches, which is typical for tanks carrying gasoline. We have not made this change to § 178.345–1(b) because DOT Specification 406 cargo tanks are authorized for many commodities other than gasoline and may have a static head of less than 85 inches. However, we would have no objection to the industry standardizing the design of all gasoline cargo tanks. As requested by several petitioners, paragraphs (d)(3) and (d)(8) are revised for clarity. See the earlier preamble discussion of "Application of the ASME Code to low pressure cargo tank motor vehicles" for our response to TTMA's request for exemption from additional paragraphs of the ASME Code.

Section 178.346–2

Several editorial changes are made.

Section 178.346–10 (Pressure Relief)

In response to several petitions, we have corrected the reference in § 178.346–10(b)(2) to read § 173.33(c)(1)(iii). Additionally, paragraphs (c) and (d) are revised for consistency with § 178.345–10 (see the preamble discussion to § 178.345–10).

Section 178.346–13

Two petitioners noted that the leakage test prescribed by paragraph (a), and by § 180.407(h), cannot be performed on a cargo tank equipped with a one psig normal vent unless the normal vent is removed or rendered inoperative. They suggested that a sentence be added to the leakage test procedure to allow venting devices set to discharge at less than the leakage test pressure to be removed or rendered inoperative during the test. We agree with the petitioners' suggestion, and have added the provisions to paragraph (c) of this section and to § 180.407(h).

Section 178.347–1 (General Requirements)

As requested by several petitioners, paragraphs (d)(3) and (d)(8) are revised for clarity. See the earlier preamble discussion on "Application of the ASME Code to low pressure cargo tank motor vehicles" for our response to TTMA's request for exemption from additional paragraphs of the ASME Code.

Section 178.347–2 (Material and Thickness of Material)

Several petitioners pointed out that the titles of Tables I & II should give material thicknesses "after forming." We agree with the petitioners and have changed the table titles.

Section 178.347–10 (Pressure Relief)

Several petitioners requested that paragraph (b)(1) be revised to state that vacuum relief devices are not required on cargo tanks designed to withstand full vacuum. We agree with the petitioners and have included such a provision in § 178.347–10(b)(1). Paragraph (d) is revised for consistency with § 178.345–10 (see the preamble discussion to § 178.345–10).

Section 178.348–1 (General Requirements)

In response to TTMA's petition, paragraph (d) is revised to require a cargo tank motor vehicle with a MAWP greater than 15 psig to have a circular cross-section, and paragraphs (e)(1) and (e)(2) are revised to clarify that only cargo tank motor vehicles with a MAWP greater than 15 psig must be "constructed and certified in conformance with the ASME Code". As requested by several petitioners, paragraphs (e)(2)(iii) and (e)(2)(viii) are revised for clarity. See the earlier preamble discussion on "Application of the ASME Code to low pressure cargo tank motor vehicles" for our response to TTMA's request for an exception from additional paragraphs of the ASME Code.

Section 178.348–2 (Material and Thickness of Material)

Several petitioners pointed out that the titles of Tables I and II should give material thicknesses "after forming." We agree with the petitioners and have changed the table titles.

Section 178.348–10 (Pressure Relief)

Several petitioners requested that paragraph (b)(1) be revised to state that vacuum relief devices are not required on cargo tanks designed to withstand full vacuum. We agree with the petitioners and have included such a provision in § 178.348–10(b)(1). TTMA requested that paragraph (d)(3) be clarified to indicate that the minimum total venting capacity required is determined from § 178.270–11(d)(3) and that the approximations provided in that section can be used in place of specific values for each commodity. We agree with TTMA that the use of the approximations provided in § 178.270–11(d)(3) will provide a venting capacity in excess of that required for a corrosive material and have revised paragraph (d)(3) as requested.

Section 180.403

A new definition for "Corrosive to the tank/valve," as used in § 180.407, is added. For explanation, refer to the preamble discussion to § 180.407 under the headings "External visual inspections." Also, the definitions for "Modification" and "Repair" are revised for consistency with other changes made in this amendment.

Section 180.405

Paragraph (f) is revised for consistency with changes made to § 178.345–11. Refer to the preamble discussion to § 178.345–11.

TTMA stated it appears, from paragraph (f), —1) that only a Design Certifying Engineer would be capable of determining compliance with "equally adequate accident damage protection" for the stop-valve, 2) that an unreinforced portion of a shell exceeding 60 inches had a construction which "produces a structural integrity of at least equal to that prescribed in § 178.345–3", and 3) that a cargo tank projection from the shell or head is "as strong as the tank shell or head and is located within appropriate accident damage protection device." We agree that the person performing certain

certifications would need design experience. However, we do not agree with TTMA that, for determining whether a cargo tank authorized under exemption qualifies for remarking as a specification cargo tank, a Design Certifying Engineer should be authorized to the exclusion of a Registered Inspector. The designs of these cargo tanks have already been approved by DOT. Therefore, in paragraph (f), we have allowed either (1) a Design Certifying Engineer or a Registered Inspector and (2) an owner of a cargo tank under exemption to determine if the tank qualifies for remarking as a specification cargo tank.

For changes to paragraph (h), refer to the preamble discussion to § 178.345–10.

In regard to paragraph (k), API pointed out that a design pressure of 3.0 psig would allow more cargo tanks now in service to remain operable in a fully loaded condition. We agree and have provided in this paragraph and in § 173.33(c)(2) for these cargo tanks to be marked with a design pressure or MAWP of 3.0 psig instead of 2.65.

Section 180.407 (Requirements for Test and Inspection of Cargo Tanks)

In response to petitioners, the title to this section, and various references in paragraphs (a), (b), and (c) are revised to clarify that the test and inspection requirements of this section apply only to specification cargo tanks. Paragraphs (a)(4) and (a)(5) are redesignated as paragraphs (a)(5) and (a)(6), respectively. Based on some petitioners' confusion over what to do with defects discovered during tests and inspections, a new § 180.407(a)(4) is added containing a reference to § 180.411, which describes acceptable results of tests and inspections. Paragraph (b)(3) is revised to require a cargo tank which has been out of hazardous materials transportation service for a period of one year or more to be hydrostatically or pneumatically tested in accordance with § 180.407(g) prior to further use. A hydrostatic pressure test is currently required prior to further use of a cargo tank which has been out of hazardous materials transportation service for one year or more. As written in the final rule, it could be construed that a cargo tank which has been out of hazardous materials transportation service for a year or more would not have to be pressure tested for 5 years.

In response to petitions, the May 22, 1990 amendment specified compliance dates for various provisions contained in the final rule. A table contained in the May 22 amendment, which sets forth the time intervals for performing periodic tests and inspections, and the dates by which the first tests and inspections must be completed, is revised and incorporated into § 180.407(c) of this amendment.

External Visual Inpsection

For clarification, NPGA suggested that the second sentence of § 180.407(d) be revised to read "Where visual inspection is precluded by both internal coating and external insulation *and where* the cargo tank is not equipped with a manhole * * *" (change underlined). We believe that NPGA's suggested wording implies that if a cargo tank is not equipped with a manhole or inspection opening, a pressure test is performed in place of the external visual inspection. It was not our intent in the final rule to require a pressure test in place of an external visual inspection, except where it is not possible to do either an external or an internal visual inspection. Therefore, NPGA's suggested wording is not incorporated into paragraph (d). However, we have revised the paragraph to clarify that where insulation precludes external visual inspection, and the cargo tank is not equipped with a manhole or inspection opening, the tank must be hydrostatically or pneumatically pressure tested. Other petitioners asked that the first sentence of paragraph (d) be revised to require that, where insulation precludes external inspection of the tank shell and heads, the insulation system or jacket be inspected in accordance with § 180.407(d)(2). We believe it is beyond the scope of this rulemaking to require the inspection of insulation or jacketing material. No such inspection requirements were proposed in the NPRM or adopted in the final rule. Such a requirement may be considered in a separate rulemaking action.

NTTC asked that § 180.407(d)(2)(iii) be revised by adding the following: "any manhole cover or gasket leakage discovered during this inspection must be eliminated." We believe the addition of such wording is unnecessary, because the repair of sources of leakage is addressed by § 180.411(d). NTTC also asked that paragraph (d)(2)(v) be revised to state "fusible linkage must be in working order and loose bolts and nuts must be tightened." NTTC argued that the existing wording, which states that mising bolts and nuts must be replaced, does not take into account situations where bolt holes are intentionally left empty by the cargo tank manufacturer. These empty bolt holes could give a false appearance of "missing" bolts and nuts. We believe that in cases where bolts and nuts are actually missing, they must be replaced. If a cargo tank motor vehicle design incorporates certain bolt holes which sometimes are not used, for instance, on upper coupler assemblies, then no bolts are considered missing. Therefore, no change has been made to paragraph (d)(2)(v). The revision suggested by NTTC specifying that the fusible linkage be in working order also is not adopted. We believe it is difficult to determine whether a fusible device is in working order without functioning of the device, and it is unreasonable to expect functioning of the fusible element during an inspection. Remote closure devices must be operated in accordance with paragraph (d)(2)(iv). For clarity, paragraph (d)(2)(v) is revised to refer to "fusible links or elements," because all fusible devices may not be "links."

NTTC recommended that § 180.407(d)(2)(vi) be revised to require only those markings prescribed by § 180.415 to be checked for legibility. We believe all required markings prescribed by parts 178 and 180 must be checked for legibility. However, this paragraph is revised to clarify that the markings to be checked do not extend to those prescribed by parts 172 and 173. A reference to 49 CFR part 396 is added to paragraph (d)(2)(vii), as suggested by NTTC.

NTTC asked for clarification of § 180.407(d)(2)(viii), regarding which components must be removed from the cargo tank for inspection and which components may be inspected in place. Paragraph (d)(2)(vii) does not require removal of any components for inspection. The only requirement for removal of a component at the time of the external visual inspection appears in paragraph (d)(3), when certain pressure relief valves must be removed from the cargo tank for inspection and testing.

Petitioners pointed out that the term "upper coupler (fifth wheel)" appears in paragraph (d)(2)(viii), while the term "upper skid plate" is used in paragraph (e)(3). NPGA recommended that the term "upper skid plate" be used throughout, because it is widely used in the liquefied petroleum gas industry. We agree with NPGA regarding the need to be consistent in the use of the term "upper skid plate" or "upper coupler (fifth wheel)". A number of other petitioners asked if these terms were synonymous, and if they refer to the "king pin plate". We believe the terms "upper coupler" and "fifth wheel" are most widely used and, therefore, have used the term "upper coupler (fifth wheel)" in paragraphs (d)(2)(viii) and (e)(3) of this amendment. Also, the term "upper coupler (fifth wheel)" is used in the cargo tank motor vehicle

specifications in part 178. Further, NPGA suggested a revision to paragraph (d)(2)(viii) to clarify that the upper skid plate assembly need not be dismantled at the time of the external inspection. We agree with the suggested wording. As discussed under the heading "Internal visual inspection" of this section, paragraphs (e)(2)(ix) and (g)(1)(iii) contain requirements for dismantling the upper coupler assembly for inspection of areas covered by the assembly.

A petitioner suggested that the requirement for removal of pressure relief valves from cargo tanks for inspection be moved from the external visual inspection to the internal visual inspection. The intent of paragraph (d)(3) is to require removal of all reclosing pressure relief valves from cargo tanks transporting lading corrosive to the valve on an annual basis. This intent would not be satisfied if this provision was moved to the internal visual inspection requirements. Therefore, the change suggested by the petitioner has not been made. Paragraph (d)(3) is revised to clarify the performance requirements of the reclosing pressure relief valves.

A number of petitioners urged RSPA to remove the undefined terminology "corrosive to the tank" and "corrosive to the valve" and instead refer to materials "classed as corrosive." It was our intent to refer not to materials which are classified as corrosive materials, but to any material which is corrosive to the tank or valve material. Some materials are classified as corrosive materials, but they are not corrosive to the material of construction of the cargo tank or valve. An example is a material which is corrosive only to skin. Cargo tanks carrying these materials would not be subject to the additional inspection and testing requirements. On the other hand, there are some materials which are not classed as corrosive materials, but which have a subsidiary corrosive hazard which makes them corrosive to the tank or valve. An example is a flammable liquid which is also corrosive. The additional test and inspection requirements would apply to these materials. For clarity, a definition of "lading corrosive to the tank/valve" is added in § 180.403. This new definition includes materials which meet the criteria in § 173.240(a)(2) for corrosion to the material of construction, and any other materials which, experience, has shown to be corrosive to the material of construction of the tank or valve. If the tank or valve is likely to corrode due to the lading, more frequent inspections are warranted. The references to lading "corrosive to the tank" and "corrosive to the valve" have not been changed in this amendment.

TTMA requested a revision of paragraph (d)(4) to clarify that only corroded or abraded areas of the cargo tank shell and head must be thickness tested in accordance with § 180.407(i), because there are no minimum thickness standards for appurtenances or attachments. The paragraph is revised to clarify that corroded or abraded areas "of the cargo tank wall" must be thickness tested.

Internal Visual Inspection

A petitioner suggested a five-year "phase-in" period for the internal inspection of cargo tanks in corrosive service for consistency with the five-year period authorized for completing the pressure retest. We do not agree that a five-year phase-in period should be allowed for the internal visual inspection for cargo tanks in corrosive service. The internal visual inspection for these cargo tanks is an annual inspection. NPGA suggested that a new paragraph (e)(2) be added to state that "the requirements for internal visual inspection for MC 330 and MC 331 cargo tanks shall coincide with the next required quinquennial requalification for required service." We do not intend to specify when each visual inspection is performed, as long as the internal visual inspection of each tank is performed prior to September 1, 1995.

Section 180.407(e)(2)(ii) requires lined cargo tanks to have the lining material inspected for defects. NTTC stated that this language should be eliminated from paragraph (e)(2)(ii), because lining inspections are addressed in paragraph (f). We agree that the lining inspection is adequately addressed by paragraph (f), and have deleted the first sentence of paragraph (e)(2)(ii). However, the requirement that tank liners be inspected as specified in § 180.407(f) is retained for clarity. Paragraph (e)(5), which refers to degraded or defective areas of the tank liner, is redesignated as paragraph (f)(3) for proper placement with other lining inspection requirements.

Several petitioners addressed the requirement in paragraph (e)(3) that tank head and shell areas covered by the upper skid plate be inspected for corroded and abraded areas. As was discussed earlier, the term "upper skid plate" is revised to read "upper coupler (fifth wheel)" in this amendment. The petitioners asked whether this paragraph would require removal of the upper coupler assembly for the inspection. It was our intent to require removal of the upper coupler assembly for this inspection, as suggested by comments to the NPRM. This requirement was placed in the internal visual inspection requirements rather than the external visual inspection requirements, because we do not believe it is necessary to require such an inspection on an annual basis. NTTC pointed out that for cargo tanks transporting materials which are corrosive to the tank, the upper coupler assembly would have to be removed once each year. NTTC suggested that this procedure be moved to the pressure testing requirements in paragraph (g), which would be required every 5 years, and that for cargo tanks in corrosive service, the removal of the upper coupler assembly for inspection be at a two year interval. We agree with NTTC, therefore, the requirement to remove the upper coupler assembly for cargo tanks carrying lading that is corrosive to the tank has been moved to paragraph (d)(2)(ix) as part of the external visual inspection. Paragraph (d)(2)(ix) clarifies that the upper skid plate must be removed and states that this part of the inspection is required only once each 2 years. For cargo tanks used to transport hazardous materials which are not corrosive to the tank, the requirement to remove the upper coupler assembly for inspection of tank head and shell areas covered by the assembly has been moved to paragraph (g)(1)(iii), and appears as part of the pressure retest. In paragraphs (d)(2)(ix) and (g)(1)(iii), the phrase "tank head and shell areas" is changed to "areas", because there may be cargo tank elements covered by the upper coupler assembly which are not head or shell areas.

A petitioner suggested that we add a clarification that only corroded or abraded areas of the tank shell and head must be thickness tested. We agree with the petitioner and have clarified in paragraph (e)(3) of this amendment that corroded or abraded areas "of the cargo tank wall" must be thickness tested.

Lining Inspection

A petitioner suggested that we revise paragraph (f)(1)(i) by changing the word "frequency" to "voltage." We do not agree with this suggested change. The wording adopted in the final rule is consistent with Technical Bulletin 13 of the Rubber Manufacturers' Association, which addresses the inspection of protective linings.

A petitioner asked that paragraph (f)(2) be revised to state that test equipment and procedures could be obtained from lining installers or distributors as well as lining manufacturers. The petitioner indicated

that when cross-linked polyethylene liners are used, it is difficult to get test procedures from either the polyethylene resin manufacturer or the lining installers, each claiming they are not the lining "manufacturer." We do not believe it is necessary that lining installers and distributors be referenced in this paragraph. It is our opinion that where cross-linked polyethylene resins are used as lining material, the person installing the polyethylene in the cargo tank is considered to be the lining manufacturer.

New paragraph (f)(3) contains requirements, formerly in paragraph (e)(5), regarding what to do with degraded or defective areas of the tank liner.

As suggested by NTTC, a new paragraph (f)(4) is added to require that an inspector record the results of the lining inspection in accordance with § 180.417(b).

Pressure Retest

Paragraph (g)(1)(iv) states that an owner of five or more cargo tank motor vehicles used to transport liquid hazardous materials must pressure test at least 20% of the cargo tank motor vehicles in his ownership each year. API requested that this paragraph reference § 173.33 so a shipper will know that a carrier is complying with the phase-in requirement. We do not believe it is necessary to relate the requirements in § 180.407(g)(1)(iv) to § 173.33, because it is not necessary for a shipper to know if the carrier is complying with the requirement to test 20% of his cargo tank motor vehicles each year. Section 173.22(a)(2), as revised in this amendment, does not require a shipper to determine whether a cargo tank motor vehicle meets the continuing qualification requirements of part 180.

TTMA suggested that paragraph (a)(1)(viii) be revised to limit the pressure used for the pneumatic test to 6 psig. TTMA recommended the same revision for the pressure testing of new tanks in § 178.345–13. As was discussed in the preamble to § 178.345–13, we do not believe it is necessary to limit the pneumatic test pressure to 6 psig, but have revised paragraph (g)(1)(viii) for consistency with § 178.345–13.

A petitioner requested clarification about when the wet fluorescent magnetic particle inspection of MC 330 and MC 331 cargo tanks is to be performed in accordance with paragraph (g)(3). The wet fluorescent magnetic particle inspection, when required, is performed immediately prior to and in conjunction with the required pressure test and, therefore, should be performed when the cargo tank is due for the pressure test. The wet fluorescent magnetic particle inspection need not be performed prior to the effective date of the final rule.

Section (g)(5)(ii) of the final rule contained an exception from pressure testing for certain uninsulated lined or clad cargo tanks. The same exception appeared as Note 2 to the table in § 180.407(c). A petitioner suggested that, because cladding material is integral with the base metal, paragraph (g)(5)(ii) be revised to subject clad cargo tanks to the same test requirements as tanks that are not clad. We agree with the petitioner and have revised paragraph (g)(5)(ii) to except only certain uninsulated lined cargo tanks from the pressure testing requirements. Additionally, Note 2 to the table in § 180.407(c) is similarly revised.

Section 180.407(g)(6) contains the acceptance criteria for cargo tanks subjected to the pressure test. TTMA and NTTC pointed out that paragraph (g)(6), as written would place a cargo tank out of service if the heating system failed the pressure test, even if the cargo tank otherwise passes the pressure test. They noted that the failure of the heating system alone would not adversely impact the lading retention capability or integrity of the cargo tank. TTMA suggested that paragraph (g)(6) be revised to allow a cargo tank which fails the heating system pressure test in § 180.407(g)(4) to be returned to service as an unheated cargo tank, under certain conditions. We agree that failure of a heating system to retain pressure under test does not necessarily render the cargo tank unsuitable for transportation of all hazardous materials. Such a cargo tank could safely be used under certain conditions for hazardous materials lading which does not require heating of the cargo tank. However, we believe an unsafe condition could occur if hazardous material lading leaks into the heading system and reacts with other incompatible residue. Therefore, paragraph (g)(6) is revised to authorize the use of such a cargo tank as an unheated cargo tank, if certain conditions are met.

Leakage Test

NPGA argued that the leakage test requirements, in paragraph (h), should not apply to cargo tanks transporting compressed gases, because these cargo tanks, including their piping systems, are effectively leak tested each time they are used. Conversely, another petitioner argued that the leakage test requirements should apply only to cargo tanks transporting compressed gases. Both petitioners argued that a requirement to leak test at 80% of the MAWP would penalize a shipper who offers a liquid material in an MC 330 or MC 331 cargo tank a lower integrity is authorized.

We believe all cargo tanks should be leak tested annually to assess their continued integrity. Paragraph (h) was revised in the final rule to clarify that the leakage test may be evaluated with hazardous material in the cargo tank for MC 330 and MC 331 cargo tanks. However, in their petition, NPGA stated it is impractical to reach the required 80% of the MAWP with a compressed gas lading in the cargo tank. We believe for a cargo tank with a higher MAWP, leaks can be detected at less than 80% of the MAWP. Therefore, paragraph (h)(1) is revised to permit a cargo tank with an MAWP of not less than 100 psig which is in dedicated service or services to be leakage tested at its normal operating pressure. When these cargo tanks are transporting compressed gases, leaks can be detected at the normal operating pressure of the cargo tank. The cargo tank must be leak-tight at the pressure at which it is operated. However, a cargo tank may not be operated at a pressure higher than the pressure to which it has successfully passed a leakage tested within the previous year. As discussed in the preamble to § 178.346–13, paragraph (h) is revised to allow venting devices which are set to discharge at less than the leakage test pressure to be removed or rendered inoperative during the test.

Paragraph (h)(1) requires that each cargo tank be leak tested at 80% of its MAWP. An equipment manufacturer recommended that the required leakage test pressure be reduced to 50% of its MAWP, because the vents they currently produce for MC 307 cargo tanks experience slight leakage at 50–60% of the MAWP when equipped with a teflon valve seat. However, the manufacturer also indicated that valve seats are available which enable the vent to withstand the required pressures. We have not receive any other information to suggest that pressure relief devices cannot pass the required leakage test. Therefore, the leakage test pressure requirements have not been changed, other than as indicated for high pressure cargo tanks.

NPGA suggested paragraph (h)(3) be revised to clarify that if a cargo tank fails to retain leakage test pressure, it may be returned to service if defects are corrected and test pressure requirements are met. As discussed earlier with regard to the results of visual inspections, the acceptable results of tests and inspections all

appear in § 180.411. Paragraph (d) of that section states that all sources of leakage must be properly repaired prior to returning a cargo tank to hazardous materials service. For clarity, a reference to § 180.411(d) is added to § 180.407(h)(3).

Thickness Testing

The shell and head thickness of all unlined cargo tanks used for the transportation of materials corrosive to the tank must be measured every two years. A petitioner recommended that the thickness testing requirement, in paragraph (i), be phased in over a 5-year period. We have not authorized a 5-year phase in period, since this test must be performed on a 2-year, not a 5-year, basis. The first thickness test must be completed on affected cargo tanks by September 1, 1992. Another petitioner objected to paragraph (i)(2), which states that the measuring device used must be capable of accurately measuring thickness to 0.002 of an inch, stating that the paragraph should be revised to require use of a device "having an accuracy of +/− 0.002 inch." It was our intent to require that the device used for measuring thickness be capable of measuring to the third decimal place, with an accuracy of +/− 0.002 of an inch. Revised paragraph (i)(2) clarifies this point.

TTMA and NTTC recommended that paragraph (i)(4) be revised to clarify that only areas of the cargo tank shell and heads need to be thickness tested. We agree and have revised this paragraph accordingly.

NTTC objected to paragraph (i)(5), which requires a cargo tank which no longer meets the prescribed minimum thickness to be removed from hazardous materials service. NTTC argued that a cargo tank can be safely used to haul less dense products, i.e. downgraded from 16 pounds per gallon product to 12 pounds per gallon product service. NTTC suggested a revision to the paragraph to allow continued use of a thinned cargo tank that has the specification plate re-marked to indicate its new service limits. We agree that a cargo tank which has thinned from its manufactured thickness may be suitable for carrying a lading with a density less than the maximum lading density marked on the cargo tank nameplate. However, we believe that a Design Certifying Engineer must certify that the cargo tank meets the structural integrity requirements for the lower density lading, and the cargo tank nameplate must be changed to reflect the new service limitations (maximum density of lading). A cargo tank which no longer meets the absolute minimum thickness requirement for the specification under which it was manufactured may not be returned to hazardous materials service. A new paragraph (i)(5) specifying the conditions under which these cargo tanks may be used is added. Revised paragraph (i)(6), which appeared in the final rule as paragraph (i)(5), provides that a cargo tank must be taken out of hazardous materials service if it no longer meets the minimum thickness prescribed by the applicable specification.

Section 180.409

Several petitioners stated that the tests and inspections described § 180.407(c) would have to be done by Registered Inspectors if performed in a manufacturing or repair facility, but could be done by persons who do not qualify as Registered Inspectors if performed by an employee of a carrier or cargo tank owner. It was evident from petitions that some people held the mistaken notion that *all* tests and inspections found at § 180.407(c) were covered by this section. Several raised objections to the "paperwork" called for by paragraph (b). Others objected to the provision for training "in accordance with the requirements of the ASME Code." One person pointed out that thickness test requirement should be moved to § 180.407(i). Our intent was to require that all periodic tests and inspections be performed only at registered facilities by persons certified to be qualified by virtue of being trained and experienced in use of the required inspection and test equipment. Under the NPRM, these persons were to be Authorized Inspectors. However, in response to comments, this requirement was relaxed in the final rule to allow properly trained, experienced employees to do pressure testing only for carriers and cargo tank owners if their facilities were registered to conduct these tests. The person who is identified as the responsible official in the registration application must certify that anyone performing such pressure testing is properly qualified.

This entire section has been rewritten to clarify our intentions. The requirements for training in accordance with the ASME Code and for submitting information on the tester are deleted.

Section 180.413 (Repair, Modification, Stretching, and Rebarrelling)

The Petroleum Marketeers Association of America (PMAA) petitioned RSPA to reconsider § 180.413 which requires that any repair, modification, stretching, or rebarrelling of a cargo tank be performed by a holder of an ASME "U" stamp or a National Board "R" stamp. PMAA stated the cost for obtaining certification may be from $35,000 to $50,000. As stated in the preamble to the final rule, current § 178.340–2(a) prescribes that cargo tanks are to be "designed and constructed in accordance with the best known and available practices." The ASME Code is a nationally recognized industry standard for the design and construction of pressure vessels, and ASME quality control procedures and qualified welders are among the best known and available. We believe the cost of obtaining an ASME "U" stamp certification or a National Board "R" stamp certification will be minimal for those facilities which are currently utilizing the best known and available practices, and which have established quality control procedures. Further, we believe this certification is necesary to ensure that organizations performing repairs and modifications to cargo tanks have qualified personnel and adequate quality control programs to effect proper repairs and modifications to cargo tanks used to transport hazardous materials.

PMAA also urged RSPA to expand paragraph (a) to permit organizations other than the ASME and the National Board to participate in the certification of repair shops. PMAA requested that RSPA "be receptive" to the formation of other certifying agencies. We are not aware of any other existing agencies or organizations which are qualified to certify cargo tank repair facilities, nor have any other organizations expressed an interest in certifying these facilities. The ASME and the National Board both have established procedures for the inspection and certification of facilities engaged in the construction and repair or pressure vessels. These organizations also are independent, disinterested parties. We believe it is important for a "third party" (e.g. not the person performing a repair, or the owner of the cargo tank) to evaluate and certify a facility as being capable of performing repairs and any modifications, stretching, and/or rebarrelling. Therefore, the requirement that repairs, modifications, stretching, and rebarrelling be performed in a facility which is certified for use of the ASME "U" stamp or National Board "R" stamp has not been changed. However, it should be noted that the procedures in 49 CFR 106.31 provide for interested persons to petition for rulemaking. If petitioned, RSPA will consider authorizing other third party organizations to certify cargo tank repair facilities if the third party organization can show that it is capable

of adequately evaluating and certifying these facilities.

PMAA expressed a concern that many repair facilities may not be able to obtain certification by the ASME or National Board before repairs must be performed in certified shops. PMAA urged a one-year delay to give repair facilities adequate time to obtain certification. The May 22 amendment established a compliance date of December 31, 1991, for repair facilities to obtain ASME or National Board certification.

In addition to requiring certification of each facility performing a repair or modification by the ASME or National Board, the final rule requires that each repair be certified by a Registered Inspector. PMAA characterized these requirements as redundant. We agree with another petitioner who stated that requiring a repair shop to hold a "U" stamp or "R" stamp does not guarantee that repairs are carried out in accordance with the quality assurance procedures required by the ASME or the National Board. We also believe that an inspection of each repair by a qualified person is necessary to ensure compliance with applicable specification requirements. The minimum qualifications for Registered Inspectors in this amendment will allow more employees who are currently working at repair facilities to qualify as Registered Inspectors. The requirement for inspection of each repair by a Registered Inspector is retained in this amendment.

A petitioner noted that paragraph (a) does not reference the MC 302 and MC 310 cargo tanks, and asked that they be added to this paragraph. We did not intend to exclude the MC 302 and MC 310 cargo tanks from this provision, and have corrected this omission.

A petitioner, addressing paragraph (b)(1)(vi)(A), suggested that when a wet fluorescent magnetic particle inspection is performed after a repair, the test should only be required on the area of the cargo tank affected by the repair, because the entire cargo tank was already tested to detect the defect. We agree that the wet fluorescent magnetic particle inspection need only be repeated on the area of the cargo tank which was affected by the repair, and have revised paragraph (b)(1)(vi)(A) accordingly.

A petitioner asked that a sentence be added to paragraph (b)(3) to require any repair or modification of a cargo tank which is not ASME Code "U" stamped be performed in accordance with the National Board Inspection Code, with the exception of those provisions of the ASME Code specifically exempted in the specifications for DOT 406, 407, and 412 cargo tanks. We do not believe it is necessary or appropriate to apply the National Board Inspection Code to the repair of cargo tanks which are not ASME Code "U" stamped.

Paragraph (b)(6) requires owners to retain all records of repairs and modifications. RSPA received a request that motor carriers who are not the owner also should retain copies of these records. Retention of these records by motor carriers was not a part of the NPRM or the final rule. However, we recognize that there may be situations where these record should be retained by the motor carrier, and have added a new sentence at the end of paragraph (b)(5).

Several petitioners requested clarification of paragraph (c). Specifically, they asked what testing must be performed after the repair or replacement for components, such as piping, valves, hoses, or fittings. These petitioners pointed out that, if a hydrostatic pressure test is required, the paragraph would essentially prohibit any work on these components while the cargo tank is loaded with hazardous material lading. It was not our intent in paragraph (c) to prohibit the maintenance or replacement of external valves, vents, or dust covers on loaded cargo tanks, as long as no welding is performed on the cargo tank. NTTC and the Hazardous Waste Association of California (HWAOC) suggested that paragraph (c) be revised to state only that piping, valves or fittings "must be properly installed in accordance with the applicable specification." We believe that the proper repair or replacement of any piping, valve, or fitting must be confirmed by testing. However, we do not believe there is a need to perform a hydrostatic pressure test in all cases. If any welding is perform on the cargo tank wall, which is defined as a "repair," pressure testing is required. For these reasons, paragraph (c) is revised to require only that piping, valves, and fittings be leak-tested after a repair or replacement which does not involve welding on the cargo tank wall. As suggested by NTTC and HWAOC, the first sentence in revised paragraph (c) states that these components "must be properly installed in accordance with the applicable specification." Also, as requested by API, revised paragraph (c) clarifies that the hose testing requirements apply only to hoses permanently attached to the cargo tank.

NTTC and HWAOC understood paragraph (d) to require all components of a cargo tank be brought up to the most current specification if the cargo tank is stretched or rebarrelled and requested clarification. Similarly, some petitioners stated that, under paragraph (d)(3), the Registered Inspector should certify only that portion of the cargo tank that was stretched or rebarrelled, not the entire cargo tank. We did not intend to require, when a cargo tank is stretched or rebarrelled, that the entire cargo tank be brought into compliance with the most current specification. We realize that it may be impossible to convert an existing cargo tank into a new specification cargo tank. An example, presented by NPGA in comments to the NPRM and in their petition to reconsider the final rule, is an MC 330 cargo tank which may not be converted into an MC 331 cargo tank because of the MC 331 specification restrictions on the location of longitudinal seams.

In this amendment, only the stretched or rebarrelled portion of the cargo tank, as well as equipment directly affected by the stretched or rebarrelled portion, must be in accordance with the most current specification. However, we believe that when a cargo tank motor vehicle is stretched or rebarrelled, a Design Certifying Engineer must verify that the entire cargo tank meets the structural integrity requirements of the most current specification. Inspection of the stretched or rebarrelled cargo tank motor vehicle by a Registered Inspector, on the other hand, need only be of the stretched or rebarrelled portion of the cargo tank motor vehicle. The provisions in paragraphs (d)(1) and (d)(3) are revised to clarify what portions of the cargo tank must be brought into compliance with current specifications when stretching or rebarrelling, and to what degree the Design Certifying Engineer must certify the stretched or rebarrelled cargo tank motor vehicle to current specifications.

TTMA requested that paragraph (d) be revised to authorize any "design type change," as long as the requirements of this paragraph are met. We disagree with TTMA's request. We believe that the definitions of "modification", "repair", "stretching", and "rebarrelling" adequately address the types of changes which are likely to be made to cargo tank motor vehicles, and § 180.413 specifically covers such changes. Paragraph (d) applies to operations defined as "stretching" and "rebarrelling," while § 178.320 requires each "design type" to be certified by a Design Certifying Engineer. Therefore, we believe it is unnecessary to revise § 180.413(d) to include any "design type change."

NPGA objected to a requirement in paragraph (d)(2)(v) to change the

existing specification plate after stretching or rebarrelling. NPGA questioned whether the original ASME nameplate or the specification plate could be removed or change without invalidating the original certification of the tank or vehicle construction. NPGA recommended that a supplemental plate, noting the appropriate changes made to the cargo tank, be attached near the original plate. The final rule did not require or suggest that the ASME nameplate be altered or removed from the cargo tank. Changing the existing specification plate would not invalidate the original certification of the tank, because the rebarrelled or stretched cargo tank's design must be certified by a Design Certifying Engineer, and the stretching or rebarrelling must be inspected and certified by a Registered Inspector. However, we believe the attachment of a supplemental plate, noting appropriate changes that have been made, would accomplish the intended purpose of the revised or replaced specification plate. Therefore, paragraph (d)(2)(v) is revised to permit the attachment of a supplemental specification plate as an alternative to changing or removing the existing specification plate.

Section 180.415 (Test and Inspection Markings)

NTTC and HWAOC inquired whether test and inspection markings may be placed anywhere on the front head on a cargo tank, regardless of the location of the specification plate. This section is revised to clarify that these markings must be on the cargo tank shell near the specification plate, or anywhere on the front head. They also requested guidance with respect to the applicability of the marking requirements in the case of cargo tank motor vehicles composed of more than one cargo tank, particularly if one cargo tank is repaired and tested and the others are not. This section is revised to clarify test and inspection markings for cargo tank motor vehicles composed of more than one cargo tank.

Section 180.417 (Reporting and Record Retention Requirements)

NTTC and HWAOC inquired whether a current requirement for a written report following the wet florescent magnetic particle inspection was eliminated under the final rule. Paragraph (c) of the final rule contains the same requirement. The reporting requirement was broadened to include cargo tanks used in liquefied petroleum gas, or any other service that may cause stress corrosion cracking. However, a requirement in § 177.824(f), that carriers file with the Office of Motor Carrier Field Operations a written listing of all MC 330 and MC 331 cargo tanks in service, was eliminated in the final rule.

A petitioner requested that the first sentence of paragraph (a) be revised to apply the reporting and record retention requirements only to owners of specification cargo tanks. We agree and have revised the requirement accordingly.

NPGA requested that consideration be given to allowing the certification required by paragraph (a)(3)(ii) to be performed by a Registered Inspector in place of an Authorized Inspector. We believe that, in this case, compliance with the ASME Code requirements will be assured by obtaining a copy of the manufacturer's data report, or the information on the cargo tank's ASME Code plate. We have revised this paragraph to permit the certification to be performed by a Registered Inspector.

Both NTTC and HWAOC recommended that the DOT registration number of the facility or the person performing the test be added to the written test or inspection report required by paragraph (b), to provide a more complete compliance record. They also recommended that the DOT registration number of the inspector be added to the report. We agree that this additional information will assure a more complete compliance record. Therefore, the phrase "and DOT registration number of the facility or the person performing the test" is added at the end of paragraph (b)(1)(vi), and paragraph (b)(1)(viii) is revised to require the inspector's DOT registration number to appear on the report as well as the inspector's signature.

A petitioner requested that alternatives to the actual signature of an inspector be authorized in paragraph (b)(1)(viii), to facilitate computerized recordkeeping. We believe a handwritten signature is necessary on test and inspection reports to ensure that an individual has taken responsibility for ensuring the test or inspection was performed in accordance with applicable requirements. For that reason, and to ensure signatures are not preprinted on reports, the petitioner's request is denied.

Administrative Notices

A. Executive Order 12291

This final rule has been reviewed under the criteria specified in section 1(b) of Executive Order 12291 and is determined not to be a major rule. However, it is a significant rule under the regulatory procedures of the Department of Transportation (44 FR 11034). This rule does not require a Regulatory Impact Analysis, or an environmental impact statement under the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*). This final rule does not impose additional requirements and has the net result of reducing costs imposed under the final rule published in the Federal Register on June 12, 1989, without reducing safety (54 FR 24982). The original regulatory evaluation of the Final rule was not modified because the changes made under this rule will result in a minimal economic impact on industry.

B. Executive Order 12612

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that the final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

C. Regulatory Flexibility Act

Based on limited information concerning the size and nature of entities likely to be affected by this rule, I certify this rule will not have a significant economic impact on a substantial number of small entities. A regulatory flexibility analysis is available for review in the docket.

D. Paperwork Reduction Act

This amendment imposes no changes to the information collection and recordkeeping requirements contained in the June 12, 1989 final rule, which was approved by the Office of Management and Budget under the provisions of 44 U.S.C. chapter 35 and assigned control number 2137–0014 (approved through 6–30–92).

List of Subjects

49 CFR Part 107

Administrative practice and procedure, Hazardous materials transportation.

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 176

Hazardous materials transportation, Maritime carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 177

Hazardous materials transportation, Motor carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

In consideration of the foregoing, title 49, chapter I, subchapters B and C of the Code of Federal Regulations, is amended as follows:

PART 107—HAZARDOUS MATERIALS PROGRAM PROCEDURES

1. The authority citation for part 107 continues to read as follows:

Authority: 49 U.S.C. App. 1421(c); 49 U.S.C. App. 1802, 1806, 1808–1811; 49 CFR 1.45 and 1.53, and Pub. L. 89–670 (49 U.S.C. App. 1653(d), 1655).

2. Section 107.501, as added at 54 FR 25003, on June 12, 1989, is revised to read as follows:

Subpart F—Registration of cargo tank and cargo tank motor vehicle manufacturers and repairers and cargo tank motor vehicle assemblers

§ 107.501 Scope.

(a) This subpart establishes a registration procedure for persons who are engaged in the manufacture, assembly, inspection and testing, certification, or repair of a cargo tank or a cargo tank motor vehicle manufactured in accordance with a DOT specification under subchapter C of this chapter or under terms of an exemption issued under this part.

(b) Persons engaged in continuing qualification and maintenance of cargo tanks and cargo tank motor vehicles must be familiar with the requirements set forth in part 180, subpart E, of this chapter.

3. In § 107.502, as added at 54 FR 25003, on June 12, 1989, paragraph (e) is removed, paragraphs (a) through (d) are redesignated as paragraphs (b) through (e) respectively, and new paragraphs (a) and (f) are added to read as follows:

§ 107.502 General registration requirements.

(a) *Definitions:* For purposes of this subpart—

(1) *Assembly* means the assembly of one or more tanks or cargo tanks to a motor vehicle or to a motor vehicle suspension component and involves no welding on the cargo tank wall.

(2) The terms *Authorized Inspector, Cargo tank, Cargo tank motor vehicle, Design Certifying Engineer, Registered Inspector,* and *Person* are defined in § 171.8 of this chapter.

(3) The terms *cargo tank wall* and *manufacturer* are defined in § 178.320(a), and *repair* is defined in § 180.403 of this chapter.

* * * * *

(f) Persons who do not meet the minimum educational requirements for Registered Inspector or Design Certifying Engineer may register to perform the applicable duties of the respective function, if the person—

(1) Has at least three years of work experience in performing the duties of the respective function no later than September 1, 1991; and

(2) Submits a registration statement before December 31, 1991.

4. In § 107.503, as added at 54 FR 25003, on June 12, 1989, paragraphs (a) introductory text, (a)(3), (a)(4), (a)(6), (b) and (c) are revised to read as follows:

§ 107.503 Registration statement.

(a) Each registration statement must be in English and contain the following information:

* * * * *

(3) A statement signed by the person responsible for compliance with the applicable requirements of this chapter, certifying knowledge of those requirements and that each employee who is a Registered Inspector or Design Certifying Engineer meets the minimum qualification requirements set forth in § 171.8 of this chapter for "Registered Inspector" or "Design Certifying Engineer", except as provided by § 107.502(f) of this part. The following language may be used.

I certify that all Registered Inspectors and Design Certifying Engineers used in performance of the prescribed functions meet the minimum qualification requirements set forth in 49 CFR 171.8, that I am the person responsible for ensuring compliance with the applicable requirements of this chapter, and that I have knowledge of the requirements applicable to the functions to be performed.

(4) A description of the specific functions to be performed on cargo tanks or cargo tank motor vehicles, e.g.:

(i) Manufacture,

(ii) Assembly,

(iii) Inspection and testing (specify type, e.g., external or internal visual inspection, lining inspection, hydrostatic pressure test, leakage test, thickness test),

(iv) Certification,

(v) Repair, or

(vi) Equipment manufacture;

* * * * *

(6) A statement indicating whether the registrant employs Registered Inspectors or Design Certifying Engineers to conduct certification, inspection or testing functions addressed by this subpart. If the registrant engages a person who is not an employee of the registrant to perform these functions, provide the name, address and registration number of that person; and

* * * * *

(b) In addition to the information required under paragraph (a) of this section, each person who manufactures or assembles a cargo tank or cargo tank motor vehicle must submit a copy of the manufacturer's current ASME Certificate of Authorization for the use of the ASME "U" stamp.

(1) Any person who manufactures MC 306, MC 307 or MC 312 cargo tanks must submit a copy of the ASME Certificate of Authorization to RSPA before December 31, 1991.

(2) This requirement does not apply to an assembler who performs no welding on a cargo tank wall.

(c) In addition to the information required under paragraph (a) of this section, each person who repairs a cargo tank or cargo tank motor vehicle must submit a copy of the repair facility's current National Board Certificate of Authorization for the use of the "R" stamp or ASME Certificate of Authorization for the use of the ASME "U" stamp. Any person who repairs MC-series cargo tanks which are not certified to the ASME Code must submit a copy of the National Board or ASME Certification of Authorization to RSPA before December 31, 1991.

5. In § 107.504, as added at 54 FR 25003, on June 12, 1989, paragraph (a) is revised, a sentence is added at the end of paragraph (c), and a new paragraph (f) is added, to read as follows:

§ 107.504 Period of registration, updates, and record retention.

(a) Registration will be for a maximum of three years from the date of the original registration.

* * * * *

(c) * * * Any person initially registered under the provisions of § 107.502(f) and who is in good standing is eligible for renewal.

* * * * *

(f) The issuance of a registration number under this subpart is not an approval or endorsement by the Department of the qualifications of any person to perform the specified functions.

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

6. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. App. 1802, 1803, 1804, 1805, 1808; 49 CFR part 1.

7. In § 171.8, as amended at 54 FR 25004, on June 12, 1989, the definitions for "Cargo tank," "Design Certifying Engineer," and "Registered Inspector" are revised, to read as follows:

§ 171.8 Definitions and abbreviations.

* * * * *

Cargo tank means a bulk packaging which:

(1) Is a tank intended primarily for the carriage of liquids or gases and includes appurtenances, reinforcements, fittings, and closures (for "tank", see 49 CFR 178.345–1(c), 178.337–1, or 178.338–1, as applicable);

(2) Is permanently attached to or forms a part of a motor vehicle, or is not permanently attached to a motor vehicle but which, by reason of its size, construction or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle; and

(3) Is not fabricated under a specification for cylinders, portable tanks, tank cars, or multi-unit tank car tanks.

* * * * *

Design Certifying Engineer means a person registered with the Department in accordance with part 107, subpart F of this chapter who has the knowledge and ability to perform stress analysis of pressure vessels and otherwise determine if a cargo tank design and construction meets the applicable DOT specification and has an engineering degree and one year of work experience in structural or mechanical design. (See § 107.502(f)). Persons registered as professional engineers by appropriate authority of a State of the United States, or a Province of Canada, who have the requisite experience may be registered under this program.

* * * * *

Registered Inspector means a person registered with the Department in accordance with part 107, subpart F of this chapter who has the knowledge and ability to determine if a cargo tank conforms with the applicable DOT specification and has, at a minimum, any of the following combinations of education (see § 107.502(f)) and work experience in cargo tank design, construction, inspection, or repair:

(1) An engineering degree and one year of work experience,

(2) An associate degree in engineering and two years of work experience, or

(3) A high school diploma (or General Equivalency Diploma) and three years of work experience.

* * * * *

PART 172—HAZARDOUS MATERIALS TABLES, HAZARDOUS MATERIALS COMMUNICATIONS REQUIREMENTS AND EMERGENCY RESPONSE INFORMATION REQUIREMENTS

8. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. App. 1803, 1804, 1805, 1808; 49 CFR part 1.

§ 172.101 [Amended]

9. In § 172.101 Hazardous Materials Table, column (2), the entry for "Ammonium nitrate, solution" is revised to read as follows: "Ammonium nitrate, solution *(containing 35% or less water). See 173.154(a)(4) and 173.154(a)(17)*".

§ 172.203 [Amended]

9a. Section 172.203(h)(1)(i), as amended at 54 FR 25004, on June 12, 1989, is further amended by removing the reference "§ 173.315(a), Note 15" and inserting, in its place, the reference "§ 173.315(a), Note 14".

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

10. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. App. 1803, 1804, 1805, 1806, 1807, 1808; 49 CFR part 1, unless otherwise noted.

11. In § 173.22, as amended at 54 FR 25004, on June 12, 1989, paragraph (a)(2) introduction text is revised to read as follows:

§ 173.22 Shipper's responsibility.

(a) * * *

(2) The person shall determine that the packaging or container is an authorized packaging, including part 173 requirements, and that it has been manufactured, assembled, and marked in accordance with:

* * * * *

12. In § 173.33, as revised at 54 FR 25005, on June 12, 1989, and amended at 55 FR 21037, on May 22, 1990, the first sentence of paragraph (d)(3) and paragraphs (a)(3), (b)(3), (b)(4), (c)(1) introductory text, (c)(1)(vi), (c)(2)–(c)(5), (d)(1), (d)(2) and (e) are revised to read as follows:

§ 173.33 Hazardous materials in cargo tank motor vehicles.

(a) * * *

(3) A specification cargo tank motor vehicle, for which the prescribed periodic retest or reinspection under subpart E of part 180 of this subchapter is past due, may not be filled and offered for transportation until the retest or inspection has been successfully completed. This requirement does not apply to any cargo tank filled prior to the retest or inspection due date.

(b) * * *

(3) Air pressure in excess of ambient atmospheric pressure may not be used to load or unload any lading which may create an air-enriched mixture within the flammability range of the lading in the vapor space of the tank.

(4) To prevent cargo tank rupture in a loading or unloading accident, the loading or unloading rate used must be less than or equal to that indicated on the cargo tank specification plate, except as specified in § 173.318(b)(6). If no loading or unloading rate is marked on the specification plate, the loading or unloading rate and pressure used must be limited such that the pressure in the tank may not exceed 130% of the MAWP.

(c) * * *

(1) Prior to loading and offering a cargo tank motor vehicle for transportation with material that requires the use of a specification cargo tank, the person must confirm that the cargo tank motor vehicle conforms to the specification required for the lading and that the MAWP of the cargo tank is greater than or equal to the largest pressure obtained under the following conditions:

* * * * *

(vi) The maximum pressure in the tank during loading or unloading.

* * * * *

(2) Any Specification MC 300, MC 301, MC 302, MC 303, MC 305, MC 306 or MC 312, cargo tank motor vehicle with no marked design pressure or marked with a design pressure of 3 psig or less may

be used for an authorized lading where the pressure derived from § 173.33(c)(1) is less than or equal to 3 psig. After December 31, 1990, a cargo tank may not be loaded and offered for transportation unless marked or remarked with an MAWP or design pressure in accordance with 49 CFR 180.405(k).

(3) Any Specification MC 310 or MC 311 cargo tank motor vehicle may be used for an authorized lading where the pressure derived from § 173.33(c)(1) is less than or equal to the MAWP or MWP, respectively, as marked on the specification plate.

(4) Any cargo tank manufactured prior to December 31, 1990, marked with a design pressure rather than an MAWP may be used for an authorized lading where the largest pressure derived from § 173.33(c)(1) is less than or equal to the design pressure marked on the cargo tank.

(5) Any material that meets the definition of a Poison B material must be loaded in a cargo tank motor vehicle having a MAWP of 25 psig or greater.

(d) * * *

(1) Non-reclosing pressure relief devices are not authorized in any cargo tank except when in series with a reclosing pressure relief device. However, a cargo tank constructed before December 31, 1990 which is fitted with non-reclosing pressure relief devices may continue to be used in any hazardous material service for which it is authorized. The requirements in this paragraph do not apply to MC 330, MC 331 and MC 338 cargo tanks.

(2) Each cargo tank motor vehicle used to transport a liquid hazardous material in its gaseous state must have a pressure relief system that provides the venting capacity prescribed in § 178.345–10(e) of this subchapter. The requirements in this paragraph do not apply to MC 330, MC 331 and MC 338 cargo tanks.

(3) A cargo tank motor vehicle made to a specification listed in column 1 may have pressure relief devices or outlets conforming to the applicable specification to which the tank was constructed, or the pressure relief devices or outlets may be modified to meet the applicable requirement for the specification listed in column 2 without changing the markings on the tank specification plate. * * *

* * * * *

(3) *Retention of hazardous materials in product piping during transportation.* DOT specification cargo tanks used for the transportation of any material that is a Poison B liquid, oxidizer liquid, liquid organic peroxide or corrosive liquid (corrosive to skin only) may not be transported with hazardous materials lading retained in the piping, unless the cargo tank motor vehicle is equipped with bottom damage protection devices meeting the requirements of § 178.337–10 or § 178.345–8(b) of this subchapter, or the accident damage protection requirements of the specification under which it was manufactured. This requirement does not apply to a residue which remains after the piping is drained. A sacrificial device (see § 178.345–1 of this subchapter) may not be used to satisfy the accident damage protection requirements of this paragraph.

13. In § 173.119, as amended at 54 FR 25006, on June 12, 1989, paragraphs (a)(17)(i) and (ii), (e)(3)(ii) and (iii), and (m)(10)(iv) and (v) are revised to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

(a) * * *

(17) * * *

(i) Except as provided by § 173.33(d), each cargo tank is equipped with a pressure relief system meeting the requirements in § 178.346–10 or § 178.347–10 of this subchapter. However, pressure relief devices on Specification MC 310, MC 311 or MC 312 cargo tanks must meet the requirements for a Specification MC 307 cargo tank. Pressure relief devices on Specification MC 330 and MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

(ii) Bottom outlets on Specification DOT 406, DOT 407, or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means and by a closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 cargo tanks are equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

* * * * *

(e) * * *

(3) * * *

(ii) Except as provided by § 173.33(d), each cargo tank is equipped with a pressure relief system meeting the requirements in § 178.347–10 of this subchapter. However, pressure relief devices on Specification MC 310, MC 311 or MC 312 cargo tanks must meet the requirements for a Specification MC 307 cargo tank. Pressure relief devices on Specification MC 330 and MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

(iii) Bottom outlets on Specification DOT 407, DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307, MC 310, MC 311, MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means and by a closure activated at a temperature not over 250° F.; and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

* * * * *

(m) * * *

(10) * * *

(iv) Except as provided by § 173.33(d), each cargo tank is equipped with a pressure relief system meeting the requirements in § 178.347–10 of this subchapter. However, Pressure relief devices on Specification MC 310, MC 311 or MC 312 Cargo tanks must meet the requirements for a Specification MC 307 cargo tank. However, Pressure relief devices on Specification MC 330 and MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

(v) Bottom outlets on Specification DOT 407, and DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307, MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means and by a closure activated at a temperature not over 250° F.; and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

14. In § 173.131, as amended at 54 FR 254007, on June 12, 1989, paragraph (a)(2) is revised to read as follows:

§ 173.131 Road asphalt, or tar, liquid.

(a) * * *

(2) A nonspecification cargo tank motor vehicle that is at least equivalent in design and construction to a Specification MC 306 or DOT 406 (§§ 178.345, 178.346 of this subchapter) cargo tank motor vehicle, except the cargo tank motor vehicle need not conform to requirements in §§ 178.345–7(d)(5), 178.345–8 (c) and (d), 178.345–14, 178.345–15, 178.346–5, 178.346–10, and

178.346–11 of this subchapter (or the certification, manhole, venting, and emergency flow control requirements of the MC 306 cargo tank specification). Also, the design stress limits at elevated temperatures of the ASME Code are not applicable. The design stress limits may not exceed 25 percent of the stress limit provided by the Aluminum Association Inc. in a publication entitled "Aluminum Standards and Data" for 0 temper at the maximum design temperature of the cargo tank motor vehicle.

15. In § 173.135, as amended at 54 FR 25007, on June 12, 1989, paragraphs (a)(9)(iii), (iv) and (v) are revised to read as follows:

§ 173.135 Diethyl dichlorosilane, dimethyl dichlorosilane, ethyl dichlorosilane, ethyl trichlorosilane, methyl trichlorosilane, trimethyl chlorosilane, and vinyl trichlorosilane.

(a) * * *

(9) * * *

(iii) The cargo tank, except Specification MC 330 or MC 331 cargo tank, meets the corrosion protection requirements in § 178.345–2(c) of this subchapter.

(iv) Except as provided by § 173.33(d), the cargo tank is equipped with a pressure relief system meeting the requirements in § 178.347–10 of this subchapter. However, pressure relief devices on Specification MC 330 and MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

(v) Bottom outlets on Specification DOT 407 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 or and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

16. In § 173.136, as amended at 54 FR 25007, on June 12, 1989, paragraph (a)(8) is revised to read as follows:

§ 173.136 Methyl dichlorosilane and trichlorosilane.

(a) * * *

(8) Specification MC 330 or MC 331 (§ 178.337 of this subchapter) cargo tank motor vehicle. Bottom outlets must be equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

* * * * *

17. In § 173.141, as amended at 54 FR 25007, on June 12, 1989, paragraph (a)(8) is revised to read as follows:

§ 173.141 Amyl mercaptan, butyl mercaptan, ethyl mercaptan, isopropyl mercaptan, propyl mercaptan, and aliphatic mercaptan mixtures.

(a) * * *

(8) Specification MC 330 or MC 331 (§ 178.337 of this subchapter) cargo tank motor vehicle. Bottom outlets must be equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

* * * * *

18. In § 173.145, as amended at 54 FR 25007, paragraph (a)(7)(ii) is revised to read as follows:

§ 173.145 Dimethylhydrazine, unsymmetrical, and methylhydrazine.

(a) * * *

(7) * * *

(ii) Except as provided by § 173.33(d), each cargo tank is equipped with steel pressure relief valves meeting the requirements in § 173.33(d) or § 178.347–10 of this subchapter. However, pressure relief devices on MC 311 or MC 312 cargo tanks must meet the requirements for a Specification MC 307 cargo tank. Pressure relief devices on Specification MC 330 and MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

* * * * *

19. In § 173.154, the third sentence in paragraph (a)(17) is revised to read: "Authorized only for ammonium nitrate with 35 percent or less water in solution at a maximum temperature of 240° F."; and as amended at 54 FR 25007, on June 12, 1989, paragraphs (a)(4)(iii)–(a)(4)(vi) are redesignated as paragraphs (a)(4)(ii)–(a)(4)(v) respectively; and paragraphs (a)(4)(i) (B) and (C), newly designated paragraphs (a)(4)(ii), and (a)(4)(v) are revised to read as follows:

§ 173.154 Flammable solids, organic peroxide solids and oxidizers not specifically provided for.

(a) * * *

(4) * * *

(i) * * *

(B) Potassium nitrite solutions, except that MC 306 cargo tanks are not authorized; or

(C) Ammonium nitrate with 35 percent or less water in solution at a maximum temperature of 240° F., except that transportation in uninsulated tanks and in MC 303, MC 306, MC 310 and DOT 406 cargo tank motor vehicles is not authorized.

(ii) Bottom outlets on Specification DOT 407 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 or and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

(v) Each cargo tank is equipped with pressure relief devices meeting the requirements in § 173.33(d) or § 178.347–10 of this subchapter.

* * * * *

20. In § 173.190, as revised at 54 FR 25008, on June 12, 1989, paragraph (b)(4)(iv) is revised to read as follows:

§ 173.190 Phosphorus, white or yellow.

* * * * *

(b) * * *

(4) * * *

(iv) Each cargo tank is equipped with pressure relief devices meeting the requirements in § 173.33(d) or § 178.347–10 of this subchapter.

* * * * *

21. In § 173.206, as amended at 54 25008, on June 12, 1989, paragraph (c)(3)(v) is revised to read as follows:

§ 173.206 Sodium or potassium, metallic; sodium amide; sodium potassium alloys; sodium aluminum hydride; lithium metal; lithium silicon, lithium ferro silicon; lithium hydride; lithium borohydride; lithium aluminum hydride; lithium acetylide-ethylene diamine complex; aluminum hydride; cesium metal; rubidium metal; zirconium hydride; powdered.

* * * * *

(c) * * *

(v) The cargo tank is equipped with spring-loaded pressure relief valves having a start-to-discharge pressure not exceeding 150 psig which at a minimum are sized for the padding gas at its charge pressure.

* * * * *

22. In § 173.224, as amended at 54 FR 25008, on June 12, 1989, paragraphs (a)(4)(iii) and (iv) are redesignated as paragraphs (a)(4)(ii) and (a)(4)(iii) respectively, and newly designated paragraph (a)(4)(iii) is revised to read as follows:

§ 173.224 Cumene hydroperoxide, dicumyl peroxide, diisopropylbenzene hydroperoxide, paramenthane hydroperoxide, pinane hydroperoxide, and tertiary butylisopropyl benzene hydroperoxide.

(a) * * *

(4) * * *

(iii) The pressure relief system on the cargo tank meets the requirements in § 173.33(d) or § 178.347–10 of this subchapter.

* * * * *

23. In § 173.245, as revised at 54 FR 25008, on June 12, 1989, paragraphs (a)(29)(iii) and (iv) are revised to read as follows:

§ 173.245 Corrosive liquids not specifically provided for.

(a) * * *

(29) * * *

(iii) The cargo tank meets the corrosion protection requirements in § 178.345–2(c) of this subchapter.

(iv) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 303, MC 306, MC 307, MC 310, MC 311, MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

24. In § 173.247, as amended at 54 FR 25008, on June 12, 1989, paragraph (a)(12)(ii) is revised to read as follows:

§ 173.247 Acetyl bromide; acetyl chloride; acetyl iodide; antimony pentachloride; benzoyl chloride; boron trifluoride acetic acid complex; chromyl chloride; dichloroacetyl chloride; diphenylmethyl bromide solutions; pyrosulfuryl chloride; silicon chloride; sulfur chloride (mono and di); sulfuryl chloride; thionyl chloride; tin tetrachloride (anhydrous); titanium tetrachloride; trimethyl acetyl chloride.

(a) * * *

(12) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

25. In § 173.247a, as amended at 54 FR 25008, on June 12, 1989, paragraph (a)(3)(iii) is revised to read as follows:

§ 173.247a Vanadium tetrachloride and vanadium oxytrichloride.

(a) * * *

(3) * * *

(iii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

26. In § 173.248, as amended at 54 FR 25008, on June 12, 1989, paragraph (a)(6)(ii) is revised to read as follows:

§ 173.248 Spent sulfuric acid, or spent mixed acid.

(a) * * *

(6) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

27. In § 173.249, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(6)(iv) is revised to read as follows:

§ 173.249 Alkaline corrosive liquids, n.o.s.; alkaline liquids, n.o.s.; alkaline corrosive battery fluid; potassium fluoride solution; potassium hydrogen fluoride solution; sodium aluminate, liquid; sodium hydroxide solution; potassium hydroxide solution.

(a) * * *

(6) * * *

(iv) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 303, MC 304, MC 306, MC 307, MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

28. In § 173.249a, as amended at 54 FR 25009, on June 12, 1989, paragraph (d)(6)(iv) is revised to read as follows:

§ 173.249a Cleaning compound, liquid; coal tar dye, liquid; dye intermediate, liquid; mining reagent, liquid; and textile treating compound or mixture, liquid.

* * * * *

(d) * * *

(6) * * *

(iv) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 303, MC 304, MC 306, MC 307, MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

29. In § 173.250a, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(2)(ii) is revised to read as follows:

§ 173.250a Benzene phosphorus dichloride and benzene phosphorus thiodichloride.

(a) * * *

(2) * * *

(ii) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 304, MC 307, MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

30. In § 173.252, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(4)(ii) is amended by removing "cladding," and paragraphs (a)(4) (iv) and (v) are revised to read as follows:

§ 173.252 Bromine.

(a) * * *

(4) * * *

(iv) The cargo tank meets the corrosion protection guidelines in § 178.345–2(c) of this subchapter.

(v) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

31. In § 173.253, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(6)(iii) is revised to read as follows:

§ 173.253 Chloroacetyl chloride.

(a) * * *

(6) * * *

(iii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

32. In § 173.254, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(5)(ii) is revised to read as follows:

§ 173.254 Chlorosulfonic acid and mixtures of chlorosulfonic acid-sulfur trioxide.

(a) * * *

(5) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

33. In § 173.257, as amended at 54 FR 25009, on June 12, 1989, paragraph (a)(4)(ii) is revised to read as follows:

§ 173.257 Electrolyte (acid) and alkaline corrosive battery fluid.

(a) * * *

(4) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

34. In § 173.262, amended at 54 FR 25010, on June 12, 1989, paragraph (a)(11)(ii) is revised to read as follows:

§ 173.262 Hydrobromic acid.

(a) * * *

(11) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

35. In § 173.263, as amended at 54 FR 25010, on June 12, 1989, paragraph (a)(10)(ii) is revised to read as follows:

§ 173.263 Hydrochloric (muriatic) acid; hydrochloric (muriatic) acid mixtures; hydrochloric (muriatic) acid solution, inhibited; sodium chlorite solution (not exceeding 42 percent sodium chlorite); and cleaning compounds, liquids, containing hydrochloric (muriatic) acid.

(a) * * *

(10) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

36. In § 173.264, as amended at 54 FR 25010, on June 12, 1989, paragraphs (a)(14)(ii) and (b)(3) are revised to read as follows:

§ 173.264 Hydrofluoric acid; White acid.

(a) * * *

(14) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

(b) * * *

(3) Specification MC 310, MC 311, MC 312 or DOT 412 (§§ 178.345, 178.348 of this subchapter) cargo tank motor vehicle. Bottom outlets on: Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

37. In § 173.265, as amended at 54 FR 25010, on June 12, 1989, paragraph (b)(4)(ii) is revised to read as follows:

§ 173.265 Fluorosilicic acid (hydrofluorosilicic acid) (hydrofluoosilicic acid).

(b) * * *

(4) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

38. In § 173.266, as amended at 54 FR 25010, on June 12, 1989, paragraph (f)(2)(iv) immediately following paragraph (f)(2)(v) is redesignated as paragraph (f)(2)(vi), and paragraph (f)(2)(v) is revised to read as follows:

§ 173.266 Hydrogen peroxide solution in water.

* * * * *

(f) * * *

(2) * * *

(v) The cargo tank metal specification plate must be marked "DOT MC 310–H_2O_2", "DOT MC 312–AL–H_2O_2", "DOT MC 312–SS–H_2O_2", or as appropriate. In addition to the required markings prescribed in § 172.328 of this subchapter, each such cargo tank is marked in letters at least 1 inch high "FOR HYDROGEN PEROXIDE ONLY".

* * * * *

39. In § 173.271, as amended at 54 FR 25010, on June 12, 1989, paragraph (a)(8)(iv) is revised to read as follows:

§ 173.271 Methyl phosphonic dichloride, phosphorus oxybromide, phosphorus oxychloride, phosphorus trichloride, and thiophosphoryl chloride.

(a) * * *

(8) * * *

(iv) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

40. In § 173.272, as amended at 54 FR 25011, on June 12, 1989, paragraphs (d), (e), (f), (g), (h), and (i)(21)(iv) are revised to read as follows:

§ 173.272 Sulfuric acid.

* * * * *

(d) *Concentrations of greater than 51 percent to not over 65.25 percent.* Authorized packagings for sulfuric acid at concentrations of 51 percent to not over 65.25 percent are prescribed in paragraphs (i)(1)–(i)(16), (i)(21), and (i)(27)–(i)(30) of this section.

(e) *Concentrations of greater than 65.25 percent to not over 77.5 percent.* Authorized packagings for sulfuric acid at concentrations of 65.25 percent to not over 77.5 percent are prescribed in paragraphs (i)(1)–(i)(16), (i)(20)–(i)(22), and (i)(29)–(i)(30) of this section.

(f) *Concentrations of greater than 77.5 percent to not over 95 percent.* Authorized packagings for sulfuric acid concentrations of 77.5 percent to not over 95 percent are prescribed in paragraphs (i)(1)–(i)(22), and (i)(29)–(i)(30) of this section.

(g) *Concentrations of greater than 95 percent to not over 100.5 percent.* Authorized packagings for sulfuric acid concentrations of greater than 95 percent to not over 100.5 percent are prescribed in paragraphs (i)(1)–(i)(4), (i)(6), (i)(9), (i)(14)–(i)(22), and (i)(29)–(i)(30) of this section.

(h) *Concentrations of over 100.5 percent.* Authorized packagings for sulfuric acid concentrations of over 100.5 percent are prescribed in

paragraphs (i)(1)–(i)(4), (i)(17), and (i)(19)–(i)(23) of this section.

(i) * * *

(21) * * *

(iv) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

41. In § 173.273, as amended at 54 FR 25011, on June 12, 1989, paragraphs (a)(5) and (b)(2) are revised to read as follows:

§ 173.273 Sulfur trioxide.

(a) * * *

(5) Specification MC 310, MC 311, MC 312 or DOT 412 (§§ 178.345, 178.348 of this subchapter) cargo tank motor vehicle, subject to the following conditions:

(i) The cargo tank is equipped with a pressure relief system meeting the requirements in § 173.33(d) or § 178.345–10 of this subchapter and consisting of a spring-loaded pressure relief valve, or a combination spring-loaded pressure relief valve and a frangible (rupture disk) installed in series with the relief valve. When the pressure relief system consists of a spring-loaded pressure relief valve and a frangible (rupture disk) installed in series with the pressure relief valve, the spring-loaded pressure relief value must be set-to-discharge at a pressure not exceeding 125 percent of the design pressure.

(ii) The tank is not equipped with interior heating coils.

(iii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of aotuation by manual or mechanical means.

(b) * * *

(2) Specification MC 311, MC 312 or DOT 412 (§§ 178.345, 178.348 of this subchapter) cargo tank motor vehicle, subject to the following conditions:

(i) The cargo tank is insulated.

(ii) The tank is not equipped with interior heating coils.

(iii) The cargo tank is equipped with a pressure relief system meeting the requirements in § 173.33(d) or § 178.345–10 of this subchapter and consisting of a spring-loaded pressure relief valve, or a combination spring-loaded pressure relief valve and a frangible (rupture) disk installed in series with the relief valve. When the pressure relief system consists of a spring-loaded pressure relief valve and a frangible (rupture) disk installed in series with the pressure relief valve, the spring-loaded pressure relief value must be set-to-discharge at a pressure not exceeding 125 percent of the design pressure.

* * * * *

42. In § 173.274, as amended at 54 FR 25011, on June 12, 1989, paragraph (a)(4) is revised to read as follows:

§ 173.274 Fluosulfonic acid.

(a) * * *

(4) Specification MC 310, MC 311, MC 312 or DOT 412 (§§ 178.345, 178.348 of this subchapter) cargo tank motor vehicle. Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

43. In § 173.276, as amended at 54 FR 25011, on June 12, 1989, paragraphs (a)(6) introductory text and (a)(6)(iii) are revised to read as follows:

§ 173.276 Anhydrous hydrazine and hydrazine solution.

(a) * * *

(6) Specification MC 310, MC 311, MC 312, DOT 412, MC 330 or MC 331 (§§ 178.345, 178.348, 178.337 of this subchapter) cargo tank motor vehicle, subject to the following conditions:

* * * * *

(iii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means; and MC 330 and MC 331 cargo tanks are equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

* * * * *

44. In § 173.277, as amended at 54 FR 25011, on June 12, 1989, paragraph (a)(9)(ii) is revised to read as follows:

§ 173.277 Hypochlorite solutions.

(a) * * *

(9) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

45. In § 173.280, as amended at 54 FR 25012, on June 12, 1989, paragraph (a)(8)(ii) is revised to read as follows:

§ 173.280 Trichlorosilanes.

(a) * * *

(8) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

46. In § 173.292, as amended at 54 FR 25012, on June 12, 1989, the section heading and paragraph (a)(2)(iv) are revised to read as follows:

§ 173.292 Hexamethylenediamine solution.

(a) * * *

(2) * * *

(iv) Bottom outlets on Specification DOT 406, DOT 407, DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

47. In § 173.294, as amended at 54 FR 25012, on June 12, 1989, paragraph (a)(3)(ii) is correctly revised to read as follows:

§ 173.294 Monochloroacetic acid, liquid or solution.

(a) * * *

(3) * * *

(ii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

48. In § 173.295, as amended at 54 FR 25012, on June 12, 1989, paragraph (a)(9)(iii) is revised to read as follows:

§ 173.295 Benzyl chloride.

(a) * * *

(9) * * *

(iii) Bottom outlets on Specification DOT 412 cargo tanks are equipped with

stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

49. In § 173.297, as amended at 54 FR 25012, on June 12, 1989, there was an error in the designation used in the regulatory text. The regulatory text was correctly placed in paragraph (a)(1) instead of paragraph (a)(4) of the October 1, 1989, edition of the CFR.

§ 173.297 Titanium sulfate solution containing not more than 45 percent sulfuric acid.

(a) * * *

(1) * * *

(ii) Bottom outlets on Specifications DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; and Specification MC 310, MC 311, or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means.

* * * * *

50. In § 173.315, paragraph (a) is amended by removing the introductory text of paragraph (a)(1); and paragraphs (i)(1)(ii), as revised at 54 FR 25012, on June 12, 1989, is revised to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tanks.

* * * * *

(i) * * *

(1) * * *

(ii) The flow capacity rating, testing and marking must be in accordance with Sections 5, 6 and 7 of CGA Pamphlet S–1.2.

* * * * *

51. In § 173.318, as amended at 54 FR 25013, on June 12, 1989, paragraphs (b)(2)(i)(C) and the last sentence in paragraph (b)(2)(ii) are revised to read as follows:

§ 173.318 Cryogenic liquids in cargo tanks.

* * * * *

(b) * * *

(2) * * *

(i) * * *

(C) The flow capacity and rating must be verified and marked by the manufacturer of the device in accordance with CGA Pamphlet S–1.2.

(ii) * * * The flow capacity and rating must be verified and marked by the manufacturer of the device in accordance with CGA Pamphlet S–1.2.

* * * * *

52. In § 173.346, as amended at 54 FR 25013, on June 12, 1989, paragraph (a)(12) is revised to read as follows:

§ 173.346 Poison B liquids not specifically provided for.

(a) * * *

(12) Specification MC 304, MC 307, MC 310, MC 311, MC 312, DOT 407, DOT 412, MC 330 or MC 331 (§§ 178.345, 178.347, 178.348, 178.337 of this subchapter) cargo tank motor vehicle subject to the following conditions:

(i) The design pressure of the cargo tank is at least 25 psig.

(ii) Bottom outlets on Specification DOT 406 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307, MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 must be equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

(iii) Each tank is equipped with a pressure relief system meeting the requirements in § 173.33(d) or § 178.347–10 of this subchapter. However, pressure relief devices on MC 330 or MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

* * * * *

53. In § 173.353, as amended at 54 FR 25013, on June 12, 1989, paragraph (e)(3) is revised to read as follows:

§ 173.353 Methyl bromide and methyl bromide mixtures.

* * * * *

(e) * * *

(3) Bottom outlets on the cargo tank are equipped with internal self-closing stop-valves meeting the requirements in § 178.337–11 of this subchapter.

§ 173.354 [Amended]

54. In § 173.354(a)(5), as revised at 54 FR 25013, on June 12, 1989, the word "vehicle" is revised to read "vehicles."

55. In § 173.358, as amended at 54 FR 25014, on June 12, 1989, paragraph (a)(14)(vi) and (vii) are revised to read as follows:

§ 173.358 Hexaethyl tetraphosphate, methyl parathion, organic phosphate compound, organic phosphorus compound, parathion, tetraethyl dithio pyrophosphate, and tetraethyl pyrophosphate, liquid.

(a) * * *

(14) * * *

(vi) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

(vii) Each tank is equipped with a pressure relief system meeting the requirements in § 173.33(d) or § 178.347–10 of this subchapter, except that pressure relief devices on MC 330 or MC 331 cargo tanks must meet the requirements in § 178.337–9 of this subchapter.

* * * * *

56. In § 173.359, as amended at 54 FR 25014, on June 12, 1989, paragraph (a)(16)(v) and (vi) are revised to read as follows:

§ 173.359 Hexaethyl tetraphosphate mixtures; methyl parathion mixtures; organic phosphorus compound mixtures, organic phosphate compound mixtures; parathion mixtures, tetraethyl dithio pyrophosphate mixtures; and tetraethyl pyrophosphate mixtures, liquid (includes solutions, emulsions, or emulsifiable liquids).

(a) * * *

(16) * * *

(v) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed wthin 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

(vi) Each tank is equipped with a pressure relief system meeting the requirements in § 173.33(d) or § 178.345–10 of this subchapter, except that pressure relief devices on MC 330 or MC 331 cargo tanks must meet the requirements in the § 178.337–9 of this subchapter.

* * * * *

57. In § 173.369, as amended at 54 FR 25014, on June 12, 1989, paragraph (a)(14)(iii) is revised to read as follows:

§ 173.369 Carbolic acid (phenol), not liquid.

(a) * * *

(14) * * *

(iii) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 304, MC 307, MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

58. In § 173.373, as amended at 54 FR 25014, on June 12, 1989, paragraphs (a)(6)(i) and (iv) are revised to read as follows:

§ 173.373 Ortho-nitroaniline and paranitroaniline.

(a) * * *

(6) * * *

(i) The tanks are authorized only for ortho-nitroaniline which must be loaded in a liquefied state at a temperature not over 180° F.

* * * * *

(iv) Bottom outlets on Specification DOT 407 or DOT 412 cargo tanks are equipped with stop-valves meeting the requirement of § 178.345–11 of this subchapter; Specification MC 304, MC 307, MC 310, MC 311 or MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activated closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

59. In § 173.374, as amended at 54 FR 25014, on June 12, 1989, paragraph (a)(4)(v) is revised to read as follows:

§ 173.374 Nitrochlorobenzene, meta or para.

(a) * * *

(4) * * *

(v) Bottom outlets on Specification DOT 412 cargo tanks are equipped with stop-valves meeting the requirements of § 178.345–11 of this subchapter; Specification MC 312 cargo tanks are equipped with stop-valves capable of being remotely closed within 30 seconds of actuation by manual or mechanical means or in the case of fire by a thermally activited closure activated at a temperature not over 250° F., and Specification MC 330 and MC 331 are equipped with internal self-closing stop-valves meeting the requirements of § 178.337–11 of this subchapter.

* * * * *

PART 176—CARRIAGE BY VESSEL

60. The authority citation for Part 176 continues to read as follows:

Authority: 49 U.S.C. 1803, 1804, 1805, 1808; 49 CFR 1.53, app. A to part 1.

61. The text of paragaph (b) of § 176.76, as amended at 54 FR 25014, on June 12, 1989, contained an error in the amendatory language, the text as it appears in the October 1, 1989, edition of the CFR is accurate.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

62. The authority citation for Part 177 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 49 CFR Part 1.

63. Section 177.824 is revised to read as follows:

§ 177.824 Retesting and inspection of cargo tanks.

Except as otherwise provided in this subchapter, no motor carrier may operate a specification cargo tank motor vehicle containing a hazardous material unless the cargo tank motor vehicle conforms to the retest and inspection requirements set forth in Subpart E of Part 180 of this subchapter. This paragraph does not apply to any cargo tank filled prior to the retest or inspection due date.

PART 178—SHIPPING CONTAINER SPECIFICATIONS

64. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. App. 1803, 1804, 1805, 1806, 1808; 49 part 1.

65. Section 178.320, as added at 54 FR 25015, on June 12, 1989, is revised to read as follows:

§ 178.320 General requirements applicable to all DOT specification cargo tank motor vehicles.

(a) *Definitions.* For the purposes of this subpart,

Cargo tank, as defined in § 171.8 of this subchapter, means a bulk packaging which:

(1) Is a tank intended primarily for the carriage of liquids or gases (including appurtenances, reinforcements, fittings, and closures) (For definition of "tank", see § 178.345–1(c), § 178.337–1, or § 178.338–1, as applicable);

(2) Is permanently attached to or forms a part of a motor vehicle but which, by reason of its size, construction or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle; and

(3) Is not fabricated under a specification for cylinders, portable tanks, tank cars, or multi-unit tank car tanks.

Cargo tank motor vehicle, as defined in § 171.8 of this subchapter, means a motor vehicle with one or more cargo tanks permanently attached to or forming an integral part of the motor vehicle.

Cargo tank wall means those parts of the cargo tank which make up the primary lading retention structure including shell, bulkheads, and fittings which, when closed during transportation of lading, yields the minimum volume of the cargo tank assembly.

Design type means one or more cargo tanks which are made—

(1) To the same specification;

(2) By the same manufacturer;

(3) To the same engineering drawings and calculations, except for minor variations in piping which do not affect the lading retention capability of the cargo tank;

(4) Of the same materials of construction;

(5) To the same cross-sectional dimensions;

(6) To a length varying by no more than five percent;

(7) With the volume varying by no more than five percent (due to a change in length only); and

(8) For the purposes of § 178.338 only, with the same insulation system.

Manufacturer means any person engaged in the manufacture or assembly of a DOT specification cargo tank, cargo tank motor vehicle, or cargo tank equipment which forms part of the cargo tank wall. A manufacturer shall register with the Department in accordance with subpart F of part 107 in subchapter B of this chapter.

(b) *Design certification.* (1) Each cargo tank design type shall be certified in conformance with the specification requirements by a Design Certifying Engineer registered in accordance with subpart F of part 107.

(2) The Design Certifying Engineer shall furnish to the manufacturer a certificate to indicate compliance with the specification requirements. The certificate must include the sketches, drawings, and calculations used for certification. Each certificate, including

sketches, drawings, and calculations, shall be signed by the Design Certifying Engineer.

(3) The manufacturer shall retain the design certificate at his principal place of business for as long as he manufactures DOT specification cargo tanks.

(c) *Exceptions to the ASME Code.* Unless otherwise specified, when exceptions are provided in this subpart from compliance with certain paragraphs of the ASME Code, compliance with those paragraphs is not prohibited.

§ 178.337-1 [Amended].

66. In § 178.337-1, as amended at 54 FR 25015, on June 12, 1989, the last sentence in paragraph (e)(2) is amended by removing the word "self-extinguishing".

67. Section 178.337-3 is revised to read as follows:

§ 178.337-3 Structural integrity.

(a) General requirements and acceptance criteria. (1) Except as provided in paragraph (d) of this section, the maximum calculated design stress at any point in the cargo tank may not exceed the maximum allowable stress value prescribed in Section VIII of the ASME Code, or 25 percent of the tensile strength of the material used.

(2) The relevant physical properties of the materials used in each cargo tank may be established either by a certified test report from the material manufacturer or by testing in conformance with a recognized national standard. In either case, the ultimate tensile strength of the material used in the design may not exceed 120 percent of the ultimate tensile strength specified in either the ASME Code or the ASTM standard to which the material is manufactured.

(3) The maximum design stress at any point in the cargo tank must be calculated separately for the loading conditions described in paragraphs (b), (c), and (d) of this section. Alternate test or analytical methods, or a combination thereof, may be used in place of the procedures described in paragraphs (b), (c), and (d) of this section, if the methods are accurate and verifiable.

(4) Corrosion allowance material may not be included to satisfy any of the design calculation requirements of this section.

(b) The static design and construction of each cargo tank must be in accordance with section VIII of the ASME Code. The cargo tank design must include calculation of stresses generated by design pressure, the weight of lading, the weight of structure supported by the tank wall, and the effect of temperature gradients resulting from lading and ambient temperature extremes. When dissimilar materials are used, their thermal coefficients must be used in calculation of thermal stresses. Stress concentrations in tension, bending and torsion which occur at pads, cradles, or other supports must be considered in accordance with appendix G of the ASME Code.

(c) Stresses resulting from static and dynamic loadings, or a combination thereof, are not uniform throughout the cargo tank motor vehicle. The following is a simplified procedure for calculating the effective stress in the cargo tank resulting from static and dynamic loadings. The effective stress (the maximum principal stress at any point) must be determined by the following formula:

$$S = 0.5\,(S_y + S_x) \pm (0.25(S_y - S_x)^2 + S_s^2)^{0.5}$$

Where:

S = effective stress, in psi, at any given point under the most severe combination of static and dynamic loadings that can occur at the same time.

S_y = circumferential stress generated by internal and external pressure when applicable, in psi.

S_x = the net longitudinal stress, in psi, generated by the following loading conditions:

(1) The longitudinal tensile stress generated by internal pressure;

(2) The tensile or compressive stress generated by the axial load resulting from a decelerative force equal to twice the static weight of the fully loaded vehicle applied independently to each suspension assembly at the road surface;

(3) The tensile or compressive stress generated by the bending moment resulting from a decelerative force equal to twice the static weight of the fully loaded vehicle applied independently to each suspension assembly at the road surface;

(4) The tensile or compressive stress generated by the axial load resulting from an accelerative force equal to the static weight of the fully loaded vehicle applied to the horizontal pivot of the fifth wheel supporting the vehicle;

(5) The tensile or compressive stress generated by the bending moment resulting from an accelerative force equal to the static weight of the fully loaded vehicle applied to the horizontal pivot of the fifth wheel supporting the vehicle; and

(6) The tensile or compressive stress generated by a bending moment produced by a vertical force equal to three times the static weight of the fully loaded vehicle.

S_s = The following shear stresses, in psi, that apply:

(1) The shear stress generated by a vertical force equal to three times the static weight of the tank and contents;

(2) The lateral shear stress generated by a lateral accelerative force which will produce an overturn but not less than 0.75 times the static weight of the fully loaded vehicle, applied at the road surface; and

(3) The torsional shear stress generated by a lateral accelerative force which will produce an overturn but not less than 0.75 times the static weight of the fully loaded vehicle, applied at the road surface.

(d) In order to account for stresses due to impact in an accident, the design calculations for the cargo tank shell and heads must include the load resulting from the design pressure in combination with the dynamic pressure resulting from a longitudinal deceleration of "2g". For this loading condition the stress value used may not exceed the lesser of the yield strength or 75 percent of the ultimate tensile strength of the material of construction. For cargo tanks constructed of stainless steel the maximum design stress may not exceed 75 percent of the ultimate tensile strength of the type steel used.

(e) The minimum metal thickness for the shell and heads must be 0.187 inch for steel and 0.270 inch for aluminum, except for chlorine and sulfur dioxide tanks. For a cargo tank used in chlorine or sulfur dioxide service, the cargo tank must be made of steel. A corrosion allowance of 20 percent or 0.10 inch, whichever is less, must be added to the thickness otherwise required for sulfur dioxide and chlorine tank material. In chlorine tanks the wall thickness must be at least five-eighths inch, including corrosion allowance.

(f) Where a tank support is attached to any part of the tank wall, the stresses imposed on the tank wall must meet the requirements in paragraph (a) of this section.

(g) The design, construction, and installation of an appurtenance to the cargo tank must be such that, in the event of its damage or failure, the lading retention integrity of the tank will not be adversely affected.

(1) A lightweight attachment, such as a conduit clip, brakeline clip or placard holder, must be constructed of a material of lesser strength than the cargo tank wall material and may not be more than 72 percent of the thickness of the material to which it is attached. The attachment may be secured directly to the cargo tank wall if the device is designed and installed in such a manner that, if damaged, it will not affect the lading retention integrity of the tank. The lightweight attachment must be secured to the cargo tank wall by continuous weld or in such a manner as to preclude formation of pockets, which may become sites for incipient corrosion. Attachments meeting the requirements of this paragraph are not

authorized for cargo tanks constructed under part UHT of the ASME Code.

(2) Except as prescribed in § 178.337-3(g)(1), the welding of any appurtenance of the cargo tank wall must be made by attachment of a mounting pad, so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force is applied to the appurtenance, from any direction. The thickness of the mounting pad may not be less than that of the shell or head to which it is attached, and not more than 1.5 times the shell or head thickness. However, a pad with a minimum thickness of 0.250 inch may be used when the shell or head thickness is over 0.250 inch. If weep holes or tell-tale holes are used, the pad must be drilled or punched at its lowest point before it is welded. Each pad must:

(i) Extend at least 2 inches in each direction from any point of attachment of an appurtenance;

(ii) Have rounded corners, or otherwise be shaped in a manner to minimize stress concentrations on the shell or head; and

(iii) Be attached by a continuous weld around the pad, except for a small gap at the lowest point for draining, using filler material conforming to the recommendations of the manufacturer of the head or shell material.

67a. In § 178.337-9, as amended at 54 FR 25017, on June 12, 1989, paragraph (b)(6) is revised to read as follows:

§ 178.337-9 Pressure relief devices, piping, valves, hoses, and fittings.

* * * * *

(b) * * *

(6) All *piping, valves, and fittings* on a cargo tank must be proven free from leaks. This requirement is met when such piping, valves, and fittings have been tested after installation at not less than 80 percent of the design pressure marked on the cargo tank. This requirement is applicable to hoses used in the cargo tank, except that hoses may be tested before or after installation on the tank.

* * * * *

68. In § 178.337-11, as revised at 54 FR 25017, on June 12, 1989, the second sentence in paragraph (a)(1)(v) is amended by removing the word "hose" and adding, in its place, the word "hoses", and paragraph (c)(1) is amended by removing the words "self closing" and adding, in their place, the word "self-closing".

69. In § 178.337-18, as amended at 54 FR 25018, on June 12, 1989, paragraph (a) is revised to read as follows:

§ 178.337-18 Certification.

(a) At or before the time of delivery, the cargo tank manufacturer must supply and the owner must obtain, a tank manufacturer's data report as required by the ASME Code, and a certificate stating that the completed cargo tank motor vehicle conforms in all respects to Specification MC 331 and the ASME Code. The registration numbers of the manufacturer, the Design Certifying Engineer, and the Registered Inspector, as appropriate, must appear on the certificates (see subpart F, part 107 in subchapter B of this chapter).

(1) For each design type, the certificate must be signed by a responsible official of the manufacturer and a Design Certifying Engineer; and

(2) For each cargo tank motor vehicle, the certificate must be signed by a responsible official of the manufacturer and a Registered Inspector.

(3) The certificate must state whether or not it includes certification that all valves, piping, and protective devices comply with the requirements of the specification. If it does not so certify, the installer of any such valve, piping, or device shall supply and the owner shall obtain a certificate asserting complete compliance with these specifications for such devices. The certificate, or certificates, will include sufficient sketches, drawings, and other information to indicate the location, make, model, and size of each valve and the arrangement of all piping associated with the tank.

(4) The certificate must contain a statement indicating whether or not the cargo tank was postweld heat treated for anhydrous ammonia as specified in § 178.337-1(f).

* * * * *

70. Section 178.338-3 is revised to read and follows:

§ 178.338-3 Structural integrity.

(a) *General requirements and acceptance criteria.* (1) Except as permitted in paragraph (d) of this section, the maximum calculated design stress at any point in the tank may not exceed the lesser of the maximum allowable stress value prescribed in section VIII of the ASME Code, or 25 percent of the tensile strength of the material used.

(2) The relevant physical properties of the materials used in each tank may be established either by a certified test report from the material manufacturer or by testing in conformance with a recognized national standard. In either case, the ultimate tensile strength of the material used in the design may not exceed 120 percent of the minimum ultimate tensile strength specified in either the ASME Code or the ASTM standard to which the material is manufactured.

(3) The maximum design stress at any point in the tank must be calculated separately for the loading conditions described in paragraphs (b), (c), and (d) of this section. Alternate test or analytical methods, or a combination thereof, may be used in lieu of the procedures described in paragraphs (b), (c), and (d) of this section, if the methods are accurate and verifiable.

(4) Corrosion allowance material may not be included to satisfy any of the design calculation requirements of this section.

(b) The static design and construction of each tank must be in accordance with section VIII of the ASME Code. The tank design must include calculation of stresses due to design pressure, the weight of lading, the weight of structures supported by the tank wall, and the effect of temperature gradients resulting from lading and ambient temperature extremes. When dissimilar materials are used, their thermal coefficients must be used in calculation of the thermal stresses. Stress concentrations in tension, bending and torsion which occur at pads, cradles, or other supports must be considered in accordance with Appendix G of the ASME Code.

(c) Stresses resulting from static and dynamic loadings, or a combination thereof, are not uniform throughout the cargo tank motor vehicle. The following is a simplified procedure for calculating the effective stress in the tank resulting from static and dynamic loadings. The effective stress (the maximum principal stress at any point) must be determined by the following formula:

$$S = 0.5\,(S_y + S_x) \pm (0.25(S_y - S_x)^2 + S_s^2)^{0.5}$$

Where:

S = effective stress, in psi, at any given point under the most severe combination of static and dynamic loadings that can occur at the same time.

S_y = circumferential stress generated by internal and external pressure when applicable, in psi.

S_x = the net longitudinal stress, in psi, generated by the following loading conditions:

(1) The longitudinal tensile stress generated by internal pressure;

(2) The tensile or compressive stress generated by the axial load resulting from a decelerative force applied independently to each suspension assembly at the road surface using applicable static loadings specified in § 178.338-13 (b) and (c);

(3) The tensile or compressive stress generated by the bending moment resulting from a decelerative force applied independently to each suspension assembly

at the road surface using applicable static loadings specified in § 178.338–13 (b) and (c);

(4) The tensile or compressive stress generated by the axial load resulting from an accelerative force applied to the horizontal pivot of the fifth wheel supporting the vehicle using applicable static loadings specified in § 178.338–13 (b) and (c);

(5) The tensile or compressive stress generated by the bending moment resulting from an accelerative force applied to the horizontal pivot of the fifth wheel supporting the vehicle using applicable static loadings specified in § 178.338–13 (b) and (c); and

(6) The tensile or compressive stress generated by a bending moment produced by a vertical force using applicable static loadings specified in § 178.338–13 (b) and (c).

S_s = The following shear stresses, in psi, that apply: The vectorial sum of the applicable shear stresses in the plane under consideration, including direct shear generated by the static vertical loading; direct lateral and torsional shear generated by a lateral accelerative force applied at the road surface, using applicable static loads specified in § 178.338–13(b) and (c).

(d) In order to account for stresses due to impact in an accident, the design calculations for the tank shell and heads must include the load resulting from the design pressure in combination with the dynamic pressure resulting from a longitudinal deceleration of "2g". For this loading condition the stress value used may not exceed the lesser of the yield strength or 75 percent of the ultimate tensile strength of the material of construction. For a cargo tank constructed of stainless steel, the maximum design stress may not exceed 75 percent of the ultimate tensile strength of the type steel used.

(e) The minimum thickness of the shell or heads of the tank must be 0.187 inch for steel and 0.270 inch for aluminum. However, the minimum thickness for steel may be 0.110 inches provided the cargo tank is:

(1) Vacuum insulated, or

(2) Double walled with a load bearing jacket designed to carry a proportionate amount of structural loads prescribed in this section.

(f) Where a tank support is attached to any part of the tank wall, the stresses imposed on the tank wall must meet the requirements in paragraph (a) of this section.

(g) The design, construction, and installation of an appurtenance to the cargo tank or jacket must be such that, in the event of its damage or failure, the lading retention integrity of the tank will not be adversely affected.

(1) A lightweight attachment, such as a conduit clip, brakeline clip or placard holder, must be constructed of a material of lesser strength than the cargo tank wall or jacket material and may not be more than 72 percent of the thickness of the material to which it is attached. The attachment may be secured directly to the cargo tank wall or jacket if the device is designed and installed in such a manner that, if damaged, it will not affect the lading retention integrity of the tank. The lightweight attachment must be secured to the cargo tank wall or jacket by continuous weld or in such a manner as to preclude formation of pockets, which may become sites for incipient corrosion. Attachments conforming with this paragraph are not authorized for cargo tanks constructed under part UHT of the ASME Code.

(2) Except as prescribed in § 178.338-3(g)(1), the welding of any appurtenance to the cargo tank wall or jacket must be made by attachment of a mounting pad, so that there will be no adverse affect upon the lading retention integrity of the tank if any force is applied to the appurtenance, from any direction. The thickness of the mounting pad may not be less than that of the shell or head to which it is attached, and not more than 1.5 times the shell or head thickness. However, a pad with a minimum thickness of 0.187 inch may be used when the shell or head thickness is over 0.187 inch. If weep holes or tell tale holes are used, the pad must be drilled or punched at its lowest point before it is welded. Each pad must—

(i) Extend at least 2 inches in each direction from any point of attachment of an appurtenance;

(ii) Be attached by a continuous weld around the pad except for a small gap at the lowest point for draining.

71. In § 178.338-17, as revised at 54 FR 25020, on June 12, 1989, paragraph (b) is revised to read as follows:

§ 178.338-17 Pumps and compressors.

* * * * *

(b) A valve or fitting made of aluminum with internal rubbing or abrading aluminum parts that may come in contact with oxygen, cryogenic liquid, may not be installed on any cargo tank used to transport oxygen, cryogenic liquid, unless the parts are anodized in accordance with ASTM Standard B 580.

72. In § 178.338-19, paragraph (a) and the first sentence of paragraph (b) are revised to read as follows:

§ 178.338-19 Certification.

(a) At or before the time of delivery, the manufacturer of a cargo tank motor vehicle shall furnish to the owner of the completed vehicle the following:

(1) The tank manufacturer's data report as required by the ASME Code, and a certificate bearing the manufacturer's vehicle serial number stating that the completed cargo tank motor vehicle conforms to all applicable requirements of Specification MC 338, including the ASME Code in effect on the date (month, year) of certification. The registration numbers of the manufacturer, the Design Certifying Engineer, and the Registered Inspector, as appropriate, must appear on the certificates (See subpart F, part 107 in subchapter B of this chapter).

(i) For each design type, the certificate must be signed by a responsible official of the manufacturer and a Design Certifying Engineer; and

(ii) For each cargo tank motor vehicle, the certificate must be signed by a responsible official of the manufacturer and a Design Certifying Engineer;

(2) A photograph, pencil rub, or other facsimile of the plates required by paragraphs (a) and (b) of § 178.338-18.

(b) In the case of a cargo tank vehicle manufactured in two or more stages, each manufacturer who performs a manufacturing operation on the incomplete vehicle or portion thereof shall furnish to the succeeding manufacturer, at or before the time of delivery, a certificate covering the particular operation performed by that manufacturer, and any certificates received from previous manufacturers, Registered Inspectors, and Design Certifying Engineers.

* * * * *

73. In § 178.345.1, as added at 54 FR 25020, on June 12, 1989, definitions for "Flange," "Internal self-closing stop-valve," "Nozzle," "Outlet," "Pipe coupling," and "Shell" in paragraph (c) are revised, and paragraphs (h), and (i)(2) (k) are revised to read as follows:

§ 178.345-1 General requirements.

* * * * *

(c) * * *

Flange means the structural ring for guiding or attachment of a pipe or fitting with another flange (companion flange), pipe, fitting or other attachment.

* * * * *

Internal self-closing stop-valve means a self-closing stop-valve designed so that the self-stored energy source is located inside the tank or tank sump, or within the welded flange, and the valve seat is located within the tank or within one inch of the external face of the welded flange or sump of the tank.

* * * * *

Nozzle means the subassembly consisting of a pipe or tubular section with or without a welded or forged flange on one end.

Outlet means any opening in the shell or head of a tank, (including the means

for attaching a closure), except that the following are not outlets: A threaded opening securely closed during transportation with a threaded plug or a threaded cap, a flanged opening securely closed during transportation with a bolted or welded blank flange, a manhole, or gauging devices, thermometer wells, and safety relief devices.

* * * * *

Pipe coupling means a fitting with internal threads on both ends.

* * * * *

Shell means the circumferential portion of a tank defined by the basic design radius or radii excluding the closing heads.

* * * * *

(h) Any additional requirements prescribed in part 173 of this subchapter that pertain to the transportation of a specific lading are incorporated into these specifications.

(i) * * *

(2) The strength of the connecting structure joining multiple cargo tanks in a cargo tank motor vehicle must meet the structural design requirements in § 178.345-3. Any void within the connecting structure must be vented to the atmosphere by a drain of at least 1 inch inside diameter which must be kept open at all times. The connecting structure must have inspection openings of sufficient size and number to permit proper visual internal inspection of the connecting structure and cargo tank surfaces. Each drainage and inspection opening must be accessible.

* * * * *

74. In § 178.345-2, as added at 54 FR 25021, on June 12, 1989, paragraphs (a) introductory text, (a)(1), (b) and (c), introductory text are revised to read as follows:

§ 178.345-2 Material and material thickness.

(a) All material for shell, heads, bulkheads, and baffles must conform to Section II, Parts A and B, of the ASME Code except as follows:

(1)The following steels are also authorized for cargo tanks "constructed in accordance with the ASME Code".

ASTM A 569
ASTM A 570
ASTM A 572
ASTM A 656
ASTM A 715

* * * * *

(b) *Minimum thickness.* The minimum thickness for the shell and heads must be such that the maximum stress levels specified in § 178.345-3 of this subpart are not exceeded. In no case may the shell or head thickness be less than that specified in the applicable specification.

(c) *Corrosion or abrasion protection.* When required by 49 CFR part 173 for a particular lading, a cargo tank or a part thereof, subject to thinning by corrosion or mechanical abrasion due to the lading, must be protected by providing the tank or part of the tank with a suitable increase in thickness of material, a lining or some other suitable method of protection.

* * * * *

75. Section 178.345-3, as added at 54 FR 25021, on June 12, 1989, is revised to read as follows:

§ 178.345-3 Structural integrity.

(a) *General requirements and acceptance criteria.* (1) Except as provided in paragraph (d) of this section, the maximum calculated design stress at any point in the tank wall may not exceed the lesser of the maximum allowable stress value prescribed in section VIII of the ASME Code, or 25 percent of the tensile strength of the material used.

(2) The relevant physical properties of the materials used in each cargo tank may be established either by a certified test report from the material manufacturer or by testing in conformance with a recognized national standard. In either case, the ultimate tensile strength of the material used in the design may not exceed 120 percent of the minimum ultimate tensile strength specified in either the ASME Code or the ASTM standard to which the material is manufactured.

(3) The maximum design stress at any point in the cargo tank must be calculated spearately for the loading conditions described in paragraphs (b), (c), and (d) of this section. Alternate test or analytical methods, or a combination thereof, may be used in place of the procedures described in paragraphs (b), (c), and (d) of this section, if the methods are accurate and verifiable.

(4) Corrosion allowance material may not be included to satisfy any of the design calculation requirements of this section.

(b) The static design and construction of each cargo tank must be in accordance with section VIII of the ASME Code. The tank design must include calculation of stresses generated by the MAWP, the weight of lading, the weight of structures supported by the tank wall, and the effect of temperature gradients resulting from lading and ambient temperatures extremes. When dissimilar materials are used, their thermal coefficients must be used in the calculation of thermal stresses. Stress concentrations in tension, bending and torsion which occur at pads, cradles, or other supports must be considered in accordance with Appendix G of the ASME Code.

(c) Stresses resulting from static or dynamic loadings, or a combination thereof, are not uniform throughout the cargo tank motor vehicle. The following is a simplified procedure for calculating the effective stress in the tank shell and heads resulting from static and dynamic loadings. The effective stress (the maximum principal stress at any point) must be determined by the following formula:

$$S = 0.5(S_y + S_x) \pm (0.25(S_y - S_x)^2 + S_s^2)^{0.5}$$

Where:

S = effective stress, at any given point under the most severe combination of static and dynamic loadings that can occur at the same time, in psi.

S_y = circumferential stress generated by internal and external pressure, when applicable, in psi.

S_x = the net longitudinal stress, in psi, generated by the following loading conditions:

(1) The longitudinal stresses resulting from the MAWP and from the lowest pressure at which the cargo tank may operate, in combination with the bending stress generated by the weight of the lading, the weight of the cargo tank and other structures and equipment supported by the cargo tank wall;

(2) The tensile or comprehensive stress generated by the axial load resulting from a longitudinal decelerative force equal to 0.75 times the vertical reaction at each suspension assembly, applied at the road surface. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank motor vehicle;

(3) The tensile or comprehensive stress generated by the bending moment resulting from a longitudinal decelerative force equal to 0.75 times the vertical reaction at each suspension assembly, applied at the road surface. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank motor vehicle;

(4) The tensile or compressive stress generated by the axial load resulting from a longitudinal accelerative force equal to 0.7 times the static weight of the fully loaded cargo tank, applied at the horizontal pivot of the upper coupler (fifth wheel) or turntable supporting the cargo tank motor vehicle;

(5) The tensile or compressive stress generated by the bending moment resulting from a longitudinal accelerative force equal to 0.75 times the static weight of the fully loaded cargo tank applied to the horizontal pivot of the upper coupler (fifth wheel) or turntable supporting the cargo tank motor vehicle; and

(6) The tensile or compressive stress generated by the bending moment resulting from a veritically up accelerative force equal to 0.7 times the vertical reaction, applied at each suspension assembly. The vertical reaction must be calculated based on the static weight of the lading, the weight of the

cargo tank and other structures and equipment supported by the cargo tank wall.

S_s=The following shear stresses, in psi, that apply:

(1) The vertical shear stress generated by a vertical force equal to 1.7 times the vertical reaction, applied at each suspension assembly. The vertical reaction must be calculated based on the static weight of the lading, the weight of the cargo tank and other structures and equipment supported by the cargo tank wall;

(2) The lateral shear stress generated by a lateral accelerative force equal to 0.4 times the vertical reaction, applied laterally at the road surface. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank motor vehicle; and

(3) The torsional shear stress generated by a lateral accelerative force equal to 0.4 times the vertical reaction, applied laterally at the road surface. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank motor vehicle.

(d) In order to account for stresses due to impact in an accident, the design calculations for the tank shell and heads must include the load resulting from the design pressure in combination with the dynamic pressure resulting from a longitudinal deceleration of "2g". For this loading condition the stress value used may not exceed the lesser of the yield strength or 75 percent of the ultimate tensile strength of the material of construction. For a cargo tank constructed of stainless steel, the maximum design stress may not exceed 75 percent of the ultimate tensile strength of the type steel used. For cargo tanks with internal baffles, the decelerative force may be reduced by "0.25g" for each baffle assembly, but in no case may the total reduction in decelerative force exceed "1g".

(e) In no case may the minimum thickness of the cargo tank wall be less than that prescribed in § 178.346–2, 178.347–2, or § 178.348–2, as applicable.

(f) For a cargo tank mounted on a frame or built with integral structural supports, the calculation of effective stresses for the loading conditions in paragraph (c) of this section may include the structural contribution of the frame or the integral structural supports.

(g) The design, construction, and installation of an appurtenance to the cargo tank must conform to the following requirements.

(1) Structural members, the suspension subframe, accident protection and external rings must be used as sites for attachment of appurtenances and other accessories to the cargo tank, when practicable.

(2) A lightweight attachment, such as a conduit clip, brakeline clip, skirting structure, lamp mounting bracket or placard holder, must be constructed of a material of lesser strength than the cargo tank wall materials and may not be more than 72 percent of the thickness of the material to which it is attached. The lightweight attachment may be secured directly to the cargo tank wall if the device is designed and installed in such a manner that, if damaged, it will not affect the lading retention integrity of the tank. A lightweight attachment must be secured to the tank shell or head by continuous weld or in such a manner as to preclude formation of pockets, which may become sites for incipient corrosion.

(3) Except as prescribed in paragraphs (g)(1) and (g)(2) of this section, the welding of any appurtenance to the cargo tank wall must be made by attachment of a mounting pad, so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force less than that prescribed in § 178.345–8(b)(1) of this subchapter is applied from any direction. The thickness of the mounting pad may not be less than that of the shell or head to which it is attached, and not more than 1.5 times the shell or head thickness. However, a pad with a minimum thickness of 0.187 inch may be used when the shell or head thickness is over 0.187 inch. If weep holes or tell-tale holes are used, the pad must be drilled or punched at its lowest point before it is welded. Each pad must—

(i) Extend at least 2 inches in each direction from any point of attachment of an appurtenance;

(ii) Have rounded corners, or otherwise be shaped in a manner to minimize stress concentrations on the shell or head; and

(iii) Be attached by a continuous weld around the pad except for a small gap at the lowest point for draining.

76. Section 178.345–7, as added at 54 FR 25023, on June 12, 1989, is revised to read as follows:

§ 178.345–7 Circumferential reinforcements.

(a) A tank with a shell thickness of less than ⅜ inch must be circumferentially reinforced with bulkheads, baffles, ring stiffeners, or any combination thereof, in addition to the tank heads.

(1) Circumferential reinforcement must be located so that the thickness and tensile strength of the shell material in combination with the frame and reinforcement produces structural integrity at least equal to that prescribed in § 178.345–3 and in such a manner that the maximum unreinforced portion of the shell does not exceed 60 inches. For cargo tanks designed to be loaded by vacuum, spacing of circumferential reinforcement may exceed 60 inches provided the maximum unreinforced portion of the shell conforms with the requirements of Section VIII, Division 1 of the ASME Code.

(2) Where discontinuity in the alignment of longitudinal shell sheets exceeds the greater of 10 degrees or eight inches, circumferential reinforcement must be located within one inch of the shell joint, unless otherwise reinforced with structural members are capable of maintaining shell stress levels authorized in § 178.345–3.

(b) Except for doubler plates and knuckle pads, no reinforcement may cover any circumferential joint.

(c) When a baffle or baffle attachment ring is used as a circumferential reinforcement member, it must produce structural integrity at least equal to that prescribed in § 178.345–3 and must be circumferentially welded to the tank shell. The welded portion may not be less than 50 percent of the total circumference of the tank and the length of any unwelded space on the joint may not exceed 40 times the shell thickness.

(d) When a ring stiffener is used as a circumferential reinforcement member, whether internal or external, it must be continuous around the circumference of the cargo tank shell and must be in accordance with the following:

(1) The section modulus about the neutral axis of the ring section parallel to the shell must be at least equal to that derived from the applicable formula:

$I/C = 0.00027WL$, for MS, HSLA and SS; or
$I/C = 0.000467WL$, for aluminum alloys;

[1] Where:

I/C=Section modulus in inches 3
W=Tank width, or diameter, inches
L=Spacing of ring stiffener, inches; i.e., the maximum longitudinal distance from the midpoint of the unsupported shell on one side of the ring stiffener to the midpoint of the unsupported shell on the opposite side of the ring stiffener.

(2) If a ring stiffener is welded to the tank shell, a portion of the shell may be considered as part of the ring section for purposes of computing the ring section modulus. This portion of the shell may be used provided at least 50 percent of the total circumference of the tank is welded and the length of any unwelded space on the joint does not exceed 40 times the shell thickness. The maximum portion of the shell to be used in these calculations is as follows:

Number of circumferential ring stiffener-to-shell welds	W [1]	Shell section
1		20t
2	Less than 20t.	20t+W
2	20t or more	40t

[1] where:
t=Shell thickness, inches;
W=Length of unwelded joint between parallel circumferential ring stiffener-to-shell welds.

(3) When used to meet the vacuum requirements of this section, ring stiffeners must be as prescribed in the ASME Code.

(4) If configuration of internal or external ring stiffener encloses an air space, this air space must be arranged for venting and be equipped with drainage facilities which must be kept operative at all times.

(5) Hat shaped or open channel ring stiffeners which prevent visual inspection of the tank shell are prohibited on cargo tank motor vehicles constructed of carbon steel.

77. In § 178.345–8, as added at 54 FR 25023, on June 12, 1989, the second sentence of paragraph (a)(3) is amended by removing the word "may" and adding, in its place, the word "must"; paragraphs (a) introductory text, (a)(1) introductory text, (a)(5), (b) introductory text, (c) introductory text, (d) introductory text, (d)(1), (d)(2)(i) and (d)(3) are revised to read as follows:

§ 178.345–8 Accident damage protection.

(a) *General.* Each cargo tank motor vehicle must be designed and constructed in accordance with the requirements of this section and the applicable individual specification to minimize the potential for the loss of lading due to an accident.

(1) Any dome, sump, or washout cover plate projecting from the cargo tank wall that retains lading in any tank orientation, must be as strong and tough as the cargo tank wall and have a thickness at least equal to that specified by the appropriate cargo tank specification. Any such projection located in the lower ⅓ of the tank circumference (or cross section perimeter for non-circular tanks) that extends more than half its diameter at the point of attachment to the tank or more than 4 inches from the cargo tank wall, or located in the upper ⅔ of the tank circumference (or cross section perimeter for non-circular tanks) that extends more than ¼ its diameter or more than 2 inches from the point of attachment to the tank must have accident damage protection that are:

* * * * *

(5) *Minimum road clearance.* The minimum allowable road clearance of any cargo tank motor vehicle component or protection device located between any two adjacent axles on a vehicle or vehicle combination must be at least one-half inch for each foot separating such axles, and in no case less than 12 inches.

(b) *Bottom damage protection.* Each outlet, projection or piping located in the lower ⅓ of the tank circumference (or cross section perimeter for non-circular tanks) that could be damaged in an accident thereby resulting in the loss of lading must be protected by a bottom damage protection device, except as provided by paragraph (a)(1) of this section and § 173.33(e) of this subchapter.

* * * * *

(c) *Rollover Damage Protection.* Each closure for openings, including but not limited to manhole, filling or inspection openings, and each valve, fitting, pressure relief device, vapor recovery stop valve or other lading retaining fitting located in the upper ⅔ of a cargo tank circumference (or cross section perimeter for non-circular tanks) must be protected by being enclosed inside the body of the tank, by being enclosed inside a rollover damage protection device, or by being 125 percent as strong as the otherwise required damage protection device.

* * * * *

(d) *Rear-end protection.* Each cargo tank motor vehicle must be provided with a rear-end protection device to protect the tank and piping in the event of a rear-end collision and reduce the likelihood of damage which could result in the loss of lading. The rear-end tank protection device must conform to the following requirements (Nothing in this paragraph shall be construed to relieve a manufacturer of responsibility for complying with the requirements of § 393.86 of this title):

(1) The rear-end tank protection device must be designed so that it can deflect at least 6 inches horizontally forward with no contact between any part of the cargo tank motor vehicle which contains lading during transit and with any part of the rear-end protection device, or with a vertical plane passing through the outboard surface of the protection device.

(2) * * *

(i) The bottom surface of the rear-end protection device must be at least 4 inches below the lower surface of any part at the rear of the cargo tank motor vehicle which contains lading during transit and not more than 60 inches from the ground when the vehicle is empty.

* * * * *

(3) The structure of the rear-end protection device and its attachment to the vehicle must be designed to satisfy the conditions specified in paragraph (d)(1) of this section when subjected to an impact of the cargo tank motor vehicle at rated payload, at a deceleration of 2 "g". The design stress level may be no more than one-half the ultimate strength of the materials used. Such impact must be considered uniformally and applied horizontally (parellel to the ground) from any direction at an angle not to exceed 30 degrees to the longitudinal axis of the vehicle.

78. In § 178.345–9, as added at 54 FR 25025, on June 12, 1989, paragraphs (c)–(g) are redesignated as paragraphs (d)–(h) respectively, a new paragraphs (c) is added, and paragraphs (a), (b), and newly designated paragraphs (d) and (h) are revised to read as follows:

§ 178.345–9 Pumps, piping, hoses and connections.

(a) Each loading or unloading pump mounted on a cargo tank motor vehicle that may pressurize the cargo tank must be provided with an automatic means to prevent internal pressure from exceeding the MAWP of the tank and tank-mounted equipment.

(b) Each hose, piping, stop-valve, lading retention fitting and closure must be designed for a bursting pressure of the greater of 100 psig or four times the MAWP.

(c) Each hose coupling must be designed for a bursting pressure of the greater of 120 psig or 4.8 times the MAWP of the cargo tank, and must be designed so that there will be no leakage when connected.

(d) Suitable provision must be made to allow for and prevent damage due to expansion, contraction, jarring, and vibration. Slip joints may not be used for this purpose in the lading retention system.

* * * * *

(h) Use of a nonmetallic pipe, valve or connection that is not as strong and heat resistant as the tank material is authorized only if such attachment is located outboard of the lading retention system.

79. In § 178.345–10, as added at 54 FR 25025, on June 12, 1989, the table heading in paragraph (e) introductory text is amended by removing the designation "Table 1." and adding, in its place, "Table I"; paragraphs (a), (b)(2), (b)(3), (b)(4), (c), (d), (e)

introductory text, (g)(1), and (h)(3) are revised to read as follows:

§ 178.345–10 Pressure relief.

(a) Each cargo tank must be equipped to relieve pressure and vacuum conditions in conformance with this section and the applicable individual specification. The pressure and vacuum relief system must be designed to operate and have sufficient capacity to prevent tank rupture or collapse due to over-pressurization or vacuum resulting from loading, unloading, or from heating and cooling of lading.

(b) * * *

(2) When provided by § 173.33(c)(1)(iii) of this subchapter, cargo tanks may be equipped with a normal vent. Such vents must be set to open at not less than 1 psig and must be designed to prevent loss of lading through the device in case of vehicle overturn.

(3) Each pressure relief system must be designed to prevent loss of liquid lading due to pressure surges caused by overturn or other accident. This requirement is satisfied by a pressure relief system designed to withstand with no loss of lading a dynamic pressure surge reaching 30 psig above the designed set pressure of the relief system and sustained above the set pressure for at least 60 milliseconds. Set pressure is a function of MAWP as set forth in paragraph (d) of this section.

(i) After August 31, 1992, each pressure actuated relief valve which is unseated by a dynamic pressure surge described in paragraph (a)(3) of this section must reseat to a leak-tight condition.

(A) This capability must be demonstrated by tests which subject pressure actuated relief valves to a dynamic pressure surge reaching 30 psig above the designed set pressure of the valve and sustained above the set pressure for at least 60 milliseconds. One approach to such a test procedure is outlined in TTMA RP No. 81—"Performance of Spring-Loaded Pressure Relief Valves on MC 306, MC 307, and MC 312 Tanks."

(B) The total volume of liquid released during the test may not exceed one gallon.

(ii) After August 31, 1995, each pressure relief system must be able to withstand the dynamic pressure surge described in paragraph (a)(3) of this section with no loss of lading. This requirement must be met regardless of vehicle orientation.

(4) Each reclosing pressure relief valve must be constructed and installed in such a manner as to prevent unauthorized adjustment of the relief valve setting.

* * * * *

(c) *Location of relief devices.* Each pressure relief device must communicate with the vapor space above the lading as near as practicable to the center of the vapor space. For example, on a tank designed to operate in a level attitude, the device should be positioned at the horizontal and transverse center of the tank; on tanks sloped to the rear, the device should be located in the forward half of the tank. The discharge from any device must be unrestricted. Protective devices which deflect the flow of vapor are permissible provided the required vent capacity is maintained.

(d) *Settings of pressure relief system.* The set pressure of the pressure relief system is the pressure at which it starts to open, allowing discharge.

(1) *Primary pressure relief system.* The set pressure of each primary relief valve must be no less than 120 percent of the MAWP, and no more than 132 percent of the MAWP. The valve must reclose at not less than 108 percent of the MAWP and remain closed at lower pressures.

(2) *Secondary pressure relief system.* The set pressure of each pressure relief valve used as a secondary relief device must be not less than 120 percent of the MAWP.

(e) *Venting capacity of pressure relief systems.* The pressure relief system (primary and secondary, including piping) must have sufficient venting capacity to limit the tank internal pressure to not more than the tank test pressure. The total venting capacity, rated at not more than the tank test pressure, must be at least that specified in Table I, except as provided in § 178.348–10(d).

* * * * *

(g) * * *

(1) At least 3 devices of each specific model must be tested for flow capacity at a pressure not greater than the test pressure of the cargo tank. For a device model to be certified, the capacities of the devices tested must fall within a range of plus or minus 5 percent of the average for the devices tested.

* * * * *

(h) * * *

(3) Set pressure, in psig; and

* * * * *

80. Section 178.345–11, as added at 54 FR 25026, on June 12, 1989, is revised to read as follows:

§ 178.345–11 Tank outlets.

(a) Each tank outlet that may contain lading in any tank attitude must be equipped with a stop-value or other leak-tight closure in accordance with this section. Tank outlets, closures and associated piping must be protected in accordance with § 178.345–8.

(b) A self-closing system must be provided to close loading/unloading outlets within 30 seconds of actuation. The self-closing system must consist of an internal self-closing stop-valve (with remote linkage and actuators) or external stop-valve (with energy source, remote linkage and actuator). In addition, the self-closing system must be designed according to the following:

(1) If the actuating system is damaged or sheared-off in an accident during transportation, each loading/unloading outlet must remain securely closed and capable of retaining lading.

(2) Any loading/unloading connection extending beyond an internal self-closing stop-valve or the innermost external stop-valve which is part of a self-closing system must be fitted with another stop-valve or other leak-tight closure at the end of such connection.

(3) It must be fitted with a remotely actuated means of closure located more than 10 feet from the loading/unloading connection where vehicle length allows, or on the end of the cargo tank farthest away from the loading/unloading connection. If a cable linkage is used, it must be corrosion resistant and effective in all types of environment and weather. In addition:

(i) When required by part 173 for materials that are flammable, pyrophoric, oxidizing or Poison B liquids, the remote means of closure must be activated by manual, mechanical, or thermal means. A thermally activated system must engage at a temperature not over 250° F. The means by which the system is thermally activated for closure must be located as close as practicable to the loading/unloading connection.

(ii) Cargo tanks intended exclusively for lading other than those specified in paragraph (b)(4)(i) of this section do not require thermally activated self-closing systems and may be activated by manual or mechanical means only.

81. Section 178.345–12 as added at 54 FR 25026, on June 12, 1989, is revised to read as follows:

§ 178.345–12 Gauging devices.

Each cargo tank, except a tank intended to be filled by weight, must be equipped with a gauging device that indicates the maximum permitted liquid level to within 0.5 percent of the nominal capacity as measured by volume or liquid level. Gauge glasses are not permitted.

82. In § 178.345–13, as added at 54 FR 25026, on June 12, 1989, paragraph (b)(2) is revised to read as follows:

§ 178.345–13 Pressure and leakage tests.

* * * * *

(b) * * *

(2) *Pneumatic method.* A pneumatic test may be used in place of the hydrostatic test. However, pneumatic pressure testing may involve higher risk than hydrostatic testing. Therefore, suitable safeguards must be provided to protect personnel and facilities should failure occur during the test. The tank must be pressurized with air or an inert gas. Test pressure must be reached gradually by increasing the pressure to one half of test pressure. Thereafter, the pressure must be increased in steps of approximately one tenth of the test pressure until test pressure is reached. Test pressure must be held for at least 5 minutes. The pressure must then be reduced to the inspection pressure which must be maintained while the entire cargo tank surface is inspected for leakage and other sign of defects. The inspection method must consist of coating all joints and fittings with a solution of soap and water or other equally sensitive method.

* * * * *

83. In § 178.345–14 as added at 54 FR 25027, on June 12, 1989, paragraph (e)(1) is amended by removing the entry "Fusible type _____" under the heading "Pressure relief devices", and paragraphs (b) introductory text, (b)(3), (b)(7)–(b)(15), (c)(1), (c)(2), (c)(8), and (d) are revised to read as follows:

§ 178.345–14 Marking.

* * * * *

(b) *Nameplate.* Each cargo tank must have a corrosion resistant nameplate permanently attached to it. The following information, in addition to any applicable information required by the ASME Code, must be marked on the tank nameplate (parenthetical abbreviations may be used):

* * * * *

(3) Tank (MAWP) in psig.

* * * * *

(7) Maximum design density of lading (Max. lading density), in pounds per gallon.

(8) Material specification number—shell (Shell matl, yyy***), where "yyy" is replaced by the alloy designation and "***" by the alloy type.

(9) Material specification number—heads (Head matl, yyy***), where "yyy" is replaced by the alloy designation and "***" by the alloy type.

Note.—When the shell and heads materials are the same thickness, they may be combined, (Shell&head matl, yyy***).

(10) Weld material (Weld matl.).

(11) Minimum thickness—shell (Min. shell-thick), in inches. When minimum shell thicknesses is not the same for different areas, show (top __, side __, bottom __, in inches).

(12) Minimum thickness—heads (Min. heads thick.), in inches.

(13) Manufactured thickness—shell (Mfd. shell thick.), top __, side __, bottom __, in inches. (Required when additional thickness is provided for corrosion allowance.)

(14) Manufactured thickness—heads (Mfd. heads thick.), in inches. (Required when additional thickness is provided for corrosion allowance.)

(15) Exposed surface area, in square feet

(c) * * *

(1) Cargo tank motor vehicle manufacturer (CTMV mfr.).

(2) Cargo tank motor vehicle certification date (CTMV cert. date), if different from the cargo tank certification date.

* * * * *

(8) Lining material (Lining), if applicable.

* * * * *

(d) *Multi-cargo tank cargo tank motor vehicle.* For a cargo tank motor vehicle having one cargo tank or having all its cargo tanks not separated by any void, the information required by paragraphs (b) and (c) of this section may be combined on one specification plate. When separated by a void, each cargo tank must have an individual nameplate as required in paragraph (b) of this section, unless all of the cargo tanks are identical. The cargo tank motor vehicle may have a combined nameplate and specification plate. When only one plate is used, the plate must be visible and not covered by insulation and the required information must be listed on the plate from front to rear in the order of the corresponding cargo tank location.

* * * * *

84. Section 178.345–15, as added at 54 FR 25028, on June 12, 1989, is revised to read as follows:

§ 178.345–15 Certification.

(a) At or before the time of delivery, the manufacturer of a cargo tank motor vehicle must provide certification documents to the owner of the cargo tank motor vehicle. The registration numbers of the manufacturer, the Design Certifying Engineer, and the Registered Inspector, as appropriate, must appear on the certificates (see subpart F, part 107 in subchapter B of this chapter).

(b) The manufacturer of a cargo tank motor vehicle made to any of these specifications must provide:

(1) For each design type, a certificate signed by a responsible official of the manufacturer and a Design Certifying Engineer certifying that the cargo tank motor vehicle design meets the applicable specification; and

(2) For each cargo tank motor vehicle, a certificate signed by a responsible official of the manufacturer and a Registered Inspector certifying that the cargo tank motor vehicle is constructed, tested and completed in conformance with the applicable specification.

(c) The manufacturer of a variable specification cargo tank motor vehicle must provide:

(1) For each design type, a certificate signed by a responsible official of the manufacturer and a Design Certifying Engineer certifying that the cargo tank motor vehicle design meets the applicable specifications; and

(2) For each variable specification cargo tank motor vehicle, a certificate signed by a responsible official of the manufacturer and a Registered Inspector certifying that the cargo tank motor vehicle is constructed, tested and completed in conformance with the applicable specifications. The certificate must include all the information required and marked on the variable specification plate.

(d) In the case of a cargo tank motor vehicle manufactured in two or more stages, each manufacturer who performs a manufacturing operation on the incomplete vehicle or portion thereof shall provide to the succeeding manufacturer, at or before the time of delivery, a certificate covering the particular operation performed by that manufacturer, including any certificates received from previous manufacturers, Registered Inspectors, and Design Certifying Engineers. Each certificate must indicate the portion of the complete cargo tank motor vehicle represented thereby, such as basic tank fabrication, insulation, jacket, lining, or piping. The final manufacturer shall provide all applicable certificates to the owner.

85. In § 178.346, as added at 54 FR 25028, on June 12, 1989, paragraphs (d)(3) and (d)(8) are revised to read as follows:

§ 178.346 Specification DOT 406; cargo tank motor vehicle.

§ 178.346–1 General requirements.

* * * * *

(d) * * *

(3) The knuckle radius of flanged heads must be at least three times the material thickness, and in no case less than 0.5 inch. Stuffed (inserted) heads may be attached to the shell by a fillet

weld. The knuckle radius and dish radius versus diameter limitations of UG–32 do not apply. Shell sections of cargo tanks designed with a non-circular cross section need not be given a preliminary curvature, as prescribed in UG–79(b).

* * * * *

(8) The following paragraphs in Parts UG and UW of the ASME Code, Section VIII, Division I do not apply: UG–11, UG–12, UG–22(g), UG–32(e), UG–34, UG–35, UG–44, UG–76, UG–77, UG–80, UG–81, UG–96, UG–97, and UW–13.1(f).

86. In § 178.346–2, as added at 54 FR 25028, on June 12, 1989, paragraph (a) Table I is amended by removing the column heading "Over 14 to 22" and adding, in its place, "Over 14 to 23", and by removing the column heading "23 and over" and adding, in its place, "Over 23"; and by revising Table I heading to read as follows:

§ 178.346–2 Material and thickness of material.

(a) * * *

TABLE I.—MINIMUM THICKNESS OF HEADS (OR BULKHEADS AND BAFFLES WHEN USED AS TANK REINFORCEMENT) USING MILD STEEL (MS), HIGH STRENGTH LOW ALLOY STEEL (HSLA), AUSTENITIC STAINLESS STEEL (SS) OR ALUMINUM (AL)—EXPRESSED IN DECIMALS OF AN INCH AFTER FORMING

* * * * *

87. In § 178.346–10, as added at 54 FR 25029, on June 12, 1989, paragraphs (b)(2), (c) and (d) are revised to read as follows:

§ 178.346–10 Pressure relief.

* * * * *

(b) * * *

(2) When intended for use only for lading meeting the requirements of § 173.33(c)(1)(iii) of this subchapter, the cargo tank may be equipped with a normal vent. Such vents must be set to open at not less than 1 psig and must be designed to prevent loss of lading through the device in case of vehicle upset.

(c) *Pressure settings of relief valves.*

(1) Notwithstanding the requirements in § 178.345–10, the set pressure of each primary relief valve must be not less than 125 percent of the MAWP or 3.3 psig, whichever is greater, and not more than 138 percent of the MAWP. The valve must close at no less than the MAWP and remain closed at lower pressures.

(2) Each vacuum relief device must be set to open at no more than 6 ounces vacuum.

(d) *Venting capacities.* (1) In addition to the requirements in § 178.345–10(e), the primary pressure relief valve must have a venting capacity of at least 6,000 SCFH of free air, rated at not greater than the tank test pressure.

(2) Each vacuum relief system must have sufficient capacity to limit the vacuum to 1 psig.

(3) If pressure loading or unloading devices are provided, the relief system must have adequate vapor and liquid capacity to limit the tank pressure to the cargo tank test pressure at maximum loading or unloading rate. The maximum loading and unloading rates must be included on the metal specification plate.

88. In § 178.346–13, as added at 54 FR 25029, on June 12, 1989, paragraph (c) is revised to read as follows:

§ 178.346–13 Pressure and leakage tests.

* * * * *

(c) *Leakage test.* (1) Any venting device set to discharge at less than the leakage test pressure must be removed or rendered inoperative during the leak test.

(2) Where applicable, the Environmental Protection Agency's "Method 27—Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure—Vacuum Test," as set forth in 40 CFR part 60, appendix A, is an acceptable alternate leakage test.

89. In § 178.347, as added at 54 FR 25029, on June 12, 1989, paragraphs (d) introductory text, (d)(3) and (d)(8) are revised to read as follows:

§ 178.347 Specification DOT 407; cargo tank motor vehicle.

* * * * *

(d) Each cargo tank built to this specification with MAWP of 35 psig or less must be "constructed in accordance with the ASME Code" except as modified herein:

* * * * *

(3) The knuckle radius of flanged heads must be at least three times the material thickness, and in no case less than 0.5 inch. Stuffed (inserted) heads may be attached to the shell by a fillet weld. The knuckle radius and dish radius versus diameter limitations of UG–32 do not apply for cargo tank motor vehicles with a MAWP of 35 psig or less.

* * * * *

(8) The following paragraphs in Parts UG and UW of the ASME Code, Section VIII, Division I do not apply: UG–11, UG–12, UG–22(g), UG–32(e), UG–34, UG–35, UG–44, UG–76, UG–77, UG–80, UG–81, UG–96, UG–97, and UW–13.1(f).

90. In § 178.347–2, as added at 54 FR 25030, on June 12, 1989, paragraph (a) Table I and II headings are revised to read as follows:

§ 178.347–2 Material and thickness of material.

(a) * * *

TABLE I.—MINIMUM THICKNESS OF HEADS (OR BULKHEADS AND BAFFLES WHEN USED AS TANK REINFORCEMENT) USING MILD STEEL (MS). HIGH STRENGTH LOW ALLOY STEEL (HSLA), AUSTENITIC STAINLESS STEEL (SS) OR ALUMINUM (AL)—EXPRESSED IN DECIMALS OF AN INCH AFTER FORMING

* * * * *

TABLE II.—MINIMUM THICKNESS OF SHELL USING MILD STEEL (MS). HIGH STRENGTH LOW ALLOY STEEL (HSLA), AUSTENITIC STAINLESS STEEL (SS) OR ALUMINUM (AL)—EXPRESSED IN DECIMALS OF AN INCH AFTER FORMING

* * * * *

91. In § 178.347–10, as added at 54 FR 25030, on June 12, 1989, paragraph (a) is amended by revising the reference "§ 178.340–10" to read "§ 178.345–10", and paragraphs (b) and (d) are revised to read as follows:

§ 178.347–10 Pressure relief.

* * * * *

(b) *Type and Construction.* Vacuum relief devices are not required for cargo tanks designed to be loaded by vacuum or built to withstand full vacuum.

* * * * *

(d) *Venting capacities.* (1) The vacuum relief system must limit the vacuum to less than 80 percent of the design vacuum capability of the cargo tank.

(2) If pressure loading or unloading devices are provided, the relief system must have adequate vapor and liquid capacity to limit the tank pressure to the cargo tank test pressure at maximum loading or unloading rate. The maximum loading or unloading rate must be included on the metal specification plate.

* * * * *

92. In § 178.348–1, as added at 54 FR 25031, on June 12, 1989, paragraphs (d),

(e)(1), (e)(2) introductory text, (e)(2)(iii) and (viii) are revised to read as follows:

§ 178.348–1 General requirements.

* * * * *

(d) Each cargo tank having a MAWP greater than 15 psig must be of circular cross-section.

(e) * * *

(1) MAWP greater than 15 psig must be "constructed and certified in conformance with the ASME Code"; or

(2) MAWP of 15 psig or less must be "constructed in accordance with the ASME Code," except as modified herein:

* * * * *

(iii) The knuckle radius of flanged heads must be at least three times the material thickness, and in no case less than 0.5 inch. Stuffed (inserted) heads may be attached to the shell by a fillet weld. The knuckle radius and dish radius versus diameter limitations of UG–32 do not apply for cargo tank motor vehicles with a MAWP of 15 psig or less. Shell sections of cargo tanks designed with a non-circular cross section need not be given a preliminary curvature, as prescribed in UG–79(b).

* * * * *

(viii) The following paragraphs in Parts UG and UW of the ASME Code, Section VIII, Division I do not apply: UG–11, UG–12, UG–22(g), UG–32(e), UG–34, UG–35, UG–44, UG–76, UG–77, UG–80, UG–81, UG–96, UG–97, and UW–13.1(f).

93. In § 178.348–2, as added at 54 FR 25031, on June 12, 1989, paragraph (a), in Table I, under the column "Volume capacity (gallons per inch)", the third entry is revised to read: "Thickness (inch), aluminum"; under the column "10 or less", the entry "Over 16 to 26 lbs" is revised to read "Over 16 lbs"; the Note following Table II is removed, and Table I and II headings are revised to read as follows:

§ 178.348–2 Material and thickness of material.

* * * * *

TABLE I.—MINIMUM THICKNESS OF HEADS (OR BULKHEADS AND BAFFLES WHEN USED AS TANK REINFORCEMENT) USING MILD STEEL (MS), HIGH STRENGTH LOW ALLOY STEEL (HSLA), AUSTENITIC STAINLESS STEEL (SS) OR ALUMINUM (AL)—EXPRESSED IN DECIMALS OF AN INCH AFTER FORMING

* * * * *

TABLE II.—MINIMUM THICKNESS OF SHELL USING MILD STEEL (MS), HIGH STRENGTH LO ALLOY STEEL (HSLA) OR AUSTENITIC STAINLESS STEEL (SS) OR ALUMINUM (AL)—EXPRESSED IN DECIMALS OF AN INCH AFTER FORMING

* * * * *

94. Section 178.348–9, as added at 54 FR 25032, or June 12, 1989, is revised to read as follows:

§ 178.348–9 Pumps, piping, hoses and connections.

Each pump and all piping, hoses and connections on each cargo tank motor vehicle must conform to § 178.345–9, except that the use of nonmetallic pipes, valves, or connections are authorized on DOT 412 cargo tanks.

95. In § 178.348–10, as added at 54 FR 25032, on June 12, 1989, paragraph (a) is amended by revising the reference "§ 178.340–10" to read "§ 178.345–10"; and paragraphs (b) and (d)(3) are revised to read as follows:

§ 178.348–10 Pressure relief.

* * * * *

(b) *Type and construction.* Vacuum relief devices are not required for cargo tanks designed to be loaded by vacuum or built to withstand full vacuum.

* * * * *

(d) * * *

(3) Cargo tanks used in dedicated service for materials classed as corrosive material, with no secondary hazard, may have a total venting capacity which is less than required by § 178.345–10(e). The minimum total venting capacity for these cargo tanks must be determined in accordance with the formula contained in § 178.270–11(d)(3). Use of the approximate values given for the formula in § 178.270–11(d)(3) is acceptable as this will provide a great vent capacity requirement.

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

96. The authority citation for part 180 is revised to read as follows:

Authority: 49 U.S.C. App. 1803; 49 CFR part 1.

§ 180.401 [Amended]

97. Section 180.401, as added at 54 FR 25033, on June 12, 1989, is amended by adding "107," immediately preceding "171".

98. In § 180.403, as added at 25033, on June 12, 1989, a definition for "Corrosive to the tank/valve" is added alphabetically and definitions for "Modification," "Owner," and "Repair" are revised to read as follows:

§ 180.403 Definitions.

* * * * *

Corrosive to the tank/valve means a lading meets the criteria for corrosivity specified in § 173.240 of this subchapter, for the material of construction of the tank or valve; or the lading has been shown through experience to be corrosive to the tank or valve.

* * * * *

Modification means any change to the original design and construction of a cargo tank or a cargo tank motor vehicle which affects its structural integrity or lading retention capability. Excluded from this category are the following:

(1) A change to motor vehicle equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and

(2) Replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

Owner means the person who owns a cargo tank motor vehicle used for the transportation of hazardous materials, or that person's authorized agent.

* * * * *

Repair means any welding on a cargo tank wall done to return a cargo tank or a cargo tank motor vehicle to its original design and construction specification, or to a condition prescribed for a later equivalent specification in effect at the time of the repair. Excluded from this category are the following:

(1) A change to motor vehicle equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and

(2) Replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

(3) Replacement of an appurtenance by welding to a mounting pad.

* * * * *

99. In § 180.405, as added at 54 FR 25033, on June 12, 1989, paragraph (c)(2)(iii) is amended by removing the words "MC 304 or cargo" and adding, in their place, the words "MC 304 cargo"; the last sentence in paragraph (e), and paragraphs (b), (f) introductory text, (f)(1)(ii) introductory text, (f)(2), (f)(4),

(g)(1), (g)(2), (h), and (k) introductory text are revised to read as follows:

§ 180.405 Qualification of cargo tanks.

* * * * *

(b) *Cargo tank specifications.* To qualify as an authorized packaging, each cargo tank must conform to this subpart, the applicable requirements specified in part 173 of this subchapter for the specific lading and, *where a DOT specification cargo tank is required,* an applicable specification in effect on the date the initial construction began: MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, MC 312, MC 330, MC 331, MC 338, DOT 406, DOT 407, or DOT 412 (§ 178.337, § 178.338, § 178.345, § 178.346, § 178.347, § 178.348 of this subchapter). However, construction of MC 306, MC 307, or MC 312 cargo tanks meeting the requirements of the applicable specification in effect on December 30, 1990, is authorized until August 31, 1993.

* * * * *

(e) * * * During the period the cargo tank is in service, the owner of a cargo tank that is remarked in this manner must retain at the owner's principal place of business a copy of the last exemption in effect.

(f) *MC 306, MC 307, MC 312 cargo tanks.* Either a Registered Inspector or a Design Certifying Engineer and the owner of a MC 306, MC 307 or MC 312 cargo tank motor vehicle constructed in accordance with and used under an exemption issued before December 31, 1990, that authorizes a condition specified in this paragraph shall examine the cargo tank motor vehicle and its design to determine if it meets the requirements of the applicable MC 306, MC 307 or MC 312 specification in effect at the time of manufacture, except as specified herein.

* * * * *

(1) * * *

(ii) An outlet equipped with a self-closing system which includes an external stop-valve must have the stop valve and associated piping protected within the vehicle's rear-end tank protection device, vehicle frame or an equally adequate accident damage protection device (See § 178.345–8 of this subchapter.) The self-closing system (See § 178.345–11 of this subchapter) must be equipped with a remotely actuated means of closure as follows:

* * * * *

(2) A vacuum-loaded cargo tank constructed after August 1, 1981, or the date specified in the applicable exemption, in conformance with paragraph (f)(1) of this section, except that an outlet is equipped with an external valve which is not part of a self-closing system:

(i) Must be equipped with a self-closing system prior to September 1, 1993.

(ii) May be remarked and certified in accordance with paragraphs (f)(5) and (6) of this section after the cargo tank motor vehicle has been equipped with the self-closing system.

* * * * *

(4) A vacuum-loaded cargo tank constructed prior to August 1, 1981, in conformance with paragraph (f)(1) of this section, except for paragraph (f)(1)(i) of this section, and an outlet is equipped with an external valve which is not part of a self-closing system:

(i) Must be equipped with a self-closing system prior to September 1, 1993.

(ii) May be remarked and certified in accordance with paragraphs (f)(5) and (6) of this section after the cargo tank motor vehicle has been equipped with the self-closing system.

* * * * *

(g) * * *

(1) On or before August 31, 1995, each owner of a cargo tank manufactured prior to December 31, 1990, authorized for the transportation of a hazardous material, must have the cargo tank equipped with manhole assemblies conforming with 49 CFR 178.345–5 except for the marking requirements in 49 CFR 178.345–5(e) and the hydrostatic testing requirement in 178.345–5(b) of this subchapter. Manhole assemblies installed on an MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, MC 310, MC 311 or MC 312 cargo tank prior to December 31, 1990, which are marked or certified in writing as conforming to TTMA RP No. 61 may be considered to be in compliance with this paragraph. Any manhole assembly installed on a cargo tank after December 30, 1990 must meet the requirements in 49 CFR 178.345–5.

(2) The owner of an MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, MC 310, MC 311, or MC 312 cargo tank manufactured prior to December 31, 1990, which is equipped with a manhole assembly or assemblies manufactured prior to December 31, 1990, which are not certified in conformance with TTMA RP No. 61 may have them certified in accordance with the Recommended Practice by the manufacturer of the manhole closure. Those manhole closures which the manufacturer cannot indentify and certify, or for which the manufacturer cannot be identified, may be tested and certified in accordance with TTMA TB No. 107. These certifications must be performed on or before August 31, 1995.

* * * * *

(h) *Pressure Relief System.* Properly functioning reclosing pressure relief valves and frangible or fusible vents need not be replaced. However, replacement is authorized on DOT MC-specification cargo tanks as provided in paragraph (c)(2) of this section. Reclosing pressure relief valves which are replaced for any reason must meet the following requirements:

(1) After August 31, 1992, replacements for any reclosing pressure relief valve must be capable of reseating to a leak-tight condition after a pressure surge, and the volume of lading released may not exceed one gallon. Specific performance requirements for these pressure relief valves are set forth in § 178.345–10(b)(3)(i) of this subchapter. This requirement applies to DOT 406, DOT 407 and DOT 412 cargo tank motor vehicles and to all DOT MC-specification cargo tanks except MC 330, MC 331 and MC 338; and

(2) After August 31, 1995, any reclosing pressure relief valve installed on any DOT 406, DOT 407 or DOT 412 cargo tank motor vehicle, either on new units or as replacements, must withstand pressure surges with no loss of lading regardless of vehicle orientation. Specific performance requirements for these pressure relief valves are set forth in § 178.345–10(b)(3)(ii) of this subchapter.

* * * * *

(k) *DOT specification cargo tank with no marked design pressure or a marked design pressure of less than 3 psig.* The owner of an MC 300, MC 301, MC 302, MC 303, MC 305, MC 306 or MC 312 cargo tank, which has a pressure relief system set at 3 psig, may mark or remark the cargo tank with an MAWP or design pressure of not greater than 3 psig.

* * * * *

100. In § 180.407, as added at 25035, on June 12, 1989, the section heading is revised, paragraphs (a)(4) and (a)(5) are redesignated as paragraphs (a)(5) and (a)(6) respectively, paragraph (e)(3) is removed and paragraphs (e)(4) through (e)(6) are redesignated as paragraphs (e)(3) through (e)(5) respectively, paragraphs (g)(1)(iii)–(viii) are redesignated as paragraphs (g)(1)(iv)–(ix) respectively; new paragraphs (a)(4), (d)(2)(ix), (f)(3), (f)(4) and (g)(1)(iii) are added; and paragraphs (b) introductory text, (b)(3), (c), (d)(1), (d)(2)(v)–(viii), (d)(3), (d)(4), (e)(2)(ii), (e)(3), (f)(1)(ii), (g)(5)(ii), (g)(6), (h)(1), (h)(3), (i) and

newly designated paragraphs (e)(3), and (g)(1)(ix) are revised, to read as follows:

§ 180.407 Requirements for test and inspection of specification cargo tanks.

(a) * * *

(4) Each cargo tank must be evaluated in accordance with the acceptable results of tests and inspections prescribed in § 180.411.

* * * * *

(b) *Conditions requiring test and inspection of cargo tanks.* Without regard to any other test or inspection requirements, a specification cargo tank must be tested and inspected in accordance with this section prior to further use if:

* * * * *

(3) The cargo tank has been out of hazardous materials transportation service for a period of one year or more. Each cargo tank that has been out of hazardous materials transportation service for a period of one year or more must be pressure tested in accordance with § 180.407(g) prior to further use.

(c) *Periodic test and inspection.* Each specification cargo tank must be tested and inspected as specified in the following table by an inspector meeting the qualifications in § 180.409.

COMPLIANCE DATES—INSPECTIONS AND RETESTS UNDER § 180.407(C)

Test or inspection (cargo tank specification, configuration, and service)	Date by which first test must be completed (see note 1)	Interval period after first test
External Visual Inspection:		
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1991	6 months.
All other cargo tanks	September 1, 1991	1 year.
Internal Visual Inspection:		
All insulated cargo tanks, except MC 330, MC 331, MC 338	September 1, 1991	1 year.
All cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year.
All other cargo tanks, except MC 338	September 1, 1995	5 years.
Lining Inspection:		
All lined cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year.
Leakage Test:		
All cargo tanks except MC 338	September 1, 1991	1 year.
Pressure Retest:		
(Hydrostatic or pneumatic) (See Notes 2 and 3)		
All cargo tanks which are insulated with no manhole or insulated and lined, except MC 338.	September 1, 1991	1 year.
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1992	2 years.
MC 330 and MC 331 cargo tanks in chlorine service	September 1, 1992	2 years.
All other cargo tanks	September 1, 1995	5 years.
Thickness Test:		
All unlined cargo tanks in corrosive service, except MC 338	September 1, 1992	2 years.

Note 1: If a cargo tank is subject to an applicable inspection or test requirement under the regulations in effect on December 30, 1990, and the due date (as specified by a requirement in effect on December 30, 1990) for completing the required inspection or test occurs before the compliance date listed in Table I, the earlier date applies.

Note 2: Pressure testing is not required for MC 330 and MC 331 cargo tanks in dedicated sodium metal service.

Note 3: Pressure testing is not required for uninsulated lined cargo tanks, with a design pressure or MAWP 15 psig or less, which receive an external visual inspection and lining inspection at least once each year.

(d) * * *

(1) Where insulation precludes external visual inspection, the cargo tank must be given a visual internal inspection in accordance with § 180.407(e). The tank must be hydrostatically or pneumatically tested in accordance with § 180.407(c) and (g) where:

(i) Visual inspection is precluded by both internal coating and external insulation, or

(ii) Visual inspection is precluded by external insulation, and the cargo tank is not equipped with a manhole or inspection opening.

(2) * * *

(v) Missing bolts, nuts and fusible links or elements must be replaced, and loose bolts and nuts must be tightened;

(vi) All markings on the cargo tank required by parts 178 and 180 must be legible;

(vii) The cargo tank motor vehicle must conform to parts 393 and 396 of this title (the Federal Motor Carrier Safety Regulations) and, where appropriate, part 571 of this title (the Federal Motor Vehicle Safety Standards);

(viii) All major appurtenances and structural attachments on the cargo tank including, but not limited to, suspension system attachments, connecting structures, and those elements of the upper coupler (fifth wheel) assembly that can be inspected without dismantling the upper coupler (fifth wheel) assembly must be inspected for any corrosion or damage which might prevent safe operation.

(ix) For cargo tanks transporting lading corrosive to the tank, areas covered by the upper coupler (fifth wheel) assembly must be inspected at least once in each two year period for corroded and abraded areas, dents, distortions, defects in welds, and any other condition that might render the tank unsafe for transportation service. The upper coupler (fifth wheel) assembly must be removed from the cargo tank for this inspection.

(3) All reclosing pressure relief valves must be externally inspected for any corrosion or damage which might prevent safe operation. All reclosing pressure relief valves on cargo tanks carrying lading corrosive to the valve must be removed from the cargo tank for inspection and testing. Each reclosing pressure relief valve required to be removed and tested must open at the required set pressure and reseat to a leak-tight condition at 90 percent of the set-to-discharge pressure or the pressure prescribed for the applicable cargo tank specification.

(4) Corroded or abraded areas of the cargo wall must be thickness tested in accordance with the procedures set forth in paragraphs (i)(2), (i)(3), (i)(5) and (i)(6) of this section.

* * * * *

(e) * * *

(2) * * *

(ii) Tank liners must be inspected as specified § 180.407(f).

(3) Corroded or abraded areas of the cargo tank wall must be thickness tested

in accordance with paragraphs (i)(2), (i)(3), (i)(5) and (i)(6) of this section.

* * * * *

(f) * * *

(1) * * *

(ii) The probe must be passed over the surface of the calibration block in a constant uninterrupted manner until the leak is found. The leak is detected when a white or light blue spark forms. (A leak-free lining causes a dark blue or purple spark.) The voltage must be adjusted to the lowest setting that will produce a minimum 0.5 inch spark, measured from the top of the lining to the probe. To assure that the setting on the probe has not changed, the spark tester must be calibrated periodically using the test calibration block and using the same power source, probe and cable length.

* * * * *

(3) Degraded or defective areas of the tank liner must be removed and tank wall below the defect must be inspected. Corroded areas of the tank wall must be thickness tested in accordance with § 180.407(i).

(4) The inspector must record the results of the lining inspection as specified in § 180.417(b).

(g) * * *

(1) * * *

(iii) Except for cargo tanks carrying lading corrosive to the tank, areas covered by the upper coupler (fifth wheel) assembly must be inspected for corroded and abraded areas, dents, distortions, defects in welds, and any other condition that might render the tank unsafe for transportation service. The upper coupler (fifth wheel) assembly must be removed from the cargo tank for this inspection.

* * * * *

(ix) *Pneumatic test method.* Pneumatic testing may involve higher risk than hydrostatic testing. Therefore, suitable safeguards must be provided to protect personnel and facilities should failure occur during the test. The tank must be pressurized with air or an insert gas. The pneumatic test pressure in the tank must be reached by gradually increasing the pressure to one-half of the test pressure. Thereafter, the pressure must be increased in steps of approximately one-tenth of the test pressure until the required test pressure has been reached. The test pressure must be held for at least 5 minutes. The pressure must then be reduced to the MAWP, which must be maintained during the time the entire tank surface is inspected. During the inspection, a suitable method must be used for detecting the existence of leaks. This method must consist either of coating the entire surface of all joints under pressure with a solution of soap and water, or using other equally sensitive methods.

* * * * *

(5) * * *

(ii) Pressure testing is not required for uninsulated lined cargo tanks, with a design pressure or MAWP of 15 psig or less, which receive an external visual inspection and a lining inspection at least once each year.

(6) *Acceptance criteria.* A cargo tank that leaks, fails to retain test pressure or pneumatic inspection pressure, shows distortion, excessive permanent expansion, or other evidence of weakness that might render the cargo tank unsafe for transportation service, may not be returned to service, except as follows: A cargo tank with a heating system which does not hold pressure may remain in service as an unheated cargo tank if:

(i) The heating system remains in place and is structurally sound and no lading may leak into the heating system, and

(ii) The specification plate heating system information is changed to indicate that the cargo tank has no working heating system.

* * * * *

(h) * * *

(1) Each cargo tank must be leak tested in accordance with § 180.407(c). The cargo tank, with all valves and accessories in place and operative, must be tested at not less than 80 percent of the tank design pressure or MAWP, whichever is marked on the certification or specification plate. Any venting device set to discharge at less than the leakage test pressure must be removed or rendered inoperative during the test. The pressure must be maintained for at least 5 minutes. The leakage test must include product piping. MC 330 and MC 331 cargo tanks may be leak tested with the hazardous materials contained in the tank during the test. Suitable safeguards shall be provided to protect employees and other persons should a failure occur. A cargo tank with an MAWP not less than 100 psig, which is in dedicated service or services, may be leakage tested at its normal operating pressure. No cargo tank may be operated at a pressure which is greater than the pressure to which it has been leakage tested within the previous year.

* * * * *

(3) A cargo tank that fails to retain leakage test pressure may not be returned to service as a specification cargo tank, except under conditions specified in § 180.411(d).

* * * * *

(i) *Thickness testing.* (1) The shell and head thickness of all unlined cargo tanks used for the transportation of materials corrosive to the tank must be measured at least once every 2 years, except that cargo tanks measuring less than the sum of the minimum prescribed thickness, plus one-fifth of the original corrosion allowance, must be tested annually.

(2) Measurements must be made using a device capable of accurately measuring thickness to within +/− 0.002 of an inch.

(3) Any person performing thickness testing must be trained in the proper use of the thickness testing device used in accordance with the manufacturer's instruction.

(4) Thickness testing must be performed in the following areas of the cargo tank wall, as a minimum:

(i) Areas of the tank shell and heads and shell and head area around any piping that retains lading;

(ii) Areas of high shell stress such as the bottom center of the tank;

(iii) Areas near openings;

(iv) Areas around weld joints;

(v) Areas around shell reinforcements;

(vi) Areas around appurtenance attachments;

(vii) Areas near upper coupler (fifth wheel) assembly attachments;

(viii) Areas near suspension system attachments and connecting structures; and

(ix) Known thin areas in the tank shell and nominal liquid level lines.

(5) An owner of a cargo tank that no longer conforms with the minimum thickness prescribed for the maximum lading density marked on the specification plate may use the cargo tank to carry lading of lower density under the following conditions:

(i) A Design Certifying Engineer must certify that the cargo tank design and thickness is appropriate for the lower density lading, by issuance of a new manufacturer's certificate, and

(ii) The tank's nameplate must be changed to reflect the new service limits (maximum density of lading).

(6) an owner of a cargo tank that no longer conforms with the minimum thickness prescribed for the specification may not return the cargo tank to hazardous materials service. The tank's specification plate must be removed, obliterated or covered in a secure manner.

(7) The inspector must record the results of the thickness test as specified in § 180.417(b).

101. Section 180.409, as added at 54 FR 25038, on June 12, 1989, is revised to read as follows:

§ 180.409 Minimum qualifications for inspectors and testers.

(a) Any person performing or witnessing the inspections and tests specified in § 180.407(c) must—

(1) Be registered with the Department in accordance with part 107, subpart F of this chapter, and

(2) Be familiar with DOT specification cargo tanks and must be trained and experienced in use of the inspection and testing equipment needed.

(b) A motor carrier or cargo tank owner may use an employee who is not a Registered Inspector to perform the pressure testing required by § 180.407(c), if—

(1) the employee is familiar with the cargo tank and is trained and experienced in the use of the inspection and testing equipment used;

(2) the employer submits certification that such employee meets the qualification requirements to the Director, Office of Hazardous Materials Transportation, Attn: (DHM–32), Research and Special Programs Administration, Department of Transportation, 400 Seventh Street, SW, Washington, DC 20590; and

(3) the employer retains a copy of the tester's qualifications with the documents required by § 180.417(b).

105. In § 180.413, as added at 54 FR 20538, on June 12, 1989, paragraph (a) introductory text, the last sentence in paragraph (b)(1)(vi)(A), and paragraphs (b)(5), (c), (d)(1) introductory text, (d)(1)(iii) and (v), and (d)(3) are revised to read as follows:

§ 180.413 Repair, modification, stretching, or rebarrelling of a cargo tank.

(a) For purposes of this section only, "stretching" is not considered a "modification", and "rebarrelling" is not considered a "repair." Any repair, modification, stretching, or rebarrelling of a cargo tank must be performed in conformance with the requirements of this section. Except for work performed on a MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, or MC 312 before January 1, 1992, the repair, modification, stretching, or rebarrelling must be performed by:

* * * * *

(b) * * *

(1) * * *

(vi) * * *

(A) * * * When any repair is made of defects revealed by the wet fluorescent magnetic particle inspection, including those by grinding, the affected area of the cargo tank must again be examined by the wet fluorescent magnetic particle method after hydrostatic testing to assure that all defects have been removed.

* * * * *

(5) Each owner of a cargo tank must retain at its principal place of business all records of repairs or modifications made to each tank during the time the tank is in service and for one year thereafter. Copies of these records may be retained by a motor carrier, who is not the owner, at its principal place of business during the period the tanks is in the carrier's service.

(c) *Maintenance or replacement of piping, valves, hoses or fittings.* In the event of repair, maintenance or replacement, any piping, valve, or fitting must be properly installed in accordance with the provisions of the applicable specification before the cargo tank is returned to hazardous materials service. After maintenance or replacement which does not involve welding on the cargo tank wall, piping, valves and fittings must be leak tested. After repair or replacement of piping, valves or fittings which involves welding on the cargo tank wall, the cargo tank, including the repaired or replaced piping, valve, or fitting must be hydrostatically pressure tested in accordance with the applicable specification. Hoses permanently attached to the cargo tank must be tested either before or after installation.

(d) * * *

(1) All new material and equipment, and equipment affected by the stretching or rebarrelling conform with requirements of the specification in effect at the time of such work. Stretching or rebarrelling must be performed such that the cargo tank, as stretched or rebarrelled, meets the structural integrity requirements (§ 178.337–3, § 178.338–8, or § 178.345–3, as applicable) of the specification in effect at the time of such work, as follows:

* * * * *

(iii) Assure compliance with all applicable Federal Motor Carrier Safety Regulations for any newly installed safety equipment;

* * * * *

(v) Change the existing specification plate to reflect the cargo tank as modified, attach a supplemental specification plate noting appropriate changes that have been made to the cargo tank, or remove the existing specification plate and attach a new specification plate to the cargo tank;

* * * * *

(3) The design of the rebarrelled or stretched cargo tank must be certified by a Design Certifying Engineer registered in accordance with subpart F of part 107. The Design Certifying Engineer must certify that the rebarrelled or stretched cargo tank meets the structural integrity requirements of the applicable specification. The person performing the stretching or rebarrelling and a Registered Inspector must certify that the cargo tank is in accordance with this section and the applicable specification by issuing a supplemental manufacturer's certificate. The registration number of the Registered Inspector must be entered on the certificate.

103. Section 180.415, as added at 54 FR 25039, on June 12, 1989, is revised to read as follows:

§ 189.415 Test and inspection markings.

Each cargo tank successfully completing the test and inspection requirements contained in § 180.407 must be marked as specified in this section. Each cargo tank must be durably and legibly marked, in English, with the test date (month and year) followed by the type of test or inspection. The marking must be in letters and numbers at least 1¼ inches high, on the tank shell near the specification plate, or anywhere on the front head. For a cargo tank motor vehicle composed of multiple cargo tanks constructed to the same specification, which are tested and inspected at the same time, one set of test and inspection markings may be used to satisfy the requirements of this section. For a cargo tank motor vehicle composed of multiple cargo tanks constructed to different specifications, which are tested and inspected at different intervals, the test and inspection markings must appear in the order of the cargo tank's corresponding location, from front to rear. The type of test or inspection may be abbreviated as follows: V for external visual inspection and test; I for internal visual inspection: P for pressure retest: L for lining test, K for leakage test; and T for thickness test. For example, the marking "10–85 P, V, L" would indicate that in October 1985 the cargo tank received and pass the prescribed pressure retest, external visual inspection and test, and the lining inspection.

104. In § 180.417, as added at 54 FR 25039, on June 12, 1989, the first sentence in paragraph (a)(1) is amended by adding the word "specification" immediately preceding the words "cargo tank" each place it appears; the second sentence in paragraph (a)(3)(ii) is amended by removing the words "Authorized Inspector" and adding, in its place, the words "Registered

Inspector"; and paragraphs (b)(1)(vi) and (b)(1)(viii) are revised to read as follows:

§ 180.417 Reporting and record retention requirements.

* * * * *

(b) * * *

(1) * * *

(vi) Name and address of person performing the test, the DOT registration number of the facility or the person performing the test;

* * * * *

(viii) DOT registration number of the inspector, and dated signature of inspector and owner.

* * * * *

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Douglas Ham,

Deputy Administrator, Research and Special Programs Administration.

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