Aviation Administration published a Notice of Proposed Rulemaking which would amend § 71.181 of Part 71 of the Federal Aviation Regulations so as to designate a transition area at West Plains, Missouri. Interested persons were invited to participate in this rulemaking proceeding by submitting written comments on the proposal to the FAA. No objections were received as a result of the Notice of Proposed Rulemaking.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule will not have significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Aviation safety, Transition areas.

Adoption of the Amendment

PART 71—[Amended]

Accordingly, pursuant to the authority delegated to me, the Federal Aviation Administration (FAA) amends Part 71 of the FAR (14 CFR Part 71) as follows:

1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 1348(a), 1354(a), 1510; Executive Order 10854; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); 14 CFR 11.69.

2. By amending § 71.181 as follows:

West Plains, Missouri

That airspace extending upward from 700 feet above the surface within a 7 mile radius of the West Plains Municipal Airport (latitude 36°52'43" N., longitude 91°54'08" W.), within 3 miles each side of the West Plains NDB (UNO) (latitude 36°52'42" N., longitude 91°54'02" W.) 185° bearing extending from the 7 mile radius to 8.5 miles south of the West Plains NDB.

This amendment becomes effective at 0901 G.m.t., March 13, 1986.

Issued in Kansas City, Missouri, on December 19, 1985.

Edwin S. Harris,

Director, Central Region.

[FR Doc. 86-115 Filed 1-3-86; 8:45 am]

BILLING CODE 4910-13-M

14 CFR Part 71

[Airspace Docket No. 85-AEA-8]

Designation of Transition Area, Moneta, VA

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment designates a transition area at Moneta, VA. A new VOR/DME Runway 23 instrument approach procedure has been developed to the Smith Mountain Lake Airport. The transition area is to provide protected airspace for aircraft departing/arriving under instrument flight rules (IFR).

EFFECTIVE DATE: 0901 G.m.t., May 8, 1986.

FOR FURTHER INFORMATION CONTACT: Joseph Kelley, Airspace and Procedures Branch, AEA-530, Air Traffic Division, Federal Aviation Administration, Fitzgerald Federal Building, J.F.K. International Airport, Jamaica, New York 11430; Telephone: (718) 917-1228.

SUPPLEMENTARY INFORMATION:

History

On October 12, 1985, the FAA proposed to amend Part 71 of the Federal Aviation Regulations (14 CFR Part 71) to establish a transition area at Smith Mountain Lake Airport, VA, to provide controlled airspace from 700 feet above the surface for IFR arrival/departure aircraft at Smith Mountain Lake Airport (50 FR 46450). A new VOR/DME Runway 23 instrument approach procedure has been developed to the Smith Mountain Lake Airport. Interested parties were invited to participate in this proposed rulemaking proceeding by submitting written comments on the proposal to the FAA. No comments objecting to the proposal were received. Except for editorial changes, this amendment is the same as that proposed in the notice. Section 71.181 of Part 71 of the Federal Aviation Regulations were republished in Handbook 7460.6 dated January 3, 1984.

The Rule

This amendment to Part 71 of the Federal Aviation Regulations designates a new transition area at Smith Mountain Lake Airport, VA. A new VOR/DME Runway 23 approach procedure has been developed to the Smith Mountain Lake Airport. This action provides protected airspace for aircraft arriving/departing under instrument flight rules.

The FAA has determined that this amendment only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore: (1) Is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Transition areas, Aviation safety.

Adoption of the Amendment

PART 71—[Amended]

Accordingly, pursuant to the authority delegated to me, Part 71 of the Federal Aviation Regulations (14 CFR Part 71) is amended, as follows:

1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 1348(a), 1354(a), 1510; Executive Order 10854; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); 14 CFR 11.69.

2. Section 71.181 is amended as follows:

Moneta, VA [New]

That airspace extending upward from 700 feet above the surface within a five statute mile radius of the Smith Mountain Lake Airport (lat. 37°06'28" N., long. 79°35'34" W.); and within 1.5 miles each side of the Lynchburg VORTAC 242° radial, extending from the five mile radius area to seven miles northeast of the airport.

Issued in Jamaica, New York, on December 13, 1985.

Timothy L. Hartnett,

Acting Director, Eastern Region.

[FR Doc. 86-112 Filed 1-3-86; 8:45 am]

BILLING CODE 4910-13-M

14 CFR Part 97

[Docket No. 24877; Amdt. No. 1311]

Standard Instrument Approach Procedures; Miscellaneous Amendments

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment establishes, amends, suspends, or revokes Standard Instrument Approach Procedures (SIAPs) for operations at certain

airports. These regulatory actions are needed because of the adoption of new or revised criteria, or because of changes occurring in the National Airspace System, such as the commissioning of new navigational facilities, addition of new obstacles, or changes in air traffic requirements. These changes are designed to provide safe and efficient use of the navigable airspace and to promote safe flight operations under instrument flight rules at the affected airports.

DATES: *Effective:* An effective date for each SIAP is specified in the amendatory provisions.

Incorporation by reference—approved by the Director of the **Federal Register** on December 31, 1980, and reapproved as of January 1, 1982.

ADDRESSES: Availability of matters incorporated by reference in the amendment is as follows:

For Examination—

1. FAA Rules Docket, FAA Headquarters Building, 800 Independence Avenue, SW., Washington, DC 20591;

2. The FAA Regional Office of the region in which the affected airport is located; or

3. The Flight Inspection Field Office which originated the SIAP.

For Purchase—

Individual SIAP copies may be obtained from:

1. FAA Public Inquiry Center (APA-430), FAA Headquarters Building, 800 Independence Avenue, SW., Washington, DC 20591; or

2. The FAA Regional Office of the region in which the affected airport is located.

By Subscription—

Copies of all SIAPs, mailed once every 2 weeks, are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

FOR FURTHER INFORMATION CONTACT: Donald K. Funai, Flight Procedures Standards Branch (AFO-230), Air Transportation Division, Office of Flight Operations, Federal Aviation Administration, 800 Independence, SW., Washington, DC 20591; telephone (202) 426-8277.

SUPPLEMENTARY INFORMATION: This amendment to Part 97 of the Federal Aviation Regulations (14 CFR Part 97) prescribes new, amended, suspended, or revoked Standard Instrument Approach Procedures (SIAPs). The complete regulatory description of each SIAP is contained in official FAA form documents which are incorporated by reference in this amendment under 5 U.S.C. 552(a), 1 CFR Part 51, and § 97.20 of the Federal Aviation Regulations (FARs). The applicable FAA Forms are identified as FAA Forms 8260-3, 8260-4, and 8260-5. Materials incorporated by reference are available for examinations or purchase as stated above.

The large number of SIAPs, their complex nature, and the need for a special format make their verbatim publication in the **Federal Register** expensive and impractical. Further, airmen do not use the regulatory text of the SIAPs, but refer to their graphic depiction on charts printed by publishers of aeronautical materials. Thus, the advantages of incorporation by reference are realized and publication of the complete description of each SIAP contained in FAA form document is unnecessary. The provisions of this amendment state the affected CFR (and FAR) sections, with the types and effective dates of the SIAPs. This amendment also identifies the airport, its location, the procedure identification and the amendment number.

This amendment to Part 97 is effective on the date of publication and contains separate SIAPs which have compliance dates stated as effective dates based on related changes in the National Airspace System or the application of new or revised criteria. Some SIAP amendments may have been previously issued by the FAA in a National Flight Data Center (FDC) Notice to Airman (NOTAM) as an emergency action of immediate flight safety relating directly to published aeronautical charts. The circumstances which created the need for some SIAP amendments may require making them effective in less than 30 days. For the remaining SIAPs, an effective date at least 30 days after publication is provided.

Further, the SIAPs contained in this amendment are based on the criteria contained in the U.S. Standard for Terminal Instrument Approach Procedures (TERPs). In developing these SIAPs, the TERPs criteria were applied to the conditions existing or anticipated at the affected airports. Because of the close and immediate relationship between these SIAPs and safety in air commerce, I find that notice and public procedure before adopting these SIAPs is unnecessary, impracticable, and contrary to the public interest and, where applicable, that good cause exists for making some SIAPs effective in less than 30 days.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. For the same reason, the FAA certifies that this amendment will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 97

Approaches, Standard instrument, Aviation safety.

Issued in Washington, DC on December 27, 1985.

John S. Kern,

Acting Director of Flight Standards.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me, Part 97 of the Federal Aviation Regulations (14 CFR Part 97) is amended by establishing, amending, suspending, or revoking Standard Instrument Approach Procedures, effective at 0901 G.M.T. on the dates specified, as followed:

PART 97—[AMENDED]

1. The authority citation for Part 97 continues to read as follows:

Authority: 49 CFR 1348, 1354(a), 1421, and 1510; 49 U.S.C. 106(g) (revised, Pub. L. 97-449, January 12, 1983; and 14 CFR 11.49(b)(3)).

2. By amending: § 97.23 VOR, VOR/DME, VOR or TACAN, and VOR/DME or TACAN; § 97.25 LOC, LOC/DME, LDA, LDA/DME, SDF, SDF/DME; § 97.27 NDB, NDB/DME; § 97.29 ILS, ILS/DME, ISMLS, MLS, MLS/DME, MLS/RNAV; § 97.31 RADAR SIAPs; § 97.33 RNAV SIAPs; and § 97.35 COPTER SIAPs, identified as follows:

. . . Effective 13 March, 1986

Oakland, CA—Metropolitan Oakland Intl. NDB Rwy 27R, Amdt. 3
Lihue, HI—Lihue, ILS Rwy 35, Amdt. 4

. . . Effective 13 February, 1986

Selma, AL—Craig Field, VOR Rwy 32, Amdt. 3
Mountain View, AR—Harry F. Wilcox Mem Fld, NDB-A, Original
Chester, CT—Chester, RNAV Rwy 17, Orig
Metter, GA—Metter Muni, NDB Rwy 9, Orig
Hailey, ID—Friedman Memorial, NDB-A, Original, Canceled
Bangor, ME—Bangor Intl, VOR/DME Rwy 33, Amdt. 4
Sanford, ME—Sanford Muni, VOR Rwy 7, Amdt. 2
Sanford, ME—Sanford Muni, VOR Rwy 25, Amdt. 12
Frederick, MD—Frederick Muni, VOR Rwy 23, Amdt. 8

Detroit, MI—Detroit Metropolitan Wayne County, ILS Rwy 3L, Amdt. 9
Detroit, MI—Detroit Metropolitan Wayne County, ILS Rwy 3R, Amdt. 8
Detroit, MI—Detroit Metropolitan Wayne County, ILS Rwy 21L, Amdt. 4
Detroit, MI—Detroit Metropolitan Wayne County, ILS Rwy 21R, Amdt. 21
Helena, MT—Helena Regional, ILS Rwy 26, Amdt. 7
Jamestown, NY—Chautauqua County, VOR/DME Rwy 7, Amdt. 3
Malone, NY—Malone-Dufort, VOR-DME-A, Original
Saranac Lake, NY—Adirondack, NDB Rwy 23, Amdt. 4
Lima, OH—Lima Allen County, ILS Rwy 27, Orig
Wapakoneta, OH—Neil Armstrong, VOR-A, Amdt. 4
Wapakoneta, OH—Neil Armstrong, RNAV Rwy 26, Amdt. 2
Bend, OR—Bend Municipal, VOR/DME Rwy 16, Amdt. 6
Grove City, PA—Grove City, VOR-A, Amdt. 4
Pittsburgh, PA—Greater Pittsburgh Intl, RADAR-1, Amdt. 23, Canceled
Galax/Hillsville, VA—Twin County, VOR/DME Rwy 18, Amdt. 4
Martinsville, VA—Blue Ridge, SDF Rwy 30, Orig
Martinsville, VA—Blue Ridge, NDB Rwy 30, Amdt. 1
Seattle, WA—Seattle-Tacoma Intl, VOR Rwy 16L/R, Amdt. 10
Seattle, WA—Seattle-Tacoma Intl, NDB Rwy 16L/R, Amdt. 5

Effective 16 January, 1986

Pago Pago, American Samoa—Pago Pago Intl, VOR/DME or TACAN-A, Amdt. 3
Pago Pago, American Samoa—Pago Pago Intl, VOR/DME or TACAN-B, Amdt. 3
Pago Pago, American Samoa—Pago Pago Intl, VOR-D, Amdt. 5
Pago Pago, American Samoa—Pago Pago Intl, NDB-C, Amdt. 5
Peipeinimaru, N. Mariana Islands—West Tinian, NDB-A, Original

Effective 24 December, 1985

Corpus Christi, TX—Corpus Christi Intl, VOR or TACAN Rwy 17, Amdt. 24
Rockport, TX—Aransas Co, NDB 1 Rwy 14, Amdt. 5
Rockport, TX—Aransas Co, NDB 2 Rwy 14, Amdt. 1

Effective 23 December, 1985

Toledo, OH—Toledo Express, ILS Rwy 7, Amdt. 21

Effective 19 December, 1985

Flint, MI—Bishop, ILS Rwy 9, Amdt. 19
Fond du Lac, WI—Fond du Lac County, SDF Rwy 36, Amdt. 5

[FR Doc. 86-119 Filed 1-3-86; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Part 37

[Docket No. RM85-19-000; Order No. 442]

Generic Determination of Rate of Return on Common Equity for Public Utilities

Issued December 26, 1985.

AGENCY: Federal Energy Regulatory Commission, DOE.

ACTION: Final rule.

SUMMARY: The Federal Energy Regulatory Commission (Commission) determines that the average cost of common equity for the jurisdictional operation of electric utilities during the year ending June 30, 1985, was 15.36 percent. The Commission also determines an average "ratemaking rate of return" of 14.37 percent for the same period. The average "ratemaking rate of return" will be the basis for the quarterly benchmark rates of return.

The Commission also amends the quarterly indexing procedure which establishes and updates the benchmark rates of return. Pursuant to this rule, new benchmarks will be established for filings made after February 1, 1986.

As indicated in § 37.8 of the Commission's regulations, these benchmark rates of return are advisory only. The benchmark rates of return established as a result of this proceeding are intended to guide companies and intervenors in individual rate cases and to serve as a reference point for the Commission in its deliberations. The Commission may take official notice of them in individual rate proceedings.

EFFECTIVE DATE: The final rule is effective February 1, 1986.

FOR FURTHER INFORMATION CONTACT:

Marvin Rosenberg, Chief, Financial Analysis Branch, Office of Regulatory Analysis, Federal Energy Regulatory Commission, 825 N. Capitol Street, NE., Washington, DC 20426, (202) 357-8283

or

Ronald Rattey, Office of Regulatory Analysis, Federal Energy Regulatory Commission, 825 N. Capitol Street, NE., Washington, DC 20236, (202) 357-8282.

SUPPLEMENTARY INFORMATION:

Table of Contents

Table of Contents—Continued

I. Introduction

In accordance with the new Part 37 of its Regulations, as amended herein, the Federal Energy Regulatory Commission (Commission) is determining in this order: (1) The average cost of common equity and (2) the average "ratemaking rate of return" [1] on common equity for the jurisdictional operations of public utilities [2] for the year ending June 30, 1985 (hereafter the "base year"), and (3) a quarterly indexing procedure to update the cost estimate and establish benchmark rates of return on common equity for use in individual rate cases. This is the second annual proceeding. The benchmark rates of return established in this proceeding are advisory only.

The Commission's intent is to produce more accurate and consistent rate of return decisions, to involve the Commission on an ongoing basis in a consideration of the financial and operating circumstances of the industry and, ultimately, to reduce the resources directed to this issue by applicants, intervenors, and the Commission.[3] We have previously discussed the statutory requirements applicable to electric rates subject to the Commission's jurisdiction and the Commission's reasons for attempting to develop a generic or benchmark approach to the measurement of the cost of common equity for individual electric utilities in rate cases.[4] The Commission's statements in Order No. 420 continue to hold true for this second year of the advisory period.

On July 19, 1985, the Commission issued a Notice of Proposed Rulemaking (NORP) in Docket No. RM85–19–000 [5] proposing to determine (1) the average cost of common equity for the jurisdictional operations of public utilities for the base year and (2) a quarterly indexing procedure to establish benchmark rates of return on common equity for use in individual rate cases. The Commission proposed:

(1) To place primary reliance on the Discounted Cash Flow (DCF) method for estimating the market required rate of return on common equity;

(2) To use an industry average flotation cost adjustment (reflecting issuance costs only) to the market required rate of return; and

(3) To use a quarterly indexing procedure based on changes in the median dividend yield for a sample of 100 electric utilities.

In the NOPR, the Commission made more detailed proposals with regard to implementing these three basic proposals.

These more detailed proposals will be discussed herein as the Commission proceeds with its discussion of the components of the determination of the average cost of common equity for the base period and of the quarterly indexing procedure.

As indicated in Section 37.8 of the Commission's regulations, these benchmark rates of return are advisory only. The benchmark rates established as a result of this proceeding are intended to guide companies and intervenors in individual rate cases and to serve as a reference point for the Commission in its deliberations. The Commission may take official notice of them in individual rate proceedings and the Commission will determine the weight to accord these benchmark rates based on the record in each case. In this regard, the Commission urges participants in rate cases to evaluate the reasonableness of the applicable benchmark in light of any special circumstances of the filing utility.[6] The Commission is using the results from the initial two year advisory period under Part 37 as a test of the likely consequences of making application of the generic rate of return a rebuttable presumption in rate cases.

In responses to the NOPR, 22 parties submitted comments: 16 individual utilities or groups of utilities, an electric utility trade association, 4 individual utility customers, groups of utility customers or representatives of utility customers, and 1 regulatory commission staff.[7] Most of the comments favored primary reliance on the DCF approach to estimate the cost of common equity and several included comprehensive studies estimating the cost during the base year. Most commenters also favored the Commission's proposal to incorporate an estimate of the industry average flotation cost in the benchmark rate of return. Finally, there was general support for the use of a dividend yield-based indexing mechanism and for the imposition of some limit on the quarterly changes in the benchmark.

In response to the comments and after consideration of the issues involved, the Commission has decided to adopt a procedure for determining and updating the benchmark rate of return that is different in three respects from the procedure used in the first annual proceeding:

(1) It uses a formulation of the DCF model that is somewhat different from the one that the Commission adopted in the last proceeding and proposed in the NOPR, to reflect more accurately the timing and growth of quarterly dividend payments and to recognize a relationship between nominal and effective required rates of return;

(2) It adjusts the average effective cost of common on equity determined by the new DCF model to reflect certain ratemaking practices of this Commission and obtain the "ratemaking rate of return" which shall be the basis for the quarterly benchmark rates of return, and

(3) It uses the most recent two quarters of data on dividend yields as

[1] This term, used for the first time in this proceeding, as discussed in section III. B., *infra*, is the rate of return on common equity that, when applied to rate base, will give investors the opportunity to obtain the effective market required rate of return on common equity and give firms the opportunity to recover flotation costs.

[2] The terms "public utilities" and "electric utilities" are used interchangeably.

[3] Generic Determination of Rate of Return on Common Equity for Public Utilities, 50 FR 21802 (May 29, 1985) (Docket No. RM84–15–000) (Final Rule) (Order No. 420) (Issued May 20, 1985) (to be codified at 18 CFR 37.9).

[4] Order No. 420, 50 FR at 21803.

[5] Generic Determination of Rate of Return on Common Equity for Public Utilities, 50 FR 30207 (July 24, 1985) (Docket No. RM83–19–000) (Notice of Proposed Rulemaking) (Issued July 19, 1985).

[6] The primary exception to the application of the benchmark rate of return to a utility during a rate case is when the utility is significantly more or less risky than the average utility

[7] These groups of utilities or customers are referred to by identifying acronyms in the text that follows. *See* Appendix D for a listing of the acronyms and the parties that they signify

the basis for updating the benchmark rate of return; in contrast, the NOPR proposed to use only the most recent quarter's dividend yields.

As detailed below, the Commission estimates that the average cost of common equity for the jurisdictional operations of electric utilities during the base year was 15.36 percent. This is based on an effective required rate of return of 15.32 percent and a flotation cost adjustment of 0.04 percent. The average "ratemaking rate of return" corresponding to this cost estimate was 14.37 percent.

Updated estimates of the average ratemaking rate of return will be used to establish the quarterly benchmark rates of return for use in individual rate cases. In mid-January of 1986, the Commission will announce the first benchmark rate of return in this proceeding, based on the dividend yields for the last two quarters of 1985, and applicable to rate filings made between February 1, and April 30, 1986.

II. Basic Conclusions

A. The Average Ratemaking Rate of Return for Jurisdictional Operations of Electric Utilities for the Year Ending June 30, 1985

In the following sections of this order, the Commission places primary reliance on the DCF approach to estimating the effective required rate of return on common equity. The Commission chooses the following DCF Model to evaluate the effective required rate of return for the base year:

$$k = \frac{D_0}{4P_0}\left[(1+k)^{.75} + (1+k)^{.5} + (1+g)(1+k)^{.25} + (1+g)\right] + g$$

were:

k = effective required rate of return on common equity

$\frac{D_0}{P_0}$ = current dividend yield (current indicated annual dividend rate divided by current market price)

g = expected dividend growth rate

The Commission then evaluates the specific components of that DCF model. In particular, the current dividend yield for the base year is estimated as 10.03 percent. The growth rate is estimated as 4.5 percent. Using these values in the above model, the Commission estimates that the effective required rate of return for the base year was 15.32 percent.

Next, the Commission evaluates the reasonableness of this result by reference to the corroborative evidence submitted by commenters. The Commission concludes that this estimate of the effective required rates consistent with the corroborative evidence in the record, as well as with other publicly available data.

Based on a review and analyses of the comments on flotation costs, the Commission next adjusts the effective required rate by 4 basis points to obtain the cost of common equity for the base year of 15.36 percent.

The Commission then reviews the evidence of FERC-jurisdictional risks (vis-a-vis retail risks) and concludes that the record evidence supports the conclusion that there is no appreciable risk differential in the cost of common equity for the average utility attributable to jurisdictional differences.

Finally, the average cost of common equity is adjusted downward, according to a formula, to arrive at the average ratemaking rate of return of 14.37 percent that reflects the measure the Commission uses to estimate rate base. [8]

B. Overview of the Commission's Findings and Commenters' Studies of the Cost of Common Equity

Table 1 summarizes nine commenters' studies of the cost of common equity for the base year, [9] by presenting the commenters' estimates of the components of the cost of common equity along with the models and the size of the samples used in these estimations. Table 1 also presents the Commission's findings with respect to these factors.

TABLE 1.—Estimates of the Average Cost of Common Equity to Electric Utilities for the Year Ending June 30, 1985 [1]

Commenter [2]	Sample size	Model used [3]	In percentage						
			Current dividend yield	Quarterly dividend adjustment	Adjusted dividend yield	Constant growth rate	Required rate of return	Flotation cost adjustment	Cost of common equity
SWEPCO	106	2	10.62	.48	11.10	4.56	15.66	.45	16.11
EEI	101	2	10.48	.47	10.95	4.48	15.43	.28	15.71
NEP	100	1	9.98	.26	10.24	5.24	15.48	(4)	(4)
		1	9.98	.27	10.25	5.40	15.65		
NSP	100	1	10.03	.25	10.28	5.00	15.28	.22	15.50
BEC	100	1	10.08	.25	10.33	4.88	15.21	.04	15.25
								.29	15.50
AUS	96	1	10.03	.23	10.26	4.60	14.86	.11	14.97
		[5] 1	10.03	.24	10.27	4.75/4.50	15.06	.11	15.17
FA Staff	100	1	10.00	.22	10.22	4.40	14.62	.04	14.66
Cooperatives [6]	89	1	9.94	.22	10.16	4.39	14.55	.00	14.55
Commission	100	6	10.03			4.50	(7)	.04	[7] 14.37
GSA	100	1	[8] 10.05			3.69	14.00	.00	14.00
		1	[8] 10.05			3.92	14.24	.00	14.24

[1] Some of the values listed are not reported directly by the commenter but are, instead, the result of a simple mathematical calculation using the values reported by the commenter. Workpapers explaining this calculation have been placed in the public files for this docket.

[2] See Appendix D for identification of commenters.

[3] See Appendix E or Section III. A. For a listing of the models. Models 3, 4, and 5 are proposed by commenters but have not been used in empirical studies of the base year cost of common equity.

[4] NEP states that the Commission should include a flotation cost adjustment but does not recommend a numerical value.

[5] Two-stage growth model.

[6] *See* Section III. B., *infra*, for an explanation of this concept.

[7] Southern Company also presents a study which estimates the cost of capital for the base year as 15.04 percent. Initial Comments at 11–12. However, Southern Company no longer appears to support the model used in that study. Reply Comments at 4. Both models which Southern Company presents are quarterly models not too disimilar to that adopted by the Commission in this proceeding.

[6] Industry-wide study results. Cooperatives believe tht the industry should be separated into risk classes. Studies are presented which estimate the base year cost of common equity for a "non-nuclear group" and a "nuclear group" as 13.94 percent and 15.88 percent, respectively.

[7] The Commission has found that the effective required rate of return on common equity for the base year is 15.32 percent. Adding the flotation cost adjustment of 0.04 percent yields a cost of common equity of 15.36 percent. When that rate is adjusted for the relationship between the way the rate base is calculated and the rate of return necessary to generate returns consistent with investors' expectations, the resulting "ratemaking rate" is 14.37 percent.

[8] GSA calculates the cost of capital for 24 periods of the base year. The values shown are the averages for these 24 periods.

[9] The 10.05 reported by GSA appears to be an error. The data reported by GSA yields an average of 10.12. In addition, the GSA cost of common equity results can only be duplicated using a current dividend yeild of 10.12.

1. DCF Model

Most commenters' studies used the model adopted in Order No. 420, which the Commission proposed in the NOPR to use in this proceeding. However, based on the comments in response to the NOPR,[10] and the Commission's analysis of them, this rule adopts a new DCF model.[11]

The new DCF model more accurately recognizes quarterly dividend payments and the effect of their timing because the model reflects when dividends are received and how they grow over the year. The new DCF model also distinguishes between investors' nominal and effective required rates of return. The Order No. 420 model was intended to estimate the investor's nominal quarterly required rate of return on common equity. The new model determines the investors' effective required rate of return.[12] There is a mathematical relation between these rates.[13] They represent different ways of looking at investors' return requirements. As explained below, however, neither of these rates is proposed to be used as the benchmark rate of return.[14]

This rule also concludes that, because of the interrelationship between the way rate base is computed and the rate of return necessary to generate returns consistent with the estimated investors expectations,[15] it appears the ratemaking rate of return should be different from the investors' effective (and nominal quarterly) required rates of return. Both the effective rate and the nominal quarterly rate of return on common equity required by investors when applied to the Commission's measure of rate base appear to allow the utility to earn more than enough to meet its dividend payments and achieve the growth implied by investors' return requirements. The appropriate rate depends on the basis on which the rate base is set. The appropriate rate—the ratemaking rate—depends on the number of periods used in the computation of the rate base.[16] If each succeeding rate base value includes the effects of reinvesting retained earnings, after payment of dividends, from previous periods of the test year, a rate of return lower than the effective rate is sufficient to give the utility enough dollars to satisfy investor requirements. The correct rate of return, or a close approximation of it, can be estimated from the cost of common equity by using the following general formula:[17]

$$k_r = (m)[(1+k_c)^{1/m}-1]$$

where

k_r = "ratemaking rate of return" corresponding to the cost of common equity, k_c, and

m = number of periods used in the rate base determination

The Commission's finding of the effective required rate of return for the base year using the new model is 15.32 percent. Adding a flotation cost adjustment of 0.04 percent yields a cost of common equity of 15.36 percent. Because dividends are paid quarterly, some investors may be inclined to think in terms of nominal quarterly rates. The nominal quarterly rate associated with the cost of common equity expressed as an effective rate of 15.36 is 14.55 percent.[18] [19]

Because the Commission uses a 13 month average rate base,[20] the correct ratemaking rate is approximated by specifying m=13 in the above formula, which yields an average ratemaking rate of return for the base year of 14.37 percent:

$$k_r = 13[(1.1536)^{1/13}-1] = 14.37 \text{ percent.}$$

2. Sample Size and Dividend Yield

All commenters' studies used broad-based samples of companies and, as a result, the differences among the commenters' estimates of the current dividend yields are generally small. The Commission chooses the same sample of 100 companies as in the previous proceeding. This sample is chosen by applying standards which are intended to produce a broad-based sample of predominantly electric utilities for which the necessary data is available.[21] The Commission estimated the dividend yield (10.03 percent) as the median dividend yield for the 100 firm sample based on indicated dividend rates and an average of monthly high and low market prices for each quarter.[22]

3. Constant Growth Rate

The Commission's finding for the growth rate is based upon both a fundamental analysis and a two-stage growth model. The Commission carried out these two analyses using plausible ranges of the component parameters for each analysis. The resulting Commission estimate (4.5 percent) lies in the middle of the range of the commenters' estimates of the constant growth rate.[23]

4. Required Rate of Return

The differences in the commenters' estimates of the required rate of return result largely from the model chosen and the growth rate used. The two models used in these studies, including the model adopted by the Commission in Order No. 420, do not properly account for the quarterly receipt of dividends.[24]

---

[10] Other DCF models were proposed by commenters who did not present empirical studies estimating the cost of common equity for the base year.

[11] *See* Section III. A., *infra*.

[12] *See* Appendix B for a discussion of effective and nominal rates of return.

[13] Except for certain technical points, the difference between the effective rate and the nominal rate is that the effective rate accounts for both the utility's retained earnings and the reinvestment of intra-year dividends by the shareholders.

[14] *See* Section III. B., *infra*.

[15] Within the context of the DCF model, investors' expected rates of return are, in equilibrium, equal to their required rates of return.

[16] If the rate base components increase over time due to plant additions exceeding retirements and depreciation expense, a rate base determined on the basis of the beginning of year rate base estimates will, for example, be smaller than a rate base determined on the basis of 13 month average rate base estimates. To provide enough dollars to satisfy investors' return requirements, a higher ratemaking rate of return is required if the rate base is determined on a beginning of the year basis than if it is determined on a 13 month average basis.

[17] This formula is only appropriate if the number of periods used in the rate base determination is no less than the number of dividend payments made in a year.

[18] As explained in Appendix B, the formula to convert from the yearly effective rate to the nominal quarterly rate is:

$$.1455 = 4[(1.1536)^{.25}-1]$$

[19] The Commission's model uses interative techniques to find the market required rate of return. A computer program to calculate both the market required rate of return and the ratemaking rate of return has been placed in the public files. In addition, as discussed below, the "continuous compounding" model, model (5), $D_0/P_0 + g$, provides a very close approximation of the nominal quarterly rate. Using the Commission's dividend yield (D_0/P_0) of 0.1003 and growth rate, g, of 0.045 from Table 1, model (5) provides an approximation of 14.53 percent:

$$.1453 = 0.1003 + .045.$$

This approximation is within 2 basis points of the nominal quarterly rate of .1455 percent estimated by the Commission's new model.

[20] 18 CFR 35.13(h)(4) (1984).

[21] *See* Section III. C., *infra*.

[22] *See* Section III. D., *infra*.

[23] *See* Section III. E., *infra*.

The commenters generally use a dividend yield estimate close to that of the Commission. The Commission's growth rate estimate is in the middle of the range of commenters recommendations. The interaction of these factors results in the Commission's finding of the effective required rate of return on common equity of 15.32 percent falling in the upper half of the range of commenters' estimates of the required rate of return.

5. Flotation Cost Adjustments

The Commission allows for recovery of the industry average annual amount of flotation costs, based on near-term projections. The Commission's flotation cost adjustment of .04 percent allows recovery of the average issuance costs associated with new stock issues. In general, those commenters which recommended higher flotation cost adjustments use as amortization method which recovers flotation costs on all outstanding stock over the infinite life of that stock.[25]

6. Cost of Common Equity

Adding the flotation cost adjustment of 0.04 percent to the effective required rate of return of 15.32 percent yields the Commission's estimate of the cost of common equity of 15.36 percent. The Commission's ratemaking rate, which takes into account the relationship between the way the rate base is calculated and the rate of return necessary to generate returns consistent with investors' reguirements, is 14.37 percent. The commenters' estimates are not adjusted to account for this relationship.

III. Summary and Analysis of Comments on Particular Components of Generic Rate of Return Determination and Commission Conclusions as to Those Particular Components

A. Formulation of the DCF Model

In the NOPR the Commission expressed its intention to place primary reliance on the discounted cash flow (DCF) method for estimating the market-required rate of return on common equity.[26] The particular formulation of the DCF model that the Commission proposed to rely on was the one used in Order 420:

(1) $k = [D_0/P_0](1+.5g)+g$

where

k = market required rate of return [27]

D_0/P_0 = current dividend yield (current annual dividend rate divided by current market price)

g = expected annual dividend growth rate

$(1+.5g)$ = dividend adjustment factor for quarterly dividend payments

The Commission noted that in proposing this formulation of the DCF model it did not wish to foreclose consideration of improvements in existing alternatives or any new and innovative analyses as may be developed in the future. The Commission requested comments on its proposed formulation of the DCF model and asked any commenters proposing alternative models to provide comprehensive explanations of such methods and their major assumptions.

Several commenters respond by proposing models for a DCF analysis different from the model the Commission proposed to rely upon. The commenters suggest four alternative models. Several commenters propose the following model:

(2) $k = [D_0/P_0](1+g)+g$, where the symbol have the same meaning as in equation (1) above.[28]

The Southern Company proposes [29] a model of the form:

$$(3)\quad k = \frac{A_0(1+k)^{.75} + A_0(1+k)^{.50} + A_0(1+k)^{.25} + A_0}{P_0} + g$$

where

k = market required rate of return

D_0 = current annual dividend rate

$$A_0 = \frac{D_0[1+.5g]}{4}$$

g = expected dividend growth rate

P_0 = current market price

PSCol proposes [30] the same model that it did in the Docket No. RM84-15-000 proceeding. This model consists of:

$$(4)\quad P_0 = \left\{\frac{(1+k)}{(1+k)-(1+g)}\right\}\left\{\sum_{t=1}^{4}\frac{D_{u,t}}{(1+k)^{N_{u,t}}}\right\}$$

where

P_0 = current stock price

k = market required rate of return

g = expected dividend growth rate

$D_{u,r}$ = the dividend for the r^{th} quarter of the u^{th} dividend year

$N_{u,r}$ = the number of days divided by 365 (i.e., the fractional part of a year) between the present day and the date of $D_{u,r}$.

Finally, WCG recommends an alternative model: [31]

$$(5)\quad k = \frac{D_0}{P_0} + g$$

where

k = market required rate of return

$\frac{D_0}{P_0}$ = current dividend yield (current annual dividend rate divided by current market price)

g = expected dividend growth rate.

Model (2) assumes that the total dividends received during a year are received at the end of the year. AUS provides a derivation of this model from the general form DCF model.[32] The commenters supporting model (2) make several arguments. EEI argues generally that model (2) is a reasonable and widely used method for determining an annual cost of equity.[33] EEI believes its model is a reasonable approximation of the effective rate found from a quarterly

---

[25] *See* Section III. G., *infra*.

[26] Order No. 420, 50 FR 30,208.

[27] Model (1) is a yearly model. In Order No. 420 the resulting k was used as an estimate of a nominal quarterly rate. *See* Appendix B for a discussion of nominal and effective rates.

[28] These commenters are EEI, the AEP companies, CP&L, WTU, and SWEPCO. Also included in this group are the commenters that endorse the position of EEI: Duke, SCEd, and WPL.

[29] Southern Company proposes a different model in its Initial Comments. Initial Comments at 11-12. However, Southern Company no longer appears to support that model as Southern Company claims in its reply comments that its proposed model (3) "accurately reflects the cost to the company of making quarterly rather than annual dividend payments." Reply Comments at 4.

[30] Initial Comments of PSCol at 3.

[31] Initial Comments of WCG at Appendix D.

[32] Initial Comments of AUS at 22.

[33] Initial Comments of EEI at 7.

model in which dividends grow each quarter at a constant rate.[34]

The Southern Company argument for model (3) is that this model reflects the fact that investors' valuations reflect quarterly dividends rather than annual dividends. Southern Company contends that this model accounts for these quarterly payments better than alternative models. Southern Company also contends that the quarterly payment of dividends means that the cost to the company is higher than it would be if utilities paid annual dividends.[35]

PSCol argues that an acceptable model must reflect when dividends are received. PSCol further contends that its proposed model (4) does this, and is the only model that provides an unbiased reflection of the process that actually occurs in securities markets.[36]

WCG, supported by the Minnesota DPS in its reply comments, argues that model (5) is the appropriate model to use. WCG argues that "inherent in the mechanics of ratemaking is the fact that whatever return on common equity is allowed by the Commission the actual effective return to the company and investors will be higher."[37] WCG goes on to argue that its model is appropriate because the amount by which the realized rate of return to equity is greater than the permitted rate of return will always be greater than or equal to the adjustment to the dividend yield (D_0/P_0) implied by discrete compounding. For this reason, according to WCG, any adjustment to (D_0/P_0) for discrete compounding produces excessive returns.[38]

The comments on the question of what formulation of the DCF model should be used have caused the Commission to reexamine its conclusions in Order Nos. 420 and 420-A as to the formulation of the model that seems most able to capture the essential attributes of dividend payment and shareholder expectations; in particular, that dividends are paid quarterly and that they are likely to increase at some point during the next year.

The Commission's analytical process in deciding to reevaluate the model formulation was to start with the general form of the DCF model and make certain assumptions. The first two are the standard assumptions that dividends grow at the same rate each year, and that the required rate of return is the same in every period. The next two assumptions reflect (1) the fact that dividends are paid quarterly, and (2) that the annual dividend increase, on average, occurs halfway through the year. The latter assumption was made in the model used in Order No. 420. The Commission there noted that "from the perspective of the average company or the average investor, the next dividend increase is a half year away."[39]

To determine which constant growth DCF model is consistent with these assumptions, the Commission incorporated these concepts into the general form DCF equation and derived the following constant growth DCF model:[40] where the symbols have the same definitions as in the equations above.[41]

$$(6)\ K=\frac{D_0}{4P_0}[(1+k)^{.75}+(1+k)^{.5}+(1+g)(1+k)^{.25}+(1+g)]+g$$

The market required rate of return on equity may be expressed in terms of either a yearly effective rate or a nominal rate, such as a nominal quarterly rate. The effective rate tells the shareholder how many dollars he will receive at the end of the year per dollar invested. The nominal rate is another way of expressing this return. Since dividends are paid quarterly, some investors may find it convenient to think of the market required rate of return in nominal quarterly terms. By dividing the nominal quarterly rate by four the shareholder knows the return he will receive each quarter. He can then compute the equivalent effective rate. For example, a nominal quarterly rate of 12 percent tells the investor that he will receive 3 percent per quarter, but over the year he will receive the effective rate of 12.55 percent. The nominal and effective rates are two ways of describing the same thing and a mathematical formula exists for converting from one to the other.[42] The Commission recognizes that since dividends are paid quarterly there are those who are more comfortable in thinking in terms of nominal quarterly rates. The yearly effective rate may be converted to this nominal rate using the following example: Nominal quarterly rate = 4[[1 + effective rate]$^{.25}$ − 1].

The Commission believes that the new model more accurately portrays the implications of the timing of the cash flows to investors than does the Order No. 420 Model, since it is derived from an explicit evaluation of quarterly rather than annual cash flows. The Order No. 420 Model evaluates the first year dividend rate for the yield component in the model as simply the sum of the projected dividends during the first year and, effectively, assumes this sum is received by investors at the end of the first year. The new model likewise estimates the projected dividends during the first year but it reflects the benefits to investors of getting the dividends in four quarterly installments rather than in a lump sum at the end of the first year. These benefits are, of course, the additional return investors may obtain by reinvesting the dividends received quarterly in the same or another comparable investment until the end of the year.

$$\text{Effective Required Rate of Return} = [1+\frac{[\text{nominal rate}]}{4}]^4-1$$

[34] *Id.*

[35] Reply Comments of Southern Company at 3-4.

[36] Reply Comments of PSCol at 5.

[37] Initial Comments of WCG at 9-10.

[38] *Id.*

[39] Order No. 420, 50 FR 21810.

[40] *See* Appendix A for derivation.

[41] The market rate of return in model (6) is found by an iterative procedure which is relatively simple to perform with a programmable calculator or a computer. However, without these tools the process can be quite cumbersome. The Commission has found that Model (5), $D_0/P_0 + g$, provides a close approximation of the nominal quarterly rate associated with the effective required rate of return of Model (6). It has been found that this approximation is within 2 basis points for a relatively extreme range of dividend yield and growth rate combinations. For a dividend yield of 15 percent and a growth rate of 6 percent, Model (5) is within 2 basis points. For a dividend yield of 7 percent and a growth rate of 3 percent, Model (5) is within 1 basis point.

The following formula converts the nominal quarterly rate to the effective required rate of return:

The Commission is not adopting Model (5), but rather using it only as an estimate of the nominal quarterly rate associated with the effective required rate of return. *See* Appendix B for a discussion of nominal and effective rates.

[42] *See* Appendix B for a discussion of nominal and effective rates.

Also, with respect to the dividends for the first year, both models can be viewed as assuming, for purposes of estimating the first year's dividends, that, "from the perspective of the average company or the average investor, the next dividend increase is a half year away."[43] The Order No. 420 Model does this by multiplying the current annual dividend rate by one and one half the growth rate. The new model reflects this assumption by evaluating the four quarterly dividend payments separately. In the new model, the first two dividend payments in the initial year are assumed to be at the current rate. The last two payments (the third and fourth quarter of the initial year) are estimated as the current rate times one plus the growth rate.[44] Thus, the sum of the dividends projected for the first year is the same in both models. Only the assumed timing of their receipt is different.

It should be noted that the new model is similar to the models proposed by PSCol and Southern Company as shown in equations (4) and (3) above.[45] The difference between the Commission's model and that of Southern Company is relatively small. Southern Company determines the total amount of dividends to be paid for the year, and then divides this total into four equal payments. The Commission's model assumes a dividend increase occurs at mid-year for the typical utility.

The PSCol model is very general and provides different solutions when different assumptions are made. When the specific assumptions made by the Commission are incorporated into the PSCol model, along with the simplification that the first dividend payment is one-quarter of a year away, then the PSCol model reduces to the Commission's model. The Commission believes that PSCol's proposed refinement of counting the days before the next expected dividend payment is unrealistic for a generic proceeding.

Concerning model (1), the Order No. 420 Model, we believe model (6) is superior to model (1) because model (6) is directly derived from the general DCF model which incorporated the assumptions discussed above, while model (1) is only an approximation of the same assumptions. Concerning both models (1) and (2), we continue to believe that it is unreasonable to use a model which assumes payment of dividends only once a year.

In contrast, with respect to model (5), we continue to believe that it is unreasonable to use a model that assumes dividends are paid and compounded continuously. WCG appears to concede that there is a problem with its model, but argues that because ratemaking practices lead to investors earning effective rates above the cost of equity, model (5) leaves shareholders with a return closer to their required rate of return than quarterly models. However, WCG makes no attempt to quantify its argument in this regard. The contention of WCG, that ratemaking must be concerned with how the rate base is determined during the test period, is addressed below.

B. The Rate of Return for Ratemaking Purposes [46]

The market rate of return found by using Model (6) is an estimate of the effective rate of return required by investors. This effective rate includes the return which investors have the opportunity to obtain by reinvesting the quarterly dividends in the same or another investment yielding the same effective rate. In contrast, the "ratemaking rate of return" is that which, when applied to the particular rate base determined by the regulator, allows the electric utility to provide the stockholders with their expected dividends and the expected growth in the market value of the utility's stock. This ratemaking rate, however, does not include the return due to dividend reinvestment. The utility is only "required" to provide the quarterly dividends which give the investor the opportunity to earn these additional earnings through reinvestment.

The relationship between the effective rate of return required by the stockholders and the ratemaking rate depend upon the method used by the regulator in determining the rate base.[47] [48] If the regulator uses a forward-looking test year, allowing the investors' effective required rate of return as the ratemaking rate of return will result in overcompensation for the investor; that is, it will permit investors to obtain a higher rate of return than they require, a rate of return in excess of this effective rate.[49]

This can be illustrated with an example. Assume a firm is expected to increase its dividends once a year at a rate of 5 percent per year. Assume that the next dividend will be paid three months from today. Assume also that the expected dividends are $0.20 in the next two quarters and $0.21 for the following two quarters (based on the 5 percent growth occurring in the third quarter). Assume next that both the common equity book value and market price of the firm are currently $8.00. For simplicity, assume the firm is 100 percent equity-financed,[50] and that rate base equals total capitalization; [51] and that all retained earnings, after payment of dividends, are reinvested in rate base.[52] Based on these expectations the

[43] Order No. 420, 50 FR 21811

[44] The new model reflects the annual growth in dividends occurring as discrete increases during the third quarter in each year of the future

[45] Reply Comments on PSCol at 3 and Reply Comments of Southern Company at 4.

[46] For clarity this discussion ignores flotation costs. As discussed above, the Commission adds the flotation cost adjustment to the effective required rate of return before calculating the ratemaking rate.

[47] *See* Charles M. Linke and J. Kenton Zumwalt, "Estimation Biases in Discounted Cash Flow Analyses of Equity Capital Cost in Rate Regulation," *Financial Management* (Autumn 1984) pp. 15–21

[48] There may also be a similar distinction between the rates that the company must pay to bond and preferred stock holders in the market and the rates that should be used for ratemaking.

[49] This is consistent with the Commission s finding in Order No. 420–A that the utility should not be allowed to earn the investors' effective required rate of return. Order No. 420–A, 50 FR 34,087

[50] This simplification is for expositional purposes. The concepts also apply to firms which are not 100 percent equity financed. In rate setting, a weighted average cost of debt, preferred stock, and common equity capital is applied to the utility's rate base. The same result would be obtained, however, if the utility's rate base was first separated into the portions attributable to each capital source, and the cost of each source was applied to its respective rate base portion. For firms that are not 100 percent financed by common equity the "rate base" discussed in the examples would be the portion of the rate base attributable to common equity.

[51] This assumption simplifies away such issues as CWIP, deferred taxes, and investment tax credits. There is no reason to believe that the essential results of the analysis would change if this assumption were relaxed. Similarly to the discussion in the previous footnote, the analysis could be geared to the equity-financed portion of CWIP under the assumption that the FERC is the predominant regulatory commission for the firm. (This latter point is intended to reflect the Commission's determination made in the regulatory accounts that the equity-financed portion of CWIP should be costed at the last allowed rate of return on common equity by the firm's predominant regulatory commission.) Order No. 561, 57 FPC 608, 618 (1977). Similarly, the Commission's ratemaking treatment of deferred taxes, as well as investment tax credits, assumes that they are used to finance rate base and are a substitute for all long term financing, debt and equity, and in the same proportions as indicated by the capital structure. Opinion No. 12, *Minnesota Power & Light Company*, 3 FERC ¶ 61,045 (1978) at 61,128. Thus, dropping the assumption of no deferred taxes would simply require consideration that a portion of rate base was financed with these tax deferrals. The conclusions from the analysis with regard to the ratemaking rate of return would not change.

investors' effective required rate of return for investments in this firm as estimated from model (6) is 15.83 percent.

Now suppose the firm is allowed this rate on a beginning of year rate base. If this rate base value is $8.00,[53] this means allowing the firm to earn revenues of $1.266 over the course of the year (.1583 times $8.00). After paying dividends of $.82, this produces retained earnings of $.446 which translates to an increase in book value (rate base)[54] and an expected market value to $8.446 at year end. This can also be viewed as a return to investors from the firm of $.82 in dividends and $.446 in capital appreciation.

The investor gets the dividends in quarterly installments and can reinvest them in the same or other securities. Assuming reinvestment at the same effective rate, the investor can earn additional investment income of $.046 during the course of the year.[55] Adding this to the dividends and capital appreciation, from above, means that the investor can earn a return of $1.312 (or 16.40%) on his initial investment of $8.00. This is $0.46 (or 62 basis points) above what he required. This result is due to a double compensation for reinvestment of dividends.

This result was obtained by applying the effective required rate to a beginning of year rate base. Since, generally speaking, rate base increases over time, the beginning of year measure of rate base is the lowest measure to use. It follows from this that any measure of rate base based on an average for the year will be higher and application of the effective rate to it will result in still greater overcompensation to investors.

If the effective rate results in overcompensation, what is the correct ratemaking rate? In the above example, for the stockholders to be able to receive the estimated effective required rate of return of 15.83%, the firm must earn $1.22. This is based on its paying a $.20 dividend for the first two quarters, $.21 for the following two quarters, and then experiencing a 5 percent growth in end of the year book value and market value of the stock through retained earnings of $.40 to $8.40. At the end of the year the shareholders would have had the opportunity to earn additional income of $.046 from reinvestment of the quarterly dividends. Total returns to shareholders would be $1.266. This would give a return of 15.83 percent ($1.266/$8.00), which is what the shareholders required when they valued the shares at $8.00 at the beginning of the year. This could be obtained by a ratemaking rate of return of 15.25 percent on the beginning of year rate base.

The important point is that the rate that should be allowed is the one that, when applied to rate base, will provide sufficient revenues to produce the investors' required growth and dividend payments. And the relationship between the rate of return required by stockholders and the ratemaking rate of return on rate base depends on how the regulator determines the rate base.

If the regulator of the utility in the above example computes rate base as the average of 12 beginning of the month values, the correct ratemaking rate would be different. Table 2 demonstrates that, in this situation, a rate-making rate of 14.79 percent will allow the firm to provide the dividends and growth in stock value necessary to produce the investor's effective required return of 15.83 percent for the year. Each month the utility earns 1.2321 percent return on rate base. Earning 1.2321 percent per month provides an effective return of 15.83 percent for the year.[56] Table 2 shows that the average rate base for the year is $8.25. When the $8.25 average rate base is multiplied by 14.79 percent, the result is the required revenues of $1.22. The 14.79 percent is simply 12 times the monthly return of 1.2321 percent. For a 12-month average rate base, the proper ratemaking rate is calculated from the following formula:

Ratemaking Rate = 12 [(1 + effective required rate) $^{1/12}$ − 1] = 12 [(1.1583) $^{1/12}$ − 1] = 14.79%.

TABLE 2.—CALCULATION OF ALLOWED RATE OF RETURN[57]

[Required rate of return is 15.83%]

[Return per month is 1.2321%]

	Beginning book value	Revenue	Dividends	Retained earnings	Ending book value
Month:					
1	$8.00	$0.099	$0.00	$0.099	$8.10
2	8.10	0.100	.00	0.100	8.20
3	8.20	0.101	.20	(.099)	8.10
4	8.10	0.100	.00	0.100	8.20
5	8.20	0.101	.00	0.101	8.30
6	8.30	0.102	.20	(0.098)	8.20
7	8.20	0.101	.00	0.101	8.30
8	8.30	0.102	.00	0.102	8.41
9	8.41	0.104	.21	(0.106)	8.30
10	8.30	0.102	.00	0.102	8.40
11	8.40	0.104	.00	0.104	8.51
12	8.51	0.105	.21	(0.105)	8.40
Total	99.00	1.22	.82	0.40	
Average	8.25				

[57] Columns do not sum to totals because of rounding.

The Commission uses an average 13 month test year rate base for ratemaking purposes. The 13 months are the rate base at the beginning of the first month and the rate base at the end of each of the year. Under this circumstance, the following formula provides an approximation of the rate of return for ratemaking purposes from the market effective required rate of return: Ratemaking Rate = 13[1 + market effective required rate) $^{1/13}$ − 1].

C. Sample of Electric Utilities To Be Used

1. Introduction

In the NOPR, the Commission proposed to use the same sample of 100 electric utilities as was used in the first annual proceeding. This sample consisted essentially of those publicly traded electric utilities or combination companies that met explicit standards; these are that the utility:

(1) Is predominantly electric,[58]

[52] This assumption assures that the assumption that rate base equals total capitalization holds throughout the period of analysis. Relaxing this assumption to consider retained earnings being used to finance other investments (e.g., CWIP) would not change the conclusions of the analysis, though it could significantly increase the complexity of the analysis.

[53] Assume the test begins today, the same day for which the required rate of return is estimated, and that rates go into effect.

[54] This analysis assumes that all retained earnings will be invested in rate base.

[55] The investment income of $0.046 is obtained by investing the first dividend of $.02 at 15.83 percent for ¾ of a year, investing the second dividend at 15.83 percent of ½ of a year, and so on.

[56] $(1.012321)^{12} = 1.1583$. *See* Appendix B for a discussion of effective and nominal interest rates and their relationship to the rate per compounding period.

[58] Operationally, the Commission has selected all companies classified in the industry groupings "Electric Service" or "Electric and Other Services Combined" by Standard and Poor's Compustat Services, Inc. These industry groupings are

Continued

(2) Has its stock traded or either the New York or American Stock Exchanges, and

(3) Is included in the Utility Compustat II data base.

The Commission makes explicit here a fourth standard that was implicit in the previous proceeding.[59]

(4) The Commission determines, on a case-by-case basis, that the exclusion of a utility from the sample is appropriate.[60]

This fourth standard gives the Commission the discretion to eliminate companies whose data may be unavailable or inappropriate.

The Commission also proposed to use the same screening criteria for each quarterly dividend yield calculation as in the first annual proceeding. Companies from the sample will not be used in the quarterly dividend yield calculation if:

(1) The company, through merger or other action, no longer has its common stock traded on the New York or American Stock Exchange;

(2) The company has decreased or omitted a dividend payment in the current or prior three quarters, or

(3) The Commission determines on a case-by-case basis that some other occurrence causes the dividend yield for that company to be substantially misleading and to bias the resulting quarterly average.

The first screen ensures data availability. The second screen eliminates companies whose data would probably be inappropriate in a DCF model using industry average growth rates. The third screen gives the Commission the discretion to further eliminate atypical companies when necessary.

2. Comment Summary and Analysis

The commenters raise several issues with respect to the sample. Both BEC and NSP suggest that companies that reduce or omit their dividend during a longer period than the proposed four quarters be excluded from the sample. BEC states that "[i]f a company has decreased its dividend level *more* than four quarters back, it is our belief that the company should also be omitted from the sample." BEC, however, does not suggest a specific alternative exclusion period. [61] NSP suggests that companies be excluded if they reduced or omitted dividends within the past five years because "[h]istorical dividends, earnings, book values, returns on common equity, retention ratios, common stock sales and market-to-book ratios are used by investors over at least that length of time to estimate expected growth in their valuation process." [62]

The Commission believes that investors do take account of the effect of previously reduced or omitted dividends when making use of historical ratios, so this should not be of concern in choosing a proper exclusion period. A judgment must be made as to the average time necessary after a reduction or omission in dividends for a firm's data to again become appropriate for use in the new DCF model. A review of yields of firms that reduced dividends showed that they generally returned to their previous level relative to the industry average within four quarters of the dividend reduction.[63] The Commission thus believes that four quarters generally is a reasonable exclusionary period. However, consistent with the fourth standard for inclusion in the sample, the Commission might find a different exclusionary period appropriate in the case of an individual utility.

FPL questions the adequacy of the standards used to eliminate firms from the sample when the parent firm's cost of equity is not a good proxy for its utility subsidiary's cost. FPL points out that these standards resulted in Black Hills Power, Montana Power, and Pacificorp being included in the sample when, in 1984, they derived 43.9%, 51.7%, and 34.7% of their respective total incomes from non-utility sources. FPL raises the concern that a diversified utility could have a substantial investment in a non-utility subsidiary which does not yet produce revenue, but this hypothetical firm would not be removed from the Commission's sample, even though the non-utility investment strongly affects the investors' required return on equity capital. Finally, "[a]s diversification continues to become a significant trend in the utility industry, FPL believes that the FERC will need to establish policies and procedures regarding the treatment of the cost of equity for the utility subsidiaries of exempt holding companies."[64]

The Commission believes its present sampling procedures regarding diversified firms are adequate. If the hypothetical situation suggested by FPL occurred, then that firm could be dropped from the sample under the fourth sample selection standard made explicit in this proceeding.[65]

FPL also objects to the requirement that to be included in the sample a company must have relevant price or dividend data. FPL suggests that, for such a company, methods other than DCF can be used to quantify the cost of capital, but it fails to specify such methods.[66] The Commission has less confidence in the results of alternative methods than it has in the DCF method and, indeed, has found that the primary value of those alternative methods "is that they can provide useful insights regarding the reasonableness of the result reached through a DCF analysis." [67] In addition, the Commission has less confidence in cost estimates for individual companies than estimates of the average cost for a group of companies. Therefore, it would be inappropriate to combine estimates of the cost of common equity for a few firms determined by an alternative method with the results of the broad-based DCF analysis.

AUS argues that the sample used for dividend yield estimation should also be used to estimate the dividend growth rate. AUS states that "[t]he Commission's use of mismatched samples in determining the two components of the DCF model would appear to be a flaw in their analysis. Surely, rational investors would make

supposed to conform as nearly as possible to the Bureau of Budget Standard Industry Classification (SIC) Codes. Electric Services (SIC Code 4911) is defined as establishments engaged in the generation, transmission and/or distribution of electric energy for sale. Electric and Other Services Combined (SIC Code 4931) is defined as establishments primarily engaged in providing electric services in combination with other services, with electric services as the major part, though less than 95% of revenues. (Standard and Poor's Compustat Services, Inc., Utility Compustat II User Manual (1985)).

[59] *See* Order No. 420, 50 FR 21813, n.71.

[60] In this proceeding, four companies which meet the first three standards were eliminated from the sample. Southwestern Public Service Company is eliminated because it uses a non-standard fiscal year. This causes its dividend yields to be out of time with the rest of the companies. CP National is deleted because, in spite of its being listed as a predominantly electric company, on 18.6 percent of its revenues in 1984 were derived from electric sales. Finally, Alamito and Unitil are eliminated because they are new utilities and insufficient data is available.

[61] Initial Comments of BEC at 1.

[62] Relpy Comments of NSP at 4.

[63] Computer printouts with the data used to analyze this issue have been placed in the Commission's public files.

[64] Initial Comments of FPL at 2.

[65] The Standard and Poor's Compustat Services, Inc. data base used by the Commission contains data showing the companies' electric utility and other net assets. This data set also shows the revenue from electric services and other utility services. The Commission assesses this data to "flag" firms whose data appears to be inconsistent with what is expected of firms that meet the Commission's sample standards. More detailed data sources are then consulted for these "flagged" firms (and for firms brought to the Commission's attention by other means) to ascertain if the firms should be included in the sample.

[66] Initial Comments of FPL at 2.

[67] Order No. 420, FR 21808.

their decisions with respect to the rate of return they require to hold securities based upon an analysis of the same set of securities."[68]

AUS appears to be arguing that, when evaluating a particular set of securities, a rational investor would consider only the growth estimates provided by security analysts for that set of securities. The Commission believes, instead, that a rational investor would also consider other potentially relevant information such as estimates of growth of the national economy, the industry, and other firms in the industry. The investor would assess this information and determine the best estimate for growth for the securities under evalution. This best estimate may or may not be the security analysts' estimate for the particular set of securities on a stand-alone basis. For the same reasons, the Commission has evaluated the available information to determine the best estimate of the average dividend yield and the best estimate of average growth for use in the generic proceeding. Thus, the Commission continues to believe that using only the growth estimates for the firms included in the dividend yield estimation would not provide the best estimate of industry average growth.[69]

FA Staff and Cooperatives, while not criticizing the sample used by the Commission, use samples based on reports from Salomon Brothers. AUS objects to FA Staff's approach because FA Staff uses data from companies that AUS states are not predominantly electric.[70] BEC objects to FA Staff's and Cooperatives' samples because those samples differ from the sample used by the Commission in Order No. 420. BEC reasons that if the sample used by the Commission changes from one proceeding to the next, one could never be sure whether the changes in the calculated cost of equity were due to changes in the actual cost or just changes in the sample.[71]

The Commission declines to use FA Staff's and Cooperatives' samples. The Commission's sample is based on a set of criteria that it considers reasonable. The criteria used by Compustat for selecting its companies and data are publicly available and are consistent with the Commission's needs for this proceeding. In contrast, the Commission cannot find that samples based on Salomon Brothers reports reflect appropriate selection standards because the standards used to select the sample are not publicly available.[72]

WCG objects to eliminating unusually risky companies evidenced by reduction or elimination of dividend payments because it would skew the results of the sample. WCG seems to misunderstand the reason why firms that have reduced or stopped paying dividends are eliminated from the sample.[73] These firms are eliminated from the sample because the DCF model assumes that all sample firms are currently paying dividends. To blindly apply the model by including firms that do not pay dividends would show a cost of capital equal to the growth rate, when in fact the omission of a dividend is a strong indication of a relatively high risk and therefore a high cost of capital. The estimated growth for such utilities would not be an accurate measure of their cost of equity. Utilities that have recently reduced dividends were eliminated for the same reason.

3. Conclusion

Upon analysis of this issue, the Commission adopts the sample used in the first proceeding. The Commission wishes to emphasize, however, that this sample was chosen because these 100 utilities meet the standards used in the first proceeding for choosing the sample. Application of these standards in future proceedings may produce a different sample. The Commission believes that the annual application of the standards will produce a sample that is more representative of the electric utility industry as a whole than would the continued use of a specified group of utilities. The Commission also adopts in this proceeding the screening criteria for each quarterly dividend yield calculation used in the first annual proceeding. The 100 company sample is listed in Appendix C together with the excluded companies in each quarter of the base year.

D. Dividend Yield To Be Used in DCF Model

1. Introduction

In the NOPR the Commission proposed to continue to use the median dividend yield for the 100 company sample. First, the Commission noted that the distribution of dividend yields for electric utilities is skewed rather than symmetrical. Under this circumstance, the dividend yields for a greater number of utilities are closer to the median than the mean. Second, the Commission explained that, in computing the dividend yield for each company, the dividend rate should be the "indicated dividend rate," or the last declared quarterly dividend rate times four. Third, the Commission proposed that the price to be used in the calculation of the individual company dividend yield would be the simple average of the monthly high and low prices for the quarter. Finally, the Commission proposed that the average of the four medians of the quarterly dividend yields for the sample utilities be used for the base year determination of the cost of equity.[74]

2. Comment Summary and Analysis

In response to the NOPR, few commenters directly address the question of whether the Commission should change the measure used of the mean dividend yield for the industry. Most commenters simply use without discussion the approach adopted by the Commission in Order No. 420 and proposed in the NOPR.

SWEPCO does take issue with the Commission's proposal in the NOPR, asserting that the Commission should

[68] Initial Comments of AUS at 28.

[69] In addition, the Commission stated in this context in Order No. 420:

[T]he Commission established a sample of 100 companies on which to base its estimate of the dividend yield component of the DCF model for the base year and for the quarterly indexing procedure. The median dividend yield for this sample is the statistical measure of industry average determined most appropriate given the purpose of the benchmark and the characteristics of the dividend yield data. This involves essentially a mechanical calculation upon which little disagreement is likely to arise.

In contrast, the growth rate determined in this proceeding is not based solely on data for a sample of companies in the industry. First, this component of the DCF model is much more speculative than the dividend yield component. Second, the Commission is unaware of any mechanical calculation procedure for computing individual company growth rates to which it is willing to ascribe at this time. Third, the Commission's review of the growth rate studies submitted in this proceeding suggests that, as long as the sets of companies used as a basis for the estimate are reasonably large and broad-based in their representation of the industry, the differences in results stem largely from factors other than the sample. Because of these considerations, the Commission sees no necessity for conforming the sample of companies used to derive the dividend yield with the sample of companies used for the growth rate. Nor does the Commission think it appropriate to conform the samples, at least at this time. The above considerations make it reasonable for the Commission not to require commenters to rely solely on data for a particular sample of companies in the development of their growth rate estimates. This is important where commenters rely on data sources or specifications that may not be available for all companies. 50 FR 21815, n.81.

[70] Reply Comments of AUS at 6.

[71] Reply Comments of BEC at 2.

[72] In any event, the results of using the samples of FA Staff and Cooperatives are close to the results achieved by using the Commission's sample, *i.e.*, Commission, 10.03%, FA Staff 10.00%, and Cooperatives, 9.94%. *See*, Table 1, following page 7.

[73] Reply Comments of WCG, Appendix A at 29–33.

[74] NOPR, 50 FR 30208.

use the arithmetic average quarterly dividend yield for the sample utilities rather than the median of the values for the utilities for a given quarter.[75] Although it does not address the question of how the average dividend yield should be calculated, FA Staff uses an average of twelve monthly median dividend yields over the entire base period rather then the method proposed in the NOPR.[76] Cooperatives advocate the use of a twelve month average of spot dividend yields, but do not discuss why their alternative approach is to be preferred to that proposed in the NOPR.[77] GSA also uses an approach different than that proposed in the NOPR, basing its dividend yield component on the average of 24 equally-spaced observations of the median dividend yield for the sample utilities that were made during the base period. GSA contends that its approach is to be preferred to that proposed in the NOPR because observations at equal intervals are less likely to reflect the influence of temporary market phenomena. GSA does not discuss why this would occur.[78]

3. Conclusion

The Commission believes that the decision to use the median dividend yield in Order No. 420 was a valid one, for the reason that the median is the better measure when the distribution is skewed.

Concerning the argument of SWEPCO, the Commission noted in Order No. 420 that its purpose in choosing the median rather than the mean was to choose a measure of the average that would not be influenced by a few companies with extreme values. It pointed out that the benchmark "is intended to apply to most companies and so should not be allowed to be affected by a few atypical companies."[79] The Commission believes that this reason for rejecting the use of the mean is valid. GSA also fails to explain why its approach is preferable to the approach used in Order No. 420 and proposed in the NOPR; absent further expanation, it is not apparent why GSA believes its approach is less likely to be influenced by termporary market phenomena. Since the other commenters present no analyses to support the conclusion that their respective approaches are preferable to the approach used in Order No. 420, the Commission stands by its analysis in that order.

[75] Initial Comments of SWEPCO at 6.
[76] Initial Comments of FA Staff at 24.
[77] Initial Comments of Cooperatives at 81.
[78] Initial Comments of GSA at 3.
[79] Order No. 420, 50 FR 21814.

E. Determination of Growth Rate To Use in DCF Model

1. Introduction

In the NOPR the Commission proposed to rely primarily on the same type of fundamental analysis that was used in the first annual proceeding.The Commission explained that it intends to examine and evaluate the two components of dividend growth: growth from retention of earnings and growth from the sales of new common stock. The Commission also announced its intention to look at other methods for estimating expected growth, including non-constant growth rates, but it noted that this would be done primarily as corroboration for its basic evaluation using fundamental analysis.[80]

2. Comment Summary

Most of the commenters address the question of how the Commission should estimate the growth rate for use in its evaluation of the market required rate of return. Most commenters place all or most weight on one type of data or analysis to support their recommendations (e.g., analyst forecast data or fundamental analysis). A number of commenters, however, rely on more than one approach. While the range of estimates for the growth rates recommended by commenters for use in a constant growth DCF model is 3.69 to 5.40 percent, most recommendations are between 4.39 and 4.88 percent.[81] See Table 1, *supra*.

While two commenters, NEP and NSP, compute fundamental analysis (br+sv) estimates using actual data for the year 1984 because the NOPR requested such computations, they recommend placing primary reliance on historical dividends per share (DPS) growth rates. One of these commenters, NSP, states that it believes that historical dividend growth rates are at least as representative of investor expectations as estimates derived from other methods. NSP notes first that in DCF theory, it is the dividend cash flows which constitute investment value. Second, the historical DPS growth rate estimates show a very stable pattern over the 10 year period, and it is reasonable that investors will expect this growth to continue.[82]

NEP estimates 5 and 10 year median DPS growth rates of 5.40 and 5.24 percent, respectively. This commenter estimates the median "fundamental" growth rate during 1984 at 5.32 percent. Based on this information, NEP recommends that the Commission use of growth rate in the range of 5.24 to 5.40 percent.[83]

NSP examines 10 years historical DPS growth rates for electric utilities and finds a mean growth rate of 5.48 percent and a median of 5.22 percent. Using 1984 data, NSP estimates mean and median "fundamental" growth rates of 4.94 and 5.35 percent, respectively. NSP recommends a growth rate of 5.00 percent.[84]

EEI, Duke, and SCEd recommend that the growth rate be estimated solely or primarily by analysts' forecasts.[85] EEI recommends a growth rate of 4.48 percent based on analysts' forecasts compiled by the Institutional Brokers Estimate System. Neither Duke nor SCEd recommends any specific number.

EEI contends that academic research in finance supports the conclusion that financial analyst forecasts are used by investors to make investment decisions, that analyst forecasts are more accurate than predictions based on extrapolations of historical trends and that stock prices reflect analyst forecasts much more than they reflect growth esitmates based on historical growth. EEI contends that the growth rate for the DCF model should be the one which comes closest to that which determines stock prices. EEI further argues that the Commission's stated reason in Order No. 420 for rejecting analysts' forecasts—that they were for only 3 to 5 years—is inconsistent with the fact that analysts' five year forecasts are not short-term compared to the three to six month time horizon of most institutional investors. EEI also contends that analysts' forecasts are unbiased because analysts serve clients with a variety of interests and whose only common interest is accurate forecasts.[86]

WCG, which submitted its reply comments from the last proceeding to support its position, argues that it is erroneous to rely on anaylsis' forecasts because the forecasts are biased upward by the knowledge of analysts

[80] NOPR, 50 Fed. Reg. at 30,209. Growth from retained earnings, or internal growth, is a function of the expected rate of return on common equity (r) and the expected retention ratio (b). Growth from common stock sales, or external growth, is a function of how much stock is expected to be sold (s) and at what price relative to book value (v). Growth from common stock sales can be negative if new stock is sold at prices less than current book value per share.

[81] The recommended growth rates outside this latter range are those of NEP (5.24–5.40) and NSP (5.00) on the high side and GSA (3.69–3.92) and WCG (less than 4.00) on the low side.

[82] Initial Comments of NSP at 14–15.
[83] Initial Comments of NEP at 4–6.
[84] Initial Comments of NSP at 13.
[85] Initial Comments of EEI at 7–1, Duke at 1–2, and SCEd at 1–4.
[86] Initial Comments of EEI at 7–14.

that forecasts are used by regulatory agencies in making rate of return determinations. WCG also argues, as in the last proceeding, that the appropriate growth rate expectation to focus on is the marginal expectation as to growth, not the consensus, as represented by security analysts.[87]

FA Staff and Cooperatives base their recommendations on fundamental analyses similar to that to which the Commission gave great weight in the last proceeding.

FA Staff treats the "sv" component as having a value of zero due to the fact that utility stocks as a whole were selling at book value during the base year. FA Staff estimates expected retention as 30 percent and the expected rate of return on common equity at 14.7 percent, with the result that FA Staff estimates growth expected by investors at 4.4 percent.[88]

Cooperatives argue first for development of separate fundamental analysis estimates of expected growth for what the Cooperatives classify as the nuclear and non-nuclear utilities. They then go on to develop an expected growth figure of 4.39 percent for the industry as a whole on the basis of an expected rate of return on common equity of 14.83 percent and expected retention of 28.5 percent plus a contribution to growth from expected issuances of stock at prices above book value of .19 percent.[89]

Concerning estimates of expected growth based upon fundamental analysis, AUS contends that the results of its empirical analysis show that internal growth rates are not consistently the best explanation of electrical utility stock prices. AUS urges the Commission to place less emphasis on this measure of growth in making rate of return determinations.[90] AUS also contends that historic data for the year ending June 30, 1985, is more pertinent to investor expectations and requirements as to return than earlier data, because it is only in the period ending June 30, 1985, that utility stocks as a whole began to sell at book value, after a long period in which they sold at prices less than book value.[91] AUS contends as well that the fundamental analysis approach to growth estimation should be based only on estimates of retention and of return on equity.[92] AUS goes on to contend that no adjustment should be made in the internal growth estimate to reflect additional sales of common stock because this "sv" component will be zero if the expected earned rate of return is equal to the utility's cost of equity.[93]

CP&L states that the fundamental analysis approach should focus only on "br," that since the intent of regulation is to allow a rate of return that will result in the shares of the utility selling at book value, the "sv" adjustment should be treated as zero.[94]

BEC and Southern Company propose that all methods be given some weight in the analysis of the appropriate growth rate. Southern Company urges use of a simple average of the results of (1) a historical 5 year compound earnings per share growth rate, (2) a sustainable retention growth rate based on the industry average retention rate times a sustainable required rate of return, and (3) analyst forecasts from large investment houses. Southern Company also recommends that in determining each of these growth rate measures, individual company values be weighted by the value of the utility's total assets. Without specifying its results from each of three methods, Southern Company recommends a figure of 4.83 percent that results from its application of this averaging procedure.[95]

BEC recommends a range between 4.75 and 5.00 percent (average 4.88 percent) based on its evaluation of historical growth, fundamental analysis, and direct analysts, forecasts. Looking at 5 and 10 year historical dividend and earnings per share growth rates, BEC finds a range of 5.3 to 5.6 percent. Using current and projected "fundamental" analysis growth rate estimates in a variable growth DCF model, BEC finds equivalent composite constant growth rates applicable to the model that the Commission adopted in the last proceeding of between 4.8 and 5.0 percent. Finally, BEC finds that direct analysts' forecasts of dividend and earnings per share growth during the base year are between 4.5 and 5.6 percent.[96]

AUS contends that if growth rate analysis is based upon fundamental growth rate forecasts, historical growth rates and analysts' forecasts, the range of possible growth rate choices for the year ending June 30, 1985, would be about 4.50 to 4.75 percent.[97] AUS presents in its comments the results of an analysis of the association between electric utility stock prices and 16 alternative measures of historical and analyst forecasted growth rates, with and without consideration of five measures of risk. AUS concludes from this analysis that the published dividend growth projections of Value Line and Merrill Lynch best explain the values of electric utility common stocks. The pertinent growth rates projected by Value Line and Merrill Lynch both round to 4.6 percent, which AUS notes represents the approximate midpoint of its 4.50 to 4.75 percent range.[98] AUS also evaluates a two-stage growth model where it recommends that the first stage (5 years) use its high growth rate of 4.75 percent and the second stage (beyond 5 years) use a 4.5 percent rate.[99]

SWEPCO urges a combination of historical growth and Value Line and Morgan Stanley forecasts and recommends a growth figure of 4.56 percent on this basis.[100]

GSA recommends the use of growth forecasts by analysts and historical growth rates. GSA contends that the use by the Commission of a constant growth DCF model makes the use of estimates of long-term growth necessary. GSA concludes that the Merrill Lynch steady-state growth forecast, with a mean of 4.0 percent and a median of 3.9 percent for the base year, is the only appropriate long-term forecast to use. GSA also reviews bi-monthly Value Line four to five year growth forecasts in book value ranging from 3.62 to 4.17 percent and with an average of 3.69 percent. GSA computes bi-monthly estimates of the market required rate using bi-monthly median dividend yields together with (1) the Merrill Lynch median 3.9 percent growth rate and, alternatively, (2) bi-monthly Value Line book value growth rate forecasts.[101]

BEC and AUS criticize GSA's reliance on estimates of long-term growth by Merrill Lynch and Value Line. AUS contends that the estimates are below the recommendations of most other commenters and that GSA offers no evidence that investors rely on such forecasts.[102] BEC contends that GSA is

[87] Reply Comments of WCG at 4–5 and Appendix A.

[88] Initial Comments of FA Staff at 24.

[89] Initial Comments of Cooperatives at 74–87.

[90] Initial Comments of AUS at 42.

[91] *Id.*

[92] Initial Comments of AUS at 44–45.

[93] *Id.*

[94] Initial Comments of CP&L at 2.

[95] Initial Comments of Southern Company at 3–7

[96] Initial Comments of BEC at 7–26.

[97] Initial Comments of AUS at 37

[98] Initial Comments of AUS at 37–41

[99] Initial Comments of AUS at 49.

[100] Initial Comments of SWEPCO at 4 and SWEPCO's Exhibit 2. It is noteworthy that Exhibit 2 is inconsistent with the text of the commenter at page 4. Exhibit 2 shows an average growth rate of 3.79 percent, not 4.56 percent.

[101] Initial Comments of GSA at 4–8 and Exhibit IV

[102] Reply Comments of AUS at 21–22.

in error in the way that it uses the long-term growth estimates because the estimates are of expectations for growth in the distant future.[103]

WCG argues that the growth component in the DCF analysis should be no higher than the 4.0 percent that WCG describes as the FA Staff estimate for growth in the prior generic rate of return proceeding in Docket No. RM84-15-000. WCG supports this contention with general arguments that equity costs have declined and that returns on equity expected by investors have declined since the base period covered by the last proceeding. WCG also argues that any "sv" adjustment in a fundamental growth analysis by the Commission should be negative because the utilities that expect to issue common stock are the utilities that are generally selling below book value.[104]

BEC argues in response to WCG's latter comment that the use of data only for utilities that are selling at less than book value gives an inaccurate picture of the industry as a whole.[105]

3. Analysis and Findings

On review of the comments on growth rate, the Commission finds no particular one that it is willing to adopt completely as its own. Instead, the commission reviews and evaluates for its analysis the underlying factual data presented by the commenters for reasonableness and for consistency with other information. Generally, the Commission finds this underlying factual data complementary rather than contradictory. Thus, the Commission essentially relies on all of the data supp ied by commenters in its evaluation of the growth rate to use in its DCF analysis.

As indicated above, the majority of commenters' recommendations for the growth rate fall between 4.39 and 4.88 percent. *See* Table 1, *supra*. The Commission finds a 4.5 percent growth rate for the base year based on a range of 4.3 percent determined by a two-stage growth analysis and 4.7 percent determined by a fundamental analysis. Thus, the Commission believes its analysis is generally consistent with and supported by the recommendations of the commenters.

Only two commenters, NEP and NSP, recommend growth rates higher than 4.88 percent. These recommendations are based primarily on extrapolations of past growth rates in dividends per share and supported by calculations of actual fundamental growth rates during the base year period. The Commission finds these recommendations too high. First, absent other data to the contrary, past trends in dividends provide useful starting points for a growth rate analysis. However, other record data is suggestive that this past will not be repeated over the long term future, the relevant period for a DCF analysis. In particular, direct analyst forecasts of dividend growth which are only for the near-term (3 to 5 year) future are generally in the 4.5 to 4.9 percent range and no one predicts higher growth rates beyond that time period. The Commission indicates below that it places substantial weight on analyst forecasts as measures of the near-term growth expectations of investors. Further, the Commission's analysis of the fundamental components of this growth, below, suggests that its continuation at past levels is unlikely. With regard to their fundamental analyses, while it may be true that investors give more weight to current actual growth rate information than to either past or forecast data, it is unlikely that investors would believe that current experience provides a good estimate of the long term future.

At the lower end of the range of recommendations are those of WCG and GSA. Neither WCG nor GSA recommends a specific growth rate. However, WCG argues that the growth rate cannot exceed 4.0 percent. The Commission is not persuaded by WCG's general arguments of interest rate declines as a basis for substantial declines in expected growth rates, since the Commission believes that they are reflected more in declines in dividend yields.[106] Any decline in the average expected long-term rate of return attributable to recent reductions in the cost of common equity is probably minimal due to the uncertainty of future interest rates. Further, the effect of any such reductions on the expected growth rate is muted further by its working only on retained earnings growth in a fundamental analysis.[107]

GSA's recommendations, which are based primarily on Merrill Lynch steady-state growth rates and Value Line forecasted growth rates in book value, are also biased downward. The Commission generally concurs with the criticisms by AUS and BEC, cited above, with regard to GSA's growth rates being significantly out of line with the recommendations of the other commenters and their relevance more as estimates of growth beyond the near-term future.

In determining the growth rate, the Commission departs somewhat from the last proceeding and chooses to place primary reliance on a two-stage growth analysis as well as a fundamental (br + sv) analysis. The fundamental analysis allows the Commission to evaluate the reasonableness of the factors underlying and creating the expected dividend growth. Estimates of investor growth expectations should not be based on unrealistic forecasts of utility returns, retention rates, and the like. Further, since most available forecasts are essentially short-term, their reasonableness as long-term rates should be considered. This can be done by evaluating their implications in the context of a two-stage growth model.

The Commission also believes that both historical and forecast data should be used to evaluate the parameters for the approaches used. However, where historical data is used, there must be good reason to believe that the past can be used to measure expectations of the future.

Also, in this regard, it should be noted that the Commission here focuses mostly on the primary factual data underlying commenters' recommendations rather than on the recommendations themselves. The Commission evaluates that data for use as the parameters in the two adopted approaches.

Finally, the Commission believes that all relevant data should be used and any apparent inconsistencies explained to the extent possible. In this regard, the growth rate determined in this proceeding should be reconcilable with the growth rate determined in the last proceeding.

The determination of the growth rate involves substantial judgment on the Commission's part. While the Commission's perspective is different from that of a security analyst or a prospective stock buyer, it has the same data available to it. It must infer from that data the expectations of investors on the future prospects of companies implied by current market prices. Thus, the Commission's analysis is no more precise than any other judgmental exercise. The Commission's analysis therefore determines a range for the growth rate based on the best available data and within the context of each analytical approach used. The Commission must then decide on a specific rate within that range.

With these considerations in mind, the Commission estimates that the investors' industry average expected

[103] Reply Comments of BEC at 19-23

[104] Initial Comments on WCG at 1 5

[105] Reply Comments of BEC at 23-24

[106] *See* Section III. I., *infra*.

[107] The Commission also agrees with BEC's rebuttal to WCG s suggestion that the "sv" term in the fundamental analysis be negative

growth rate during the base year was 4.5 percent. This is based on a "best" fundamental analysis determination of 4.7 percent and a "best" two-stage model determination of 4.3 percent.

a. *Fundamental Analysis.* The use of the fundamental analysis leads to a range of plausible values for the average long-term growth rate between 4.0 and 5.2 percent. This is based on the following ranges for its components:

$bxr + sxv = g$
$(.28)x(14.4) + (1.5)x(.00) = 4.0$
$(.32)x(15.4) + (1.6)x(.15) = 5.2$

where

b = average expected long-term retention ratio,
r = average expected long-term rate of return on common equity,
s = average expected long-term rate of new common stock sales, and
v = average expected long-term common equity accretion rate, from selling stock at prices other than book value.

i. *The Retention Ratio ("b").* The range for the expected average long-term retention ratio is based on an evaluation of the following primary data submitted in the record, or otherwise available to the Commission from publicly available sources:

1. For a sample of 93 companies, FA Staff indicates that Value Line projects mean and median dividend payout ratios of 71.9 and 71.1 percent, respectively, for 1988. This implies retention ratios of 28.1 and 28.9 percent since the retention ratio equals one minus the payout ratio.[108] (Note that these ratios are presented in percentage terms in the text of this order.)

2. Based on composite data, FA Staff estimates that, on June 7, 1985, Value Line projected an industry average dividend payout ratio of 82.8 percent for the period 1987–89 and that, on June 28, 1985, it projected a 69.6 percent average payout ratio for the period 1988–90. This implies retention ratios of 17.2 and 30.4 percent, respectively.[109]

3. AUS, on the basis of the June 28, 1985 report cited by FA Staff, estimates that Value Line projects a retention ratio of 33.6 percent for the 1988–90 period.[110] (The comparable projected retention ratio for the 1987–89 period is 31.0 percent.)[111]

4. Duff and Phelps projects a near term future retention ratio of 30 percent for the industry.[112]

5. The mean, median, and composite retention ratio for the industry since 1975 have been as follows:[113]

Year	Mean (percent)	Median (percent)	Composite (percent)
1975	32.2	31.3	32.5
1976	33.0	32.7	33.6
1977	28.1	30.0	33.0
1978	28.1	30.9	29.5
1979	23.4	27.4	24.5
1980	21.2	24.0	23.8
1981	27.7	30.2	26.2
1982	25.7	27.3	27.4
1983	32.6	33.1	31.3
1984	31.2	33.2	35.2

In evaluating this data, the Commission first notes the range of projected retention ratios based on Value Line data is large, 17.2 to 33.6 percent. Eliminating the aberrant 17.2 percent value, this range becomes 28.1 to 33.6 percent. The Commission also notes that all of the Value Line forecasts were for the latter half of the base year and, thus, may not be representative of average near-term future expectations during the whole of the base year. In particular, the forecasts from the June 28, 1985 report are referred to as Value Line's first estimates for 1986.[114] Given the changes from the report of a few weeks earlier, these estimates probably represent a departure from the projections it reported during the year up until then. As a result, the Commission is inclined to give less weight to these updates. The resulting range of Value Line projected retention ratios is 28.1 to 31.0 percent.

Actual retention ratios for the recent past, especially median and composite rates, suggest retention ratios in the range of 31 to 33 percent for the near-term future absent any significant changes in cash flow needs or sources. However, the forecasts by analysts of 31 percent or less for the near-term together with the fact that retention ratios over the last 10 years have generally been less than 30 percent casts doubt on the validity of recent past values for the long-term future. Based on the average historical experience and the near-term future projections, the Commission believes the range of plausible average expected retention ratios is 28 to 32 percent. The use of a 30 percent retention ratio as the Commission's best long-term estimate is consistent with the retention ratio remaining above 30 percent for the next few years, and moving to a rate slightly below 30 percent as the long-term sustainable rate.

ii. *Expected Rate of Return on Common Equity ("r").* The range for the average long-term expected rate of return on common equity ("r") is derived from the following data from the record or otherwise available to the Commission from public sources:

1. Value Line projects average rates of return on common equity for electric utilities between 14.5 and 14.9 percent in 1987–1990.[115]

2. Duff and Phelps estimates that the industry average rate of return on common equity will be higher than 14.0 percent during the next several years.[116]

3. FA Staff's attrition analysis shows the following comparison between allowed and earned rates of return:[117]

Year	Allowed (percent)	Earned (percent)	Attrition (percent)
1979	13.5		
1980	14.3	11.7	1.8
1981	15.3	12.9	1.4
1982	15.8	13.6	1.7
1983	15.3	14.9	0.9
1984	15.3	14.6	0.7

FA Staff defines attrition as the difference between the earned rate of return in one year and the allowed rate of return for the prior year.[118]

4. The mean, median, and composite earned rates of return for the industry since 1975 have been as follows:[119]

Year	Mean (percent)	Median (percent)	Composite (percent)
1975	11.6	11.9	11.3
1976	11.8	11.6	11.7
1977	11.6	11.6	11.7
1978	11.8	11.8	11.2
1979	11.5	11.6	11.2
1980	11.5	11.5	11.5
1981	12.9	13.2	12.5
1982	13.4	13.6	13.4
1983	14.9	15.0	14.6
1984	14.6	15.2	14.6

[108] Initial Comments of FA Staff at 18 and Attachment B.

[109] *Id.* at 18 and Attachments D and E.

[110] Reply Comments of AUS at 8. FA Staff bases its estimate on the Value Line projections of price-earnings ratios and dividend yields. Multiplying the price-earnings ratio times the dividend yield produces an estimate of the dividend payout ratio and one minus this ratio equals the retention ratio. AUS bases its estimate on the Value Line projections of return on common equity and retention growth rate. Dividing the retention growth rate by the rate of return on common equity also produces an estimate of the retention ratio. Since the values for the retention ratios determined by the two methods are different and since definitionally they should approximate one another, there is an apparent inconsistency in the projections made by Value Line.

[111] This ratio is determined in the same manner as AUS used with data from the later Value Line report. *See* previous footnote and Initial Comments of FA Staff at Attachment D.

[112] Initial Comments of FA Staff at 18.

[113] Initial Comments of BEC at Appendix 6 and computer printouts on 100 company sample using Compustat data developed by Commission Staff. This latter information has been placed in the public files.

[114] Initial Comments of FA Staff at Attachment E.

[115] Initial Comments of FA Staff at 19 and Attachments B, D, and E.

[116] Initial Comments of FA Staff at 19.

[117] Initial Comments of FA Staff at 20.

[118] Initial Comments of FA Staff at 20.

[119] Initial Comments of BEC at Appendix 6 and computer printouts on 100 company sample using Compustat data developed by Commission Staff. This latter information has been placed in the public files.

The Commission believes that rates of return, earned and allowed, are unlikely to remain at the level of the last few years for too far into the future. Interest rates and, by implication, common equity costs, have generally been declining since the peaks reached in the early 1980's. Average allowed rates of return have not declined in the same manner yet, probably due to a lag between the two series, but they should follow since allowed rates are generally based on the costs of common equity. Likewise, the Commission expects earned rates of return to follow allowed rates. Thus, the Commission believes it is likely that investors do not expect average rates of return on common equity at the levels of the recent past in the long-term.

On the other hand, the Commission notes that, with market-to-book ratios in the range of unity and earned rates of return on common equity in the 14.5 to 15.3 percent range during 1984, there may be good reason to believe that investors expect rates of return above 14.5 percent at least for the near-term future. This is consistent with the near-term forecasts by Value Line of rates of return in the 14.5 to 14.9 percent range noted above.

The rate of return value needed for the retention growth calculation is a composite average of the rates expected over future years. In terms of expectations that must reflect, in part, the recent high allowed and earned rates of return in the range of 15 percent and above and, in part, average historical rates of return generally less than 14 percent, the Commission finds the range of plausible average expected rates of return on common equity to be 14.0 to 15.0 percent. In the Commission's judgment, weighing the near-term expected rates with lower long-term rates, and considering the fact that in the determination of an average long-term composite the near-term expectations receive greater weight than the longer-term expectations, the best estimate for an average expected rate is 14.6 percent.

This discussion and analysis of the expected rate of return value has been presented in terms of rates of return on average common equity, since that is generally how commenters presented their data. However, the rates of return on beginning of year common equity are more consistent with the evaluation of effective required rates of return found in the new DCF model in this proceeding. This is because effective rates are essentially computed by dividing return values by beginning of year investment values. There is a mathematical relationship between the rates of return on average and beginning of year common equity investment values using the growth rate in common equity.[120] Rather than converting all of the above rates to rates of return on beginning of year common equity, the Commission has chosen to simply convert the above-determined range and best estimate. Thus, in terms of rates of return on beginning of year common equity, the Commission finds the range of plausible values to be 14.4 to 15.4 percent and its best estimate, for purposes of estimating the retention growth portion of the DCF growth rate is 15.0 percent.

The 30 percent retention rate together with the 15.0 percent rate of return suggests an average expected long-term internal growth rate (br) of about 4.5 percent. This finding is consistent with the other related information presented by commenters in this proceeding. It is consistent with the mean and median near-term retention growth projections of Value Line in the order of 4.5 and 4.6 percent,[121] assuming some expectation of lower values beyond that time following from the discussion above.

BEC estimates average retention growth during the 1984 to 1985 period to be in the range of 5.1 to 5.2 percent.[122] AUS estimates the average base year retention growth as 4.79 percent.[123] NSP finds the mean and median retention growth during 1984 to be 4.94 and 5.35 percent, respectively.[124] Finally, NEP finds the median retention growth during 1984 to be 5.32 percent.[125] The recent high retention growth rates found by these commenters are not inconsistent with the lower projected rates. In whole or in large part, they can be accounted for by reference to recent record high allowed and earned rates of return which, as discussed above, the Commission does not think reasonable to project into the future.

iii. *Growth in Common Equity ("s").* Three commenters present estimates of the average expected long-term rate of new common stock sales, "s". FA Staff recommends a value of 1.6 percent.[126] BEC proposes the use of a 1.5 percent rate.[127] Cooperatives estimate a 1.5 percent value for use in its industry-wide growth rate estimate.[128]

Since: (1) All of the recommendations are in the 1.5 to 1.6 percent range, (2) the Commission belives that estimates in this range are equally reasonable, (3) the Commission has no policy basis for using either the high or low end of the range, and (4) the effect of this range of the overall growth rate is only a few basis points, the Commission believes it is reasonable to use the mid-point of this range, 1.55 percent.

iv. *Accretion Rate ("v").* The range for the accretion raté ("v") depends on projected market-to-book ratios. Most commenters base their projected ratio on the current ratio, which has been about unity. With a market-to-book ratio of one, the accretion rate is zero. BEC evaluates the market-to-book ratio implied by Value Line projections of rates of return on common equity and price earnings ratios and finds a mean market-to-book ratio of 1.13 and a median of 1.17.[129] Since the conceptually correct value implied by the fundamental analysis is the investors' projected market-to-book value, the Commission thinks it reasonable to temper the current market-to-book ratio data with the forecasts by Value Line which suggest an increasing ratio over the near term. This may be attributable to the lag between allowed rates of return and common equity costs. In order to reflect some increase in market-to-book ratios, the Commission adopts BEC's proposed rate of 1.13 which yields an equity accretion factor of 0.1 percent (rounded).

Using its judgment as to the values investors are using (implicitly or explicitly) in their investment analyses, the Commission estimates a growth rate of 4.7 percent on the basis of a fundamental analysis using the following parameters:

$b \times r + s \times v = g$
$(.30)(15.0) + (1.55)(0.1) = 4.7$

b. *Two-Stage Growth Model.* Similarly, based on the data in the record, the use of a two-stage growth model produces a range of plausible growth rates of 3.9 to 4.7 percent. This is

[120] It can be shown that the relationship between the rate of return on average common equity (RACE) and the rate of return on beginning of year common equity (RBCE) is as follows:

$RBCE = [(2+G)/2] * RACE$

where G = growth rate in common equity from beginning of year to end of year.

The growth rate used in these conversions is 5.9 percent, the simple average of the range of 5.4 to 6.4 percent given by commenters. However, the results are reasonably invariant using the whole range. For the basis for the range, *see* Initial Comments of FA Staff at 23–24 and Cooperatives at 86.

[121] Initial Comments of BEC at 15–16 and Appendix 11.

[122] Initial Comments of BEC at 13 and Appendix 9.

[123] Initial Comments of AUS at 37 and Schedule 5.

[124] Initial Comments of NSP at 13 and Appendix 3.

[125] Initial Comments of NEP at 5 and Schedule 7.

[126] Initial Comments of FA Staff at 23–24.

[127] Initial Comments of BEC at 18.

[128] Initial Comments of Cooperatives at 87.

[129] Initial Comments of BEC at 19.

based on ranges for the first and second stage growth rates of the following:[130]

Next 5 years (percent)	Beyond (percent)	Composite (percent)
4.5	3.5	3.9
5.6	4.3	4.8

i. *Growth During the Next Five Years.* The range for the short-term growth rate is based on the following basic information:

1. During the base year, Merrill Lynch projected earnings per share (EPS) growth rates of 4.6 pecent (mean) and 4.8 percent (median).[131]

2. During the base year, Value Line projected EPS growth rates of 4.6 percent (mean) and 4.8 percent (median).[132]

3. During the base year, the mean and median Institutional Brokers Estimate System (I/B/E/S) five year projected EPS consensus growth rates were 4.5 percent and 4.2 to 4.5 percent, respectively.[133]

4. During the base year, Merrill Lynch projected DPS growth rates of 4.9 percent (mean) and 4.7 percent (median).[134]

5. During the base year, Value Line projected dividend per share (DPS) growth at rates of 4.8 percent (mean) and 4.5 to 4.6 percent (medians).[135]

6. During the base year, Salomon Brothers' five year projected normalized growth rates were 5.6 percent (mean) and 5.6 percent (median).[136]

7. Five and ten year historical DPS growth rates range from 4.5 percent (10 yr, AUS) to 5.6 percent (5 yr, BEC), but mostly in the range of 5.2 to 5.6 percent.[137]

8. Five and ten year historical EPS growth rates ranging from 5.3 percent (10 yr, BEC) to 8.9 percent (5 yr, BEC).[138]

9. The Commission's fundamental analysis is based primarily on data that could legitimately be considered more indicative of the near-term future than of the long-term. Thus, this rate could be used as another estimate of the short-term growth rate. This rate is 4.7 percent.

The majority of the direct analyst forecasts of dividend and earnings per share growth are in the 4.5 to 4.9 percent range. Since the Commission is persuaded by the arguments raised in the comments supporting the validity of analyst forecasts being reflective of investor's expectations, at least in the short-term, the Commission is inclined to place greater weight on these statistics than on the historical growth rates.[139] However, the recent historical growth in dividends suggests that investors may believe a range of plausible near-term future growth rates in dividends of 5.2 to 5.6 percent. Considering both sets of data, the Commission estimates an expected average growth rate over the next five years of 4.8 percent. The Commission notes that this rate is consistent with a downward trend in growth rates from the current level of between 5.2 and 5.6 percent to a rate of between 4.0 and 4.5 percent over the first five years.

ii. *Growth Beyond Five Years.* The evaluation of the expected growth rate beyond five years is more difficult, but the Commission can look to some estimates that have been used by others. The only published rate described as a long-term growth rate that could be used in the second stage of a DCF analysis is that of Merrill Lynch.[140] It publishes a rate referred to by the GSA as an average long-term growth forecast. For the base year, this rate is estimated to be 4.0 percent (mean) or 3.9 percent (median). GSA also refers to dividend and price growth histories for extended holding periods to obtain the bottom end of its range of second stage growth rates, 3 to 4 percent.[141]

Other data in the record relevant to the determination of the long-term expected growth rate are:

1. AUS uses as a second growth rate the lower end of its range of plausible growth rates, 4.5 percent.[142]

2. Cooperatives, in Reply Coments, use a 4.0 percent rate for their second stage based on analysts' forecasts of sustainable growth.[143]

3. In both of the two-stage growth studies referred to in Order No. 420 (by Detroit Edison and Cooperatives), the second stage growth rate was 4.0 percent.[144]

The Commission also bases its estimate of a long-term rate applicable to the period beyond five years on its own fundamental analysis of retention growth, which some refer to as a sustainable growth rate method. Sustainable growth analyses are essentially fundamental growth analyses where it is assumed that firms are expected to earn, or average, their cost of capital. From its analysis of the above, the Commission believes a second stage expected growth rate above 4.3 percent is unlikely. With a retention ratio of between 28 and 30 percent, which is the Commission's best estimate of the long-term ratio, a 4.3 percent retention growth rate implies average long-term rates of return on common equity in the range of 14.3 to 15.4 percent.[145] The Commission cannot see any basis for believing that investors expect such historically high rates of return into the distant future. On the other hand, a 4.0 percent retention growth rate, together with the above projected retention ratios, implies expected rates of return on common equity of between 13.3 and 14.3 percent, which seem more reasonable for long-term expectations.[146] While there is some possibility of retention growth rates somewhat below 4.0 percent, the Commission finds such rates unlikely. On review of this data, especially in light of the sustainable growth analysis, the Commission estimates the expected second stage long-term growth rate to be 4.0 percent.

[130] These composite average growth rates are determined by finding the internal rate of return in an expanded form of the DCF model adopted as the primary model for use in this proceeding and incorporating a different growth rate during the first five than years in the remaining years.

[131] Initial Comments of BEC at 25 and Appendix 16.

[132] Initial Comments of BEC at 25 and Appendix 15.

[133] *See* Initial Comments of BEC at 25 and Appendix 17. Also, AUS determined a median growth rate of 4.48 percent from I/B/E/S five year projected earnings per share data during the base year. Initial Comments of AUS at 37 and Schedule 3. *See* also Initial Comments of EEI at Table 1.

[134] *See* Initial Comments of BEC at 25 and Appendix 16. Also, AUS determined a median growth rate of 4.64 percent from Merrill Lynch projections on dividends per share growth during the base year. Initial Comments of AUS at 37 and Schedule 3.

[135] *See* Initial Comments of BEC at 25 and Appendix 15. Also, AUS determined a median growth rate of 4.63 percent from Value Line projections on dividends per share growth during the base year. Initial Comments of AUS at 37 and Schedule 3.

[136] *See* Initial Comments of BEC at 25 and Appendix 18.

[137] Initial Comments of AUS at 37, BEC at 9, NEP at 4, NSP at 13, and SWEPCO at Exhibit 2.

[138] Initial Comments of BEC at 9 and SWEPCO at Exhibit 2.

[139] With regard to the use of analyst forecast data, the Commission stands by its discussion in Order No. 420, 50 FR 21819. Further, the Commission generally concurs with the contentions made by EEI and AUS to the effect that stock market prices reflect these forecasts. However, the Commission does not agree that this implies that these rates are the appropriate rates to use in a DCF analysis where the model calls for the investors' average long-term growth rate.

[140] *See* Reply Comments of BEC at 22.

[141] Initial Comments of GSA at 7–8.

[142] Initial Comments of AUS at 49.

[143] Reply Comments of Cooperatives at 41.

[144] Order No. 420, 50 FR 21818.

[145] Pursuant to the Commission's earlier discussion of rates of return on average versus beginning of year common equity, these rates should be viewed as the latter for purposes of evaluating the proper growth rate for the model adopted in this proceeding. In terms of rates of return on average common equity values, this range is 13.9 to 15.0 percent.

[146] In terms of rates of return on average common equity, this range is 12.9 to 13.9 percent.

Using a two-stage model with a 4.8 percent growth rate for the next five years and a 4.0 percent rate beyond, the average expected long-term growth rate is 4.3 percent.

c. *Conclusion.* Taking the fundamental analysis result of 4.7 percent together with the two-stage model result of 4.3 percent, the Commission determines that the average expected growth rate is 4.5 precent.

F. Corroborative Evidence

1. Introduction

In the NOPR, the Commission requested that commenters support their estimates of the market required rate of return with corroborative evidence. The Commission did not specify any particular types of corroborative evidence for commenters to focus on.

Few commenters provided analysis of corroborative evidence in support of their recommendations. The types of evidence submitted by commenters for corroboration included some risk premium analyses, earnings valuation analyses (earnings-price and market-to-book ratios), and a two-stage DCF model. The Commission reviews this evidence and other publicly available data below.

2. Risk Premium Analyses

There are two general approaches to estimating the market required rate of return on common equity. It can be estimated directly by estimating its component parts, the factors for which investors ask compensation. Those factors are the real time value of money, a premium for expected inflation, and a premium for risk. Alternatively, it can be estimated indirectly on the basis of the return expectations embodied in the prices investors are willing to pay for stocks. The latter approach is essentially the discounted cash flow method in all of its variations, including the evaluation of earnings-price and market-to-book ratios which are addressed below. The direct approach is usually referred to as the risk premium approach and also has many variations. These variations can generally be categorized on the basis of the base rate [147] with which the estimated risk premium is supposed to be added, or otherwise combined.

Two commenters offered, as primary or corroborative evidence, estimates of market required rates of return on common equity for electric utilities based on risk premium analyses. AUS based its estimate on the risk premium of common stocks over public utility bonds. NSP looked at risk premiums of public utility common stocks over Treasury bonds and over public utility bonds based on the Commission's findings in Order No. 420.

AUS estimated a base year average market required rate of return of 16.30 percent, based on the addition of a 3.96 percent risk premium to the base year average yield on newly issued A-rated public utility bonds of 12.34 percent. The risk premium is based on the long-term average realized risk premium of common stock over high grade corporate bonds (for the period 1926 to 1984), adjusted for estimated differences in risk between A-rated public utility bonds and AAA-rated corporate bonds.[148]

NSP contends in its comments that a 15.25 to 16.00 percent market required rate of return is suggested by risk premiums of 3.5 percent over government bond yields and 2.0 percent over public utility bond yields, where these premiums are based on the Commission's findings in Order No. 420. Average yields on 10 and 20 year constant maturity Treasury bonds were 11.75 and 11.89 percent, respectively for the base year in the current proceeding. NSP simply added these yields together with the 3.5 percent premium and produced required common equity return estimates of 15.25 to 15.39 percent.[149] Similarly, NSP added the 2.0 percent premium to base year averages of public utility bond yield composites (by rating class), which ranged from 13.10 to 13.96 percent, to produce a range of required common equity returns of 15.10 to 15.96 percent.

Before addressing the specifics of these comments, the Commission notes some concerns with the reliability of risk premium estimates of market required rates of return. As the Commission stated in Order No. 420, it is difficult to estimate what risk premiums actually are, because they are not directly observable and because they are likely to vary over time.[150]

First, there are good reasons to question the stability of risk premiums of utility common stock returns over bond yields or other common stock returns, especially for recent years. Electric utilities, along with the energy sector of the economy as a whole, have experienced tremendous changes in the recent past—OPEC, Three Mile Island, etc. These changes have surely had an impact on the relative risk of electric utility investments (both stocks and bonds) to investments in other segments of the economy. Because of this, the relationship between the risk of, and market required rates of return on, utility common stocks and all industry common stocks has probably changed. The relationship between the risk of utility and all industry bonds has probably also changed.

Second, as the Commission stated in Order No. 420,[151] the historical relationship between debt and equity securities changed in 1979 when the Federal Reserve Board changed its policies. Prior to 1979, its objective was to stabilize interest rates. In 1979, however, it began to focus on maintaining a stable monetary aggregate. Since then, interest rates have been more volatile. This has affected the risks associated with long term bonds more than it has common stock.[152]

These changes in relative risk between utilities and other industries and between debt and equity securities arising from these events have probably not produced stable risk premiums. At

[147] Examples of what is meant by the term "base rate" here include the yields on Treasury bills and on A-rated public utility bonds. Each of these yield series already takes account of different types and amounts of risk. Thus, when common stock required rates of return are compared to them, different premiums are expected. The expected premiums will vary with the amount and types of risks already embodied in the base rate.

[148] The average realized rate of return on common stock over the period was 9.5 percent versus an average return of 4.4 percent on high grade corporate bonds. The yield spread between A-rated public utility bonds and AAA-rated corporate bonds for the base year was 1.14 percent. Adding this to the average return on high grade corporate bonds of 4.4 percent produces an estimate of the average return on public utility bonds of 5.54 percent. When this rate is subtracted from the 9.5 percent average historical common stock return, a risk premium of 3.96 percent is produced. *See* Initial Comments of AUS at 51.

[149] Initial Comments on NSP at 23.

[150] 50 FR 21821.

[151] *Id.*

[152] *See* Reply Comments of WCG at 12. As evidence of this change, one study referred to by WCG estimates that the standard deviation in the rates of return on bonds in duration from 1 to 8 years had a range of 2.26 to 5.43 during the period January 1977 to September 1979, just prior to the Federal Reserve policy change in October 1979. However, that range of standard deviations for these different duration bonds was 5.15 to 20.4 during the two year beginning January 1980. In contrast, the standard deviation of rates of return on common stocks hardly changed at all between these two periods. It was 17.46 during the first period and 17.55 during the later period. (Zvi Bodie, Alex Kane, and Robert McDonald, "Why Haven't Nominal Rates Declined?" *Financial Analysts Journal*, March–April 1984, p. 16.) Other evidence is found in the changed relationship between bond and common stock yields. Whereas prior to 1979 AAA-rated utility bonds and utility dividend yields tracked one another closely, since that year the bond yields have been significantly higher. (*See*, for example, Dennis B. Fitzpatrick, "Does the Negative Risk Premium Really Exist?" *Public Utilities Fortnightly*, July 8, 1982, p. 27.)

the least, the Commission believes that the measurement of the current premiums is made more difficult by these factors.

For these reasons, the Commission is reluctant to place any great weight on risk premium analyses in general other than those based on a simple ranking of securities. In other words, the Commission accepts the notion that, for instance, an A-rated public utility bond remains more risky than a Treasury bond. However, the Commission believes it would be difficult to estimate current risk premiums. Further, given the Commission's understanding of the effects of these recent events, the Commission will not be easily convinced of claims that the risk premium between two securities is relatively constant.

Turning now to the specifics of the AUS analysis, the Commission finds it is flawed in its conceptual framework. By adjusting the base rate from "high grade corporate bonds" to "A-rated public utility bonds," the AUS analysis simply changes the base upon which common stock returns are compared. These common stock returns, however, are for all common stocks, not just electric utility stocks. What is needed is an adjustment to the risk premium (over high grade corporate or public utility bonds) for the difference in risk between utility common stocks and all common stocks. Even if one assumes that the other parts of its analysis are correct, AUS has produced an estimate of the average long-term risk premium of all common stocks over public utility bonds. This is useful for the current proceeding only if one assumes that utility common stocks are equal in risk to all common stocks. There is no record evidence to support such an assumption.

In Order No. 420, the Commission adjusted a 5.9 percent historical realized risk premium of common stock returns over Treasury bonds for the lower risk of utility common stocks by using a "beta" measure of relative risk.[153] The average electric utility beta of between .65 and .70 multiplied times the 5.9 percent corporate common stock risk premium yields a utility common stock risk premium (over Treasury bonds) of between 3.8 and 4.1 percent. Using a base year (ending June 30, 1984) average Treasury bond yield of 12.25 percent, the Commission derived a 16.1 to 16.4 percent required return estimate. The comparable average Treasury bond yield for the current base year (ending June 30, 1985) of 11.89 percent, together with this risk premium range, produces required return estimates of 15.7 to 16.0 percent.[154] But, as the Commission stated in Order No. 420 and discusses above, even these adjusted historical risk premium estimates probably overstate actual premiums since the 1979 Federal Reserve policy changes.

Further, given the Commission's new awareness of differences between nominal and effective rates of return, it seems that further adjustments are required in this type of risk premium analysis. The above-referenced historical risk premium is based on differences between annual effective rates of return, not on nominal rates. For proper comparison, the Treasury bond yield should probably be converted to an effective rate before adding the above risk premium and the final value should be compared to the Commission's estimate of the effective required rate of return based on its DCF analysis of 15.32 percent. The effective Treasury bond yield equivalent to the semi-annual nominal rate of 11.89 percent is 12.2 percent (rounded). Adding the above-referenced range of risk premiums of 3.8 to 4.1 percent to this rate produces estimates of the effective market required rate of return between 16.0 and 16.3 percent.[155] While the difference between this rate and the Commission's DCF estimate of 15.32 percent appears large, this evidence is not sufficient to warrant rejection of the DCF estimate. This is especially true given that, as discussed above, the Commission has reason to believe the risk premiums have fallen in recent years.

With regard to the NSP comments, the Commission observes that NSP presents no new information on risk premiums. As such, there is little to comment on except to note that NSP overstates somewhat the actual risk premiums found in the last proceeding. The actual risk premiums implied by the Commission's determination in the last proceeding were (1) 3.00 and 3.14 percent over 20 year and 10 year constant maturity Treasury bonds, respectively, and (2) 1.73 percent over the composite of newly issued public utility bonds. Because of this, NSP's analysis produces required rate of return estimates above those of the Commission. The Commission shows below that the risk premiums implied by its findings in the last proceeding are comparable to those found in this one.

Finally, consistent with the analysis supporting the new DCF model adopted in this proceeding (Section III.A., *supra*) the Commission is sensitive to the difference between nominal and effective yields or rates of return. In comparing interest rates of different securities, and in evaluating risk premiums, it is important that the rates be expressed in comparable terms or that the analyst be able to evaluate the effects of any differences. All rates could be converted to comparable units through the mathematical relationships that exist between them.[156] However, this means changing the rates from their published values. The Commission does not wish to proceed down that path at this time. Instead, the Commission thinks it reasonable to simply observe the direction of the changes that would take place if one did the conversions.

Bond yields are most commonly presented as nominal rates with semi-annual compounding, since interest payments are made twice a year. This rate primarily reflects the interest payments received by the lender during the course of each year and ignores any additional return that he may obtain by reinvesting this interest income in the same or other investments. The model

[153] "Beta" is a measure of risk derived from a theoretical model of capital markets, known as the Capital Asset Pricing Model (or CAPM). According to the hypothesis underlying this model, a security's risk may be divided into two parts: a "systematic" or market-related risk component which cannot be eliminated by diversification and an "unsystematic," residual risk component which can be eliminated through diversification in efficient portfolios. Systematic risk (measured by "beta") refers to the tendency of all securities to move "with the market," although the magnitude of the movement obviously varies among securities. As general supply and demand pressures act in capital and related money markets to push equilibrium required rates of return up and down over time, some securities experience greater than normal swings while others experience less. Those securities that move in perfect "lock-step" with the market will have beta values of one. Those that move less (more) than proportionately with the market will have beta values less (greater) than one. Although the existence of systematic risk arises from general market factors, its relative importance to the risk in individual securities depends on factors unique to the securities, e.g., the capital structure of the firm. On the other hand, unsystematic risk relates solely to factors peculiar to the individual securities, e.g., labor difficulties or regulatory climate. Investors, by efficiently diversifying their portfolios, can eliminate this source of risk. And, as many investors act likewise, the market prices of the stocks can be expected to reflect only systematic risk.

[154] *See* Order No. 420, 50 FR 21821. In Reply Comments, WCG does a similar analysis using the historical risk premium between common stocks and short term Treasury bills to produce an estimate of the base year required rate of return of 10.9 percent. However, the Commission finds this estimate inadequate on its face, because it barely reflects average utility yields for the base year.

[155] The comparable rates for the last proceeding were 16.4 to 16.7 percent, based on the conversion of the semiannual nominal Treasury yield of 12.25 (from Table 3) to its equivalent effective rate of 12.6 (rounded).

[156] The relationship between nominal and effective rates, repeated here for the reader's convenience, is as follows:

$$\text{effective rate} = \left[1 + \frac{(\text{nominal rate})}{m}\right]^{m} - 1$$

used in this proceeding produces estimates of the investors' effective required rates of return on common equity. These rates include the effects of reinvesting earnings. Thus, these rates are not comparable to the published bond yield figures.

To make these rates comparable, the bond yields could be converted to effective rates or the effective common equity rates could be converted to nominal rates. Since common stock dividends are paid out quarterly, when investors think of nominal market required rates of return on common equity, they may think in terms of nominal quarterly rates, i.e., nominal rates with quarterly compounding. While nominal quarterly rates are not strictly comparable to nominal semi-annual rates, the difference is generally less than the difference between them and the effective rate.

In this proceeding, the average nominal quarterly required rate of return on common equity equivalent to the 15.32 percent effective required rate is 14.51 percent. If one were to convert this to a semi-annual nominal figure, the rate would increase to 14.77 percent.[157] The import of this is that when one compares the nominal quarterly rate with a rate for a lower risk security that is expressed as a nominal semi-annual figure, the risk premium between the two is understated.

Table 3 presents selected interest rates for the base year for this proceeding (ending June 30, 1985) and, for comparative purposes, the base year for the last proceeding (ending June 30, 1984). *A priori*, the least that can be said about the estimated average market required rate of return on common equity for electric utilities is that it should generally be above the base year interest rates presented in Table 3. The estimate of 15.32 percent found reasonable in this proceeding (section III. E.3., *supra*) meets that standard. Further, applying this year's DCF model to the data for the base year ending June 30, 1984, produces an estimate of the market required rate for that year also consistent with the interest rates during that year.[158]

[157] Specially, the nominal semi-annual rate equivalent to the nominal quarterly rate of 14.51 percent is 14.77 percent. These rates are determined from the equation of the previous footnote, based on an effective rate of 15.32 percent and m values of 2 (for nominal semi-annual) and 4 (for nominal quarterly).

[158] The effective required rates presented in Table 3 are derived using the new model and data for the year ending June 30, 1984—average dividend yield of 10.74 percent and a growth rate of 4.30 percent. The nominal equivalent rates are derived from the mathematical relationship between the rates explained above.

TABLE 3.—SELECTED INTEREST RATES [159]

	Year ending	
	6/30/84 (percent)	6/30/85 (percent)
Treasury bills (new 3 month)	9.24	8.76
Commercial paper (new 3 month)	9.65	9.17
Treasury bond yields:		
10 year constant maturity	12.11	11.75
20 year constant maturity	12.25	11.89
Moody's public utility A-rated preferred stock	12.82	12.45
Moody's public utility bond yields:		
Aaa	12.84	12.47
Aa	13.44	13.10
A	13.80	13.53
Baa	14.41	13.96
Composite average	13.79	13.27
Yields on recently issued bonds:		
Moody's new A-rated	12.98	12.37
Composite average	13.52	13.11
DCF estimates of the average market required rate of return on common equity for electric utilities using new model:		
Nominal quarterly rate	15.03	14.51
Nominal semi-annual rate	15.31	14.77
Effective rate	15.90	15.32

[159] Average of monthly rates for specified periods. Sources: Federal Reserve Statistical Release G.13 (various dates) and Moody's 1985 Public Utility Manual.

Generally, as one moves down the list of securities in Table 3, the greater the associated risks and the higher the lenders' or investors' required rate of return. While there may be circumstances where the relative position of one or more of these securities may change for short periods of time, these circumstances are not the norm. The relative positions depicted in Table 3 are consistent with the Commission's understanding of the relative risks of the referenced securities. Federal government securities are of lower risk than commercial or industrial securities. Short-term securities are less risky than long-term securities. Lower bond ratings imply higher risks and higher required rates of return.

With reference to Table 3, two additional points are worth noting. First, in all cases, the reduction in the rates from the year ending June 30, 1984, to the year ending June 30, 1985, is roughly between 30 and 60 basis points. Thus, there is a general consistency in the various rates, including the estimated market required rate on common equity, from one year to the next. Second, as noted above, if the Commission were to express the rates in this table on comparable bases—quarterly nominal or semi-annual nominal or effective, the risk premiums between the debt and preferred securities and the common stock would appear greater than those depicted.

In conclusion, the Commission finds no inconsistency between its finding of an effective required rate of return for the base year of 15.32 percent and interest rates, in general, for the same time period. The implied risk premiums, while smaller than long-term historical data would suggest, appear very plausible, especially in light of the changed relationship between debt and common stock since 1979.

3. Market-to-Book and Earnings-Price Ratio Evidence

Two commenters present, as corroborative evidence, analyses based on earnings-price (E/P) and market-to-book (or price-book, P/B) ratios.

FA Staff states that the market cost of common equity should be bracketed by the E/P ratio and the expected rate of return on common equity. FA Staff first looked at the relationship between the market cost of common equity and E/P ratios. FA Staff states that when the P/B ratio is one, the E/P ratio correctly estimates the market cost of common equity. When the P/B ratio is above one, the E/P ratio is said to understate the market cost. When the P/B ratio is below one, the E/P ratio overstates the market cost. Employing its base year estimated dividend yield of 10.22 percent with its projected payout ratio of 70 percent, FA Staff estimates an E/P ratio of 14.60 percent,[160] which it claims is consistent with the above reasoning, with a P/B ratio slightly in excess of one, and its estimated cost of common equity of 14.62 percent.[161]

$$\text{Earning-Price Ratio} = \frac{\text{Divided Yield}}{\text{Dividend Payout Ratio}} = \frac{.1022}{.70} = .1460.$$

FA Staff also evaluates the expected rate of return on common equity (or expected rate of return on book) with reference to the P/B ratio. Reasoning similar to that in the preceding paragraph is applied to the relationship between these two values. When the P/B ratio is above one, FA Staff states that the expected rate of return on book value overstates the cost of common equity. When the P/B ratio is below one, the expected rate of return understates the cost of common equity. When the P/B ratio equals one, the expected rate of return on book value equals the cost of common equity. Using this reasoning, FA Staff argues that its estimate of the expected rate of return on book value of 14.7 percent, together with a current P/B ratio slightly above one, is consistent

[160] This is estimated as follows by FA Staff:

[161] Initial Comments of FA Staff at 25–26 and Attachment F.

with its cost of common equity finding of 14.62 percent.[162]

Cooperatives present an E/P ratio analysis similar to that of FA Staff.[163] Cooperatives do this analysis for their nuclear and non-nuclear samples of companies, as well as for the combined industry average. For the industry as a whole, Cooperatives use their base year median dividend yield of 9.94 percent and a projected payout ratio of 71.5 percent to derive an E/P ratio of 13.90 percent.[164] Since Cooperatives estimate the industry's average P/B ratio to be 1.14 percent, an upward adjustment of .69 percent is made to the E/P ratio to obtain an adjusted ratio of 14.59 percent.[165] Cooperatives claim that this is consistent with their 14.55 percent estimate of the cost of common equity.[166]

In Reply Comments, both FA Staff's and the Cooperatives' analyses are criticized on a number of grounds. Since the E/P analyses of both are essentially equivalent in method, criticisms of one are applicable to the other. AUS criticizes the E/P analyses in three ways. First, it states that the analyses did not use actual E/P ratios. Second, the analyses mismatch estimated (forecasts of) dividend payout ratios with historical average dividend yields. Finally, AUS argues, apparently as an alternative to the above arguments, that actual E/P ratios provide misleading corroborative evidence since such E/P ratios essentially disregard price being a function of expectations.

According to AUS, E/P ratios are historical rates and the only way these can provide a reasonable estimate of the market required rate on common equity is if investors expect both the current earnings rate and the current payout ratio to remain constant into the future. AUS points out that FA Staff provides proof of neither. As a more proper method, AUS takes its base year median E/P ratio of 14.654 percent and adjusts it by its estimate of the growth rate (4.6 percent) to obtain a "properly matched" E/P ratio of 15.34 percent (14.654 x 1.046=15.34). AUS also takes its own "adjusted" dividend yield of 10.26 percent (in lieu of FA Staff's 10.22) together with its estimate of Value Line's implicit forecast of the dividend payout ratio of .664 and, using FA Staff's formula, derives an estimated E/P ratio of 15.45 percent.[167]

BEC argues that when the P/B ratio is equal to one, FA Staff's two tests are one.[168] Both BEC and NSP make the point that the tests are not independent checks on the DCF-derived results, since they are essentially based on the same estimates of certain parameters, especially the expected rate of return on common equity.[169]

As stated above, these approaches can be considered variations of discounted cash flow analyses since they rely on the theory that stock market prices are based on the discounted cash flows to investors. Specifically, the E/P ratio is a particular form of DCF model, being derived from the general form with certain simplifying assumptions made about the cash flow stream expected by investors. The P/B ratio analysis is based on a comparative analysis of the investors' expected cash flows relative to the market value of their investment and the expected cash flows relative to the book value of their investment. Like the typical DCF models used to estimate required rates of return, these approaches attempt to infer investors' required rates of return by reference to some valuation of the investors' expectations embodied in stock market prices.

The Commission would, in general, agree with the criticism of BEC and NSP that the tests are not independent checks on the DCF-derived results, but only to the extent that these analyses relied on the same empirical data. While it is true that both market prices (P) and book values (B) are embodied

[162] Initial Comments of FA Staff at 26.

[163] Initial Comments of Cooperatives at 89–91.

[164] Using the formula given in reference to FA Staff's analysis above, the E/P ratio is estimated as the ratio of the dividend yield to the dividend payout ratio, or .0994 divided by .715 equals .1390.

[165] The adjustment used by Cooperatives is as follows:

$$\text{Underestimation} = \left[\begin{array}{c}\text{Growth in Total}\\ \text{Common Equity}\end{array}\right] \cdot \frac{[1-\text{Market-to-Book Ratio}]}{[\text{Market-to-Book Ratio}]} = [5.62] \cdot \frac{[1-1.14]}{[1.14]} = .69$$

[166] Initial Comments of Cooperatives at 89.

[167] Reply Comments of AUS at 11.

[168] Reply Comments of BEC at 25.

[169] Reply Comments of BEC at 25, NSP at 12.

somewhere in the DCF model used by the Commission (market price is the denominator of the dividend yield and book value is the denominator of the return on common equity), the Commission believes there is value in looking at P/B ratios also. The evaluations of P/B ratios does provide some corroboration of the model results, even if that is simply a check on the internal consistency of the assumptions made about the parameters in estimating the required rate of return. Secondly, the book value used in the P/B ratio is unlikely to be the same as that embodied in the average expected long-run rate of return on common equity component of the growth rate. Therefore, the Commission believes that the evaluation of the P/B ratio does add additional information to the analysis. Likewise, the Commission believes that the E/P ratio provides insights as to the internal consistency of the model's empirical results even though both the numerator and the denominator of the ratio may be employed elsewhere in the model.

Along similar lines, the Commission does not agree with the criticism by BEC that FA Staff's two tests are redundant when the P/B ratio is one. Since the tests look at different empirical data, or at least look at the same data from a different perspective, the Commission believes that there is value in the analysis.

The Commission shares the concerns of AUS with regard to the E/P analyses of FA Staff and Cooperatives. Without any apparent explanation, these analyses estimate an E/P ratio on the basis of an actual base year average dividend yield and some expected long-run average payout ratio. The resulting value is not an actual E/P ratio applicable to the base year. The ratio also appears to mismatch past and forecast data. Because of this, the resulting E/P ratios obtained by both FA Staff and Cooperatives are difficult to evaluate. The method of using a forecasted dividend payout ratio does not seem to counter the third concern of AUS, shared by the Commission, that the straight-forward use of an E/P ratio is misleading since it is not based on the long-run expectations that the theory says are the basis for market prices.

The specific E/P model derived by FA Staff appears to call for using an earnings rate for the forthcoming year.[170] [171] The method of FA Staff and Cooperatives does not appear to produce that result. AUS proposes that the expected growth rate be used to adjust the average actual E/P ratio for the base year. The Commission agrees that this would produce a result consistent with the theory underlying FA Staff's model. Using AUS's estimate of the average E/P ratio for the base year of 14.65 percent with the Commission's estimate of expected growth, 4.5 percent, yields a value of 15.31 percent. The Commission believes this value is roughly corroborative of the Commission's estimate of the effective market required rate of return, taking into account the differences in the assumptions underlying the two models.

With regard to FA Staff's evaluation of the expected rate of return on common equity vis-a-vis the P/B ratio, the Commission finds corroboration from the average P/B ratio of one during the base year [172] and its determination of the average expected long-term rate of return on common equity. As explained in the Commission's discussion of the growth rate, the expected rate of return on common equity most closely comparable to the effective required rate of return on common equity and the appropriate one to use for the determination of the growth rate in the model the Commission adopts in this proceeding is 15.0 percent.[173] This rate is based on expectations of returns divided by beginning of year common equity investment, in contrast to the more typical presentation of common equity rates of return based on average investment over the year. Thus, given a P/B ratio of one, and the resultant *a priori* expectation that the expected return on market price should approximate the expected return on book value, the Commission finds this data also consistent with its determination in this proceeding.

4. GSA's Two-Stage DCF Model

GSA uses a two-stage DCF model to check the results it obtained from its constant growth model. Its two-stage model is based on annual dividend payments, a four year period for the first stage of growth, and a 20 year period for the second stage. As with GSA's primary constant growth model, it estimates the market required rate of return on a bi-monthly basis and averages these values over the base year. GSA employs bi-monthly estimates of the short-term growth rate ranging from 4.5 to 4.9 percent (rounded) over the course of the year. For each bi-monthly determination, GSA employs a range of long-term growth rates from 3.0 to 4.0 percent. From this analysis, GSA determines an average required rate of 13.86 percent for the year using a 3.0 percent growth in the second stage and an average required rate of 14.60 percent using the higher 4.0 percent second stage growth.[174]

The Commission notes that the range of short-term growth rates used by GSA is consistent with its own findings.[175] With regard to long-term growth rates, the Commission finds the 3 percent rate too low. While GSA did not specify the exact model it used to derive its results, the Commission believes it can be surmised that it understates the effective required rate of return and produces a rate closer to the nominal quarterly equivalent rate, which the Commission finds to be 14.51 percent. Since this rate is roughly comparable to the average rate found by GSA using a 4 percent second stage growth rate, which the Commission finds reasonable, the Commission believes that the GSA study yields results consistent with its own.

G. Flotation Costs

1. Introduction

In Order No. 420, the Commission found that recovery of issuance costs only, such as underwriters' compensation and legal and printing fees, should be allowed. No recovery was allowed for "market pressure" or "market break" costs.[176] The Commission continues this policy.

2. Types of Costs to be Recovered

In the NOPR, the Commission proposed that utilities should be compensated only for issuance expenses—that is, the out-of-pocket expenses for underwriting, legal work, and publishing. The Commission noted that this would represent a continuation of the Commission's existing policy.[177] The Commission further proposed that any adjustment to the market required rate of return should reflect recovery of only average annual costs associated with new stock issues. The Commission noted its belief that an industry average adjustement to the market required rate of return is the best way of dealing with these costs since they have a relatively small quantitative impact, since the adjustment is subject to forecast errors,

[170] [171] *See* Initial Comments of FA Staff at Attachment F.

[172] Cooperatives estimate of the industry-wide P/B ratio of 1.14 times is based on data for the last month of the base year. It is therefore not reflective of average conditions during the base year.

[173] *See* Section III.E. *supra*.

[174] Initial Comments of GSA at 6-7 and Exhibit V.

[175] See Section III.E., *supra*.

[176] Order No. 420, 50 FR 21824-25.

[177] NOPR, 50 FR 30209.

and since underrecovery of such costs by individual utilities is offset over time.[178]

3. Comment Summary

The comments address three primary issues. The first is whether the Commission should make any allowance for costs due to market pressure or market break.[179] The second issue is whether flotation costs should be recovered through a form of perpetual amortization or a form of current cost recovery. The third issue is whether the recovery of flotation costs should be reflected in the allowed return on common equity.

Concerning a market pressure adjustment, a number of commenters argue that market pressure occurs and that public utilities should be compensated for the costs arising from market pressure and market break.[180] NSP and SWEPCO present empirical studies of their own that they believe demonstrate the existence of market pressure.[181] NSP also raises the question of whether the Commission's prior finding that the need for a market pressure allowance had not been demonstrated [182] means that the Commission would as a matter of policy refuse to recognize the existence of market pressure even if studies are repeatedly submitted that demonstrate market pressure.[183] In their comments, Cooperatives, FA Staff, and WCG all oppose any allowance for market pressure.[184]

Most commenters who argued for the perpetual amortization method also argued that the resulting flotation cost adjustment be applied to all equity.[185] Their primary argument is dealt with a in detail below. AUS argues that a flotation cost adjustment based only on an average will not compensate those public utilities that actually issue stock.[186]

GSA and Cooperatives oppose any flotation cost ajdustment to the average cost of equity.[187] They contend that flotation costs do not have an effect on the cost of equity, so that no adjustment should be made to the cost of equity because of them. Cooperatives suggest recovery of actual flotation costs through the cost of service.[188] In response, AUS and BEC contend that if flotation costs are not recovered, it will raise the cost of capital.[189] FA Staff opposes application of the flotation cost adjustment to all stock rather than new equity only.[190]

Also, while some commenters suggest consideration of market break in the flotation cost adjustment,[191] no quantitative studies have been presented to support an adjustment.

4. Discussion

a. *Market Pressure and Market Break.* The Commission finds that no studies have been presented which support the existence of market break. Thus, no adjustment for market break will be reflected in the flotation cost adjustment. This is consistent with the Commission's finding in the previous proceeding.[192]

As noted, several commenters recommend an adjustment for market pressure. However, only two commenters present studies to support their recommendations. Southern Company refers to two articles which, it claims, support an allowance of one percent of gross proceeds. One article referred to by Southern Company, the study by Bowyer and Yawitz,[193] found a positive market pressure cost of .76 percent for the years 1973 to 1976. The second article, the study by Logue and Jarrow [194] found market pressure cost of less than 1.5 percent for 1963 to 1974. However, the articles do not provide sufficient data to permit the Commission to evaluate the conclusions.

SWEPCO's study examines the price performance of new common stock issues of 13 utilities for the base year. The study finds that the price of eight of the issues, adjusted for changes in the Dow Jones utility average, declined upon issuance, and that the price of five of the issues *increased.* As the Commission stated in Order No. 420, "if market pressure costs do exist, one would not expect to see any price increases, except as statistical noise." [195] The SWEPCO study shows too many price increases to be considered statistical noise. The Commission believes that the results of the SWEPCO study, in conjunction with the evidence offered in the previous proceeding, do not provide a basis for concluding that the existence of market pressure has been shown.

One commenter, NSP, raises the question of whether the Commission did not recognize market pressure costs in Order No. 420 because the Commission felt that insufficient evidence was provided or because the Commission "has difficulty with the concept." [196] The Commission has an open mind on the subject of market pressure; however, the Commission will allow recovery only if convincing empirical evidence of its existence is presented.

b. *Method of Recovery.* In Order No. 420 the Commission adopted a formula for the recovery of issuance costs.[197] That formula also will be used in this proceeding.

PSCol divides flotation cost recovery methods into two categories—recovery of the costs on a current basis, and amortization of costs.[198]

The formula adopted by the Commission allows recovery each year of the total expected industry flotation cost. It is a form of current cost recovery. In this proceeding, as in the previous one, the utility companies generally argue for the amortization method. Several commenters cite a recent study by Brigham, Aberwald, and Gapenski [199] to justify their position.[200] The Brigham study suggests that flotation costs be recovered by amortizing them over an infinite period to correspond to the infinite life of common stock.[201] This type of amortization is not the type used in depreciation calculations, such as dividing the flotation cost into twenty equal payments. Rather, it is a stream of

---

[178] *Id.*

[179] EEI defines market break as short-term fluctuations in the stock price at the time of issuance. Market pressure, in turn, is an alleged decline in the price of a stock at the time of news of a new issue of that stock.

[180] Initial Comments of AUS at 45, EEI at 14, NEP at 16, NSP at 15, IIGE at 2, Southern Company at 7, SWEPCO at 5, and WTU at 2.

[181] Initial Comments at SWEPCO at 5, NSP at 15.

[182] Order No. 420, 50 FR 21824.

[183] Initial Comments NSP at 15.

[184] Reply Comments of Cooperatives at 44, Initial Comments of FA Staff at 12, and WCG Reply Comments at A–36.

[185] Initial Comments of AUS at 45, BEC at 29, EEI at 14, IIGE at 2, and Southern Company at 7.

[186] Initial Comments of AUS at 14.

[187] Initial Comments of Cooperatives at 34 and GSA at 8.

[188] Reply Comments of Cooperatives at 44.

[189] Reply Comments of AUS at 10 and BEC at 30.

[190] Initial Comments of FA Staff at 3.

[191] Initial Comments of WTU at 2, NEP at 6, EEI at 14.

[192] Order No. 420, 50 FR 21824.

[193] Bowyer and Yawitz, "The Effect of New Equity Issues on Utility Stock Prices," *Public Utilities Fortnightly*, May 23, 1980.

[194] Logue and Jarrow, "Negotiations vs. Competitive Bidding in the Sale of Securities by Public Utilities," *Financial Management*, Fall 1978.

[195] Order No. 420, 50 FR 21824.

[196] Initial Comments of NSP at 20.

[197] Order No. 420, 50 FR 21825.

[198] Reply Comments of PSCol at 5.

[199] Eugene F. Brigham, Dana Aberwald, and Louis C. Gapenski, "Common Equity Flotation Costs and Rate Making," *Public Utitilites Fortnightly*, May 2, 1985, pages 28–36 (Brigham Study).

[200] Initial Comments of IIGE at 2, Southern Company at 9, and SWEPCO at 5.

[201] Brigham, *et al.*, proposed the perpetual amortization method, but recognized the validity of alternative methods of flotation cost recovery.

payments, which when discounted at the shareholders required return, has a "present value" equal to the flotation cost. The perpetual nature of this amortization means that once this form of amortization is used to recover the flotation costs of a stock issue it must continue, or there will be underrecovery of flotation costs.

A number of companies argue that flotation cost recovery should be permitted on all outstanding stock every year, whether or not the utility has isued any new stock during the year.[202] This argument implies the perpetual method of amortization described by the Brigham study. Thus, the argument would have merit only if the Commision were to adopt this amortization method of flotation recovery, instead of a current recovery method.

For a new company, either current cost recovery or amortization would provide the correct amount of recovery as long as the method selected is followed consistently. A problem arises, however, when a company has been in existence for some time. Both ratepayers and shareholders are affected by the choice of method of recovery. If current cost recovery has been allowed, switching to amortization permits recovery of costs that have already been fully recovered. Conversely, when an amortization policy was followed in the past, switching to current cost recovery cuts off the recovery on past issues and leads to underrecovery.

The methods have very different effects on rates. If the amortization method were adopted by the Commission using information found in this proceeding, the flotation cost adjustment would be approximately 28 basis points.[203] This adjustment is large because it is recovering a portion of the flotation cost of past issues as well as that of the new issue. Under the current cost recovery method, using information found in this proceeding, the flotation cost adjustment would be 4 basis points.[204] The industry, on average, is currently projected to issue less than two percent new stock each year.[205] In this case, the current cost method provides for a relatively small flotation cost adjustment because the cost of issuing the small proportion of stock is spread over the entire rate base.

When justified, the Commission has allowed recovery of flotation costs in the past. However, it is not clear whether past recovery has been the amount that would be permitted by either the current recovery method or the amortization method. With the generic proceedings, the Commission wishes to start with a clean slate. Thus, the Commission adopted a policy of current cost recovery in Order No. 420 and will continue this policy in the current proceeding.

c. *Issuance Cost Adjustment.* The formula adopted in Order No. 420 was:[206]

$$k^* = \frac{fs}{(1+s)}$$

Where:

k^* = flotation cost adjustment to required rate of return
f = industry average flotation costs as a percent of offering price
s = proportion of new equity expected to be issued annually to total common equity

As stated in Order No. 420, this formula determines an increment to the cost of common equity which reflects, on average, the annualized amount of flotation cost incurred by utilities.[207]

Commenters' estimates of issuance costs as a percent of gross sales price, f, were in a narrow range, from 2.4 percent [208] to 2.8 percent.[209] The differences were due, for the most part, to the inclusion or exclusion of certain utilities in the commenter's analysis. The Commission finds the analysis of AUS, which included 25 new issues, to be the most complete and adopts its corrected estimate of 2.4 percent.

The expected rate of new common stock issued annually, "s," was found in the growth rate section (III. E.) to be 1.55 percent. Applying the 2.4 percent estimate of issuance costs, f, and the 1.55 percent estimate of new equity financing, s, to the above formula, the Commission finds a flotation cost adjustment of 4 basis points.[210]

$$.0004 = \frac{0.024(0.0155)}{1.0155}$$

d. *Arguments against a Flotation Cost Adjustment.* GSA opposes any flotation cost adjustment on a generic basis, noting low percentages of companies in the sample that actually issued new shares during twelve month periods ending in June 1984 and 1985.[211] This argument is unpersuasive because there have been new issues and their costs must be accounted for.

Cooperatives also oppose a flotation cost adjustment, claiming that it does not enter into an investor's consideration of risk. The Cooperatives' argument is that when flotation cost recovery is not allowed, there is a decline in the expected growth rate but no change in risk, so that the cost of capital remains unchanged. They argue that this will come about because prices will decline to raise the yield enough to offset the expected growth decline.[212] However, without a flotation cost adjustment, holders of stock at the time of the issuance would experience an unanticipated loss equal to the issuance cost and therefore would not receive their required return.

H. *Jurisdictional Risk* [213]

1. Introduction

In the NOPR, the Commission noted that it found the record in the first annual proceeding inconclusive on the question of relative risk between jurisdictional and nonjurisdictional electric operations.[214] The Commission therefore requested commenters to:

> provide evidence on the issue of whether there is a difference in risk, an estimate of the difference in the cost of common equity due to such difference, if any, between jurisdictional and retail electric operations and an explanation of how that estimate was derived.[215]

2. Comment Summary

WCG argues that the Commission should recognize in this proceeding risk reductions due specifically to the Commission's CWIP rule.[216] Nine

---

[202] *See*, for example, Initial Comments of AUS at 45, BEC at 31, EEI at 15, and NEP at 6.

[203] Based on the Commission's model for determining the market required rate of return and the perpetual amortization method proposed by the Brigham study, and by several companies. This formula adjusts the price by multiplying it by one minus the flotation cost rate. A flotation cost estimate of 2.4 percent was used.

[204] *See* Section III. G. 4. c., *infra.*

[205] *See* Section III. E. 3. a. iii., *supra.*

[206] Order No. 420, 50 FR 21825.

[207] *Id.* at 21826.

[208] The actual low estimate was 2.2 percent by AUS. However, this low estimate appears to be due to an error in the entry for underwriters' commission for Gulf States Utilities on Schedule 6 of its initial comments. When this error is corrected, its estimate would be closer to 2.4 percent.

[209] Initial Comments of AUS, BEC, EEI, SWEPCO, FA Staff, and GSA and Reply Comments of NSP.

[210]

[211] Initial Comments of GSA at 8.

[212] Initial Comments of Cooperatives at 33.

[213] As used here, jurisdictional risk is a simplified expression for the distinction in risk between wholesale and retail operations or between the rate schedule under consideration and the rest of a company's operations.

[214] NOPR, 50 FR 30209.

[215] *Id.*

[216] Initial Comments of WCG at 10. *See* Construction Work in Progress for Public Utilities; 48 Fed. Reg. 24,323 (June 1, 1983) (Docket No. RM81-38-000) (Final Rule) (Order No. 298) (issued May 16,

Continued

commenters object to any adjustment to account for jurisdictional risk. Most argue that it is just too difficult to quantify any difference in cost of equity due to differences in regulatory jurisdiction.[217] BEC is the only commenter that presents any statistical analysis on the question of relative risk.

BEC evaluates the difference in standard errors of operating income, a measure of overall operating risks, for two samples of companies. One sample consists of those companies whose sales were at least 99 percent jurisdictional to the Commission. The second sample consists of those companies whose sales were no more than 1 percent jurisdictional. BEC evaluates whether the means and medians of the standard errors were significantly different from one another. BEC concludes that there is no significant difference between the two samples.[218]

3. Analysis and Conclusions

In general, utility costs must be allocated between jurisdictional and nonjurisdictional operations in establishing just and reasonable utility rates. Capital costs, including the cost of common equity, are no different than other costs in this respect. The allocation of common equity costs is, in part, made in an implicit manner through the determination of rate base and capital structure. The percent common equity in the capital structure multiplied by the rate base value effectively allocates a utility's common equity investment between jurisdictional and nonjurisdictional operations. To be complete, however, a determination of the appropriate rate of return to allow on this "jurisdictional" common equity investment is necessary.

The standard for the allowed rate of return on common equity is that it should be commensurate with the risk of the investment. Since, theoretically, a company is a composite of assets each with different risk characteristics, the question arises as to whether the risks associated with the jurisdictional investment are the same as or different from the overall risks of the company's other investments. If the risks are the same, the company-wide cost may be used as an estimate of the jurisdictional cost. Similarly, in the context of this generic proceeding, if the assets of the industry are allocated between jurisdictional and nonjurisdictional assets, a determination must be made whether the risk associated with the composite of all jurisdictional assets is generally equivalent to the risk associated with the composite of all nonjurisdictional assets. If it is, then the industry average cost of common equity is a reasonable proxy for the average cost of common equity to the jurisdictional operations of electric utilities.

Are the jurisdictional and nonjurisdictional operations of electric utilities equivalent in risk? The Commission finds no reasonable basis to conclude that the average risks of these different operations are distinguishable. No party, despite the invitation to do so, has made a convincing case that one segment has greater risks than the other. The Commission therefore concludes that a reasonable aproximation of the cost of common equity to jurisdictional operations may be made on the basis of the average cost to the industry as a whole.

Some commenters contend that the relative ranking of the Commission as a regulatory agency by various investment advisory services is suggestive of lower risk to jurisdictional operations. However, these rankings are as much a function of the relative levels of returns as they are of risk, since investors are presumably interested in both and the assesments are intended to be a guide to investors. The regulatory risks to utilities in two jurisdictions may be identical but the regulatory rankings different because one commission allows higher rates of return to be realized. Thus, the rankings may not solely reflect differences in risk. These rankings are also subjective measures of differences in regulatory policies. As such, these rankings are open to significant measurement errors.

Further, even if these investment advisory service rankings truly reflected overall differences in regulatory risks between wholesale and retail operations, they are not measures of the overall risks of wholesale and retail operations. Regulatory risk represents only one facet of risk for a company's common equity and this facet may not necessarily be translated into measurable differences in the cost of capital since investors may be able to diversify away this type of firm-specific risk.

Concerning WCG's argument that the Commission should recognize risk reductions due specifically to the Commission's rule regarding CWIP, the Commission specifically noted in Order No. 298 the difficulty in determining the effect of CWIP on the cost of capital.[219] Furthermore, the rule was recently vacated and remanded to the Commission by the Court of Appeals.[220] Also, WCG has presented no empirical support for its contention that a jurisdictional risk differential should be recognized in this proceeding. Finally, the "evidence" that has been supplied relating to policy differences between the Commission and the average State regulatory commission, *e.g.*, CWIP policy, is largely anecdotal. The Commission does not believe that such non-quantitative assertions are sufficient to support a finding that the overall risks, and cost of capital, of jurisdictional operations are different for nonjurisdictional operations.

Concerning the empirical study presented by BEC, since there does not appear to be any bias in the study and the study does look at a measure of overall risk rather than any particular aspect or type of risk (such as regulatory risk), this study is persuasive on the relative risk issue. Absent any evidence to the contrary, the BEC study stands as the best evidence on this issue. Based on this evidence and our discussion above, it appears reasonable to find that the risks associated with the composite of wholesale operations are equivalent to the risks of retail operations, so that the average cost to jurisdictional operations can be estimated by estimating the industry average cost of equity which reflects industry average risks.

I. Quarterly Indexing Procedure

1. Introduction

In the NOPR, the Commission proposed to adopt, for the current proceeding, the quarterly indexing procedure established in Order No. 420. In that procedure, the average cost of common equity is indexed to the median yield for the 100 company sample for the most recent calendar quarter prior to the period to which the benchmark is intended to apply. The quarter-to-quarter changes in the benchmark rates are capped at 50 basis points. The initial benchmark rate established in each annual proceeding, however, will not be subject to the 50 basis point cap.

2. Comment Summary and Analysis

While some commenters supported the proposed procedure,[221] other

1983), *vacated, Mid-Tex Electric Cooperative, et al.* v. *FERC*, —— F.2d —— (D.C. Cir. Nos. 82-2058, *et al.* (September 24, 1985).

[217] These commenters are AUS, BEC, CP&L, Duke, EEI, and NEP.

[218] Initial Comments of BEC at 35.

[219] 48 FR 24340-41.

[220] *See*, note 216, *supra*.

[221] Initial Comments of NEP at 7, SWEPCO at 6, and WTU at 2. EEI acknowledged the support for the Commission's proposed procedure expressed in the previous proceeding, while also stating that

Continued

commenters suggested three types of changes: (1) The use of a period longer than one quarter to calculate the dividend yield applied in the indexing; (2) an adjustment for changes in growth expectations in addition to adjusting for changes in the dividend yield; and (3) the use of the cap as a "trigger" mechanism which, when exceeded, would cause the indexing procedure to be suspended.

a. *Extending the Period for Indexing.* Some commenters state that a period longer than one quarter should be used to calculate the dividend yield employed in the indexing procedure.[222] These commenters state that the use of a longer period would: (1) Reduce the effects of short-run volatility in yields, which may be inconsistent with the use of a constant growth DCF model; (2) diminish the potential for an abrupt change in the benchmark rate when the succession of three benchmark rates with quarter-to-quarter changes capped at 50 basis points are superseded by the rate established in the next annual proceeding, which is not subject to the cap; and (3) provide a more stable benchmark and minimize the application of the cap.

Certainly, the more quarters used in the dividend yield calculation, the greater the tendency toward the stated effects. The Commission believes that the mitigation of both the effect of volatile yields and the possibility of abrupt changes in the benchmark to be desirable, consistent with the previously stated goals of "determining and allowing rates of return that approximate actual cost rates and maintaining stability and predictability in the allowed rates".[223] These goals can, of course, conflict. The longer the period goes back, the less likely it will be that an abrupt change will occur or that short-run volatility will greatly affect the outcome. At the same time, however, the longer the period goes back, the less likely it is that the outcome will reflect the current dividend yield.

A judgment must be made as to which period gives the best balance between the potentially conflicting goals. The Commission believes the use of a 12-month moving average as suggested by some commenters would not provide a sufficiently current estimate of the dividend yield. In addition, the Commission believes that the use of the last preceding quarter, as orginally proposed, creates too great a risk that an abrupt change will occur or that short-run volatility will greatly affect the outcome. On reconsideration, the Commission finds that use of a median dividend yield for the two preceding quarters provides a better balance between accuracy and stability than use of a median dividend yield for the last preceding quarter, as originally proposed.

b. *Changes in Growth Expectations.* Some commenters expressed the view that the quarterly adjustment procedure should reflect changes in the investors' growth rate expectations.[224] These commenters point out that under the proposed procedure the growth rate estimate for the base year is used to calculate the cost of common equity for periods up to one and a half years after the base period ends. They believe that changes over time in the expected growth rate are so significant that the use of the base year's estimated growth rate, together with a more current dividend yield, results in a "mismatch" that could lead to substantial errors in the estimated cost of common equity.[225]

The Commission's quarterly indexing procedure allows for changes in dividend yield but assumes a constant growth rate. The Commission believes that the average industry dividend yield can change rapidly. Changes in the risk free rate of return (the pure time value of money plus a premium for inflation) and investors' risk perceptions are primarily reflected in changes occurring in the dividend yield. These factors, which are related to macroeconomic conditions, are more likely to change dramatically over short periods of time. The quarterly indexing procedure adopted by the Commission, which adjusts for changes in dividend yields, will pick up these changes.

In contrast, the Commission believes that growth rate changes for the industry occur more slowly. The Commission recognizes that the investors' growth expectations cannot be estimated with a high degree of accuracy.[226] Given the inaccuracy of these estimates, identifying changes in the expected growth rate cannot be accomplished with any confidence unless the changes are significant. It appears that significant changes in the long-run expected growth rate for the industry occur too infrequently and too slowly to justify attempts to provide the quarterly indexing procedure with growth rate adjustments.

A change in the expected growth rate occurs because of a change, for better or worse, in the industry's long-run expected profitability. Regulation tends to maintain profit stability by allowing higher rates to be charged when demand falls or costs rise and reducing allowed rates when demand increases or costs fall. Moreover, demand conditions and operating characteristics differ across utilities due to differences in regional economies, characteristics of the customer load, and State regulatory practices. For a rapid and significant change in the industry's expected profitability to occur, one or more of these factors would have to change for a large segment of the industry at the same time and in the same direction. A major economic shock such as the oil embargo can, of course, cause rapid changes in profit expectations, but such occurrences are infrequent. The nature and diversity of factors affecting the long-run profitability of the industry as a whole support the notion that the expected growth rate for the industry is relatively stable.

In addition, the Commission believes that changes in investors' perceptions of the average expected industry growth rate are more likely to affect near-term than long-term expectations. Thus, these relatively stable long-term dividend growth expectations will cause any changes occurring in the growth expectations for near-term dividends to have only a muted effect on the growth term of a constant-growth DCF model.[227]

---

support existed from member companies for other indexing methodologies. Initial Comments at 16. In addition, Southern Company describes a preferred indexing method that appears to be the same as the proposed procedure. Initial Comments at 13.

[222] Initial Comments of AUS at 15, NSP at 27–28, and Cooperatives at 81; *see also*, Reply Comments of AUS at 19 and NSP at 13–14, which advocate the use of a 12-month moving average. The Initial Comments of BEC advocate the use of a 6-month average. Initial Comments at 43.

[223] Order No. 420, 50 FR 21802. The dividend yield used in the previous proceedings' quarterly indexing procedure was the median yield for the preceding quarter. The median yields applied during the first three quarters of 1985 were .0988, .0911 and .0914, respectively. Had this proceeding's standard—the dividend yield for the two preceding quarters—been used in those quarterly indexing procedures, the applicable dividend yields would have been .0999, .0949, and .0912, respectively.

[224] Initial Comments of AUS at 15 and NSP at 24–25; Reply Comments of FA Staff at 3. EEI states that there is support from member companies for a quarterly recalculation of the benchmark and reiterates EEI's support expressed for the Commission's proposed procedure in the previous proceeding. Initial Comments at 16.

[225] AUS presents a procedure which purports to make quarterly adjustments for changes in the investors' growth rate expectations. AUS then compares the results of its own and the Commission's procedures and claims that the difference is evidence that a "mismatch" occurs with the Commission's procedure. Initial Comments at 17 and Schedule 1. However, AUS presents no evidence to support the contention that these estimates are more accurate than those of the Commission. The defects in the AUS procedure are discussed below.

[226] *See* Order No. 420, 50 FR 21828.

[227] The Commission has considered the use of a two-stage growth DCF model. The Commission

Continued

Finally, it should be noted that the Commission found in Order No. 420 that the long-run constant growth rate for the base year was 4.30 percent,[228] while the growth rate for this proceeding's base year was found above to be 4.50 percent.[229] This small difference between the two base years' growth rates is consistent with the view that the industry's expected growth rate changes slowly.

EEI notes that while it supported the proposed methodology in its comments in the previous proceeding, there is also support from its member companies for "recalculation of the benchmark K on a quarterly basis."[230] As discussed in the preceding paragraph, the Commission believes that the application of the proposed quarterly indexing procedure between the annual proceedings provides an accurate estimate of the cost of equity capital; therefore, the cost to both the Commission and the parties of holding a complete generic proceeding each quarter could not be justified. Moreover, if the time for the commenters to gather and present the appropriate information and for the Commission to access this information were compressed into three months, the quality of the analysis would be certain to fall. It is likely that quarterly proceedings could be completed only through the application of a repetitive mechanical process with little analysis. Neither the commenters nor the Commission would have sufficient time to adequately assess any substantially changed industry circumstances or the innovative application of existing or new theoretical tools.

Two commenters propose specific quarterly indexing procedures which purport to adjust for changes in investors' growth rate expectations. AUS's proposed procedure applies weights to measures of "historical growth," "analysts' forecasted growth," and the "fundamental growth rate" of dividends.[231] AUS claims that these weights may be inferred from the Commission's analysis in Order No. 420 because the application of these weights to data considered by the Commission yields 4.30 percent—the Commission's finding of expected dividend growth.[232] However, the Commission did not apply these weights in Order No. 420 and, indeed, there are many combinations of weights which will yield the result of 4.30 percent.[233] When applied to quarterly data for indexing purposes, each of these combinations of weights would provide a different estimate of industry growth. In sum, AUS's methodology does not provide an indexing procedure with quarterly growth adjustments that is consistent with the Commission's findings.

FA Staff states that:

> [a]doption by the Commission of the growth model used by the Financial Analyses Branch would facilitate the adjustment of the growth rate quarterly to recognize the effect on growth of significant changes in stock prices. Three components of the growth rate; the expected earned return (r), the expected retention ratio (b), and the increase in total equity from new stock sales (s), are rather stable and should not change significantly during the year. The fourth component, the accretion factor (v), can change very quickly. Since the accretion factor (v) is a function of the price/book ratio, it would be a simple matter to revise it quarterly while using a constant "r", "b" and "s" established in the annual rulemaking procedure.[234]

FA Staff does not, however, present evidence to support the contention that "v" varies over time more than the other components. If its contention is incorrect, then FA Staff's proposed method of indexing with a quarterly "v" could overstate the quarterly changes in the growth rate because the potentially counteracting changes in the components other than "v" are not accounted for. In fact, it is possible that an observed change in the market/book ratio was caused by a change in expected "b", "r" or "s."

In addition, FA Staff's proposed methodology would be easy to carry out only if the current price/book ratio is used, but the use of this current ratio assumes that the current ratio is a good estimate of the future ratio. However, FA Staff's own analysis suggests that this "fundamental analysis" approach to growth rate expectation estimation requires the use of "the average price/book ratio 'Po/Bo' at which new common stock sales are expected to be made."[235]

In sum, the Commission continues to believe that investors' growth rate expectations are relatively stable over the length of time at issue. In addition, the specific proposals of commenters to incorporate changes in growth rate expectations into an indexing procedure are inadequate. Thus, the Commission finds it appropriate to adopt the proposed quarterly indexing procedure, adjusted as stated above, which uses the estimate of the base year's growth rate when calculating the quarterly benchmark.

c. *Use of the Cap as a Trigger Mechanism.* All commenters who specifically discuss the Commission's proposed use of a cap on the quarter-to-quarter changes in the benchmark rate of return agree that this use of the cap is beneficial. Cooperatives, however, would prefer that the cap be used as a "trigger" mechanism which, when exceeded, would cause the indexing procedure to be suspended and a new benchmark rate of return to be established. This commenter believes that "[w]hen large movements in stock prices and dividend yield occur, there is good reason to suspect that the values of the parameters of [sic] DCF model have significantly changed."[236]

The Commission agrees that it is possible for extreme changes to occur in the market which could cause the adopted quarterly indexing procedure to produce a benchmark rate of return which is significantly different from the market cost of common equity. Cooperatives, however, do not present any evidence that changes in the dividend yield of the magnitude equal to their "trigger" values are likely to indicate that changes have also occurred in the investors' expectations of the average industry growth rate. The benchmarks set in this proceeding are advisory only. This provides more flexibility in determining if the benchmarks are inappropriate than is provided by Cooperatives' suggestion or any other mechanical rule. For these

concludes that, given the lack of precision in the growth rate estimation process, the available estimates of near-term and long-term growth would not provide a more reliable estimate of the cost of common equity in a quarterly indexing procedure than would a constant growth DCF model. In addition, a two-stage growth DCF model involves a considerably more complex model to calculate the required return on common equity. On this basis, the Commission determines that the use of a two-stage growth DCF model in not appropriate in this proceeding.

[228] Order No. 420, 50 FR 21820.

[229] Section III. E., *supra*.

[230] Initial Comments of EEI at 16.

[231] Initial Comments of AUS at 16.

[232] Initial Comments at AUS at 16 and 27.

[233] A 70% weighting of the "fundamental growth rate" and a 30% weighting for "analysts' forecasts" also yields a result of 4.30% as would a 70% weighting of the "fundamental growth rate" and a 30% weighting of "historical growth." In fact, any combinations of weights for which the "analysts' forecasts" and "historical growth's" weights sum to 30% will yield a result of 4.30%. In addition, if the AUS methodology was to be applied to a proceeding where two of the three growth rates were not identical, then the weights of all three growth rates could be varied and still produce a result equal to the proceeding's chosen growth rate.

[234] Reply Comments of FA Staff at 3.

[235] Initial Comments of FA Staff at 9.

[236] Initial Comments of Cooperatives at 104. The Cooperatives suggested "trigger" values of 50 basis points on the dividend yield of the "non-nuclear" group *and* 100 basis points on the dividend yield of the "nuclear group." Initial Comments at 103.

reasons, Cooperatives' suggestion will not be adopted.

d. *Conclusion.* Upon analysis of the comments, the Commission finds it appropriate to modify the proposed procedure to use the median yield for the two most recent quarters. In addition, the Commission acknowledges that extreme changes in the market could occur which would make the quarterly indexing procedure inappropriate and cause the Commission to temporarily modify its application of generic rates of return.

J. Other Issues

1. Market Segmentation

Cooperatives recommend that the Commission establish different benchmark rates of return for those utilities with and without significant nuclear construction exposure.[237] The Commission finds that this proposal is not appropriate in this proceeding.

Cooperatives state that since the latter part of 1983, investors' attitudes toward common stocks of electric utilities with and without nuclear facilities under construction have become so divergent that a single benchmark rate would overestimate the cost of common equity to utilities without significant nuclear construction and underestimates the cost to utilities with significant nuclear construction. In support of their argument, they evaluate data from a sample of 100 electric utilities that Salomon Brothers, an investment advisory service, has segmented into companies with and without significant nuclear construction.

Statistical analysis is presented that shows the mean dividend yield of utilities designated to have significant nuclear construction is significantly higher than the mean dividend yield of the other utilities in the sample. This difference is sufficiently large that, when the dividend yield averages are combined with estimates of dividend growth, the resulting estimates of the cost of equity capital for utilities with and without significant nuclear construction differ to the extent that Cooperatives believe the single generic benchmark to be a poor approximation of either group's cost of equity capital.[238]

Even if this segmentation of the market were appropriate, it is not clear how the segmentation could be properly carried out. Cooperatives state that "[v]irtually all of the investment services analyzing the electric utilities report the fact of an industry segmentation based on construction of nuclear projects or operating problems (*e.g.*, Three Mile Island)."[239] This recognition, however, provides little guidance as to how the industry should be bifurcated because the investment services' opinions vary so greatly. The Salomon Brothers list, which Cooperatives used as a basis for segregating the industry, designates 60 utilities as "companies without significant nuclear construction" and 40 utilities "with significant nuclear construction."[240] In contrast, Goldman Sachs separates the market into three groups: (1) "Fossil-fueled without any large construction project," (2) "nuclear plants on-line," and (3) "nuclear projects under construction."[241] On the other hand, First Boston Research separates out only six "companies with troubled nuclear programs" from its 75 firm "universe."[242]

Cooperatives also argue that the utilities should be segmented "by their degree of nuclear construction exposure,"[243] but it is not obvious how this could properly be accomplished. For example, it is not clear why it is proper to consider New York State Electric and Gas Company, with a ratio of nuclear construction investment to date to stockholders' equity of 40.2 percent, as not facing significant exposure while Houston Industries, with a ratio of 42.2 percent, is considered to have significant nuclear construction.[244] BEC suggests that while Cooperatives selected but one factor by which the electric utility industry could be split into groups, one could hypothesize a number of different divisions of the industry, such as, companies with any base load generating plant construction or by equity ratio.[245]

Finally, it is not clear how Cooperatives believe the industry should be bifurcated. For statistical analysis purposes, Cooperatives apply the Salomon Brothers' list, which considered a utility to be exposed to nuclear risk only if it is engaged in active nuclear construction[246] yet Cooperatives state that the financial uncertainty extends beyond the actual construction period of a nuclear plant.[247] Thus, the Cooperatives appear to be suggesting that the Commission develop a benchmark rate of return for companies that are exposed to significant risk due to current or past nuclear construction, but little guidance has been provided as to how the Commission should accomplish the difficult task of determining which companies face significant risk exposure due to nuclear construction.

The Cooperatives' demonstration that the firms designated as having "significant nuclear construction" have a higher average estimated cost of common equity than other utilities is not a surprising result. Salomon Brothers selected those firms which they believed to face significant risk from their nuclear construction programs, so it is to be expected that the average cost of equity of these firms would be higher than the average cost of the other electric utilities. The Commission recognized that the cost of common equity differed among firms when the generic approach was adopted.[248] Thus, Cooperatives' demonstration that "it is difficult to imagine in the context of the constant growth model that the nuclears and non-nuclears have the same cost of equity capital" is not siginficant. What is potentially important is the Cooperatives' contention that the *magnitude* of the difference is so great that the single benchmark rate is not representative of either group's cost of equity.[249]

---

[237] Initial Comments of Cooperatives at 72. Reply Comments of Cooperatives at 19.

[238] Initial Comments of Cooperatives at 59–72. Reply Comments at 10–19.

[239] Initial Comments of Cooperatives at 60.

[240] Reply Comments of Cooperatives, Schedule No. 2.

[241] Goldman Sachs Investment Research, "Public Utility Survey: Electric Utilities and Telephone RHC's," July 17, 1985, at 44.

[242] *See*, for example, First Boston Research, "First Boston Electric Utility Index," August 16, 1985, or September 20, 1985.

[243] Reply Comments of Cooperatives at 12.

[244] The categorization of companies is given in Cooperatives' Reply Comments, Schedule No. 2, p. 2. The ratios are drawn from Salomon Brothers, "Nuclear Power Plants Under Construction—Quantifying the Risks," December 7, 1983, which is noted as the primary basis of the categorization.

[245] Reply comments of BEC at 5–6.

[246] All firms designated as having significant nuclear construction were listed as having plants under active construction in Salomon Brothers, "Nuclear Power Plants Under Construction—Quantifying the Risk," December 7, 1983.

[247] Cooperatives Initial Comments at 71–72.

[248] In the original generic rate of return order the Commission stated:

> Differences in required rates of return between one company and another stem from differences in risk, and under the final rule, the risk issue is left to case-by-case adjudication, where warranted. The industry average used in the generic determination therefore is not intended to be an estimate of the cost of common equity for any particular electric utility. Rather, it is intended to apply to companies whose risks are not significantly different from the industry average risk. Generic Determination of Rates of Return on Common Equity for Public Utilities, 49 FR 29946 (July 25, 1984) (Final Rule) (Order No. 389) (Issued July 18, 1984).

[249] In the same manner, Cooperatives' demonstration that the difference between the dividend yields of the two groups is statistically significant (Initial Comments at 63–67) is not important but, instead, it is the *increase* in the difference in dividend yields occurring in late 1983 that may be important (Initial Comments at 69). The difference in dividend yields was "smaller but still

Continued

The Cooperatives do not, however, produce convincing support for their contention. First, the estimate of the extent of the potential problem seems to be quite sensitive to the data used in the growth rate estimate. Cooperatives analyze the effect of applying the Salomon Brothers' segmentation to the data supplied in the AUS, BEC, and NEP comments and estimate the cost of common equity between the two groups of utilities.[250] These estimates, plus Cooperatives' own estimate of the difference in the cost of common equity, range from 0.99 percent to 1.94 percent.[251] This wide of a range in the estimates of the difference in the cost of equity of the two utility groups makes it difficult to determine if market segmentation is important. Certainly, the lower estimates are not particularly supportive of Cooperatives' claim that two benchmarks are necessary. Second, as discussed above, the "correct" bifurcation of the industry is not known, which, in turn, means that it cannot be known if the difference in the cost of equity is sufficient to raise concern about significant market segmentation. Further, even if the difference in the cost of equity of properly defined segments was known, Cooperatives do not provide guidance as to the size of the difference which would allow the use of a single benchmark rate as opposed to two benchmark rates of return.

Finally, there exists evidence that the market segmentation alleged to exist by Cooperatives may be a short-term phenomenon. Cooperatives present calculations which show that the difference in the "one-month spot indicated dividend yields" between the utilities with and without "significant nuclear construction" has fallen during the base year from 3.94 percent to 2.12 percent, a decrease of over 46 percent.[252] If the difference in the growth rates has not changed, this decrease in the difference in yields will have reduced the difference in the cost of common equity between the groups, thereby reducing the possibility of market segmentation. In addition, if the decrease in the difference in dividend yields continues with the same rapidity, any significant segmentation of the cost of equity that previously existed will soon disappear.

On review of the record, the Commission finds that the establishment of two benchmark rates of return as recommended by Cooperatives is neither necessary nor feasible at this time. The Commission believes that the proposed single benchmark rate of return procedure is the most appropriate for dealing with differences in the cost of common equity. Under the generic proceeding, companies that can be shown to be significantly more or less risky than average may be allowed rates of return different than the benchmark. At the same time, the use of the median for calculating dividend yields results in the significantly more or less risky firms having little effect on the benchmark rate of return.

2. Issues With Regard to Treatment of Rate Filings

The Commission recognizes that implementation of the generic return rule as a rebuttable presumption would involve issues not present when the rule is used on an advisory basis. In particular, how the benchmark rate should be applied in the case of a rate filing that is found to be deficient, and how the benchmark rate should be applied in the case of a rate filing that is found to be an initial rate. Concerning the first question, the Commission is inclined to treat as applicable the benchmark rate in effect when the rate filing is first made. This policy is consistent with the Commission's policy of not requiring, except in extreme cases, the test period date for a rate filing to be updated when the rate filing is initially found to be deficient.

Concerning the question of how the banchmark rate should be applied to initial rates, the Commission has not reached a decision at this point as to what course to take. The generic rate rule may establish a rebuttable presumption that the appropriate rate of return on equity to be used in a rate application is the benchmark rate of return on common equity. If so, the Commission recognizes that the issue will arise of how the Commission should treat an initial rate application that uses some other rate of return on equity than the benchmark rate and that does not contain any showing of grounds for an exception to the benchmark rate provided in the regulations. As noted above, the Commission has not determined what policy to apply in this situation. The Commission recognizes, however, that a similar issue exists with regard to rate filings that are changes in rate and is concerned that its policy in the two situations be as consistent as reasonably possible.[253]

3. Significant Risk Difference Sample

BEC provides a comment applicable when the benchmark return on equity has the status of a "rebuttable presumption." BEC expresses the concern that a bias would be created if one sample was used to calculate the cost of equity capital while a different sample was used to carry out the significant risk analysis.[254]

As previously stated in the discussion of the sample, Section III. C. above, the Commission did determine that the best estimate of the average yield is provided by eliminating firms whose dividend yield data would not be appropriate in a constant growth DCF model. However, no effort was made to eliminate data on any company from the growth rate analysis. It is thus incorrect to consider the firms which were not included in the dividend yield calculation to have been excluded from the calculation of the average cost of common equity. BEC's concern about the use of different samples is therefore not warranted.[255]

IV. Regulatory Flexibility Act Certification

The Regulatory Flexibility Act [256] requires the Commission to describe the impact that a proposed rule would have on small entities or to certify that the rule will not have a significant economic impact on a substantial number of small entities. In the NOPR, the Commission found that the proposed rule would not impose any regulatory or administrative burdens on a significant number of small entities and that it would not require an expenditure of resources by such entities. No comments were received on this finding and the modifications adopted in the final rule do not materially affect the earlier conclusions.

Accordingly, the Commission certifies that the rule does not have a significant economic impact on a substantial number of small entities.

V. Timing of Annual Proceeding and Quarterly Updates, Effective Date of Rule, and Industry Profile Report

The Commission establishes a procedure which will be used to set the initial benchmark and to establish quarterly updates. The benchmark rates of return will be published on or before

---

statistically significant" prior to the time that Cooperatives believe the cost of equity of the two groups became divergent. (Initial Comments at 67). Presumably, the difference in growth rates had compensated for the smaller difference in yields so that market segmentation of the cost of equity capital did not exist before the latter part of 1983.

[250] Reply Comments of Cooperatives at 13–18.

[251] Reply Comments of Cooperatives at 18, Table 5.

[252] Initial Comments of Cooperatives at 64, Table 4.

[253] 18 CFR 37.6.

[254] Initial Comments of BEC at 2–3.

[255] Unlike the Commission, BEC uses the same sample for growth rate estimation as it uses for dividend yield estimation. BEC Initial Comments at 7–23.

[256] 5 U.S.C. 601–612 (1982).

the fifteenth of the month following the close of a calendar quarter. It will be made effective for three months beginning with the first day of the following month. For example, the Commission will publish on or before January 15 the benchmark rate of return applicable to the three month period, February 1 to April 30. The fifteen day period between issuance and effective date will allow the public an opportunity to bring to the Commission's attention any errors in the computation of the quarterly update.

The Commission believes that it may make the quarterly benchmark effective without providing an opportunity for notice and comment and publishing it thirty days before it become effective. The determinination of the benchmark will be based on a formula that is established in this rule for which notice and comment were provided and that was made effective thirty days after publication. Additionally, the Commission believes that, in order for the updating procedure to be timely and to track as closely as possible changes in the capital markets, it is necessary that this quarterly update be made effective without allowing notice and comments and the full thirty days required by the APA. 5 U.S.C. 553(d)(3) (1982).

The first quarter following the close of an annual proceeding will run from February 1 to April 30. The second quarter will run from May 1 to August 31, etc.

List of Subjects contained in 18 CFR Part 37

Electric Power Rates, Electric Utilities, Rate of Return.

In consideration of the foregoing, the Commission amends Chapter I, Title 18 of the Code of Federal Regulations, as set forth below, effective February 1, 1986.

By the Commission.

Kenneth F. Plumb,

Secretary.

PART 37—[AMENDED]

1. The authority citation for Part 37 continues to read as follows:

Authority: Federal Power Act, 16 U.S.C. 791a–825r (1982); Department of Energy Organization Act, 42 U.S.C. 7101–7352 (1982).

2. Section 37.3 is revised to read as follows:

§ 37.3 Definitions.

For purposes of this part:

(a) "Benchmark rate of return" means the rate of return on common equity that is determined each quarter based on the findings made in the annual proceeding regarding the quarterly indexing procedure and the average cost of common equity and the average ratemaking rate of return on common equity for the jurisdictional operations of public utilities.

(b) "Ratemaking rate of return" means the rate of return on common equity that, when applied to rate base in determining revenue requirements for ratemaking purposes, will give investors the opportunity to obtain the effective market required rate of return on common equity and give firms the opportunity to recover flotation costs.

(c) "Cost of common equity" means the effective market required rate of return plus an allowance for flotation costs.

(d) "Effective market required rate of return" means the minimum rate of return that investors require to buy common stock, under the assumption that intrayear earnings are reinvested at the same rate.

3. Section 37.4 is revised to read as follows:

§ 37.4 Annual proceedings.

An estimate of the average cost of common equity and the average ratemaking rate of return for the jurisdictional operations of public utilities and a quarterly indexing procedure to establish the initial benchmark rate of return and update it quarterly will be determined annually through informal rulemaking proceedings under 5 U.S.C. 553.

4. Section 37.5 is revised to read as follows:

§ 37.5 Quarterly determination of benchmark rate of return.

Following the close of each calendar quarter, the Commission will determine and publish a benchmark rate of return in accordance with the quarterly indexing procedure of § 37.9.

5. Section 37.9 is revised to read as follows:

§ 37.9 Quarterly indexing procedure

(a) *Procedure for Determining Quarterly Benchmark Rates of Return.* In accordance with § 37.4 of this Part, the Commission will use the following indexing procedure to update quarterly the benchmark rate of return on common equity.

(1) For purposes of establishing the benchmark rate of return on common equity for period t, the average effective required rate of return on common equity for the jurisdictional operations of public utilities shall be calculated as follows:

$$k_t = \frac{(y_t)}{4}\left[(1+k_t)^{.75}+(1+k_t)^{.5}+(1+g)(1+k_t)^{.25}+(1+g)\right]+g$$

where

k_t = average effective required rate of return on common equity for the jurisdictional operations of public utilities for period t;

y_t = average dividend yield applicable to period t as determined in paragraph (b) of this section;

g = expected dividend growth rate (as determined in annual proceeding); and

t = successive three month time periods: February 1 through April 30, May 1 through July 31, August 1 through October 31, and November 1 through January 31.

(2) For purposes of establishing the benchmark rate of return on common equity for period t, the average cost of common equity for the jurisdictional operations of public utilities will be calculated as follows:

$$c_t = k_t + f$$

where

c_t = average cost of common equity for the jurisdictional operations of public utilities for period t;

k_t = as in paragraph (a)(1) of this section;

f = flotation cost allowance (as determined in annual proceeding); and

t = as in paragraph (a)(1) of this section.

(3) For purposes of establishing the benchmark rate of return on common equity for period t, the average ratemaking rate of return on common equity for the jurisdictional operations of public utilities will be calculated as follows:

$$r_t = 13[(1+c_t)^{1/13}-1]$$

where

r_t = average ratemeking rate of return on common equity for the jurisdictional operations for period t;

c_t = as in paragraph (a)(2) of this section; and

t = as in paragraph (a)(1) of this section.

(4) The benchmark rate of return on common equity for the first quarter to which an annual proceeding is applicable will be set equal to the average ratemaking rate of return on common equity for the jurisdictional operations of public utilities as determined by the formula of paragraph (a)(3) of this section.

(5) The benchmark rate of return on common equity for subsequent quarters

prior to the conclusion of the next annual proceeding will be set equal to the average ratemaking rate of return on common equity for the jurisdictional operations of public utilities as determined by the formula of paragraph (a)(3) of this section, except where an increase or decrease of more than 50 basis points from the previous quarter's benchmark would occur.

(6) Where an increase or decrease of more than 50 basis points from the previous quarter's benchmark would occur, the change in the benchmark will be limited to 50 basis points.

(b) *Dividend Yield for Quarterly Benchmark Determination.* (1) For use in the quarterly benchmark calculations, the average dividend yield applicable to period t (y_t) will be determined as the simple average of the median dividend yields for the two most recent calendar quarters, where the median dividend yield (d_t) for each calendar quarter is defined per paragraph (b)(2) of this section.

$$Y_t = \frac{d_t + d_{t-1}}{2}$$

where

y_t = as in paragraph (a)(1) of this section;

d_t = median dividend yield (defined in paragraph (b)(2) of this section) for the most recent calendar quarter prior to period t; and

d_{t-1} = median dividend yield (defined in paragraph (b)(2) of this section) for the calendar quarter prior to the most recent calendar quarter.

(2) The median dividend yield for a calendar quarter will be determined as the median of the current dividend yields of the sample of companies defined in paragraph (c) of this section, where the current dividend yield for company i for period t is defined as follows:

$$d_{ti} = \frac{D_{ti}}{P_{ti}}$$

where

D_{ti} = annual common dividend rate for company i based on the latest common dividend payment by ex-date as of the end of the most recent calendar quarter prior to period t; and

P_{ti} = average of the monthly high and low common stock prices for company i for the most recent calendar quarter prior to period t.

(c) *Sample of Companies Used to Calculate Quarterly Dividend Yields.* (1) Except as provided in paragraph (c)(2) of this section, the sample of companies used to calculate the average current dividend yield for the purpose of this section will be specified in the final order of each annual proceeding.

(2) Companies will be excluded from the sample used in the calculation of the dividend yield for any quarter if the following conditions occur:

(i) The company's common stock, through merger or other action, no longer is publicly traded, or

(ii) The company has decreased or omitted a common dividend payment in the current or prior three quarters, or

(iii) The Commission determines on a case-by-case basis that some other occurrence causes the dividend yield for that company to be substantially misleading and bias the resulting quarterly average.

(d) *Table of Quarterly Benchmark Rates of Return.*[1] The following table presents the quarterly benchmark rates of return on common equity:

Benchmark applicability period (t)	Expected dividend growth (g)	Flotation cost adjustment (f)	Current dividend yield (y_t)	Average rate-making rate of return (r_t)	Benchmark rate of return
2/1/86-4/30/86	.0450	.0004			
5/1/86-7/31/86	.0450	.0004			
8/1/86-10/31/86	.0450	.0004			
11/1/86-1/31/87	.0450	.0004			

Appendix A

In its general form, the DCF equation allows dividends to follow any payment pattern, such as a different dividend in each period, the same dividend in each period, or even dividends growing at a constant rate. Dividends can also be paid at any frequency, such as monthly, quarterly or yearly. In this general form, the equation is:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \frac{D_\infty}{(1+k)^\infty} \quad \text{(A-1)}$$

where

k = market required rate of return.[1]

D_i = dividend payment in time period i.

P_0 = current market price.

Incorporating constant growth, quarterly dividends and compounding, and dividends growing in the third quarter of each year, the equation becomes:

$$P_0 = \frac{D_0'}{(1+k)^{.25}} + \frac{D_0'}{(1+K)^{.5}} + \frac{D_0'(1+g)}{(1+K)^{.25}} + \frac{D_0'(1+g)}{(1+k)} + \frac{D_0'(1+g)}{(1+k)^{1.25}} \ldots + \ldots \frac{D_0'(1+g)^N}{(1+k)^N} \quad \text{(A-2)}$$

where

k = effective annual market required rate of return.

D_0' = current quarterly dividend rate.

P_0 = current market price.

g = annual dividend growth rate.[2]

The Commission model, model (6), is derived as follows:

multiply both sides of the equation by the ratio of $\frac{(1+k)}{(1+g)}$

$$\frac{(1+k)}{(1+g)} P_0 = \frac{D_0'(1+k)^{.75}}{(1+g)} + \frac{D_0'(1+k)^{.5}}{(1+g)} + D_0'(1+k)^{.25} + D_0' + \frac{D_0'}{(1+k)^{.25}} \ldots + \ldots \frac{D_0'(1+g)^{N-1}}{(1+k)^{N-1}} \quad \text{(A-3}$$

subtract equation (A-2) from equation (A-3)

$$\left[\frac{(1+k)}{(1+g)} - 1\right] P_0 = D_0' \left[\frac{(1+k)^{.75}}{(1+g)} + \frac{(1+k)^{.5}}{(1+g)} + (1+k)^{.25} + 1 - \frac{(1+g)^N}{(1+k)^N}\right] \quad \text{(A-4)}$$

Assume that the required rate of return, k, is greater than the rate of growth of dividends, g. Then as $N \rightarrow$ the term $(1+g)^N/(1+k)^N \rightarrow 0$ and equation (A4) becomes

$$\left[\frac{(1+k)}{(1+g)} - 1\right] P_0 = D_0' \left[\frac{(1+k)^{.75}}{(1+g)} + \frac{(1+k)^{.5}}{(1+g)} + (1+k)^{.25} + 1\right] \quad \text{(A-5)}$$

Expanding the terms on the left side of the equation and multiplying both sides by (1+g) and dividing by k-g

$$P_0 = \frac{D_0'}{(k-g)} [(1+k)^{.75} + (1+k)^{.5} + (1+g)(1+k)^{.25} + (1+g)] \quad \text{(A-6)}$$

Rearranging terms

$$k = \frac{D_0}{4P} [(1+k)^{.75} + (1+k)^{.5} + (1+g)(1+k)^{.25} + (1+g)] + g \qquad \text{Model (6)}$$

---

* Note.—Because of the time lag between the issuance of the quarterly updates to the benchmark rate of return and the publication of the Code of Federal Regulations, the currently effective benchmark rate of return can be found in the **Federal Register**.

[1] In the general form of the DCF equation, the market required rate of return may change from period to period. If it is assumed that the required return changes each period, a single "average" market required return may still be used. In this instance, the single return is defined as the return which when substituted for each individual required return results in the same present value of the stream of dividends.

[2] In this model, dividends grow only once a year. Therefore, the nominal and the effective growth rates are the same.

where D_0=four times current quarterly dividend rate $D_0=4D_0'$.

Expanding terms on the left side of the equation and multiplying both sides by (1+g) and dividing by k–q

$$P_0=\frac{D_0'}{(k-g)}\qquad[(1+k)^{.75}+(1+k)^{.5}+(1+g)(1+k)^{.25}+(1+g)]\qquad\text{(A-6)}$$

Rearranging terms

$$K=\frac{D_0}{(4P)}\qquad[(1+k)^{.75}+(1+k)^{.5}+(1+g)(1+k)^{.25}+(1+g)+g\qquad\text{Model (6)}$$

where D_0=four times current quarterly dividend rate $D_0=4D_0'$,

Appendix B—*Effective and Nominal Rates of Return*

The DCF model adopted in this proceeding determines the effective required rate of return on common equity. The model is expressed in effective terms because it is the form most people are familiar with. This Appendix discusses the difference between nominal and effective rates and their relationship to the rate per compounding period.

Interest rates can be expressed in either nominal or effective terms. There is a mathematical relationship between the two, and once an investor knows one, the other can be determined. The concept of nominal and effective interest rates is most easily illustrated by the example of a bank savings account. An investor has a choice between two bank accounts. Both accounts state that they pay "12 percent interest", but one account pays and compounds interest annually while the other account pays and compounds quarterly. By investing $100 in the annual compounding account, the investor will have $112 at the end of the year and will have earned 12 percent (112/100–1). The annual compounding account has both and effective an nominal rate of 12 percent.[1]

The quarterly compounding account has a higher effective rate. By investing $100 in the quarterly account, the investor will receive interest at the end of each quarter. The interest received each quarter is the nominal rate of 12 percent divided by 4 (interest is compounded quarterly), or 3 percent. At the end of the first quarter, the bank pays interest of $3 ($100×3%). If no funds are withdrawn from the account, at the end of the second quarter, the investor will receive interest on $103.[1a] Thus, at the end of the second quarter, the investor will have a total of $106.09. ($103.00+103.00×3%). This compounding continues each quarter so that at the end of the year, the investor will have $112.55. The nominal quarterly rate for the quarterly account is 12 percent, while the effective rate is 12.55% (112.55/100–1).The effective rate tells the investor how many dollars he will have at the end of a year per dollar invested, and makes it easy to compare alternative investments. Nominal rates do not permit direct comparsion, unless compounding is always at the same frequency; that is, a nominal quarterly rate may be directly compared to other nominal quarterly rates just as a nominal semi-annual rate may be directly compared to other nominal semi-annual rates.

There is a simple formula to convert a nominal rate to an effective rate:

$$\text{Effective rate}=\left[1+\frac{\text{Nominal rate}}{m}\right]^{m}-1$$

where

m=number of compounding periods per year

The effective rate corresponding to the 12 percent, compounded quarterly, nominal rate in the above example is 12.55 percent:

$$\text{Effective rate}=\left[1+\frac{.12}{4}\right]^{4}-1=12.55\text{ percent}$$

To convert from an effective rate to a nominal rate:

$$\text{Nominal rate}=m\,[(1+\text{Effective rate})^{1/m}-1]$$

where

m=number of compounding periods per year.

The quarterly compounded nominal rate corresponding to the 12.55 percent effective rate is 12 percent:

$$\text{Nominal rate}=4\,[1.1255^{1/4}-1]=12\text{ percent}$$

By definition the rate that must be earned in each compounding period is the same for both the nominal and corresponding effective rate:

$$\text{Rate per compounding period}=\frac{\text{Nominal rate}}{m}$$

$$=[1+\text{Effective rate}]^{1/m}-1$$

The rate that must be earned each quarter for a nominal rate of 12 percent compounded quarterly is 3 percent:

$$\text{Rate per compounding period}=\frac{.12}{4}=3\text{ percent}$$

The rate that must be earned each quarter to achieve an effective rate of 12.55 percent is 3 percent per compounding period:

$$\text{Rate per compounding period}=(1.1255)^{1/4}\times 1=3\text{ percent.}$$

1. Allegheny Power System
2. American Electric Power
3. Atlantic City Electric.
4. AZP Group Inc.[1]
5. Baltimore Gas & Electric
6. Black Hills Power & Light Co.
7. Boston Edison Co.
8. Carolina Power & Light
9. Central & South West Crop.
10. Central Hudson Gas & Elec.
11. Central IL Public Service
12. Central Louisiana Electric
13. Central Maine Power Co.
14. Central Vermont Pub. Serv.
15. Cilcorp Inc.[2]
16. Cincinnati Gas & Electric
17. Cleveland Electric Illum.
18. Commonwealth Edison
19. Commonwealth Energy System
20. Consolidated Edison of NY
21. Consumers Power Co.
22. Dayton Power & Light
23. Delmarva Power & Light
24. Detroit Edison Co.
25. Dominion Resources Inc.—VA
26. Duke Power Co.
27. Duquesne Light Co.
28. Eastern Utilities Assoc.
29. Empire District Electric Co.
30. Fitchburg Gas & Elec. Light
31. Florida Progress Group
32. FPL Group Inc.
33. General Public Utilities
34. Green Mountain Power Corp.
35. Gulf States Utilities Co.
36. Hawaiian Electric Inds.
37. Houston Industries Inc.
38. Idaho Power Co.
39. Illinois Power Co.
40. Interstate Power Co.
41. Iowa Electric Light & Pwr.
42. Iowa Resources Inc.
43. Iowa-Illinois Gas & Elec.
44. Ipalco Enterprises Inc.
45. Kansas City Power & Light
46. Kansas Gas & Electric
47. Kansas Power & Light

[1] The effective and nominal rates are equal because there is no interest paid during the year that could be reinvested and raise the effective rate above the nominal rate.

[1a] Alternatively, the investor can withdraw the interest payments. As long as he reinvests them at the same rate, he will have $112.55 at the end of the year.

[1] Formerly Arizona Public Service Co.

[2] Formerly Central Illinois Light

48. Kentucky Utilities Co.
49. Long Island Lighting
50. Louisville Gas & Electric
51. Maine Public Service
52. Middle South Utilities
53. Midwest Energy Co.
54. Minnesota Power & Light
55. Montana Power Co.
56. Nevada Power Co.
57. New England Electric System
58. New York State Elec. & Gas
59. Newport Electric Crop.
60. Niagara Mohawk Power
61. Northeast Utilities
62. Northern Indiana Public Serv.
63. Northern States Power-MN
64. Ohio Edison Co.
65. Oklahoma Gas & Electric
66. Orange & Rockland Utilities
67. Pacific Gas & Electric
68. PACIFICORP
69. Pennsylvania Power & Light
70. Philadelphia Electric Co.
71. Portland General Electric Co.
72. Potomac Electric Power
73. Public Service Co. of Colo.
74. Public Service Co. of Ind.
75. Public Service Co. of NH.
76. Public Service Co. of N. Mex.
77. Public Service Elec. & Gas
78. Puget Sound Power & Light
79. Rochester Gas & Elec.
80. San Diego Gas & Electric
81. Savannah Elec. & Power
82. Scana Corp.
83. Sierra Pacific Resources
84. Southern Calif. Edison Co.
85. Southern Co.
86. Southern Indiana Gas & Elec.
87. St. Joseph Light & Power
88. Teco Energy Inc.
89. Texas Utilities Co.
90. TNP Enterprises Inc.
91. Toledo Edison Co.
92. Tucson Electric Power Co.
93. Union Electric Co.
94. United Illuminating Co.
95. Utah Power & Light
96. Utilicorp United Inc.[3]
97. Washington Water Power
98. Wisconsin Electric Power
99. Wisconsin Power & Light
100. Wisconsin Public Service

Utilities Excluded From the Sample for the Indicated Quarter Due to Either Zero Dividends or a Cut in Dividends for This Quarter or the Prior Three Quarters

Year=84, Quarter=3

Utility and Reason for Exclusion

Consumers Power Co—Dividend rate reduced in the quarter ending 09/30/84

General Public Utilities—Dividend rate was zero for the quarter ending 09/30/84

Long Island Lighting—Dividend rate was zero for the quarter ending 09/30/84

Public Service Co of Ind—Dividend rate reduced in the quarter ending 03/31/84

Public Service Co of NH—Dividend rate was zero for the quarter ending 09/30/84

United Illuminating Co—Dividend rate reduced in the quarter ending 06/30/84

Year=84, Quarter=4

Utility and Reason for Exclusion

Consumers Power Co—Dividend rate was zero for the quarter ending 12/31/84

Central Maine Power Co—Dividend rate reduced in the quarter ending 12/31/84

Fitchburg Gas & Elec Light—Dividend rate reduced in the quarter ending 12/31/84

General Public Utilities—Dividend rate was zero for the quarter ending 12/31/84

Long Island Lighting—Dividend rate was zero for the quarter ending 12/31/84

Maine Public Service—Dividend rate reduced in the quarter ending 12/31/84

Public Service Co of Ind—Dividend rate reduced in the quarter ending 03/31/84

Public Service Co of NH—Dividend rate was zero for the quarter ending 12/31/84

United Illuminating Co—Dividend rate reduced in the quarter ending 06/30/84

Year=85, Quarter=1

Utility and Reason for Exclusion

Consumers Power Co—Dividend rate was zero for the quarter ending 03/31/85

Central Maine Power Co—Dividend rate reduced in the quarter ending 03/31/84

Fitchburg Gas & Elec Light—Dividend rate was zero for the quarter ending 03/31/85

General Public Utilities—Dividend rate was zero for the quarter ending 03/31/85

Long Island Lighting—Dividend rate was zero for the quarter ending 03/31/85

Maine Public Service—Dividend rate was zero for the quarter ending 03/31/85

Montana Power Co—Dividend rate reduced in the quarter ending 03/31/85

Public Service Co of NH—Dividend rate was zero for the quarter ending 03/31/85

United Illuminating Co—Dividend rate reduced in the quarter ending 06/30/84

Year=85, Quarter=2

Utility and Reason for Exclusion

Consumers Power Co—Dividend rate was zero for the quarter ending 06/30/85

Central Maine Power Co—Dividend rate reduced in the quarter ending 12/31/84

Fitchburg Gas & Elec Light—Dividend rate was zero for the quarter ending 06/30/85

General Public Utilities—Dividend rate was zero for the quarter ending 06/30/85

Long Island Lighting—Dividend rate was zero for the quarter ending 06/30/85

Maine Public Service—Dividend rate was zero for the quarter ending 06/30/85

Montana Power Co—Dividend rate reduced in the quarter ending 03/31/85

Public Service Co of NH—Dividend rate was zero for the quarter ending 06/30/85

Appendix D—List of Commenters and Acronyms

Docket No. RM85-19-000, Generic Rate of Return

Commenter and Acronyms

1. Alabama Electric Cooperative *et al.*—Cooperatives
2. American Electric Power Company—AEP
3. Associated Utility Services, Inc.[1]—AUS
4. Boston Edison Company *et al.*—BEC
5. Carolina Power & Light Company—CP&L
6. Duke Power Company—Duke
7. Edison Electric Institute—EEI
8. Financial Analyses Branch of Office of Electric Power Regulation Federal Energy Regulatory Commission—FA Staff
9. Florida Power & Light Company—FPL
10. General Services Administration—GSA
11. Iowa-Illinois Gas & Electric Co.—IIGE
12. Minnesota Department of Public Service—MDPS
13. New England Power Company—NEP
14. Northern States Power Company—NSP
15. Pacific Power & Light Company—PPL
16. Public Service Company of Colorado—PSCol

[3] Formerly Missouri Public Service Co.

[1] The electric utilities on whose behalf the AUS comments were filed are: American Electric Power Company, Atlantic City Electric Company, Delmarva Power & Light Company, Duquesne Light Company, Pennsylvania Power & Light Company, Pennsylvania Power Company and Philadelphia Electric Company.

17. Southern California Edison Company—SCEd
18. Southern Company—Southern Company
19. Southwestern Electric Power Company—SWEPCO
20. West Texas Utilities Company—WTU
21. Wholesale Customer Group—WCG
22. Wisconsin Power and Light Company—WPL

Appendix E—Proposed Constant Growth DCF models

$$(1)\quad k = \frac{D_0}{P_0}(1 + .5g) + g$$

$$(2)\quad k = \frac{D_0}{P_0}(1 + g) + g$$

$$(3)\quad k = \frac{A_0(1+k)^{.75} + A_0(1+k)^{.50} + A_0(1+k)^{.25} + A_0}{P_0} + g$$

$$(4)\quad P_0 = \left\{\frac{(1 + k)}{(1 + k) - (1 + g)}\right\}\left\{\sum_{r=1}^{4} \frac{D_{u,r}}{((1 + k)^{N_{u,r}})}\right\}$$

$$(5)\quad k = \frac{D_0}{P_0} + g$$

$$(6)\quad k = \frac{D_0}{4P_0}[(1+k)^{.75} + (1+k)^{.5} + (1+g)(1+k)^{.25} + (1+g)] + g$$

where:

k = market required rate of return (annual rate)
D_0 = current (indicated) annual dividend rate
P_0 = current market price
g = dividend growth rate (annual rate)

$$A_0 = \frac{D_0(1 + .5g)}{4}$$

$D_{u,r}$ = the dividend for the r^{th} quarter of the u^{th} dividend year

$N_{u,r}$ = the number of days divided by 365 (i.e., the fractional part of a year) between the present day and the date of $D_{u,r}$.

[FR Doc. 86-5 Filed 1-3-86; 8:45 am]
BILLING CODE 6717-01-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Parts 74, 81, and 82

[Docket Nos. 84N-0319 and 76N-0366]

FD&C Yellow No. 5 and its Lakes; Postponement of Closing Date, Provisional Listing, and Continued Stay of Effectiveness

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is postponing the closing date for the provisional listing of FD&C Yellow No. 5 for use in coloring cosmetics generally and externally applied drugs and of its lakes for use in coloring food and ingested drugs. FDA is establishing a new closing date for FD&C Yellow No. 5 to give the agency time to complete its evaluation of the objections that it received in response to the final rule on the use of FD&C Yellow No. 5 that FDA published in the Federal Register of September 4, 1985 (50 FR 35774). The regulations that permanently list FD&C Yellow No. 5 and that remove it from the provisional list are stayed until March 7, 1986.

DATES: Effective January 6, 1986, the new closing date for FD&C Yellow No. 5 will be March 7, 1986. The effective date of the final rule published September 4, 1985, is stayed pending final FDA action on the objections that it received.

FOR FURTHER INFORMATION CONTACT: Julius Smith, Center for Food Safety and Applied Nutrition (HFF-334) Food and Drug Administration, 200 C St. SW., Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: FDA established the current closing date of January 6, 1986, for the provisional listing of FD&C Yellow No. 5 in a regulation published in the Federal Register of November 5, 1985 (50 FR 45909). The agency established the January 6, 1986, closing date for FD&C Yellow No. 5 to provide time for its evaluation of three objections to the final rule on the use of this color additive that FDA published on September 4, 1985.

Previously, after review and evaluation of the data relevant to the petition to list FD&C Yellow No. 5 for use in externally applied drugs and in cosmetics generally, the agency had concluded that FD&C Yellow No. 5 was safe for these uses. Therefore, FDA issued a final rule in the Federal Register of September 4, 1985 (50 FR 35774), that would permanently list FD&C Yellow No. 5 for those uses and would remove the stay on the use of FD&C Yellow No. 5 in external cosmetics. FDA stated that the final rule would become effective on October 7, 1985, unless stayed by the filing of proper objections.

FDA received three letters stating objections to this final rule. Because of the objections, under section 701(e)(2) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 371(e)(2)), the effect of this final rule is stayed until the agency can rule upon the objections. FDA expects that it will need only a small amount of additional time to complete its evaluation of the objections. Therefore, FDA concludes that only a brief postponement is necessary at this time. The regulation set forth below will postpone the January 6, 1986, closing date for the provisional listing of FD&C Yellow No. 5 until March 7, 1986.

Because the current closing date expires on January 6, 1986, FDA has concluded that the use of notice and public procedure on this regulation is impracticable. Thus, good cause exists for issuing the postponement as a final rule. Moreover, this action is consistent with the protection of the public health because the agency has previously concluded that FD&C Yellow No. 5 is safe for its intended use under the Color Additive Amendments of 1960. This regulation will permit the uninterrupted

use of the color additive until March 7, 1986. To prevent any interruption in the provisional listing of FD&C Yellow No. 5 and in accordance with 5 U.S.C. 553(d)(1) and (3), this regulation is being made effective on January 6, 1986. Any person who wishes to comment on the regulation may do so in accordance with 21 CFR 10.40(e)(1).

List of Subjects

21 CFR Part 74

Color additive, Cosmetics, Drugs, Medical devices.

21 CFR Part 81

Color additives, Cosmetics, Drugs.

21 CFR Part 82

Color additives, Cosmetics, Drugs.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, Parts 74, 81, and 82 are amended as follows:

PART 74—LISTING OF COLOR ADDITIVES SUBJECT TO CERTIFICATION

1. The authority citation for 21 CFR Part 74 continues to read as follows:

Authority: Secs. 701, 706, 52 Stat. 1055–1056 as amended, 74 Stat. 399–407 as amended (21 U.S.C. 371, 376); 21 CFR 5.10.

2. The modifications of § 74.1705 *FD&C Yellow No. 5* included in the September 4, 1985, final rule continue to be stayed.

3. Section 74.2705 *FD&C Yellow No. 5* continues to be stayed.

PART 81—GENERAL SPECIFICATIONS AND GENERAL RESTRICTIONS FOR PROVISIONAL COLOR ADDITIVES FOR USE IN FOODS, DRUGS, AND COSMETICS

4. The authority citation for 21 CFR Part 81 continues to read as follows:

Authority: Secs. 701, 706, 52 Stat. 1055–1056 as amended, 74 Stat. 399–407 as amended (21 U.S.C. 371, 376); Title II, Pub. L. 86–618; sec. 203, 74 Stat. 404–407 (21 U.S.C. 376, note); 21 CFR 5.10.

§ 81.1 [Amended]

5. Section 81.1 *Provisional list of color additives is* amended in paragraph (b) by revising the closing date for "FD&C Yellow No. 5" to read "March 7, 1986."

§ 81.27 [Amended]

6. Section 81.27 *Conditions of provisional listing* is amended in paragraph (d) by revising the closing date for "FD&C Yellow No. 5" to read "March 7, 1986."

PART 82—LISTING OF CERTIFIED PROVISIONALLY LISTED COLORS AND SPECIFICATIONS

7. The authority citation for 21 CFR Part 82 continues to read as follows:

Authority: Secs. 701, 706, 52 Stat. 1055–1056 as amended, 74 Stat. 399–407 as amended (21 U.S.C. 371, 376); 21 CFR 5.10.

8. Section 82.705 *FD&C Yellow No. 5* continues to be stayed.

Dated: December 18, 1985.

Joseph P. Hile,

Associate Commissioner for Regulatory Affairs.

[FR Doc. 85-30395 Filed 12-31-85 10:26 am]

BILLING CODE 4160-01-M

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Parts 1 and 602

[T.D. 8067]

Income Tax; Accounting for Long-Term Contracts

AGENCY: Internal Revenue Service, Treasury.

ACTION: Final regulations.

SUMMARY: This document contains final regulations relating to accounting for long-term contracts. The regulations affect taxpayers who have long-term contracts whether or not they use a long-term contract method of accounting for such contracts. Modifications to the regulations were required to be made by the Tax Equity and Fiscal Responsibility Act of 1982 (Pub. L. 97-248).

DATES: In general, the regulations relating to the allocation of indirect costs to extended period long-term contracts and the rules relating to the use of inventory methods with a long-term contract method are effective for taxable years beginning after December 31, 1982. The regulations relating to the time at which a contract is to be considered completed and to aggregating and severing agreements are effective for taxable years ending after December 31, 1982.

FOR FURTHER INFORMATION CONTACT: Paulette Chernyshev of the Legislation and Regulations Division, Office of Chief Counsel, Internal Revenue Service, 1111 Constitution Avenue NW., Washington, DC 20224, Attention: CC:LR:T (202-566-3288, not a toll-free call).

SUPPLEMENTARY INFORMATION:

Background

On March 14, 1983, proposed amendments to the Income Tax Regulations (26 CFR Part 1) under sections 446, 451 and 471 of the Internal Revenue Code were published in the **Federal Register** (48 FR 10702). The amendments were proposed to conform the regulations to the requirements of section 229 of the Tax Equity and Fiscal Responsibility Act of 1982 (Pub. L. 97-248; 96 Stat. 324, 494) as amended by section 712(m) of the Tax Reform Act of 1984.

Many written comments were received. A public hearing was held on June 29, 1983. After consideration of all comments and testimony received on the proposed amendments, the amendments, with revisions, are adopted by this Treasury decision. The revisions and public comments are discussed below.

Discussion

Clear Reflection of Income

Comments received expresed the concern that the introductory language of § 1.451-3(a) changed the standard for the application of the clear reflection of income concept. No change in the standard was contemplated. The Treasury decision retains the reference to clear reflection of income consistent with the provisions of § 1.446-1 (a)(2) and (c), which permit various methods of accounting, subject to the requirement that any method, including the long-term contract method, must clearly reflect income in its application.

Classification of Contracts

Contracts that the taxpayer estimates will be completed within 2 years of the contract commencement date (3 years in the case of a construction contract) are not subject to the extended period costing rules. The proposed regulations provided that contracts that are not completed within that time period will not be reclassified if the taxpayer could reasonably have expected the contract to be completed within the time period. The proposed regulations further provided that the taxpayer's estimated time of completion for classifying and accounting for a long-term contract will not be considered unreasonable if the contract is not completed within the expected time solely because of unforseeable factors not within the control of the taxpayer. Comments considered this exception too limited, as the exception is only available if the delay in completion was due solely to unforseeable factors. Therefore, the Treasury decision modifies the