# Sunshine Act Meetings

Federal Register
Vol. 54, No. 223
Tuesday, November 21, 1989

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

## FEDERAL DEPOSIT INSURANCE CORPORATION

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that at 3:12 p.m. on Tuesday, November 14, 1989, the Board of Directors of the Federal Deposit Insurance Corporation met in closed session to consider the following:

A notice of an individual's proposal dual service as a director of two nonaffiliated depository institutions pursuant to section 205 of the Depository Institution Management Interlocks Act.

Administrative enforcement proceedings.

Matters relating to assistance agreements pursuant to section 13(c) of the Federal Deposit Insurance Act.

Recommendation regarding the liquidation of a depository institution's assets acquired by the Corporation in its capacity as receiver, liquidator, or liquidating agent of those assets:

Case No. FL-89-0037
Silverado Bank, Savings and Loan Association, Denver, Colorado

Reports of the Inspector General:

Audit Report re:
Enforcement Action System Audit (Memo dated September 27, 1989)

Audit Report re:
Liquidation Overhead Allocation Audit (Memo dated September 26, 1989)

Audit Report re:
MVS Audit By Non-FDIC Users (Memo dated September 18, 1989)

Audit Report re:
Audit of Data Base Access (Memo dated September 18, 1989)

Audit Report re:
Audit of Legal Fees Incurred for Litigation of Directors and Officers Liability Cases, (Memo dated September 15, 1989)

Matters relating to the Corporation's corporate activities.

Matters relating to the possible closing of certain insured banks.

Application of Babcock & Brown Bank, a proposed new bank to be located at 1747 Pennsylvania Avenue, NW., Washington, D.C., for Federal deposit insurance.

In calling the meeting, the Board determined on motion of Director C. C. Hope, Jr. (Appointive), seconded by Director M. Danny Wall (Director of the Office of Thrift Supervision), concurred in by Chairman L. William Seidman, that Corporation business required its consideration of the matters on less than seven days' notice to the public; that no earlier notice of the meeting was practicable; that the public interest did not require consideration of the matters in a meeting open to public observation; and that the matters could be considered in a closed meeting by authority of subsections (c)(2), (c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B) of the "Government in the Sunshine Act" (5 U.S.C. 552b (c)(2), (c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B)).

The meeting was held in the Board Room of the FDIC Building located at 550-17th Street, NW., Washington, DC.

Dated: November 16, 1989.

Federal Deposit Insurance Corporation.

**Robert E. Feldman,**

*Deputy Executive Secretary.*

[FR Doc. 89-2746 Filed 11-17-89; 1:30 pm]

BILLING CODE 6714-01-M

## FEDERAL RESERVE SYSTEM BOARD OF GOVERNORS

**TIME AND DATE:** 11:00 a.m., Monday, November 27, 1989.

**PLACE:** Marriner S. Eccles Federal Reserve Board Building, C Street entrance between 20th and 21st Streets, NW., Washington, D.C. 20551.

**STATUS:** Closed.

**MATTERS TO BE CONSIDERED:**

1. Proposed acquisition of computer equipment at two Federal Reserve Banks.
2. Proposed acquisition of automated material handling equipment within the Federal Reserve System.
3. Federal Reserve Bank and Branch director appointments. (This item was originally announced for a closed meeting on October 30, 1989.)
4. Personnel actions (appointments, promotions, assignments, reassignments, and salary actions) involving individual Federal Reserve System employees.
5. Any items carried forward from a previously announced meeting.

**CONTACT PERSON FOR MORE INFORMATION:** Mr. Joseph R. Coyne, Assistant to the Board; (202) 452-3204. You may call (202) 452-3207, beginning at approximately 5 p.m. two business days before this meeting, for a recorded announcement of bank and bank holding company applications scheduled for the meeting.

Dated: November 17, 1989.

**Jennifer J. Johnson,**

*Associate Secretary of the Board.*

[FR Doc. 89-27508 Filed 11-17-89; 3:36 pm]

BILLING CODE 6210-01-M

## NUCLEAR REGULATORY COMMISSION

**DATE:** Week of November 20, 27, December 4, and 11, 1989.

**PLACE:** Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

**STATUS:** Open and Closed.

**MATTERS TO BE CONSIDERED:**

**Week of November 20**

*Tuesday, November 21*

9:00 a.m.
Briefing on Implementation of the U.S. Environmental Protection Agency's HLW Disposal Standards (Public Meeting)

*Wednesday, November 22*

11:30 a.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

**Week of November 27—Tentative**

*Thursday, November 30*

2:00 p.m.
Briefing on DOE Views on Advanced Light Water Reactor Design and Certification (Public Meeting)

3:30 p.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

**Week of December 4—Tentative**

*Tuesday, December 5*

11:30 a.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

**Week of December 11—Tentative**

*Thursday, December 14*

10:00 a.m.
Briefing on Status of Implementation of the Severe Accident Master Integration Plan and Status of Licensee Progress on IPE (Public Meeting)

3:30 p.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

**ADDITIONAL INFORMATION:** By a vote of 3-0 (Commissioner Roberts not present) on November 15, the Commission determined pursuant to U.S.C. 552b(e) and § 9.107(a) of the Commission's rules that Commission business required that "Affirmation of Seabrook Procedural Order Involving Pleadings and Schedules for Filing with the

Commission" (PUBLIC MEETING), scheduled for November 16, be held on less than one week's notice to the public.

**Note:** Affirmation sessions are initially scheduled and announced to the public on a time-reserved basis. Supplementary notice is provided in accordance with the Sunshine Act as specific items are identified and added to the meeting agenda. If there is no specific subject listed for affirmation, this means that no item has as yet been identified as requiring any Commission vote on this date.

To verify the status of meetings call (Recording)—(303) 492-0292

**CONTACT PERSON FOR MORE INFORMATION:** William Hill (301) 492-1661.

Dated: November 16, 1989.

William M. Hill, Jr.,

*Office of the Secretary.*

[FR Doc. 89-27482 Filed 11-17-89; 2:30 pm]

BILLING CODE 3590-01-M

federal register

Tuesday
November 21 1989

# Part II

# Environmental Protection Agency

## 40 CFR Part 300

## National Priorities List of Uncontrolled Hazardous Waste Sites; Final Rule

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 300**

**[FRL 3681-4]**

## National Priorities List for Uncontrolled Hazardous Waste Sites

**AGENCY:** Environmental Protection Agency.

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency ("EPA") is amending the National Priorities List ("NPL"). The NPL is appendix B of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 CFR part 300. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires that the NCP include a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States, and that the list be revised at least annually. The NPL, initially promulgated on September 8, 1983 (48 FR 40658), constitutes this list and is being revised today in the following way: (1) The addition of Radium Chemical Co. Inc., in Woodside, New York, New York, and Forest Glen Mobile Home Subdivision, in Niagara Falls, New York; (2) the addition of 27 Federal facility sites; and (3) the expansion of the definition of a previously listed Federal facility site. After carefully reviewing public comments on these sites, EPA has determined that they meet the eligibility requirements of the NPL and are consistent with the Agency's listing policies. Information supporting these actions is contained in the Superfund Public Dockets.

**EFFECTIVE DATE:** The effective date for this amendment to the NCP shall be December 21, 1989. CERCLA section 305 provides for a legislative veto of regulations promulgated under CERCLA. Although INS v. Chadha, 462 U.S. 919, 103 S. Ct. 2764 (1983), cast the validity of the legislative veto into question, EPA has transmitted a copy of this regulation to the Secretary of the Senate and the Clerk of the House of Representatives. If any action by Congress calls the effective date of this regulation into question, the Agency will publish a notice of clarification in the **Federal Register.**

**ADDRESSES:** Addresses for the Headquarters and Regional dockets follow. For further details on what these dockets contain, see section I of the "Supplementary Information" portion of this preamble.

Tina Maragousis, Headquarters, U.S. EPA CERCLA Docket Office, OS-245, Waterside Mall, 401 M Street SW., Washington, DC 20460, 202/382-3046.

Evo Cunha, Region 1, U.S. EPA Waste Management Records Center, HES-CAN 6, J.F. Kennedy Federal Building, Boston, MA 02203, 617/565-3300.

U.S. EPA, Region 2, Document Control Center, Superfund Docket, 26 Federal Plaza, 7th Floor, Room 740, New York, NY 10278, Latchmin Serrano, 212/264-5540, Ophelia Brown, 212/264-1154.

Gayle Alston, Region 4, U.S. EPA Library, Room G-6, 345 Courtland Street NE., Atlanta, GA 30365, 404/347-4216.

Cathy Freeman, Region 5, U.S. EPA, 5 HS-12, 230 South Dearborn Street, Chicago, IL 60604, 312/886-6214.

Dolores Eddy, Region 8, U.S. EPA Library, 999 18th Street, Suite 500, Denver, CO 80202-2405, 303/293-1444.

Lisa Nelson, Region 9, U.S. EPA Library, 6th Floor, 215 Fremont Street, San Francisco, CA 94105, 415/768-1377.

David Bennett, Region 10, U.S. EPA, 9th Floor, 1200 6th Avenue, Mail Stop HW-093, Seattle, WA 98101, 206/442-2103.

**FOR FURTHER INFORMATION CONTACT:** Martha Otto, Hazardous Site Evaluation Division, Office of Emergency and Remedial Response (OS-230), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC, 20460, or the Superfund Hotline, Phone (800) 424-9346 (382-3000 in the Washington, DC, metropolitan area).

**SUPPLEMENTARY INFORMATION:**

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I. Introduction
II. Purpose and Implementation of the NPL
III. NPL Update Process
IV Contents of This NPL Update
V Response to Comments
VI. Regulatory Impact Analysis
VII. Regulatory Flexibility Act Analysis

## I. Introduction

*Background*

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601-9657 ("CERCLA" or "the Act") in response to the dangers of uncontrolled or abandoned hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act ("SARA"), Public Law No. 99-499, stat. 1613 *et seq.* To implement CERCLA, the Environmental Protection Agency ("EPA" or "the Agency") promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 CFR part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth the guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On December 21, 1988 (53 FR 51394), EPA proposed revisions to the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include "criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, taking into account the potential urgency of such action, for the purpose of taking removal action." The discussion below may refer to "releases or threatened releases" simply as "releases," "facilities," or "sites." Removal action involves cleanup or other measures that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA section 101(23)). Remedial action tends to be long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA section 101(24)). Criteria for determining priorities for possible remedial actions financed by the Trust Fund established under CERCLA are included in the Hazard Ranking System ("HRS"), which EPA promulgated as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 23, 1988 (53 FR 51962), EPA proposed revisions to the HRS in response to CERCLA section 105(c), added by SARA.

In addition to the application of the HRS, there are two other mechanisms for listing sites on the NPL. Under CERCLA section 105(a)(8)(B), each State may designate a single site as its top priority, regardless of the HRS score. According to 40 CFR 300.66(b)(4) of the NCP, the Agency also may list sites if the Agency for Toxic Substances and Disease Registry (ATSDR) recommends dissociation of individuals from the release; if EPA determines that the release poses a significant public health threat; and if EPA anticipates that it would be more cost-effective to use remedial rather than removal authorities for cleanup. The three mechanisms are described in more detail in section III of this preamble.

Based in large part on the HRS listing mechanism and pursuant to section 105(a)(8)(B) of CERCLA, as amended by

SARA, EPA prepared a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the National Priorities List ("NPL"). CERCLA section 105(a)(8)(B) also requires that the NPL be revised at least annually. A site can undergo CERCLA-financed remedial action only after it is placed on the final NPL, as provided in the NCP at 40 CFR 300.66(c)(2) and 300.68(a).

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). The NPL has been expanded since then, most recently on October 4, 1989 (54 FR 41000/41015). The Agency also has published a number of proposed rulemakings to add sites to the NPL, most recently October 26, 1989 (54 FR 43778).

EPA may delete sites from the NPL where no further response is appropriate, as explained in the NCP at 40 CFR 300.66(c)(7). To date, the Agency has deleted 28 sites from the final NPL, most recently on September 22, 1989 (54 FR 38994) when Cecil Lindsey, Newport, Arkansas, was deleted.

This rule adds two sites and 27 Federal facility sites to the NPL, and expands the definition of 1 previously listed Federal facility site. The two non-Federal sites were proposed to the NPL pursuant to § 300.66(b)(4) of the NCP (August 16, 1989, 54 FR 33846). The comment period for that rule ended on September 15, 1989. The 27 Federal facilities were proposed to the NPL, on the basis of their HRS scores, on July 14, 1989 (54 FR 29620), as was the expansion of the definition of 1 listed Federal facility site. The comment period for that rule ended on September 12, 1989. The other Federal facility sites in the July 1989 proposed rule will be addressed in future final rules.

EPA read all comments received on the sites in today's final rule, including late comments. In past rules, EPA responded even to late comments. However, because of the need to make final decisions on all currently proposed sites prior to the date that the revised HRS takes effect, EPA was not able to respond to all late comments received for sites in this rule. (EPA had previously indicated that it may no longer be able to consider late comments (53 FR 23990, June 24, 1988 and 54 FR 19527, May 5, 1989).) In section V of this preamble, EPA addresses those comments received no later than October 11, 1989 for all sites included in this final rule. Although EPA has not responded to all late comments, it has read all late comments. The Agency has determined that none of the late comments received to date on the sites in today's final rule have brought to EPA's attention a fundamental error in the scoring of a site.

This rule results in a final NPL of 1,010 sites, 79 of them in the Federal section. In addition, 209 sites are currently in proposed status, 38 of them in the Federal section. With these changes, final and proposed sites now total 1,219.

EPA may include on the NPL sites at which there are or have been releases or threatened releases of hazardous substances, pollutants, or contaminants.

*Information Available to the Public*

The Headquarters and Regional public dockets for the NPL contain documents relating to the listing of these sites (see ADDRESSES portion of this notice). Appointments should be made to view these dockets. The hours of operation for the Headquarters docket are from 9 a.m. to 4 p.m., Monday through Friday excluding Federal holidays. The hours of operation for the Regional dockets are generally from 8 a.m. to 5 p.m., Monday through Friday excluding Federal holidays.

The Headquarters docket for the Federal facility sites added by this rule include the following documents: HRS score sheets; a Documentation Record describing the information used to compute the score; a list of documents referenced in the Documentation Record; and public comments received. The Headquarters docket for the two non-Federal sites contains the same documents in addition to, for each site, a Public Health Advisory issued by ATSDR, and an EPA memorandum addressing for each site, whether the release poses a significant threat to public health and whether it would be more cost-effective to use remedial rather than removal authorities at the sites.

The Regional docket includes all information available in the Headquarters docket, as well as the reference documents, which contain the data EPA relied upon in calculating or evaluating the HRS scores for these sites.

Copies of documents contained in the Headquarters or Regional dockets may be obtained by informal written request addressed to the appropriate docket contact as specified in the Addresses section of this preamble.

## II. Purpose and Implementation of the NPL

*Purpose*

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 (1980)):

> The priority lists serve primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government action in the form of remedial actions or enforcement actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The purpose of the NPL, therefore, is primarily to serve as an informational and management tool. The identification of a site for the NPL assists EPA in determining which sites warrant further investigation to assess the nature and extent of the public health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites that EPA believes warrant further investigation.

*Implementation*

As outlined in the NCP at 40 CFR 300.66(c)(2) and 300.68(a), Trust Fund monies can be spent for remedial actions only at sites that have been placed on the final NPL. However, EPA may take enforcement actions under CERCLA or other applicable statutes against responsible parties regardless of whether the site is on the NPL, although, as a practical matter, the focus of EPA's CERCLA enforcement actions has been and will continue to be on NPL sites. Similarly, in the case of CERCLA removal actions, EPA has the authority to act at any site, whether listed or not, that meets the criteria of the NCP at 40 CFR 300.65–300.67.

EPA's policy is to pursue cleanup of NPL sites using the appropriate response and/or enforcement actions available to the Agency, including authorities other than CERCLA. Listing a site will serve as notice to any potentially responsible party that the Agency may initiate CERCLA-financed remedial action. The Agency will decide on a site-by-site basis whether to take enforcement or other action under CERCLA or other authorities, proceed directly with CERCLA-financed response actions and seek to recover response costs after cleanup, or do both. To the extent feasible, once sites are on the NPL, EPA will determine high-priority candidates for Superfund-financed response action

and/or enforcement action through both State and Federal initiatives. These determinations will take into account which approach is more likely to most expeditiously accomplish cleanup of the site while using CERCLA's limited resources as efficiently as possible.

Remedial response actions will not necessarily be funded in the same order as a site's ranking on the NPL. Most sites are listed in the order of their HRS scores, and the Agency has recognized that the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. EPA relies on further, more detailed studies in the remedial investigation/feasibility study (RI/FS) to address these concerns.

The RI/FS determines the nature and extent of the threat presented by the contamination (40 CFR 300.68(d)). Specifically, it evaluates the amount of contaminants in the environment, the risk to affected populations and environment, the cost to correct problems at the site, and the response actions that have been taken by potentially responsible parties or others. Decisions on the type and extent of action to be taken at these sites are made in accordance with the criteria contained in subpart F of the NCP. After conducting these additional studies, EPA may conclude that it is not desirable to initiate a CERCLA remedial action at some sites on the NPL because of more pressing needs at other sites, or because a private party cleanup is already underway pursuant to an enforcement action. Given the limited resources available in the Trust Fund, the Agency must carefully balance the relative needs for response at the numerous sites it has studied. It also is possible that EPA will conclude, after further analysis, that the site does not warrant remedial action. Federal facility sites are eligible for the NPL pursuant to the NCP at 40 CFR 300.66(c)(2). However, section 111(e)(3) of CERCLA, as amended by SARA, limits the expenditure of CERCLA monies at Federally-owned facilities. Federal facility sites also are subject to the requirements of CERCLA section 120, added by SARA.

## III. NPL Update Process

There are three mechanisms for placing sites on the NPL. The principal mechanism is the application of the HRS. The HRS serves as an objective screening device to evaluate the relative potential of uncontrolled hazardous substances to cause human health or safety problems, or ecological or environmental damage. The HRS score represents an estimate of the relative "probability and magnitude of harm to the human population or sensitive environment from exposure to hazardous substances as a result of the contamination of ground water, surface water, or air" (47 FR 31180, July 16, 1982). Sites that score 28.50 or greater on the HRS are eligible for the NPL.

Under the second mechanism for adding sites to the NPL, each State may designate a single site as its top priority, regardless of the HRS score. This mechanism is provided by section 105(a)(8)(B) of CERCLA, as amended by SARA, which requires that, to the extent practicable, the NPL include within the 100 highest priorities, one facility designated by each State representing the greatest danger to public health, welfare, or the environment among known facilities in the State.

The third mechanism for listing, included in the NCP at 40 CFR 300.66(b)(4) (50 FR 37624–28, September 16, 1985), allows certain sites with HRS scores below 28.50 to be eligible for the NPL if all of the following occur:

- The Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Department of Health and Human Services issues a health advisory that recommends dissociation of individuals from the release.
- EPA determines that the release poses a significant threat to public health.
- EPA anticipates that it will be more cost-effective to use its remedial authority than to use its removal authority to respond to the release.

The third mechanism was added to the NCP by rulemaking, during which the Agency explained that the HRS may not fully reflect the risk at certain types of sites. For example, direct contact is not included in calculating the total HRS score. Thus, some sites involving direct contact to residents may pose a serious threat but not receive a sufficiently high score to qualify for the NPL. Similarly, where a small number of people are exposed to a hazardous substance, the site may fail to qualify for listing due to the low targets score.

States have the primary responsibility for identifying non-Federal sites, computing HRS scores, and submitting candidate sites to the EPA Regional Offices. EPA Regional Offices conduct a quality control review of the States' candidate sites, and may assist in investigating, sampling, monitoring, and scoring sites. Regional Offices also may consider candidate sites in addition to those submitted by States.

Federal agencies have the primary responsibility under CERCLA section 120(c) for identifying Federal facility sites. In conjunction with EPA Regional offices, the Federal agencies perform investigations, sampling, monitoring, and scoring of sites. Regional offices then conduct a quality control review of the candidate sites. EPA Headquarters conducts further quality assurance audits to ensure accuracy and consistency among the various EPA and State offices participating in the scoring. The Agency then proposes the sites that meet one of the three criteria for listing (and EPA's listing policies) and solicits public comment on the proposal. Based on these comments and further review by EPA, the Agency determines final HRS scores and places those sites that still qualify on the final NPL.

## IV. Contents Of This Final Rule

This rule adds to the final NPL Radium Chemical Co. Inc., in Woodside, Queens Borough, New York City, New York, and the Forest Glen Mobile Home Subdivision in Niagara Falls, New York. Both were proposed to the NPL on August 16, 1989 (54 FR 33846) based upon § 300.66(b)(4) of the NCP (54 FR 33846). The comment period for these sites ended on September 15, 1989. EPA addresses two comments received regarding one of these sites in Section V of this preamble. A description of these two sites was included in the proposed rule (54 FR 33846, August 16, 1989).

This rule also adds 27 Federal facility sites to the NPL, and finalizes the expansion of the definition of another previously listed Federal facility site. The comment period for these sites ended on September 12, 1989. EPA addresses comments received by October 11, 1989, on these Federal facility sites in section V of this preamble. A brief discussion of the Federal facility expansion is provided below. Table 1 lists sites added to the NPL by this rule. Other Federal facility sites proposed in July 1989 will be addressed in future final rules.

### *Mather Air Force Base*

The Mather Air Force Base (AC&W Disposal Area) located in Sacramento, California, was proposed to the NPL on October 15, 1984 (49 FR 40320) and was listed on July 22, 1987 (52 FR 27620). On July 14, 1989 (54 FR 29822), the Agency proposed to expand the site definition at this facility because it believed that additional areas of the facility were contributing to contamination of the aquifer, and possibly to off-site contamination. At this time, the site is being expanded and renamed "Mather Air Force Base."

TABLE 1.—NATIONAL PRIORITIES LIST, FEDERAL FACILITY SITES, NEW FINAL (BY GROUP), NOVEMBER 1989

| NPL Gr[1] | ST | Site name | City/county |
|---|---|---|---|
| 2 | OH | Feed Materials Prod Cent (USDOE). | Fernald |
| 3 | WA | Bonneville Power Adm Ross (USDOE). | Vancouver |
| 4 | ID | Idaho National Engin Lab (USDOE). | Idaho Falls |
| 4 | TN | Oak Ridge Reservation (USDOE). | Oak Ridge |
| 5 | CA | Treasure Island Nav Sta-Hun Pt An. | San Francisco |
| 5 | AK | Eielson Air Force Base. | Fairbanks N Star Bor |
| 5 | SC | Savannah River Site (USDOE). | Aiken |
| 6 | MA | Otis Air Nat Guard/Camp Edwards. | Falmouth |
| 7 | GA | Marine Corps Logistics Base. | Albany |
| 7 | CO | Air Force Plant PJKS. | Waterton |
| 8 | FL | Pensacola Naval Air Station. | Pensacola |
| 8 | MA | Fort Devens | Fort Devens |
| 10 | NY | Brookhaven National Lab (USDOE). | Upton |
| 11 | AZ | Williams Air Force Base. | Chandler |
| 11 | CA | Barstow Marine Corps Logist Base. | Barstow |
| 12 | UT | Monticello Mill Tailings (USDOE). | Monticello |
| 13 | WA | Fort Lewis Logistics Center. | Tillicum |
| 13 | OH | Mound Plant (USDOE). | Miamisburg |
| 14 | RI | Davisville Naval Constr Batt Cent. | North Kingstown |
| 14 | CA | Camp Pendleton Marine Corps Base. | San Diego County |
| 16 | RI | Newport Naval Educat/ Training Cen. | Newport |
| 16 | FL | Jacksonville Naval Air Station. | Jacksonville |
| 16 | FL | Cecil Field Naval Air Station. | Jacksonville |
| 16 | CA | March Air Force Base. | Riverside |
| 17 | MN | Naval Industrial Reserve Ordnance. | Fridley |
| 18 | NY | Plattsburgh Air Force Base. | Plattsburgh |
| 18 | CA | Travis Air Force Base. | Solano County |

[1] Sites are placed in groups (Gr) corresponding to groups of 50 on the final NPL.
Number of New Final Federal Facility Sites: 27.

NATIONAL PRIORITIES LIST, NEW FINAL SITES (BY RANK), NOVEMBER 1989

| NPL Gr[1] | NPL Rank | St | Site Name | City/County |
|---|---|---|---|---|
| 19 | 930 | NY | Forest Glen Mobile Home Subdivis | Niagara Falls |
| 19 | 931 | NY | Radium Chemical Co., Inc. | New York City |

[1] Sites are placed in groups (Gr) corresponding to groups of 50 on the final NPL.
Number of New Final Sites: 2.

The NPL, which is Appendix B of the NCP, and which appears after this preamble, is arranged by HRS scores and is presented in groups of 50 to emphasize that minor differences in scores do not necessarily represent significantly different levels of risk. The two sites listed pursuant to § 300.66(b)(4) of the NCP have HRS scores below 28.50 and are included in the last group on the NPL.

## V. Response to Comments

EPA received two comments in favor of listing Radium Chemical Co., Inc. These comments resulted in no change in the HRS score for the site or the Agency's determination that the criteria given at § 300.66(b)(4) of the NCP have been met. No comments were received for the Forest Glen Mobile Home Subdivision.

With respect to the 28 Federal facility sites addressed by this rule, EPA received several comments in support of the listing of Otis Air National Guard Base/Camp Edwards in Falmouth, Massachusetts, Barstow Marine Corps Logistics Base in Barstow, California, and Idaho National Engineering Laboratory in Idaho Falls, Idaho. Some of these comments also included suggestions for cleanup or enforcement strategies. While the Agency appreciates these comments, they are not germane to listing these sites, and so will not be addressed at this time. No timely comments were received regarding the other Federal facility sites in today's final rule.

## VI. Regulatory Impact Analysis

The costs of cleanup actions that may be taken at sites are not directly attributable to listing on the NPL, as explained below. Therefore, the Agency has determined that this rulemaking is not a "major" regulation under Executive Order 12291. EPA has conducted a preliminary analysis of the economic implications of today's final rule to add two new non-Federal sites and 27 Federal facility sites to the NPL, and finds that the kinds of economic effects associated with this revision are generally similar to those identified in the regulatory impact analysis (RIA) prepared in 1982 for revisions to the NCP pursuant to section 105 of CERCLA (47 FR 31180, July 16, 1982) and the economic analysis prepared when amendments to the NCP were proposed (50 FR 5882, February 12, 1985). This rule was submitted to the Office of Management and Budget for review as required by Executive Order 12291.

*Costs*

EPA has determined that this rulemaking is not a "major" regulation under Executive Order 12291 because inclusion of a site on the NPL does not itself impose any costs. It does not establish that EPA necessarily will undertake remedial action, nor does it require any action by a private party or determine its liability for site response costs. Costs that arise out of site responses result from site-by-site decisions about what actions to take, not directly from the act of listing itself. Nonetheless, it is useful to consider the costs associated with responding to the sites included in this rulemaking.

The major events that follow the listing of a site on the NPL include a search for potentially responsible parties and a remedial investigation/feasibility study (RI/FS) to determine if remedial actions will be undertaken at a site. Design and construction of the selected remedial alternatives follow completion of the RI/FS, and operation and maintenance (O&M) activities may continue after construction has been completed.

EPA initially bears the costs associated with responsible party searches. Responsible parties may bear some or all of the costs of the RI/FS, remedial design and construction, and O&M, or EPA and the States may share costs.

The State cost share for site cleanup activities has been amended by section 104 of SARA. For privately-owned sites, as well as for publicly-owned but not publicly-operated sites, EPA will pay for 100% of the costs of the RI/FS and remedial planning, and 90% of the costs associated with remedial action. The State will be responsible for 10% of the remedial action. For publicly-operated sites, the State will pay for at least 50% of all response costs at the site, including the RI/FS and remedial design and construction of the remedial action selected. After the remedy is implemented, costs fall into two categories:

- For restoration of ground water and surface water, EPA will share in startup costs according to the criteria in the previous paragraph for 10 years or until a sufficient level of protectiveness is achieved before the end of 10 years.

- For other cleanups, EPA will share for up to 1 year the cost of that portion of response needed to assure that a remedy is operational and functional. After that, the State assumes full responsibilities for O&M.

In previous NPL rulemakings, the Agency estimated the costs associated with these activities (RI/FS, remedial design, remedial action, and O&M) on an average total cost per site basis. EPA will continue with this approach, using the most recent cost estimates available (1988). These estimates are presented below. However, there is wide variation in costs for individual sites, depending on the amount, type, and extent of contamination. Additionally, EPA is unable to predict what portions of the total costs responsible parties will bear, since the distribution of costs depends on the extent of voluntary and negotiated response and the success of any cost-recovery actions.

| Cost category | Average total cost per site [1] |
|---|---|
| RI/FS | 1,100,000 |
| Remedial Design | 750,000 |
| Remedial Action | [2] 13,500,000 |
| Net present value of O&M [3] | [2] 3,770,000 |

[1] 1988 U.S. Dollars
[2] Includes State cost-share
[3] Assumes cost of O&M over 30 years, $400,000 for the first year and 10% discount rate.

Source: Office of Program Management, Office of Emergency and Remedial Response, U.S. EPA.

Costs to States associated with today's rule arise from the required State cost-share of: (1) 10% of remedial actions and 10% of first-year O&M costs at privately-owned sites and sites that are publicly-owned but not publicly-operated; and (2) at least 50% of the remedial planning (RI/FS and remedial design), remedial action, and first-year O&M costs at publicly-operated sites. The State will assume the costs generated by O&M, following EPA's period of participation. The Radium Chemical Company Site and the Forest Glen Mobile Home Subdivision Site are both privately-owned. Therefore, using the budget projections presented above, State costs arising from Federal remedial planning and action, excluding O&M costs, can be expected to reach approximately $2.5 million. State O&M costs cannot be accurately determined because EPA, as noted above, will share O&M costs for up to 10 years for restoration of ground water and surface water, and it is not known if these sites will require this treatment and for how long. However, based on past experience, EPA believes a reasonable estimate is that it will share startup costs for up to 10 years at 25% of sites.

Placing a hazardous waste site on the NPL does not itself cause firms responsible for the site to bear cleanup costs. Nonetheless, a listing may induce firms to clean up the sites voluntarily, or it may act as a potential trigger for subsequent enforcement or cost-recovery actions. Such actions may impose costs on firms, but the decision to take such actions are discretionary and made solely on a case-by-case basis. Consequently, precise estimates of these effects cannot be made. EPA does not believe that every site will be cleaned up by a responsible party. EPA cannot project at this time which firms or industry sectors will bear specific portions of the response costs, but the Agency considers: the volume and nature of the waste at the site; the strength of the evidence linking the wastes at the site to the parties; the parties' ability to pay; and other factors when deciding whether and how to proceed against the parties.

Economy-wide effects of this amendment to the NCP are aggregations of effects on firms and State and local governments. Although effects could be felt by some individual firms and States, the total impact of this final rule on output, prices, and employment is expected to be negligible at the national level, as was the case in the 1982 RIA.

*Benefits*

The benefits associated with adding two sites and 27 Federal facility sites to the NPL are increased health and environmental protection as a result of increased public awareness of potential hazards. In addition to the potential for more Federally-financed remedial actions, expansion of the NPL can accelerate privately-financed, voluntary cleanup efforts. Identifying sites as national priority targets also may give States increased support for funding responses at particular sites.

As a result of additional CERCLA remedies, there will be lower human exposure to high-risk chemicals, and higher-quality surface water, ground water, soil, and air. These benefits are expected to be significant, although difficult to estimate in advance of completing the RI/FS at these sites.

## VII. Regulatory Flexibility Act Analysis

The Regulatory Flexibility Act of 1980 requires EPA to review the impacts of this action on small entities, or certify that the action will not have a significant impact on a substantial number of small entities. By small entities, the Act refers to small businesses, small government jurisdictions, and nonprofit organizations.

While these modifications to the NPL are considered revisions to the NCP, they are not typical regulatory changes since the revisions do not automatically impose costs. Placing sites on the NPL does not in itself require any action by any private party, nor does it determine the liability of any party for the cost of cleanup at the site. Further, no identifiable groups are affected as a whole. As a consequence, it is hard to predict impacts on any group. A site's inclusion on the NPL could increase the likelihood that adverse impacts to responsible parties (in the form of cleanup costs) will occur, but EPA cannot identify the potentially affected business at this time nor estimate the

number of small businesses that might be affected.

The Agency does expect that certain industries and firms within industries that have caused a proportionately high percentage of waste site problems could be significantly affected by CERCLA actions. However, EPA does not expect the impacts from the listing of these sites to have a significant economic impact on a substantial number of small businesses.

In any case, economic impacts would only occur through enforcement and cost-recovery actions, which are taken at EPA's discretion on a site-by-site basis. EPA considers many factors when determining what enforcement actions to take, including not only the firm's contribution to the problem, but also the firm's ability to pay.

The impacts (from cost recovery) on small governments and nonprofit organizations will be determined on a similar case-by-case basis.

**List of Subjects in 40 CFR Part 300**

Air pollution control, Chemicals, Hazardous materials, Intergovernmental relations, Natural resources, Oil pollution, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: November 14, 1989.

**M.A. Gade,**

*Acting Assistant Administrator, Office of Solid Waste and Emergency Response.*

## PART 300—[AMENDED]

40 CFR part 300 is amended as follows:

1. The authority citation for part 300 continues to read as follows:

**Authority:** 42 U.S.C. 9605; 42 U.S.C. 9620; 33 U.S.C. 1321(c)(2); E.O. 11735 (38 FR 21243); E.O. 12580 (52 FR 2923).

2. Appendix B of part 300 is revised to read as set forth below.

BILLING CODE 6560-50-M

# Appendix B to Part 300

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| Group 1 (HRS Scores 75.60 - 58.54) | | | | |
| 1 | 02 | NJ | Lipari Landfill | Pitman |
| 2 | 03 | DE | Tybouts Corner Landfill * | New Castle County |
| 3 | 03 | PA | Bruin Lagoon | Bruin Borough |
| 4 | 02 | NJ | Helen Kramer Landfill | Mantua Township |
| 5 | 01 | MA | Industri-Plex | Woburn |
| 6 | 02 | NJ | Price Landfill * | Pleasantville |
| 7 | 02 | NY | Pollution Abatement Services * | Oswego |
| 8 | 07 | IA | LaBounty Site | Charles City |
| 9 | 03 | DE | Army Creek Landfill | New Castle County |
| 10 | 02 | NJ | CPS/Madison Industries | Old Bridge Township |
| 11 | 01 | MA | Nyanza Chemical Waste Dump | Ashland |
| 12 | 02 | NJ | GEMS Landfill | Gloucester Township |
| 13 | 05 | MI | Berlin & Farro | Swartz Creek |
| 14 | 01 | MA | Baird & McGuire | Holbrook |
| 15 | 02 | NJ | Lone Pine Landfill | Freehold Township |
| 16 | 01 | NH | Somersworth Sanitary Landfill | Somersworth |
| 17 | 05 | MN | FMC Corp. (Fridley Plant) | Fridley |
| 18 | 06 | AR | Vertac, Inc. | Jacksonville |
| 19 | 01 | NH | Keefe Environmental Services | Epping |
| 20 | 08 | MT | Silver Bow Creek/Butte Area | Sil Bow/Deer Lodge |
| 21 | 08 | SD | Whitewood Creek * | Whitewood |
| 22 | 06 | TX | French, Ltd. | Crosby |
| 23 | 05 | MI | Liquid Disposal, Inc. | Utica |
| 24 | 01 | NH | Sylvester * | Nashua |
| 25 | 03 | PA | Tysons Dump | Upper Merion Twp |
| 26 | 03 | PA | McAdoo Associates * | McAdoo Borough |
| 27 | 06 | TX | Motco, Inc. * | La Marque |
| 28 | 05 | OH | Arcanum Iron & Metal | Darke County |
| 29 | 08 | MT | East Helena Site | East Helena |
| 30 | 06 | TX | Sikes Disposal Pits | Crosby |
| 31 | 04 | AL | Triana/Tennessee River | Limestone/Morgan |
| 32 | 09 | CA | Stringfellow * | Glen Avon Heights |
| 33 | 01 | ME | McKin Co. | Gray |
| 34 | 06 | TX | Crystal Chemical Co. | Houston |
| 35 | 02 | NJ | Bridgeport Rental & Oil Services | Bridgeport |
| 36 | 08 | CO | Sand Creek Industrial | Commerce City |
| 37 | 06 | TX | Geneva Industries/Fuhrmann Energy | Houston |
| 38 | 01 | MA | W.R. Grace & Co Inc (Acton Plant) | Acton |
| 39 | 05 | MN | Reilly Tar (St. Louis Park Plant) * | St. Louis Park |
| 40 | 05 | MN | New Brighton/Arden Hills | New Brighton |
| 41 | 04 | FL | Schuylkill Metals Corp. | Plant City |
| 42 | 02 | NJ | Vineland Chemical Co., Inc. | Vineland |
| 43 | 02 | NJ | Burnt Fly Bog | Marlboro Township |
| 44 | 03 | PA | Publicker Industries Inc. | Philadephia |
| 45 | 02 | NY | Old Bethpage Landfill | Oyster Bay |
| 46 | 02 | NJ | Shieldalloy Corp. | Newfield Borough |
| 47 | 04 | FL | Reeves Southeast Galvanizing Corp | Tampa |
| 48 | 08 | MT | Anaconda Co. Smelter | Anaconda |
| 49 | 10 | WA | Western Processing Co., Inc. | Kent |
| 50 | 05 | WI | Omega Hills North Landfill | Germantown |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| Group 2 (HRS Scores 58.41 - 55.97, except for State top priority sites) | | | | |
| 51 | 04 | FL | American Creosote (Pensacola Plt) | Pensacola |
| 52 | 02 | NJ | Caldwell Trucking Co. | Fairfield |
| 53 | 02 | NY | GE Moreau | South Glen Falls |
| 54 | 06 | OK | Tar Creek (Ottawa County) | Ottawa County |
| 55 | 07 | KS | Cherokee County | Cherokee County |
| 56 | 05 | IN | Seymour Recycling Corp. * | Seymour |
| 57 | 05 | OH | United Scrap Lead Co., Inc. | Troy |
| 58 | 04 | FL | Peak Oil Co./Bay Drum Co. | Tampa |
| 59 | 02 | NJ | Brick Township Landfill | Brick Township |
| 60 | 02 | NJ | Brook Industrial Park | Bound Brook |
| 61 | 05 | MI | American Anodco, Inc. | Ionia |
| 62 | 10 | WA | Frontier Hard Chrome, Inc. | Vancouver |
| 63 | 05 | WI | Janesville Old Landfill | Janesville |
| 64 | 05 | MI | Northernaire Plating | Cadillac |
| 65 | 04 | SC | Kalama Specialty Chemicals | Beaufort |
| 66 | 04 | SC | Independent Nail Co. | Beaufort |
| 67 | 05 | WI | Janesville Ash Beds | Janesville |
| 68 | 04 | FL | Davie Landfill | Davie |
| 69 | 05 | OH | Miami County Incinerator | Troy |
| 70 | 10 | WA | General Electric(Spokane Shop) | Spokane |
| 71 | 04 | FL | Gold Coast Oil Corp. | Miami |
| 72 | 09 | AZ | Tucson International Airport Area | Tucson |
| 73 | 05 | IN | International Minerals (E. Plant) | Terre Haute |
| 74 | 05 | WI | Wheeler Pit | La Prairie Township |
| 75 | 09 | CA | Operating Industries, Inc. Lndfll | Monterey Park |
| 76 | 02 | NY | Wide Beach Development | Brant |
| 77 | 09 | CA | Iron Mountain Mine | Redding |
| 78 | 02 | NJ | Scientific Chemical Processing | Carlstadt |
| 79 | 05 | MI | Gratiot County Landfill * | St. Louis |
| 80 | 01 | RI | Picillo Farm * | Coventry |
| 81 | 01 | MA | New Bedford Site * | New Bedford |
| 82 | 06 | LA | Old Inger Oil Refinery * | Darrow |
| 83 | 05 | OH | Chem-Dyne * | Hamilton |
| 84 | 04 | SC | SCRDI Bluff Road * | Columbia |
| 85 | 01 | CT | Laurel Park, Inc. * | Naugatuck Borough |
| 86 | 08 | CO | Marshall Landfill * | Boulder County |
| 87 | 05 | IL | Outboard Marine Corp. * | Waukegan |
| 88 | 06 | NM | South Valley * | Albuquerque |
| 89 | 01 | VT | Pine Street Canal * | Burlington |
| 90 | 03 | WV | West Virginia Ordnance * | Point Pleasant |
| 91 | 07 | MO | Ellisville Site * | Ellisville |
| 92 | 08 | ND | Arsenic Trioxide Site * | Southeastern ND |
| 93 | 07 | IA | Aidex Corp. * | Council Bluffs |
| 94 | 05 | WI | N.W. Mauthe Co., Inc. * | Appleton |
| 95 | 04 | TN | North Hollywood Dump * | Memphis |
| 96 | 04 | KY | A.L. Taylor (Valley of Drums) * | Brooks |
| 97 | 09 | GU | Ordot Landfill * | Guam |
| 98 | 04 | MS | Flowood Site * | Flowood |
| 99 | 08 | UT | Rose Park Sludge Pit * | Salt Lake City |
| 100 | 07 | KS | Arkansas City Dump * | Arkansas City |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 3 (HRS Scores 55.84 - 52.23) | |
| 101 | 08 | CO | California Gulch | Leadville |
| 102 | 02 | NJ | D'Imperio Property | Hamilton Township |
| 103 | 05 | MN | Oakdale Dump | Oakdale |
| 104 | 05 | IL | Parsons Casket Hardware Co. | Belvidere |
| 105 | 05 | IL | A & F Material Reclaiming, Inc. | Greenup |
| 106 | 03 | PA | Douglassville Disposal | Douglassville |
| 107 | 05 | MN | Koppers Coke | St. Paul |
| 108 | 01 | MA | Plymouth Harbor/Cannon Eng. Corp. | Plymouth |
| 109 | 10 | ID | Bunker Hill Mining & Metallurg | Smelterville |
| 110 | 02 | NY | Hudson River PCBs | Hudson River |
| 111 | 02 | NJ | Universal Oil Products(Chem Div) | East Rutherford |
| 112 | 09 | CA | Aerojet General Corp. | Rancho Cordova |
| 113 | 10 | WA | Com Bay, South Tacoma Channel | Tacoma |
| 114 | 03 | PA | Osborne Landfill | Grove City |
| 115 | 08 | UT | Portland Cement (Kiln Dust 2 & 3) | Salt Lake City |
| 116 | 01 | CT | Old Southington Landfill | Southington |
| 117 | 02 | NY | Syosset Landfill | Oyster Bay |
| 118 | 02 | NY | Circuitron Corp. | East Farmingdale |
| 119 | 09 | AZ | Nineteenth Avenue Landfill | Phoenix |
| 120 | 10 | OR | Teledyne Wah Chang | Albany |
| 121 | 10 | WA | Midway Landfill | Kent |
| 122 | 02 | NY | Sinclair Refinery | Wellsville |
| 123 | 04 | AL | Mowbray Engineering Co. | Greenville |
| 124 | 05 | MI | Spiegelberg Landfill | Green Oak Township |
| 125 | 04 | FL | Miami Drum Services | Miami |
| 126 | 02 | NJ | Reich Farms | Pleasant Plains |
| 127 | 10 | ID | Union Pacific Railroad Co. | Pocatello |
| 128 | 02 | NJ | South Brunswick Landfill | South Brunswick |
| 129 | 03 | PA | Raymark | Hatboro |
| 130 | 04 | AL | Ciba-Geigy Corp. (McIntosh Plant) | McIntosh |
| 131 | 04 | FL | Kassauf-Kimerling Battery | Tampa |
| 132 | 05 | IL | Wauconda Sand & Gravel | Wauconda |
| 133 | 05 | MI | Bofors Nobel, Inc. | Muskegon |
| 134 | 06 | TX | Bailey Waste Disposal | Bridge City |
| 135 | 01 | NH | Ottati & Goss/Kingston Steel Drum | Kingston |
| 136 | 05 | MI | Ott/Story/Cordova Chemical Co. | Dalton Township |
| 137 | 05 | MI | Thermo-Chem, Inc. | Muskegon |
| 138 | 09 | CA | Brown & Bryant, Inc.(Arvin Plant) | Arvin |
| 139 | 03 | VA | Greenwood Chemical Co. | Newtown |
| 140 | 02 | NJ | NL Industries | Pedricktown |
| 141 | 05 | MN | St. Regis Paper Co. | Cass Lake |
| 142 | 04 | NC | Aberdeen Pesticide Dumps | Aberdeen |
| 143 | 01 | VT | Burgess Brothers Landfill | Woodford |
| 144 | 02 | NJ | Ringwood Mines/Landfill | Ringwood Borough |
| 145 | 04 | FL | Whitehouse Oil Pits | Whitehouse |
| 146 | 04 | GA | Hercules 009 Landfill | Brunswick |
| 147 | 02 | NY | Jones Sanitation | Hyde Park |
| 148 | 05 | MI | Velsicol Chemical (Michigan) | St. Louis |
| 149 | 05 | OH | Summit National | Deerfield Township |
| 150 | 02 | NY | Love Canal | Niagara Falls |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 4 (HRS Scores 52.15 - 49.09) | |
| 151 | 03 | DE | Coker's Sanitation Service Lndfls | Kent County |
| 152 | 05 | MI | Rockwell International (Allegan) | Allegan |
| 153 | 05 | MN | Pine Bend Sanitary Landfill | Dakota County |
| 154 | 07 | IA | Lawrence Todtz Farm | Camanche |
| 155 | 05 | IN | Fisher-Calo | LaPorte |
| 156 | 04 | FL | Pioneer Sand Co. | Warrington |
| 157 | 05 | MI | Springfield Township Dump | Davisburg |
| 158 | 03 | PA | Hranica Landfill | Buffalo Township |
| 159 | 04 | NC | Martin-Marietta, Sodyeco, Inc. | Charlotte |
| 160 | 03 | PA | Hellertown Manufacturing Co. | Hellertown |
| 161 | 04 | FL | Zellwood Ground Water Contamin | Zellwood |
| 162 | 05 | MI | Packaging Corp. of America | Filer City |
| 163 | 05 | WI | Muskego Sanitary Landfill | Muskego |
| 164 | 10 | ID | Kerr-McGee Chemical(Soda Springs) | Soda Springs |
| 165 | 02 | NY | Hooker (S Area) | Niagara Falls |
| 166 | 03 | PA | Lindane Dump | Harrison Township |
| 167 | 08 | CO | Central City-Clear Creek | Idaho Springs |
| 168 | 02 | NJ | Ventron/Velsicol | Wood Ridge Borough |
| 169 | 04 | FL | Taylor Road Landfill | Seffner |
| 170 | 01 | RI | Western Sand & Gravel | Burrillville |
| 171 | 02 | NY | Rosen Brothers Scrap Yard/Dump | Cortland |
| 172 | 04 | SC | Koppers Co Inc (Florence Plant) | Florence |
| 173 | 02 | NJ | Maywood Chemical Co. | Maywood/Rochelle Pk |
| 174 | 02 | NJ | Nascolite Corp. | Millville |
| 175 | 05 | OH | Industrial Excess Landfill | Uniontown |
| 176 | 06 | OK | Hardage/Criner | Criner |
| 177 | 05 | MI | Rose Township Dump | Rose Township |
| 178 | 05 | MN | Waste Disposal Engineering | Andover |
| 179 | 02 | NY | Liberty Industrial Finishing | Farmingdale |
| 180 | 02 | NJ | Kin-Buc Landfill | Edison Township |
| 181 | 05 | IN | Waste, Inc., Landfill | Michigan City |
| 182 | 05 | OH | Bowers Landfill | Circleville |
| 183 | 06 | TX | Brio Refining, Inc. | Friendswood |
| 184 | 02 | NJ | Ciba-Geigy Corp. | Toms River |
| 185 | 05 | MI | Butterworth #2 Landfill | Grand Rapids |
| 186 | 02 | NJ | American Cyanamid Co. | Bound Brook |
| 187 | 03 | PA | Heleva Landfill | North Whitehall Twp |
| 188 | 02 | NJ | Ewan Property | Shamong Township |
| 189 | 02 | NY | Batavia Landfill | Batavia |
| 190 | 05 | IL | Woodstock Municipal Landfill | Woodstock |
| 191 | 05 | MN | Boise Cascade/Onan/Medtronics | Fridley |
| 192 | 01 | RI | Landfill & Resource Recovery | North Smithfield |
| 193 | 03 | PA | Butler Mine Tunnel | Pittston |
| 194 | 04 | FL | Northwest 58th Street Landfill | Hialeah |
| 195 | 02 | NJ | Delilah Road | Egg Harbor Township |
| 196 | 03 | PA | Mill Creek Dump | Erie |
| 197 | 02 | NJ | Glen Ridge Radium Site | Glen Ridge |
| 198 | 02 | NJ | Montclair/West Orange Radium Site | Montclair/W Orange |
| 199 | 01 | CT | Precision Plating Corp. | Vernon |
| 200 | 04 | FL | Sixty-Second Street Dump | Tampa |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 5 (HRS Scores 49.09 - 46.77) | |
| 201 | 05 | MI | G&H Landfill | Utica |
| 202 | 01 | VT | Bennington Municipal Sanitary Lfl | Bennington |
| 203 | 04 | NC | Celanese(Shelby Fiber Operations) | Shelby |
| 204 | 02 | NJ | Metaltec/Aerosystems | Franklin Borough |
| 205 | 05 | WI | Schmalz Dump | Harrison |
| 206 | 05 | MI | Motor Wheel, Inc. | Lansing |
| 207 | 09 | CA | Southern Calif Edison (Visalia) | Visalia |
| 208 | 02 | NJ | Lang Property | Pemberton Township |
| 209 | 06 | TX | Stewco, Inc. | Waskom |
| 210 | 02 | NJ | Sharkey Landfill | Parsippany/Troy Hls |
| 211 | 09 | CA | Selma Treating Co. | Selma |
| 212 | 06 | LA | Cleve Reber | Sorrento |
| 213 | 05 | IL | Velsicol Chemical (Illinois) | Marshall |
| 214 | 07 | MO | Wheeling Disposal Service Co. Lf | Amazonia |
| 215 | 05 | MI | Tar Lake | Mancelona Township |
| 216 | 02 | NY | Johnstown City Landfill | Town of Johnstown |
| 217 | 04 | NC | NC State U (Lot 86, Farm Unit #1) | Raleigh |
| 218 | 08 | CO | Lowry Landfill | Arapahoe County |
| 219 | 05 | MN | MacGillis & Gibbs/Bell Lumber | New Brighton |
| 220 | 03 | PA | Hunterstown Road | Straban Township |
| 221 | 03 | MD | Woodlawn County Landfill | Woodlawn |
| 222 | 05 | WI | Hechimovich Sanitary Landfill | Williamstown |
| 223 | 07 | IA | Mid-America Tanning Co. | Sergeant Bluff |
| 224 | 07 | NE | Lindsay Manufacturing Co. | Lindsay |
| 225 | 02 | NJ | Combe Fill North Landfill | Mount Olive Twp |
| 226 | 01 | MA | Re-Solve, Inc. | Dartmouth |
| 227 | 02 | NJ | Goose Farm | Plumstead Township |
| 228 | 04 | TN | Velsicol Chem (Hardeman County) | Toone |
| 229 | 02 | NY | York Oil Co. | Moira |
| 230 | 04 | FL | Sapp Battery Salvage | Cottondale |
| 231 | 04 | SC | Wamchem, Inc. | Burton |
| 232 | 02 | NJ | Chemical Leaman Tank Lines, Inc. | Bridgeport |
| 233 | 05 | WI | Master Disposal Service Landfill | Brookfield |
| 234 | 07 | KS | Doepke Disposal (Holliday) | Johnson County |
| 235 | 02 | NJ | Florence Land Recontouring Lndfll | Florence Township |
| 236 | 01 | RI | Davis Liquid Waste | Smithfield |
| 237 | 01 | MA | Charles-George Reclamation Lndfll | Tyngsborough |
| 238 | 02 | NJ | King of Prussia | Winslow Township |
| 239 | 03 | VA | Chisman Creek | York County |
| 240 | 05 | OH | Nease Chemical | Salem |
| 241 | 08 | CO | Eagle Mine | Minturn/Redcliff |
| 242 | 02 | NJ | Chemical Control | Elizabeth |
| 243 | 04 | NC | Charles Macon Lagoon & Drum Stor | Cordova |
| 244 | 04 | SC | Leonard Chemical Co., Inc. | Rock Hill |
| 245 | 05 | OH | Allied Chemical & Ironton Coke | Ironton |
| 246 | 05 | MI | Verona Well Field | Battle Creek |
| 247 | 07 | MO | Lee Chemical | Liberty |
| 248 | 01 | CT | Beacon Heights Landfill | Beacon Falls |
| 249 | 04 | AL | Stauffer Chem (Cold Creek Plant) | Bucks |
| 250 | 05 | MN | Burlington Northern (Brainerd) | Brainerd/Baxter |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 6 (HRS Scores 46.72 - 44.87) | |
| 251 | 05 | MI | Torch Lake | Houghton County |
| 252 | 01 | RI | Central Landfill | Johnston |
| 253 | 03 | PA | Malvern TCE | Malvern |
| 254 | 02 | NY | Facet Enterprises, Inc. | Elmira |
| 255 | 03 | DE | Delaware Sand & Gravel Landfill | New Castle County |
| 256 | 03 | PA | Tonolli Corp. | Nesquehoning |
| 257 | 04 | NC | National Starch & Chemical Corp. | Salisbury |
| 258 | 03 | PA | MW Manufacturing | Valley Township |
| 259 | 03 | VA | C & R Battery Co., Inc. | Chesterfield County |
| 260 | 04 | TN | Murray-Ohio Dump | Lawrenceburg |
| 261 | 05 | IN | Envirochem Corp. | Zionsville |
| 262 | 05 | IN | MIDCO I | Gary |
| 263 | 05 | OH | Ormet Corp. | Hannibal |
| 264 | 05 | OH | South Point Plant | South Point |
| 265 | 01 | CT | Gallup's Quarry | Plainfield |
| 266 | 03 | PA | Whitmoyer Laboratories | Jackson Township |
| 267 | 04 | FL | Coleman-Evans Wood Preserving Co. | Whitehouse |
| 268 | 02 | NJ | Dayco Corp./L.E Carpenter Co. | Wharton Borough |
| 269 | 03 | PA | Shriver's Corner | Straban Township |
| 270 | 03 | PA | Dorney Road Landfill | Upper Macungie Twp |
| 271 | 03 | PA | Berks Landfill | Spring Township |
| 272 | 05 | IN | Northside Sanitary Landfill, Inc | Zionsville |
| 273 | 05 | IL | Interstate Pollution Control, Inc | Rockford |
| 274 | 09 | CA | Pacific Coast Pipe Lines | Fillmore |
| 275 | 02 | NJ | Global Sanitary Landfill | Old Bridge Township |
| 276 | 04 | FL | Florida Steel Corp. | Indiantown |
| 277 | 03 | PA | Occidental Chem/Firestone Tire | Lower Pottsgrove Twp |
| 278 | 03 | VA | Culpeper Wood Preservers, Inc. | Culpeper |
| 279 | 05 | IL | Pagel's Pit | Rockford |
| 280 | 05 | MN | University Minn Rosemount Res Cen | Rosemount |
| 281 | 05 | MN | Freeway Sanitary Landfill | Burnsville |
| 282 | 05 | WI | Tomah Municipal Sanitary Landfill | Tomah |
| 283 | 09 | AZ | Litchfield Airport Area | Goodyear/Avondale |
| 284 | 09 | CA | Firestone Tire (Salinas Plant) | Salinas |
| 285 | 02 | NJ | Spence Farm | Plumstead Township |
| 286 | 06 | AR | Mid-South Wood Products | Mena |
| 287 | 04 | MS | Newsom Brothers/Old Reichhold | Columbia |
| 288 | 09 | CA | Atlas Asbestos Mine | Fresno County |
| 289 | 09 | CA | Coalinga Asbestos Mine | Coalinga |
| 290 | 04 | FL | Brown Wood Preserving | Live Oak |
| 291 | 02 | NY | Port Washington Landfill | Port Washington |
| 292 | 05 | IN | Columbus Old Municipal Lndfll #1 | Columbus |
| 293 | 02 | NJ | Combe Fill South Landfill | Chester Township |
| 294 | 02 | NJ | JIS Landfill | Jamesburg/S. Brnswck |
| 295 | 02 | NY | Tronic Plating Co., Inc. | Farmingdale |
| 296 | 03 | PA | Centre County Kepone | State College Boro |
| 297 | 04 | FL | Agrico Chemical Co. | Pensacola |
| 298 | 05 | OH | Fields Brook | Ashtabula |
| 299 | 01 | CT | Solvents Recovery Service New Eng | Southington |
| 300 | 08 | CO | Woodbury Chemical Co. | Commerce City |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 7 (HRS Scores 44.86 - 42.69) | |
| 301 | 02 | NJ | Waldick Aerospace Devices, Inc. | Wall Township |
| 302 | 01 | MA | Hocomonco Pond | Westborough |
| 303 | 04 | KY | Distler Brickyard | West Point |
| 304 | 02 | NY | Ramapo Landfill | Ramapo |
| 305 | 09 | CA | Coast Wood Preserving | Ukiah |
| 306 | 09 | CA | South Bay Asbestos Area | Alviso |
| 307 | 02 | NY | Mercury Refining, Inc. | Colonie |
| 308 | 04 | FL | Hollingsworth Solderless Terminal | Fort Lauderdale |
| 309 | 02 | NY | Olean Well Field | Olean |
| 310 | 09 | CA | Fairchild Semiconduct(S San Jose) | South San Jose |
| 311 | 05 | MN | Joslyn Manufacturing & Supply Co. | Brooklyn Center |
| 312 | 03 | PA | York County Solid Waste/Refuse Lf | Hopewell Township |
| 313 | 05 | WI | Spickler Landfill | Spencer |
| 314 | 08 | CO | Denver Radium Site | Denver |
| 315 | 02 | NY | Tri-Cities Barrel Co., Inc. | Port Crane |
| 316 | 03 | PA | Route 940 Drum Dump | Pocono Summit |
| 317 | 04 | FL | Tower Chemical Co. | Clermont |
| 318 | 01 | VT | Darling Hill Dump | Lyndon |
| 319 | 03 | PA | C & D Recycling | Foster Township |
| 320 | 07 | MO | Syntex Facility | Verona |
| 321 | 08 | MT | Milltown Reservoir Sediments | Milltown |
| 322 | 05 | MN | Arrowhead Refinery Co. | Hermantown |
| 323 | 10 | OR | Martin-Marietta Aluminum Co. | The Dalles |
| 324 | 08 | CO | Uravan Uranium (Union Carbide) | Uravan |
| 325 | 02 | NJ | Pijak Farm | Plumstead Township |
| 326 | 02 | NJ | Syncon Resins | South Kearny |
| 327 | 05 | MN | Oak Grove Sanitary Landfill | Oak Grove Township |
| 328 | 09 | CA | Liquid Gold Oil Corp. | Richmond |
| 329 | 09 | CA | Purity Oil Sales, Inc. | Malaga |
| 330 | 01 | NH | Tinkham Garage | Londonderry |
| 331 | 04 | FL | Alpha Chemical Corp. | Galloway |
| 332 | 02 | NJ | Bog Creek Farm | Howell Township |
| 333 | 01 | ME | Saco Tannery Waste Pits | Saco |
| 334 | 03 | PA | River Road Lf/Waste Mngmnt, Inc. | Hermitage |
| 335 | 02 | PR | Frontera Creek | Rio Abajo |
| 336 | 04 | FL | Pickettville Road Landfill | Jacksonville |
| 337 | 05 | OH | Alsco Anaconda | Gnadenhutten |
| 338 | 01 | MA | Iron Horse Park | Billerica |
| 339 | 03 | PA | Palmerton Zinc Pile | Palmerton |
| 340 | 05 | IN | Neal's Landfill (Bloomington) | Bloomington |
| 341 | 05 | WI | Kohler Co. Landfill | Kohler |
| 342 | 04 | AL | Interstate Lead Co. (ILCO) | Leeds |
| 343 | 04 | FL | Standard Auto Bumper Corp. | Hialeah |
| 344 | 07 | KS | Hydro-Flex Inc. | Topeka |
| 345 | 09 | AZ | Hassayampa Landfill | Hassayampa |
| 346 | 06 | LA | Gulf Coast Vacuum Services | Abbeville |
| 347 | 05 | IL | Tri-County Lf/Waste Mgmt Illinois | South Elgin |
| 348 | 01 | MA | Silresim Chemical Corp. | Lowell |
| 349 | 01 | MA | Wells G&H | Woburn |
| 350 | 01 | CT | Nutmeg Valley Road | Wolcott |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 8 (HRS Scores 42.69 - 41.92) | |
| 351 | 02 | NJ | Chemsol, Inc. | Piscataway |
| 352 | 05 | WI | Lauer I Sanitary Landfill | Menomonee Falls |
| 353 | 05 | MI | Petoskey Municipal Well Field | Petoskey |
| 354 | 05 | MN | Union Scrap Iron & Metal Co. | Minneapolis |
| 355 | 02 | NJ | Radiation Technology, Inc. | Rockaway Township |
| 356 | 02 | NJ | Fair Lawn Well Field | Fair Lawn |
| 357 | 05 | IN | Main Street Well Field | Elkhart |
| 358 | 05 | MN | Lehillier/Mankato Site | Lehillier/Mankato |
| 359 | 10 | WA | Lakewood Site | Lakewood |
| 360 | 03 | PA | Industrial Lane | Williams Township |
| 361 | 05 | IN | Fort Wayne Reduction Dump | Fort Wayne |
| 362 | 05 | WI | Onalaska Municipal Landfill | Onalaska |
| 363 | 03 | PA | A.I.W. Frank/Mid-County Mustang | Exton |
| 364 | 05 | WI | National Presto Industries, Inc. | Eau Claire |
| 365 | 02 | NJ | Monroe Township Landfill | Monroe Township |
| 366 | 03 | PA | Commodore Semiconductor Group | Lower Providence Twp |
| 367 | 02 | NJ | Rockaway Borough Well Field | Rockaway Township |
| 368 | 05 | IL | Lenz Oil Service, Inc. | Lemont |
| 369 | 05 | IN | Wayne Waste Oil | Columbia City |
| 370 | 03 | MD | Mid-Atlantic Wood Preservers, Inc | Harmans |
| 371 | 03 | PA | Novak Sanitary Landfill | South Whitehall Twp |
| 372 | 10 | ID | Pacific Hide & Fur Recycling Co. | Pocatello |
| 373 | 07 | IA | Des Moines TCE | Des Moines |
| 374 | 02 | NJ | Beachwood/Berkley Wells | Berkley Township |
| 375 | 02 | NJ | South Jersey Clothing Co. | Minotola |
| 376 | 02 | NY | Vestal Water Supply Well 4-2 | Vestal |
| 377 | 02 | PR | Vega Alta Public Supply Wells | Vega Alta |
| 378 | 05 | IL | Southeast Rockford Grnd Wtr Con | Rockford |
| 379 | 05 | IN | Galen Myers Dump/Drum Salvage | Osceola |
| 380 | 05 | MI | Sturgis Municipal Wells | Sturgis |
| 381 | 05 | MI | Barrels, Inc. | Lansing |
| 382 | 05 | MN | Washington County Landfill | Lake Elmo |
| 383 | 06 | TX | Odessa Chromium #1 | Odessa |
| 384 | 06 | TX | Odessa Chromium #2 (Andrews Hgwy) | Odessa |
| 385 | 07 | IA | Electro-Coatings, Inc. | Cedar Rapids |
| 386 | 07 | NE | Hastings Ground Water Contamin | Hastings |
| 387 | 09 | AZ | Indian Bend Wash Area | Scottsdale/Tmpe/Phnx |
| 388 | 09 | CA | San Gabriel Valley (Area 1) | El Monte |
| 389 | 09 | CA | San Gabriel Valley (Area 2) | Baldwin Park Area |
| 390 | 09 | CA | San Fernando Valley (Area 1) | Los Angeles |
| 391 | 09 | CA | San Fernando Valley (Area 2) | Los Angeles/Glendale |
| 392 | 09 | CA | San Fernando Valley (Area 3) | Glendale |
| 393 | 09 | CA | T.H. Agriculture & Nutrition Co. | Fresno |
| 394 | 10 | WA | Com Bay, Near Shore/Tide Flats | Pierce County |
| 395 | 05 | IL | LaSalle Electric Utilities | LaSalle |
| 396 | 05 | IL | Cross Brothers Pail (Pembroke) | Pembroke Township |
| 397 | 04 | NC | Jadco-Hughes Facility | Belmont |
| 398 | 05 | IN | Southside Sanitary Landfill | Indianapolis |
| 399 | 02 | NJ | Monitor Devices/Intercircuits Inc | Wall Township |
| 400 | 01 | VT | BFI Sanitary Landfill(Rockingham) | Rockingham |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 9 (HRS Scores 41.92 - 39.93) | |
| 401 | 02 | PR | Upjohn Facility | Barceloneta |
| 402 | 04 | NC | Koppers Co Inc (Morrisville Plnt) | Morrisville |
| 403 | 09 | CA | McColl | Fullerton |
| 404 | 03 | PA | Henderson Road | Upper Merion Twp |
| 405 | 02 | NY | Hooker Chemical/Ruco Polymer Corp | Hicksville |
| 406 | 10 | WA | Colbert Landfill | Colbert |
| 407 | 06 | LA | Petro-Processors of Louisiana Inc | Scotlandville |
| 408 | 02 | NY | Applied Environmental Services | Glenwood Landing |
| 409 | 02 | PR | Barceloneta Landfill | Florida Afuera |
| 410 | 01 | NH | Tibbets Road | Barrington |
| 411 | 03 | MD | Sand, Gravel & Stone | Elkton |
| 412 | 03 | PA | Delta Quarries/Stotler Landfill | Antis/Logan Twps |
| 413 | 01 | CT | Revere Textile Prints Corp. | Sterling |
| 414 | 05 | MI | Spartan Chemical Co. | Wyoming |
| 415 | 02 | NJ | Roebling Steel Co. | Florence |
| 416 | 03 | PA | East Mount Zion | Springettsbury Twp |
| 417 | 04 | GA | T.H. Agricul & Nutri (Albany) | Albany |
| 418 | 04 | TN | Amnicola Dump | Chattanooga |
| 419 | 02 | NJ | Vineland State School | Vineland |
| 420 | 09 | AZ | Motorola, Inc.(52nd Street Plant) | Phoenix |
| 421 | 01 | MA | Groveland Wells | Groveland |
| 422 | 02 | NY | General Motors (Cent Foundry Div) | Massena |
| 423 | 01 | NH | Mottolo Pig Farm | Raymond |
| 424 | 03 | VA | Buckingham County Landfill | Buckingham |
| 425 | 04 | SC | SCRDI Dixiana | Cayce |
| 426 | 05 | MI | Roto-Finish Co., Inc. | Kalamazoo |
| 427 | 05 | MN | Olmsted County Sanitary Landfill | Oronoco |
| 428 | 07 | MO | Quality Plating | Sikeston |
| 429 | 05 | IN | Prestolite Battery Division | Vincennes |
| 430 | 07 | MO | Fulbright Landfill | Springfield |
| 431 | 02 | NJ | Williams Property | Swainton |
| 432 | 02 | NJ | Renora, Inc. | Edison Township |
| 433 | 04 | NC | FCX, Inc. (Washington Plant) | Washington |
| 434 | 03 | PA | Jacks Creek/Sitkin Smelting & Ref | Maitland |
| 435 | 06 | NM | Cleveland Mill | Silver City |
| 436 | 02 | NJ | Denzer & Schafer X-Ray Co. | Bayville |
| 437 | 02 | NJ | Hercules, Inc. (Gibbstown Plant) | Gibbstown |
| 438 | 05 | IN | Ninth Avenue Dump | Gary |
| 439 | 03 | MD | Bush Valley Landfill | Abingdon |
| 440 | 04 | SC | Golden Strip Septic Tank Service | Simpsonville |
| 441 | 06 | TX | Texarkana Wood Preserving Co. | Texarkana |
| 442 | 06 | AR | Gurley Pit | Edmondson |
| 443 | 04 | FL | Petroleum Products Corp. | Pembroke Park |
| 444 | 01 | RI | Peterson/Puritan, Inc. | Lincoln/Cumberland |
| 445 | 07 | MO | Times Beach Site | Times Beach |
| 446 | 05 | MI | Wash King Laundry | Pleasant Plains Twp |
| 447 | 05 | MN | Whittaker Corp. | Minneapolis |
| 448 | 05 | WI | Algoma Municipal Landfill | Algoma |
| 449 | 05 | MN | NL Industries/Taracorp/Golden | St. Louis Park |
| 450 | 09 | CA | Westinghouse Elec (Sunnyvale Plt) | Sunnyvale |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 10 (HRS Scores 39.92 - 38.10) | |
| 451 | 01 | CT | Kellogg-Deering Well Field | Norwalk |
| 452 | 03 | PA | Boarhead Farms | Bridgeton Township |
| 453 | 01 | MA | Cannon Engineering Corp. (CEC) | Bridgewater |
| 454 | 05 | MI | H. Brown Co., Inc. | Grand Rapids |
| 455 | 02 | NY | Nepera Chemical Co., Inc. | Maybrook |
| 456 | 02 | NY | Niagara County Refuse | Wheatfield |
| 457 | 04 | FL | Sherwood Medical Industries | Deland |
| 458 | 04 | AL | Olin Corp. (McIntosh Plant) | McIntosh |
| 459 | 05 | MI | Southwest Ottawa County Landfill | Park Township |
| 460 | 02 | NY | Kentucky Avenue Well Field | Horseheads |
| 461 | 02 | NY | Pasley Solvents & Chemicals, Inc. | Hempstead |
| 462 | 06 | TX | Sol Lynn/Industrial Transformers | Houston |
| 463 | 02 | NJ | Asbestos Dump | Millington |
| 464 | 04 | KY | Lee's Lane Landfill | Louisville |
| 465 | 06 | AR | Frit Industries | Walnut Ridge |
| 466 | 05 | OH | Fultz Landfill | Jackson Township |
| 467 | 04 | NC | New Hanover Cnty Airport Burn Pit | Wilmington |
| 468 | 05 | OH | Coshocton Landfill | Franklin Township |
| 469 | 03 | PA | AMP, Inc. (Glen Rock Facility) | Glen Rock |
| 470 | 04 | NC | JFD Electronics/Channel Master | Oxford |
| 471 | 04 | TN | Arlington Blending & Packaging | Arlington |
| 472 | 06 | LA | PAB Oil & Chemical Service, Inc. | Abbeville |
| 473 | 04 | FL | Sydney Mine Sludge Ponds | Brandon |
| 474 | 06 | NM | Cimarron Mining Corp. | Carrizozo |
| 475 | 01 | RI | Davis (GSR) Landfill | Glocester |
| 476 | 03 | PA | Lord-Shope Landfill | Girard Township |
| 477 | 10 | WA | FMC Corp. (Yakima Pit) | Yakima |
| 478 | 05 | WI | Northern Engraving Co. | Sparta |
| 479 | 06 | TX | South Cavalcade Street | Houston |
| 480 | 01 | MA | PSC Resources | Palmer |
| 481 | 05 | MI | Forest Waste Products | Otisville |
| 482 | 03 | PA | Drake Chemical | Lock Haven |
| 483 | 01 | NH | Kearsarge Metallurgical Corp. | Conway |
| 484 | 04 | SC | Palmetto Wood Preserving | Dixiana |
| 485 | 05 | IL | Petersen Sand & Gravel | Libertyville |
| 486 | 05 | MI | Clare Water Supply | Clare |
| 487 | 03 | PA | Havertown PCP | Haverford |
| 488 | 03 | DE | New Castle Spill | New Castle County |
| 489 | 07 | MO | St Louis Airport/HIS/Fut Coatings | St. Louis County |
| 490 | 08 | MT | Idaho Pole Co. | Bozeman |
| 491 | 03 | DE | NCR Corp. (Millsboro Plant) | Millsboro |
| 492 | 05 | IN | Lake Sandy Jo (M&M Landfill) | Gary |
| 493 | 05 | IL | Johns-Manville Corp. | Waukegan |
| 494 | 05 | MI | Chem Central | Wyoming Township |
| 495 | 05 | MI | Novaco Industries | Temperance |
| 496 | 05 | MN | Windom Dump | Windom |
| 497 | 01 | RI | Rose Hill Regional Landfill | South Kingstown |
| 498 | 02 | NJ | Jackson Township Landfill | Jackson Township |
| 499 | 05 | IL | NL Industries/Taracorp Lead Smelt | Granite City |
| 500 | 04 | KY | Red Penn Sanitation Co. Landfill | Peewee Valley |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 11 (HRS Scores 38.10 - 36.73) | |
| 501 | 05 | MI | K&L Avenue Landfill | Oshtemo Township |
| 502 | 05 | OH | TRW, Inc. (Minerva Plant) | Minerva |
| 503 | 10 | WA | Kaiser Aluminum Mead Works | Mead |
| 504 | 01 | CT | Barkhamsted-New Hartford Landfill | Barkhamsted |
| 505 | 05 | MN | Perham Arsenic Site | Perham |
| 506 | 05 | MI | Charlevoix Municipal Well | Charlevoix |
| 507 | 02 | NJ | Montgomery Township Housing Devel | Montgomery Township |
| 508 | 02 | NJ | Rocky Hill Municipal Well | Rocky Hill Borough |
| 509 | 02 | NJ | Cinnaminson Ground Water Contamin | Cinnaminson Township |
| 510 | 02 | NY | Brewster Well Field | Putnam County |
| 511 | 02 | NY | Vestal Water Supply Well 1-1 | Vestal |
| 512 | 03 | PA | Bally Ground Water Contamination | Bally Borough |
| 513 | 04 | FL | Chemform, Inc. | Pompano Beach |
| 514 | 04 | FL | Wilson Concepts of Florida, Inc. | Pompano Beach |
| 515 | 04 | NC | Bypass 601 Ground Water Contamin | Concord |
| 516 | 04 | SC | Lexington County Landfill Area | Cayce |
| 517 | 07 | MO | Solid State Circuits, Inc. | Republic |
| 518 | 07 | NE | Waverly Ground Water Contamin | Waverly |
| 519 | 08 | UT | Utah Power&Light/American Barrel | Salt Lake City |
| 520 | 09 | CA | Advanced Micro Devices, Inc. | Sunnyvale |
| 521 | 10 | WA | Hidden Valley Lndfl (Thun Field) | Pierce County |
| 522 | 10 | WA | Yakima Plating Co. | Yakima |
| 523 | 05 | MN | Nutting Truck & Caster Co. | Faribault |
| 524 | 02 | NJ | U.S. Radium Corp. | Orange |
| 525 | 05 | MI | Carter Industrials, Inc. | Detroit |
| 526 | 06 | TX | Highlands Acid Pit | Highlands |
| 527 | 03 | PA | Resin Disposal | Jefferson Borough |
| 528 | 08 | MT | Libby Ground Water Contamination | Libby |
| 529 | 04 | KY | Newport Dump | Newport |
| 530 | 03 | PA | Moyers Landfill | Eagleville |
| 531 | 01 | NH | Savage Municipal Water Supply | Milford |
| 532 | 05 | MN | LaGrand Sanitary Landfill | LaGrand Township |
| 533 | 05 | IN | Poer Farm | Hancock County |
| 534 | 03 | PA | Brown's Battery Breaking | Shoemakersville |
| 535 | 02 | NY | SMS Instruments, Inc. | Deer Park |
| 536 | 05 | MI | Hedblum Industries | Oscoda |
| 537 | 06 | TX | United Creosoting Co. | Conroe |
| 538 | 02 | NY | Byron Barrel & Drum | Byron |
| 539 | 08 | WY | Baxter/Union Pacific Tie Treating | Laramie |
| 540 | 02 | NY | Anchor Chemicals | Hicksville |
| 541 | 05 | MI | Waste Management-Mich (Holland) | Holland |
| 542 | 06 | TX | North Cavalcade Street | Houston |
| 543 | 02 | NJ | Sayreville Landfill | Sayreville |
| 544 | 01 | NH | Dover Municipal Landfill | Dover |
| 545 | 02 | NY | Ludlow Sand & Gravel | Clayville |
| 546 | 03 | VA | Saunders Supply Co. | Chuckatuck |
| 547 | 05 | WI | City Disposal Corp. Landfill | Dunn |
| 548 | 02 | NJ | Tabernacle Drum Dump | Tabernacle Township |
| 549 | 07 | MO | Minker/Stout/Romaine Creek | Imperial |
| 550 | 04 | KY | Howe Valley Landfill | Howe Valley |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 12 (HRS Scores 36.72 - 35.57) | |
| 551 | 01 | CT | Yaworski Waste Lagoon | Canterbury |
| 552 | 03 | WV | Leetown Pesticide | Leetown |
| 553 | 04 | SC | Rochester Property | Travelers Rest |
| 554 | 04 | FL | Cabot/Koppers | Gainesville |
| 555 | 02 | NJ | Evor Phillips Leasing | Old Bridge Township |
| 556 | 03 | PA | William Dick Lagoons | West Caln Township |
| 557 | 05 | IN | Douglass Road/Uniroyal, Inc., Lf | Mishawaka |
| 558 | 03 | PA | Lackawanna Refuse | Old Forge Borough |
| 559 | 06 | OK | Compass Industries (Avery Drive) | Tulsa |
| 560 | 02 | NJ | Mannheim Avenue Dump | Galloway Township |
| 561 | 05 | IN | Neal's Dump (Spencer) | Spencer |
| 562 | 02 | NY | Fulton Terminals | Fulton |
| 563 | 06 | LA | Dutchtown Treatment Plant | Ascension Parish |
| 564 | 03 | PA | Westinghouse Elevator Co. Plant | Gettysburg |
| 565 | 01 | NH | Auburn Road Landfill | Londonderry |
| 566 | 03 | WV | Fike Chemical, Inc. | Nitro |
| 567 | 05 | MN | General Mills/Henkel Corp. | Minneapolis |
| 568 | 04 | TN | Wrigley Charcoal Plant | Wrigley |
| 569 | 05 | OH | Laskin/Poplar Oil Co. | Jefferson Township |
| 570 | 05 | OH | Old Mill | Rock Creek |
| 571 | 07 | KS | Johns' Sludge Pond | Wichita |
| 572 | 05 | WI | Stoughton City Landfill | Stoughton |
| 573 | 09 | CA | Del Norte Pesticide Storage | Crescent City |
| 574 | 01 | VT | Tansitor Electronics, Inc. | Bennington |
| 575 | 02 | NJ | De Rewal Chemical Co. | Kingwood Township |
| 576 | 03 | PA | Middletown Air Field | Middletown |
| 577 | 02 | NJ | Swope Oil & Chemical Co. | Pennsauken |
| 578 | 04 | GA | Monsanto Corp. (Augusta Plant) | Augusta |
| 579 | 01 | NH | South Municipal Water Supply Well | Peterborough |
| 580 | 01 | ME | Winthrop Landfill | Winthrop |
| 581 | 03 | WV | Ordnance Works Disposal Areas | Morgantown |
| 582 | 05 | OH | Zanesville Well Field | Zanesville |
| 583 | 02 | NY | Suffern Village Well Field | Village of Suffern |
| 584 | 02 | NY | Endicott Village Well Field | Village of Endicott |
| 585 | 03 | DE | Dover Gas Light Co. | Dover |
| 586 | 03 | PA | Aladdin Plating | Scott Township |
| 587 | 03 | PA | North Penn - Area 1 | Souderton |
| 588 | 03 | PA | North Penn - Area 7 | North Wales |
| 589 | 03 | PA | North Penn - Area 6 | Lansdale |
| 590 | 03 | PA | North Penn - Area 2 | Hatfield |
| 591 | 03 | PA | North Penn - Area 5 | Montgomery Township |
| 592 | 04 | FL | Harris Corp. (Palm Bay Plant) | Palm Bay |
| 593 | 05 | MN | Kummer Sanitary Landfill | Bemidji |
| 594 | 05 | OH | Sanitary Landfill Co. (IWD) | Dayton |
| 595 | 05 | WI | Eau Claire Municipal Well Field | Eau Claire |
| 596 | 06 | NM | Pagano Salvage | Los Lunas |
| 597 | 07 | MO | Valley Park TCE | Valley Park |
| 598 | 09 | CA | San Fernando Valley (Area 4) | Los Angeles |
| 599 | 09 | CA | Monolithic Memories | Sunnyvale |
| 600 | 09 | CA | National Semiconductor Corp. | Santa Clara |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 13 (HRS Scores 35.57 - 34.60) | |
| 601 | 09 | CA | Fresno Municipal Sanitary Lndfll | Fresno |
| 602 | 09 | CA | Newmark Ground Water Contamin | San Bernardino |
| 603 | 04 | GA | Powersville Site | Peach County |
| 604 | 05 | MI | Grand Traverse Overall Supply Co. | Greilickville |
| 605 | 05 | MI | Metamora Landfill | Metamora |
| 606 | 05 | MI | Whitehall Municipal Wells | Whitehall |
| 607 | 03 | DE | Standard Chlorine of Delaware,Inc | Delaware City |
| 608 | 05 | MN | South Andover Site | Andover |
| 609 | 02 | NJ | Diamond Alkali Co. | Newark |
| 610 | 05 | IN | Carter Lee Lumber Co. | Indianapolis |
| 611 | 01 | NH | Fletcher's Paint Works & Storage | Milford |
| 612 | 03 | VA | Avtex Fibers, Inc. | Front Royal |
| 613 | 05 | MI | Kentwood Landfill | Kentwood |
| 614 | 05 | MI | Electrovoice | Buchanan |
| 615 | 09 | CA | Jasco Chemical Corp. | Mountain View |
| 616 | 02 | NY | Katonah Municipal Well | Town of Bedford |
| 617 | 09 | CA | Teledyne Semiconductor | Mountain View |
| 618 | 02 | PR | Fibers Public Supply Wells | Jobos |
| 619 | 03 | VA | Dixie Caverns County Landfill | Salem |
| 620 | 05 | IN | Marion (Bragg) Dump | Marion |
| 621 | 05 | OH | Pristine, Inc. | Reading |
| 622 | 05 | WI | Mid-State Disposal, Inc. Landfill | Cleveland Township |
| 623 | 04 | TN | American Creosote (Jackson Plant) | Jackson |
| 624 | 08 | CO | Broderick Wood Products | Denver |
| 625 | 02 | NY | C & J Disposal Leasing Co. Dump | Hamilton |
| 626 | 05 | OH | Buckeye Reclamation | St. Clairsville |
| 627 | 02 | NY | Preferred Plating Corp. | Farmingdale |
| 628 | 06 | TX | Bio-Ecology Systems, Inc. | Grand Prairie |
| 629 | 08 | UT | Monticello Rad Contaminated Props | Monticello |
| 630 | 02 | NJ | Woodland Route 532 Dump | Woodland Township |
| 631 | 05 | IN | American Chemical Service, Inc. | Griffith |
| 632 | 01 | MA | Salem Acres | Salem |
| 633 | 02 | NY | Richardson Hill Road Lndfll/Pond | Sidney Center |
| 634 | 01 | VT | Old Springfield Landfill | Springfield |
| 635 | 03 | PA | Bell Landfill | Terry Township |
| 636 | 02 | NY | Solvent Savers | Lincklaen |
| 637 | 03 | VA | U.S. Titanium | Piney River |
| 638 | 05 | IL | Galesburg/Koppers Co. | Galesburg |
| 639 | 09 | CA | J.H. Baxter & Co. | Weed |
| 640 | 02 | NY | Hooker (Hyde Park) | Niagara Falls |
| 641 | 05 | MI | SCA Independent Landfill | Muskegon Heights |
| 642 | 02 | NY | Action Anodizing,Plating Polish | Copiague |
| 643 | 09 | CA | MGM Brakes | Cloverdale |
| 644 | 06 | LA | Bayou Sorrel Site | Bayou Sorrel |
| 645 | 05 | MI | Duell & Gardner Landfill | Dalton Township |
| 646 | 10 | WA | Mica Landfill | Mica |
| 647 | 02 | NJ | Ellis Property | Evesham Township |
| 648 | 04 | KY | Distler Farm | Jefferson County |
| 649 | 09 | CA | Waste Disposal, Inc. | Santa Fe Springs |
| 650 | 10 | WA | Harbor Island (Lead) | Seattle |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 14 (HRS Scores 34.58 - 33.76) | |
| 651 | 05 | WI | Lemberger Transport & Recycling | Franklin Township |
| 652 | 05 | OH | E.H. Schilling Landfill | Hamilton Township |
| 653 | 05 | MI | Cliff/Dow Dump | Marquette |
| 654 | 02 | NY | Clothier Disposal | Town of Granby |
| 655 | 03 | PA | Ambler Asbestos Piles | Ambler |
| 656 | 10 | WA | Queen City Farms | Maple Valley |
| 657 | 02 | NJ | Curcio Scrap Metal, Inc. | Saddle Brook Twp |
| 658 | 03 | VA | L.A. Clarke & Son | Spotsylvania County |
| 659 | 05 | WI | Scrap Processing Co., Inc. | Medford |
| 660 | 03 | MD | Southern Maryland Wood Treating | Hollywood |
| 661 | 05 | IL | Ilada Energy Co. | East Cape Girardeau |
| 662 | 05 | WI | Sauk County Landfill | Excelsior |
| 663 | 06 | NM | Homestake Mining Co. | Milan |
| 664 | 06 | TX | Dixie Oil Processors, Inc. | Friendswood |
| 665 | 09 | CA | Beckman Instruments (Porterville) | Porterville |
| 666 | 04 | FL | Dubose Oil Products Co. | Cantonment |
| 667 | 05 | MI | Mason County Landfill | Pere Marquette Twp |
| 668 | 05 | MI | Cemetery Dump | Rose Center |
| 669 | 07 | IA | Red Oak City Landfill | Red Oak |
| 670 | 05 | IN | Lakeland Disposal Service, Inc. | Claypool |
| 671 | 02 | NJ | Hopkins Farm | Plumstead Township |
| 672 | 04 | NC | Cape Fear Wood Preserving | Fayetteville |
| 673 | 01 | RI | Stamina Mills, Inc. | North Smithfield |
| 674 | 05 | WI | Lemberger Landfill, Inc. | Whitelaw |
| 675 | 05 | IN | Reilly Tar (Indianapolis Plant) | Indianapolis |
| 676 | 01 | ME | Pinette's Salvage Yard | Washburn |
| 677 | 01 | CT | Durham Meadows | Durham |
| 678 | 05 | MI | Kysor Industrial Corp. | Cadillac |
| 679 | 09 | CA | Lorentz Barrel & Drum Co. | San Jose |
| 680 | 02 | NJ | Wilson Farm | Plumstead Township |
| 681 | 02 | NY | Conklin Dumps | Conklin |
| 682 | 03 | PA | Old City of York Landfill | Seven Valleys |
| 683 | 03 | PA | Modern Sanitation Landfill | Lower Windsor Twp |
| 684 | 05 | IL | Byron Salvage Yard | Byron |
| 685 | 05 | MI | North Bronson Industrial Area | Bronson |
| 686 | 03 | PA | Stanley Kessler | King of Prussia |
| 687 | 07 | MO | Kem-Pest Laboratories | Cape Girardeau |
| 688 | 02 | NJ | Imperial Oil/Champion Chemicals | Morganville |
| 689 | 02 | NJ | Cosden Chemical Coatings Corp. | Beverly |
| 690 | 05 | MN | St. Augusta San Lndfll/Engen Dump | St. Augusta Township |
| 691 | 02 | NJ | Myers Property | Franklin Township |
| 692 | 02 | NJ | Pepe Field | Boonton |
| 693 | 04 | KY | Tri-City Disposal Co. | Shepherdsville |
| 694 | 10 | WA | Northwest Transformer | Everson |
| 695 | 02 | NY | Genzale Plating Co. | Franklin Square |
| 696 | 05 | MI | Albion-Sheridan Township Landfill | Albion |
| 697 | 05 | WI | Sheboygan Harbor & River | Sheboygan |
| 698 | 05 | MI | Ossineke Ground Water Contamin | Ossineke |
| 699 | 03 | WV | Follansbee Site | Follansbee |
| 700 | 03 | PA | Keystone Sanitation Landfill | Union Township |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 15 (HRS Scores 33.76 - 32.38) | |
| 701 | 04 | NC | Carolina Transformer Co. | Fayetteville |
| 702 | 02 | NY | North Sea Municipal Landfill | North Sea |
| 703 | 03 | PA | Bendix Flight Systems Division | Bridgewater Township |
| 704 | 09 | CA | Koppers Co Inc (Oroville Plant) | Oroville |
| 705 | 09 | CA | Louisiana-Pacific Corp. | Oroville |
| 706 | 03 | VA | H & H Inc., Burn Pit | Farrington |
| 707 | 05 | MI | South Macomb Disposal (Lf 9 & 9A) | Macomb Township |
| 708 | 05 | MI | U.S. Aviex | Howard Township |
| 709 | 03 | PA | Walsh Landfill | Honeybrook Township |
| 710 | 02 | NJ | Landfill & Development Co. | Mount Holly |
| 711 | 02 | NJ | Upper Deerfield Township San Lndf | Upper Deerfield Twp |
| 712 | 02 | NY | Hertel Landfill | Plattekill |
| 713 | 02 | NY | Haviland Complex | Town of Hyde Park |
| 714 | 02 | NY | Malta Rocket Fuel Area | Malta |
| 715 | 04 | GA | Cedartown Municipal Landfill | Cedartown |
| 716 | 05 | MI | Kent City Mobile Home Park | Kent City |
| 717 | 05 | MN | Adrian Municipal Well Field | Adrian |
| 718 | 06 | NM | AT & SF (Clovis) | Clovis |
| 719 | 07 | KS | Strother Field Industrial Park | Cowley County |
| 720 | 07 | KS | Obee Road | Hutchinson |
| 721 | 02 | NJ | Fried Industries | East Brunswick Twp |
| 722 | 02 | NY | American Thermostat Co. | South Cairo |
| 723 | 08 | ND | Minot Landfill | Minot |
| 724 | 04 | TN | Lewisburg Dump | Lewisburg |
| 725 | 05 | MI | McGraw Edison Corp. | Albion |
| 726 | 02 | NY | Goldisc Recordings, Inc. | Holbrook |
| 727 | 02 | NY | Islip Municipal Sanitary Landfill | Islip |
| 728 | 04 | KY | Airco | Calvert City |
| 729 | 03 | PA | Metal Banks | Philadelphia |
| 730 | 05 | IL | Yeoman Creek Landfill | Waukegan |
| 731 | 02 | NY | Sarney Farm | Amenia |
| 732 | 05 | MI | Folkertsma Refuse | Grand Rapids |
| 733 | 01 | MA | Rose Disposal Pit | Lanesboro |
| 734 | 05 | OH | Van Dale Junkyard | Marietta |
| 735 | 08 | MT | Montana Pole and Treating | Butte |
| 736 | 04 | NC | Geigy Chemical Corp(Aberdeen Plt) | Aberdeen |
| 737 | 04 | KY | B.F. Goodrich | Calvert City |
| 738 | 05 | MI | Organic Chemicals, Inc. | Grandville |
| 739 | 02 | NY | BioClinical Laboratories, Inc. | Bohemia |
| 740 | 02 | NY | Volney Municipal Landfill | Town of Volney |
| 741 | 02 | NY | FMC Corp. (Dublin Road Landfill) | Town of Shelby |
| 742 | 05 | WI | Tomah Fairgrounds | Tomah |
| 743 | 01 | MA | Sullivan's Ledge | New Bedford |
| 744 | 04 | KY | Smith's Farm | Brooks |
| 745 | 10 | OR | Joseph Forest Products | Joseph |
| 746 | 02 | PR | Juncos Landfill | Juncos |
| 747 | 07 | KS | Big River Sand Co. | Wichita |
| 748 | 05 | IN | Bennett Stone Quarry | Bloomington |
| 749 | 10 | WA | Wyckoff Co./Eagle Harbor | Bainbridge Island |
| 750 | 02 | NJ | Industrial Latex Corp. | Wallington Borough |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 16 (HRS Scores 32.37 - 31.62) | |
| 751 | 04 | FL | Munisport Landfill | North Miami |
| 752 | 06 | LA | D.L. Mud, Inc. | Abbeville |
| 753 | 04 | AL | Stauffer Chem (LeMoyne Plant) | Axis |
| 754 | 02 | NJ | M&T Delisa Landfill | Asbury Park |
| 755 | 06 | TX | Crystal City Airport | Crystal City |
| 756 | 04 | SC | Geiger (C & M Oil) | Rantoules |
| 757 | 05 | WI | Moss-American(Kerr-McGee Oil Co.) | Milwaukee |
| 758 | 05 | WI | Waste Research & Reclamation Co. | Eau Claire |
| 759 | 10 | OR | Gould, Inc. | Portland |
| 760 | 01 | ME | Union Chemical Co., Inc. | South Hope |
| 761 | 02 | NY | Cortese Landfill | Vil of Narrowsburg |
| 762 | 09 | CA | Montrose Chemical Corp. | Torrance |
| 763 | 05 | MN | St. Louis River Site | St. Louis County |
| 764 | 05 | MI | Auto Ion Chemicals, Inc. | Kalamazoo |
| 765 | 03 | PA | Recticon/Allied Steel Corp. | East Coventry Twp |
| 766 | 05 | WI | Hagen Farm | Stoughton |
| 767 | 04 | SC | Carolawn, Inc. | Fort Lawn |
| 768 | 07 | IA | Midwest Manufacturing/North Farm | Kellogg |
| 769 | 03 | PA | Berks Sand Pit | Longswamp Township |
| 770 | 09 | CA | Valley Wood Preserving, Inc. | Turlock |
| 771 | 03 | PA | Butz Landfill | Stroudsburg |
| 772 | 04 | FL | City Industries, Inc. | Orlando |
| 773 | 05 | MI | Sparta Landfill | Sparta Township |
| 774 | 05 | IL | Acme Solvent (Morristown Plant) | Morristown |
| 775 | 01 | NH | Holton Circle Ground Water Contam | Londonderry |
| 776 | 02 | NJ | Pomona Oaks Residential Wells | Galloway Township |
| 777 | 02 | NY | Rowe Industries Ground Water Cont | Noyack/Sag Harbor |
| 778 | 03 | PA | Hebelka Auto Salvage Yard | Weisenberg Township |
| 779 | 04 | FL | Hipps Road Landfill | Duval County |
| 780 | 05 | MN | Long Prairie Ground Water Contam | Long Prairie |
| 781 | 05 | MN | Waite Park Wells | Waite Park |
| 782 | 09 | CA | Applied Materials | Santa Clara |
| 783 | 09 | CA | Intel Magnetics | Santa Clara |
| 784 | 09 | CA | Intel Corp. (Santa Clara III) | Santa Clara |
| 785 | 09 | CA | Synertek, Inc. (Building 1) | Santa Clara |
| 786 | 04 | FL | Pepper Steel & Alloys, Inc. | Medley |
| 787 | 02 | NY | Mattiace Petrochemical Co., Inc. | Glen Cove |
| 788 | 01 | ME | O'Connor Co. | Augusta |
| 789 | 05 | WI | Oconomowoc Electroplating Co. Inc | Ashippin |
| 790 | 05 | IN | Continental Steel Corp. | Kokomo |
| 791 | 05 | MI | Rasmussen's Dump | Green Oak Township |
| 792 | 02 | NY | Kenmark Textile Corp. | Farmingdale |
| 793 | 04 | FL | Wingate Road Munic Incinerat Dump | Fort Lauderdale |
| 794 | 03 | PA | Westline Site | Westline |
| 795 | 04 | KY | Maxey Flats Nuclear Disposal | Hillsboro |
| 796 | 04 | NC | Benfield Industries, Inc. | Hazelwood |
| 797 | 08 | MT | Mouat Industries | Columbus |
| 798 | 05 | MI | J & L Landfill | Rochester Hills |
| 799 | 02 | NY | Claremont Polychemical | Old Bethpage |
| 800 | 05 | OH | Powell Road Landfill | Dayton |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 17 (HRS Scores 31.60 - 30.44) | |
| 801 | 03 | PA | Croydon TCE | Croydon |
| 802 | 04 | SC | Medley Farm Drum Dump | Gaffney |
| 803 | 04 | SC | Elmore Waste Disposal | Greer |
| 804 | 07 | IA | Vogel Paint & Wax Co. | Orange City |
| 805 | 05 | MN | Kurt Manufacturing Co. | Fridley |
| 806 | 05 | MI | Parsons Chemical Works, Inc. | Grand Ledge |
| 807 | 03 | PA | Revere Chemical Co. | Nockamixon Township |
| 808 | 05 | MI | Ionia City Landfill | Ionia |
| 809 | 06 | TX | Koppers Co Inc (Texarkana Plant) | Texarkana |
| 810 | 08 | CO | Lincoln Park | Canon City |
| 811 | 08 | CO | Smuggler Mountain | Pitkin County |
| 812 | 05 | IN | Wedzeb Enterprises, Inc. | Lebanon |
| 813 | 02 | PR | GE Wiring Devices | Juana Diaz |
| 814 | 05 | MI | Avenue "E" Ground Water Contamin | Traverse City |
| 815 | 05 | OH | New Lyme Landfill | New Lyme |
| 816 | 02 | NJ | Woodland Route 72 Dump | Woodland Township |
| 817 | 02 | PR | RCA Del Caribe | Barceloneta |
| 818 | 05 | MN | Koch Refining Co./N-Ren Corp. | Pine Bend |
| 819 | 03 | PA | Brodhead Creek | Stroudsburg |
| 820 | 05 | WI | Fadrowski Drum Disposal | Franklin |
| 821 | 10 | OR | United Chrome Products, Inc. | Corvallis |
| 822 | 03 | PA | Eastern Diversified Metals | Hometown |
| 823 | 05 | MI | Anderson Development Co. | Adrian |
| 824 | 05 | WI | Hunts Disposal Landfill | Caledonia |
| 825 | 05 | MI | Shiawassee River | Howell |
| 826 | 06 | OK | Tenth Street Dump/Junkyard | Oklahoma City |
| 827 | 10 | AK | Alaska Battery Enterprises | Fairbanks N Star Bor |
| 828 | 03 | PA | Taylor Borough Dump | Taylor Borough |
| 829 | 03 | DE | Halby Chemical Co. | New Castle |
| 830 | 06 | OK | Double Eagle Refinery Co. | Oklahoma City |
| 831 | 04 | GA | Mathis Bros Lf (S Marble Top Rd) | Kensington |
| 832 | 03 | DE | Harvey & Knott Drum, Inc. | Kirkwood |
| 833 | 04 | TN | Gallaway Pits | Gallaway |
| 834 | 05 | OH | Big D Campground | Kingsville |
| 835 | 06 | AR | Midland Products | Ola/Birta |
| 836 | 02 | NY | Robintech, Inc./National Pipe Co. | Town of Vestal |
| 837 | 02 | NY | BEC Trucking | Town of Vestal |
| 838 | 03 | PA | Strasburg Landfill | Newlin Township |
| 839 | 06 | OK | Fourth Street Abandoned Refinery | Oklahoma City |
| 840 | 02 | NJ | Witco Chemical Corp.(Oakland Plt) | Oakland |
| 841 | 05 | WI | Tomah Armory | Tomah |
| 842 | 03 | DE | Wildcat Landfill | Dover |
| 843 | 05 | MI | Burrows Sanitation | Hartford |
| 844 | 03 | PA | Blosenski Landfill | West Caln Township |
| 845 | 03 | VA | Rhinehart Tire Fire Dump | Frederick County |
| 846 | 03 | DE | Delaware City PVC Plant | Delaware City |
| 847 | 03 | MD | Limestone Road | Cumberland |
| 848 | 02 | NY | Hooker (102nd Street) | Niagara Falls |
| 849 | 02 | NJ | Higgins Farm | Franklin Township |
| 850 | 10 | WA | American Crossarm & Conduit Co. | Chehalis |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| | | | Group 18 (HRS Scores 30.36 - 29.07) | |
| 851 | 06 | NM | United Nuclear Corp. | Church Rock |
| 852 | 03 | PA | Reeser's Landfill | Upper Macungie Twp |
| 853 | 03 | VA | Rentokil, Inc. (VA Wood Pres Div) | Richmond |
| 854 | 06 | AR | Industrial Waste Control | Fort Smith |
| 855 | 09 | CA | Celtor Chemical Works | Hoopa |
| 856 | 01 | MA | Haverhill Municipal Landfill | Haverhill |
| 857 | 04 | AL | Perdido Ground Water Contamin | Perdido |
| 858 | 02 | NY | Marathon Battery Corp. | Cold Springs |
| 859 | 02 | NY | Colesville Municipal Landfill | Town of Colesville |
| 860 | 04 | FL | Yellow Water Road Dump | Baldwin |
| 861 | 04 | GA | Marzone Inc./Chevron Chemical Co. | Tifton |
| 862 | 05 | OH | Skinner Landfill | West Chester |
| 863 | 03 | VA | First Piedmont Quarry (Route 719) | Pittsylvania County |
| 864 | 04 | NC | Chemtronics, Inc. | Swannanoa |
| 865 | 05 | IN | MIDCO II | Gary |
| 866 | 06 | TX | Sheridan Disposal Services | Hempstead |
| 867 | 07 | KS | Pester Refinery Co. | El Dorado |
| 868 | 03 | MD | Kane & Lombard Street Drums | Baltimore |
| 869 | 07 | MO | Shenandoah Stables | Moscow Mills |
| 870 | 04 | GA | Firestone Tire (Albany Plant) | Albany |
| 871 | 07 | IA | Shaw Avenue Dump | Charles City |
| 872 | 03 | PA | Berkley Products Co. Dump | Denver |
| 873 | 10 | WA | Silver Mountain Mine | Loomis |
| 874 | 06 | TX | Petro-Chemical (Turtle Bayou) | Liberty County |
| 875 | 05 | OH | Republic Steel Corp. Quarry | Elyria |
| 876 | 07 | MO | Conservation Chemical Co. | Kansas City |
| 877 | 05 | MN | Ritari Post & Pole | Sebeka |
| 878 | 06 | LA | Bayou Bonfouca | Slidell |
| 879 | 09 | CA | Intel Corp. (Mountain View Plant) | Mountain View |
| 880 | 09 | CA | Raytheon Corp. | Mountain View |
| 881 | 05 | MN | Agate Lake Scrapyard | Fairview Township |
| 882 | 05 | MI | Adam's Plating | Lansing |
| 883 | 06 | AR | Jacksonville Municipal Landfill | Jacksonville |
| 884 | 06 | AR | Rogers Road Municipal Landfill | Jacksonville |
| 885 | 03 | VA | Saltville Waste Disposal Ponds | Saltville |
| 886 | 04 | SC | Palmetto Recycling, Inc. | Columbia |
| 887 | 01 | MA | Shpack Landfill | Norton/Attleboro |
| 888 | 03 | PA | Kimberton Site | Kimberton Borough |
| 889 | 04 | TN | Mallory Capacitor Co. | Waynesboro |
| 890 | 01 | MA | Norwood PCBs | Norwood |
| 891 | 02 | NY | Warwick Landfill | Warwick |
| 892 | 02 | NY | Sidney Landfill | Sidney |
| 893 | 10 | WA | Pesticide Lab (Yakima) | Yakima |
| 894 | 05 | IN | Lemon Lane Landfill | Bloomington |
| 895 | 05 | IN | Tri-State Plating | Columbus |
| 896 | 10 | ID | Arrcom (Drexler Enterprises) | Rathdrum |
| 897 | 01 | NH | Coakley Landfill | North Hampton |
| 898 | 04 | NC | Potter's Septic Tank Service Pits | Maco |
| 899 | 04 | NC | ABC One Hour Cleaners | Jacksonville |
| 900 | 03 | PA | Fischer & Porter Co. | Warminster |

National Priorities List (by Rank)
November 1989

| NPL Rank | EPA Reg | St | Site Name | City/County |
|---|---|---|---|---|
| Group 19 (HRS Scores 28.98 - 28.50 , except for health-advisory sites) | | | | |
| 901 | 03 | PA | Elizabethtown Landfill | Elizabethtown |
| 902 | 06 | AR | Arkwood, Inc. | Omaha |
| 903 | 09 | CA | Jibboom Junkyard | Sacramento |
| 904 | 02 | NJ | A. O. Polymer | Sparta Township |
| 905 | 05 | WI | Wausau Ground Water Contamination | Wausau |
| 906 | 02 | NJ | Dover Municipal Well 4 | Dover Township |
| 907 | 02 | NJ | Rockaway Township Wells | Rockaway |
| 908 | 02 | NJ | Pohatcong Valley Ground Water Con | Warren County |
| 909 | 02 | NJ | Garden State Cleaners Co. | Minotola |
| 910 | 03 | DE | Sussex County Landfill No. 5 | Laurel |
| 911 | 05 | WI | Delavan Municipal Well #4 | Delavan |
| 912 | 07 | MO | North-U Drive Well Contamination | Springfield |
| 913 | 09 | CA | San Gabriel Valley (Area 3) | Alhambra |
| 914 | 09 | CA | San Gabriel Valley (Area 4) | La Puente |
| 915 | 09 | CA | Modesto Ground Water Contamin | Modesto |
| 916 | 10 | WA | American Lake Gardens | Tacoma |
| 917 | 10 | WA | Greenacres Landfill | Spokane County |
| 918 | 10 | WA | Northside Landfill | Spokane |
| 919 | 06 | OK | Sand Springs Petrochemical Cmplx | Sand Springs |
| 920 | 06 | TX | Pesses Chemical Co. | Fort Worth |
| 921 | 05 | MN | East Bethel Demolition Landfill | East Bethel Township |
| 922 | 06 | TX | Triangle Chemical Co. | Bridge City |
| 923 | 02 | NJ | PJP Landfill | Jersey City |
| 924 | 03 | PA | Craig Farm Drum | Parker |
| 925 | 05 | IL | Belvidere Municipal Landfill | Belvidere |
| 926 | 07 | MO | Bee Cee Manufacturing Co. | Malden |
| 927 | 03 | PA | CryoChem, Inc. | Worman |
| 928 | 02 | NJ | Kauffman & Minteer, Inc. | Jobstown |
| 929 | 03 | PA | Lansdowne Radiation Site | Lansdowne |
| 930 | 02 | NY | Forest Glen Mobile Home Subdivis | Niagara Falls |
| 931 | 02 | NY | Radium Chemical Co., Inc. | New York City |

Number of NPL Sites: 931

* = State top priority site

National Priorities List,
Federal Section (by Group)
November 1989

| NPL Gr[1] | St | Site Name | City/County |
|---|---|---|---|
| 1 | WA | Hanford 200-Area (USDOE) | Benton County |
| 1 | WA | Hanford 300-Area (USDOE) | Benton County |
| 1 | CO | Rocky Flats Plant (USDOE) | Golden |
| 1 | NM | Cal West Metals (USSBA) | Lemitar |
| 1 | MO | Weldon Spring (USDOE/Army) | St.Charles County |
| 2 | CO | Rocky Mountain Arsenal | Adams County |
| 2 | TN | Milan Army Ammunition Plant | Milan |
| 2 | PA | Naval Air Develop Center(8 Areas) | Warminster Township |
| 2 | CA | McClellan AFB (Ground Water Cont) | Sacramento |
| 2 | OH | Wright-Patterson Air Force Base | Dayton |
| 2 | OH | Feed Materials Prod Cent (USDOE) | Fernald |
| 3 | WA | Bonneville Power Adm Ross (USDOE) | Vancouver |
| 4 | ID | Idaho National Engin Lab (USDOE) | Idaho Falls |
| 4 | AL | Anniston Army Depot (SE Ind Area) | Anniston |
| 4 | GA | Robins AFB (Lndfll #4/Sludge Lag) | Houston County |
| 4 | TN | Oak Ridge Reservation (USDOE) | Oak Ridge |
| 4 | NE | Cornhusker Army Ammunition Plant | Hall County |
| 4 | NJ | Naval Air Engineering Center | Lakehurst |
| 4 | UT | Hill Air Force Base | Ogden |
| 5 | CA | Treasure Island Nav Sta-Hun Pt An | San Francisco |
| 5 | AK | Eielson Air Force Base | Fairbanks N Star Bor |
| 5 | SC | Savannah River Site (USDOE) | Aiken |
| 5 | NJ | W.R. Grace/Wayne Int Stor (USDOE) | Wayne Township |
| 6 | WA | Hanford 100-Area (USDOE) | Benton County |
| 6 | MA | Otis Air Nat Guard/Camp Edwards | Falmouth |
| 6 | UT | Ogden Defense Depot | Ogden |
| 7 | GA | Marine Corps Logistics Base | Albany |
| 7 | CA | Sacramento Army Depot | Sacramento |
| 7 | IL | Sangamo/Crab Orchard NWR (USDOI) | Carterville |
| 7 | ME | Brunswick Naval Air Station | Brunswick |
| 7 | CO | Air Force Plant PJKS | Waterton |
| 8 | FL | Pensacola Naval Air Station | Pensacola |

1: Sites are placed in groups (Gr) corresponding to groups of 50 on the final NPL

National Priorities List,
Federal Section (by Group)
November 1989

| NPL Gr[1] | St | Site Name | City/County |
|---|---|---|---|
| 8 | OK | Tinker AFB (Soldier Cr/Bldg 3001) | Oklahoma City |
| 8 | CA | Sharpe Army Depot | Lathrop |
| 8 | CA | Lawrence Livermore Lab (USDOE) | Livermore |
| 8 | MA | Fort Devens | Fort Devens |
| 8 | WA | McChord AFB (Wash Rack/Treatment) | Tacoma |
| 8 | IL | Savanna Army Depot Activity | Savanna |
| 10 | NY | Brookhaven National Lab (USDOE) | Upton |
| 10 | CA | Norton Air Force Base | San Bernardino |
| 11 | CA | Barstow Marine Corps Logist Base | Barstow |
| 11 | AZ | Williams Air Force Base | Chandler |
| 11 | CA | Castle Air Force Base | Merced |
| 11 | PA | Letterkenny Army Depot (PDO Area) | Franklin County |
| 11 | NJ | Fort Dix (Landfill Site) | Pemberton Township |
| 11 | AL | Alabama Army Ammunition Plant | Childersburg |
| 12 | WA | Hanford 1100-Area (USDOE) | Benton County |
| 12 | DE | Dover Air Force Base | Dover |
| 12 | UT | Monticello Mill Tailings (USDOE) | Monticello |
| 13 | WA | Fort Lewis Logistics Center | Tillicum |
| 13 | IL | Joliet Army Ammu Plant (LAP Area) | Joliet |
| 13 | OH | Mound Plant (USDOE) | Miamisburg |
| 14 | RI | Davisville Naval Constr Batt Cent | North Kingstown |
| 14 | PR | Naval Security Group Activity | Sabana Seca |
| 14 | PA | Letterkenny Army Depot (SE Area) | Chambersburg |
| 14 | NY | Griffiss Air Force Base | Rome |
| 14 | VA | Defense General Supply Center | Chesterfield County |
| 14 | CA | Camp Pendleton Marine Corps Base | San Diego County |
| 14 | WA | Fort Lewis (Landfill No. 5) | Tacoma |
| 15 | MO | Lake City Army Plant (NW Lagoon) | Independence |
| 15 | MN | Twin Cities Air Force(SAR Lndfll) | Minneapolis |
| 15 | WA | Naval Undersea Warf Sta (4 Areas) | Keyport |
| 15 | NC | Camp Lejeune Military Reservation | Onslow County |
| 16 | RI | Newport Naval Educat/Training Cen | Newport |
| 16 | FL | Jacksonville Naval Air Station | Jacksonville |
| 16 | IL | Joliet Army Ammu Plant (Mfg Area) | Joliet |
| 16 | FL | Cecil Field Naval Air Station | Jacksonville |

National Priorities List,
Federal Section (by Group)
November 1989

| NPL Gr[1] | St | Site Name | City/County |
|---|---|---|---|
| 16 | WA | Fairchild Air Force Base(4 Areas) | Spokane County |
| 16 | CA | March Air Force Base | Riverside |
| 16 | TX | Lone Star Army Ammunition Plant | Texarkana |
| 17 | OR | Umatilla Army Depot (Lagoons) | Hermiston |
| 17 | MD | Aber Prov Ground-Michaelsville Lf | Aberdeen |
| 17 | MN | Naval Industrial Reserve Ordnance | Fridley |
| 17 | WA | Bangor Ordnance Disposal | Bremerton |
| 18 | NY | Plattsburgh Air Force Base | Plattsburgh |
| 18 | LA | Louisiana Army Ammunition Plant | Doyline |
| 18 | CA | Moffett Naval Air Station | Sunnyvale |
| 18 | CA | Travis Air Force Base | Solano County |
| 19 | CA | Mather Air Force Base | Sacramento |

Number of NPL Federal Facility Sites: 79

[FR Doc. 89-27209 Filed 11-20-89; 8:45 am]
BILLING CODE 6560-50-C

federal register

Tuesday
November 21, 1989

# Part III

# Department of Labor

## Mine Safety and Health Administration

30 CFR Parts 7 and 25
Multiple-Shot Blasting Units; Final Rule

DEPARTMENT OF LABOR

Mine Safety and Health Administration

30 CFR Parts 7 and 25

RIN 1219-AA42

## Multiple-Shot Blasting Units

**AGENCY:** Mine Safety and Health Administration, Labor.

**ACTION:** Final rule.

**SUMMARY:** This final rule implements new procedures and requirements for testing and approval of multiple-shot blasting units used underground in coal mines and certain metal and nonmetal mines. It transfers certain existing provisions in 30 CFR part 25 to a new subpart in part 7 and revises and upgrades them to include current terminology, eliminate duplicative or unnecessary provisions, and provide alternative methods of compliance where possible. The rule also recognizes advances in technology and is consistent with the part 75, subpart N revisions to the Agency's safety standards for the use of explosives and blasting in underground coal mines, published on November 18, 1988 (53 FR 46768).

**EFFECTIVE DATE:** New subpart D in part 7 is effective January 22, 1990. Manufacturers who choose to proceed under the provisions of the previous rule may file requests for approval or extensions of approval of blasting units under part 25 until January 22, 1991. After January 22, 1991, 30 CFR Part 25 will no longer be effective and will be removed from title 30.

**FOR FURTHER INFORMATION CONTACT:** Patricia W. Silvey, Director, Office of Standards, Regulations, and Variances, MSHA, 4015 Wilson Blvd., Room 631, Arlington, Virginia 22203 (703) 235-1910.

**SUPPLEMENTARY INFORMATION:**

### I. Paperwork Reduction Act

This rule contains information collection requirements subject to the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq.

Section 7.63 requires applicants seeking approval of multiple-shot blasting units to submit an application for approval. MSHA estimates there will be 1.1 applications for approval or extension of approval per year, each requiring 4 hours to prepare. At an estimated cost of $37 per hour, 1.1 applications would require 4.4 hours and cost $163. The application fee of $100 being charged under the revised fee schedule is applied toward the cost of processing the application, and therefore is not included as a cost of the application.

Under this rule, part 7, subpart A, § 7.4(a) requires records of test results and procedures to be retained for at least three years. Standard testing protocols used by the manufacturing community include the keeping of records of product testing. Therefore, MSHA estimates there will be no additional cost for applicants to maintain these records.

Under this rule, part 7, subpart A, § 7.5(d) requires applicants to report to MSHA any knowledge of a product distributed with critical characteristics not in accordance with the approval specifications. Rarely would such a report be submitted; however, for the purpose of this analysis, based on a worst-case scenario, MSHA estimates an annual cost of $37 or 15 minutes per manufacturer.

The rule requires applicants to maintain records on the distribution of each blasting unit bearing an approval marking as set forth in part 7, subpart A, § 7.7(c). This provision does not specify the type of record, and MSHA believes applicants will use existing sales record systems to comply. Therefore, MSHA has assigned no cost to this requirement.

Section 7.71 requires the applicant to include an approval checklist with each blasting unit bearing an approval marking. MSHA estimates that it will require two hours to develop the checklist. At $37 an hour, the one-time cost is $74 for each manufacturer, or $296 total. MSHA has also investigated the cost of inserting the checklist with each blasting unit and has determined that the cost is minimal. It takes only a few seconds to insert the checklist, and only about 544 blasting units are sold annually.

In accordance with § 3504(h) of the Paperwork Reduction Act of 1980, the collection of information requirements contained in §§ 7.63 and 7.71 of the final rule have been approved by OMB under control number 1219-0100.

### Background

This final rule will replace, in one year, the current regulations covering the testing and approval of multiple-shot blasting units found in 30 CFR part 25. These revisions are issued pursuant to section 508 of the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 957).

On June 5, 1984, MSHA published a notice of availability of its preproposal draft revisions concerning approval requirements for blasting units, 30 CFR part 25, and scheduled a public conference (49 FR 23281). The public conference, held July 11, 1984, in Pittsburgh, Pennsylvania, was well attended by representatives of the mining community. MSHA also received written comments from manufacturers of blasting units and other segments of the mining community.

After reviewing the comments received in response to the preproposal draft, MSHA published a proposed rule in the **Federal Register** on June 22, 1988 (53 FR 23506). The proposal did not retain the existing procedures for MSHA testing of multiple-shot blasting units submitted for approval under part 25. Instead, it proposed that blasting units be tested by the applicant or a third party selected by the applicant under the provisions of 30 CFR part 7, Underground Mining Equipment; Product Testing by Applicant or Third Party. Technical requirements and test procedures for blasting unit approval were proposed as subpart D to part 7.

MSHA reviewed all written statements submitted in response to the proposed rule. No public hearing was requested or held on subpart D. Comments were received from all segments of the mining community including equipment manufacturers, trade associations, and representatives of miners. This final rule was developed after a full evaluation of the entire public record.

The Agency's final rule addresses the comments received and is consistent with Executive Order 12291, the Regulatory Flexibility Act, and the Paperwork Reduction Act.

### III. Discussion and Summary of the Final Rule

#### *A. General discussion*

MSHA's regulations found in 30 CFR part 25 governing the approval of blasting units were last revised in 1960. Since that time, technological advances in electronic components and circuitry have led to the development of improved blasting units suitable for use in underground mines having potentially explosive atmospheres.

Under this final rule, multiple-shot blasting units will be evaluated for approval under MSHA's new part 7 and subject to general provisions located in subpart A of that part. Blasting units meet the criteria for applicant or third party testing because they are a product possessing characteristics that can be objectively tested in a routine and readily reproducible manner without subjective analysis.

Part 7 revises MSHA's role in the evaluation and testing of selected products used in underground mines. Products approved under part 7 are required to be tested by the applicant or

by a third party selected by the applicant to conduct the testing. All testing is to be conducted using MSHA-specified test procedures with certification of test results by the applicant. In addition, the Agency has the right to observe all product testing. When requesting approval, the applicant is required to submit certain product information. This includes, for example, drawings and specifications to document compliance with the technical requirements. Based upon an evaluation of the technical documentation, any MSHA observations of product testing, and a review of the certification statements, MSHA will issue an approval or notice denying approval of the product.

Once a product is approved under part 7, an approval-holder is required to inspect or test critical characteristics of the product as part of its quality assurance program. MSHA will perform periodic audits of products approved under part 7 to ensure that they are being manufactured as approved. If a product fails to meet the technical requirements of the applicable subpart of part 7 or creates a hazard related to its use, MSHA will take immediate action to address the problem including revocation of the approval if necessary.

As subpart D to part 7, this rule specifies the technical requirements and test procedures for the approval of multiple-shot blasting units. It revises part 25 through improved, more up-to-date requirements, replacing subjective technical requirements with performance-oriented tests and introducing charts which specify maximum electrical values. These changes when compared to part 25, will provide better safety to miners. The tests are based on MSHA's engineering experience with the subjective criteria of approval requirements. Except where indicated, they are not intended to introduce more stringent testing methods, but rather to explicitly state the tests used in MSHA's current testing program which have proven to be effective. This rule provides objective criteria for applicant or third party testing. By using these test procedures, manufacturers can measure and evaluate their product with the performance portion of the technical requirements of this subpart in order to receive an MSHA approval.

The rule deletes requirements for generator-powered blasting unit designs which are no longer used in underground mines. Also deleted are the part 25 classifications referred to as 10- and 20-shot blasting units. The capacity of blasting units under the final rule is indicated by the maximum blasting circuit resistance displayed on the blasting unit label.

Section 25.9, which concerned observers at test and evaluations, is now addressed by the general product testing requirements in § 7.4 in subpart A of part 7. Similarly, revocation of blasting unit approval is governed by the provisions of § 7.9 located in subpart A of this part.

A commenter suggested adding a new section to the final rule to require that MSHA maintain a list of approved blasting units which would be available to the public. Lists of approved products are maintained by MSHA and are available to the public. This is not an issue that needs to be addressed by rulemaking.

New requirements and test procedures for the energy output of blasting units are contained in the final rule. Although these requirements are more stringent than the existing requirements, they address state-of-the-art design technology already incorporated in most blasting units currently approved for use. These requirements address potential hazards where NSHA believes that the incorporation of advanced technology improves safety.

There are three elements present in an electric blasting system: the explosive, the electric detonator, and the blasting unit. Degraded performance or malfunction of any one of these elements has the potential to cause incomplete or premature detonation and lead to a blasting accident. The Agency has based this rule on its field experience, testing under the existing approval standards, developmental research and the availability of improved technology.

*B. Section-by-Section Discussion*

The following section-by-section analysis discusses each provision of subpart D and addresses the comments received on the proposed rule.

*Section 7.61 Purpose and effective date.*

This section, derived from § 25.1, revises and simplifies the statement of purpose and requires that multiple-shot blasting units be approved under part 7. It applies to blasting units used underground in both coal mines and certain metal and nonmetal mines, as defined in subpart T of 30 CFR part 57, where MSHA approved blasting units are required (52 FR 24924, July 1, 1987; 52 FR 41394, October 27, 1987).

One commenter expressed concern and requested assurance that the requirements contained in 30 CFR part 57.22606 pertaining to blasting units used in certain metal and nonmetal mines to fire more than 20 detonators, would not change subsequent to the promulgation of subpart D. As indicated in the preamble discussion in the final rule on methane standards (52 FR 24924 July 1, 1987), some changes to § 54.22606 are necessary based on the revised technical specifications for approval of multiple-shot blasting units which allow for the approval of units capable of firing more than 20 shots. The Agency is currently considering certain conforming amendments to § 57.22606 resulting from the approval requirements in this subpart D final rule. Amendments to part 57 will be proposed in a future rulemaking and therefore subject to public comment.

Section 7.61 provides that the requirements of subpart D take effect 60 days after publication. It further provides that manufacturers may request approval or extension of approval of blasting units under part 25 until one year from the effective date of subpart D. After the one-year period, part 25 will be removed and all new applications for approval or extension of approval of blasting units will be evaluated under the provisions of subpart D of this part.

This phase-in period of one year will enable manufacturers and third-party laboratories to make arrangements to conduct the necessary blasting unit testing. During this period, both part 25 and subpart D will be in effect. Applicants can, therefore, choose to submit applications for approval under part 25 and have the blasting units tested by MSHA or under subpart D where the obligation to test will be with the applicant. Applicants must submit extensions of approval in accordance with the approval regulations under which the original approval was granted.

After the one-year phase-in period for this subpart and the removal of part 25, approvals for blasting units will be granted only under subpart D. At the expiration of the one year, all applications for extensions of approval of blasting units approved under part 25 will be treated as new applications, and applicants will be required to apply for an original approval under subpart D. MSHA will not revoke, except for cause, any blasting unit approvals previously granted. Blasting units approved under prior regulations and in compliance with those regulations, may continue to be manufactured as long as no changes are made which would deviate from conformance with the approval documentation. MSHA will audit these

blasting units based upon the technical requirements upon which the approval was issued.

*Section 7.62 Definitions.*

The following definitions applying to the approval of blasting units are new with the exception of the term "blasting unit" which is derived from § 25.2. They are designed to clarify the requirements of subpart D and respond to the issues identified by commenters.

*Blasting circuit.* This term identifies the items connected to the firing line terminals of the blasting unit. It is necessary to identify these items in order to determine the electrical parameters used in the acceptable performance section of the output energy test.

*Blasting unit.* This term essentially retains the definition given in part 25 but clarifies that the requirements of this subpart apply only to electric initiating systems which are the only types permitted in underground coal and gassy metal and nonmetal mines under MSHA's explosives and blasting safety standards.

*Normal operation.* This term specifies the electrical parameters to be used by the applicant to determine if the maximum power, voltage, current and temperature attainable under these conditions are in compliance with § 7.64 (f), (g), and (h).

One commenter on the proposed rule suggested retaining the preproposal draft's separate definitions for multiple-shot and large capacity blasting units, with the technical requirements for each separately identified. This, the commenter believed, would prevent misunderstanding and the potential for blasting units being used inappropriately for the specific mine application. This suggestion has not been adopted because the preproposal designation of a large capacity blasting unit was not intended to limit the use of such a unit to firing more than 20 shots. Instead, it was intended to designate those units which perform in all other respects like the multiple-shot unit but which would have additional capacity. The final rule requires that the maximum blasting circuit resistance for an approved blasting unit be at least 150 ohms which is equivalent to the capacity of the 20-shot unit defined in part 25. Therefore, when used with detonators of the type commonly used in underground mines today, blasting units approved under this subpart will have sufficient capacity to fire at least 20 shots. Further, all blasting units approved under this final rule, including those with greater capacity than 20 shots, may be used to safely fire from 1 to 20 shots. The applicable provisions of part 75 for underground coal mines and part 57 for underground gassy metal and nonmetal mines regulate the use of those blasting units approved under the final rule with the capacity to fire more than 20 shots. All blasting units approved under this subpart are required to have an approval marking identifying their capacity in terms of maximum blasting circuit resistance. This information will enable mine operators to determine the number of shots which can be safely fired with each blasting unit.

The same commenter urged that subpart D include a definition of "manufacturing site survey" as it appeared in the preproposal draft of part 25 and that MSHA conduct such surveys of applicants' manufacturing facilities. During rulemaking on the general provisions of subpart A of this part, MSHA determined that its resources are more appropriately used to evaluate approved products being distributed to underground mines rather than to evaluate an applicant's manufacturing site. Since this term is not used in part 7, no definition of "manufacturing site survey" has been added to subpart D.

A recommendation was also received to include a definition of "permissible" in subpart D. The term "permissible," used in part 25 and also in the preproposal to describe blasting units which have been approved by MSHA, has been replaced with the term a "approved." The terminology used to identify products which have been examined by the Agency to determine conformity with regulatory requirements must be standardized. The term which most appropriately reflects MSHA's action in this area is "approved." Therefore, the phrase "approved blasting unit" is used in subpart D of part 7 in lieu of "permissible blasting unit." However, since blasting units approved as permissible under part 25 may continue to be manufactured and used in underground mines requiring approved blasting units, the safety standard in part 75 defines the term "permissible blasting unit" as one approved by MSHA.

General definitions such as "applicant," "approval," and "post-approval product audit" which were contained in part 25 are not included in this subpart. They are defined in the general provisions of subpart A of part 7.

The following definitions, which appeared in part 25 or the preproposal draft, are not retained in the final rule. The acronyms "MESA" and "MSHA" are not defined since these terms are defined in 30 CFR part 1. The terms "permissible," "short-delay electric detonator," and "manufacturing site surveys" are not used and therefore are not defined.

*Section 7.63 Application requirements.*

Paragraph (a), derived from § 25.6(c), prescribes the documentation to be submitted with each multiple-shot blasting unit approval application. The required drawings and specifications are to demonstrate compliance with the rule and to identify the blasting unit.

A commenter recommended adding language to § 7.63(a) requiring that all applications for approval of blasting units be submitted in English. Current MSHA policy is to accept for approval evaluation only those applications submitted in English. The Agency has not experienced problems with this policy and therefore has not included this requirement in § 7.63(a).

The overall assembly drawing is one that describes pictorially how the unit is assembled, its physical dimensions, and the location of major subassemblies. The requirement for a schematic diagram and parts list demonstrates compliance with the electrical performance requirements of this subpart. The component layout drawing is to demonstrate compliance with the technical requirements of § 7.64 and will facilitate conducting post-approval audits of the blasting unit. Applicants may submit drawings specifically prepared for approval applications or may submit the actual drawings used in the assembly of the blasting unit. In either case, the drawings are required to represent the blasting unit exactly as it will be manufactured.

The Agency agrees with a commenter who suggested that the application for approval include the model number or other manufacturer's designation of the blasting unit in order to avoid confusion with similar products and to promote easier identification. Section 7.63(a)(5) has been added to the final rule to require applicants to submit this information with their application.

Paragraph (b) is derived from § 25.6(c) and requires that each drawing be titled, numbered, dated, and include the latest revision. This paragraph permits drawings to be combined into one or more composite drawings which would reduce the number of drawings that must be maintained both by the applicant and by MSHA. An example of a composite drawing is a parts list printed on a schematic diagram. All drawings that are required by this subpart could be combined into a single composite drawing.

Paragraph (c), which is new, requires applications for approval to contain a list of the drawings submitted. This list must include drawing titles, numbers, and revisions.

Paragraph (d) is derived from § 25.6(a). It requires that a description of the operation and use of the blasting unit be submitted with the application. Use instructions are necessary to establish the conditions under which the normal operation of the blasting unit is determined.

Fees

In accordance with 30 CFR part 5, Fees for Testing Evaluation and Approval of Mining Products, fees for MSHA processing of an application under part 7, subpart A will be subject to an hourly charge. Fee schedules are updated at least once every three years and published in the **Federal Register.**

The Agency will charge $35 per hour and an application fee of $100 for processing requests for approval or extension of approval for multiple-shot blasting units under subpart D of part 7.

*Section 7.64 Technical requirements.*

This section revises and updates the technical requirements for the approval of blasting units.

Paragraph (a) is derived from § 25.7 (g), (h), and (i) and specifies that blasting units meet the acceptable performance criteria of the output energy test in § 7.66. The acceptable performance criteria of that test increases the minimum firing current from an average current of 1.5 amperes, specified in part 25, to 2 amperes under this final rule. In addition, it decreases the voltage cut-off time from a maximum of 15 milliseconds, as required in part 25, to 10 milliseconds. Increasing the current from the blasting unit reduces the likelihood of misfires in the blasting circuit. Decreasing the maximum allowable time for voltage cut off reduces the likelihood that an incendive spark, created by the post-firing contact of wires in the blasting circuit, could ignite an explosive methane-air atmosphere. The acceptable performance criteria of the output energy test have been developed for approved blasting units to maintain compatibility with and reliably initiate electric detonators of the type currently used in gassy underground mines in the United States. This type electric detonator typically fires when an average current of 1.5 amperes is applied to the detonator for 5 milliseconds, does not misfire when up to an average of 100 amperes is applied to the detonator for 10 milliseconds, and has an electrical resistance less than 7 ohms.

Blasting units approved under part 25 can fire up to a maximum of 20 shots. Subpart D does not limit the number of shots a blasting unit can be designed to fire. The capacity of the blasting unit is determined by the maximum blasting circuit resistance as specified by the applicant. This final rule allows units capable of firing more than 20 shots to be approved.

Under paragraph (b), which is derived from § 25.25, the maximum blasting circuit resistance of a blasting unit is the highest value of resistance that can be connected to the firing line terminals of a blasting unit without exceeding its capacity. When a blasting unit is connected to a blasting circuit having a resistance that exceeds the unit's capacity, all detonators may not fire. This could result in dangerous conditions such as partially detonated rounds of explosives or erratic timing resulting in blown-out shots.

The final rule requires applicants for approval to specify the maximum value of blasting circuit resistance of their blasting units. However, only units with a maximum blasting circuit resistance capacity of at least 150 ohms will be approved. This aspect of the rule is derived from § 25.25, which requires that blasting units be capable of firing 20 electric detonators connected in a single series with a total resistance of 150 ohms. This requirement that the maximum firing resistance be at least 150 ohms ensures that blasting units approved under this subpart have at least the same energy output as blasting units approved under part 25.

The footnote included in the preamble of the proposed rule has been deleted. The footnote was a formula to calculate the maximum number of detonators that can be fired by a blasting unit. One commenter said the calculation implied that the number of detonators in the blasting circuit could exceed the recommendations of the detonator manufacturer. The purpose served by the footnote was to show the relationship of the maximum blasting circuit resistance to the number of detonators in the blasting circuit and not to determine the number of detonators to be used. The Agency recommends that the number of detonators connected in the blasting circuit not exceed the detonator manufacturer's recommendation.

Paragraph (c), derived from § 25.7(f), requires that a blasting unit have a visual indicator to alert the user when the unit is ready to be operated. In a typical blasting unit design, the visual indicator is activated when the unit's energy storage capacitors have been charged to the voltage necessary to produce the required firing current through the blasting circuit. The unit may not be capable of providing energy to the blasting circuit sufficient to initiate all the detonators prior to this time. Under § 7.64(h), the lamp used to visually indicate readiness cannot be an incandescent lamp or other type of lamp having a temperature greater than 302 °F (150 °C) because of methane gas and coal dust ignition hazards.

The majority of commenters on the proposed rule disagreed with MSHA's proposed § 7.64 (c)(2) and (d)(3) which required a high resistance circuit indicator and interlock of the firing switch of blasting units. These requirements were included in the proposed rule in response to a comment on the part 25 preproposal requesting additional safeguards to protect against firing into high resistance blasting circuits. The incorporation of an integral blaster's ohmmeter into the design of the blasting unit was suggested. Blasting units approved under part 25 have incorporated this feature with no safety problems resulting from its use.

The Agency, in response to this concern, incorporated these features into the proposed rule to address the hazard of misfires resulting from firing into blasting circuits exceeding the capacity of the blasting unit. One commenter stated that these proposed features would be an unnecessary complication of questionable value. Another commenter believed that the introduction of an additional current would create a potential hazard in that an electrical component fault in this circuit could result in detonation of the round when the blasting unit user is intending to check the resistance of the blasting circuit. Another commenter suggested that the interlock could be easily defeated and yet another stated that a blasting unit could be used in place of a blaster's galvanometer to determine the blasting circuit resistance.

The final rule deletes the proposed requirements in (c)(2) and (d)(3) that a high resistance indicator and interlock of the firing switch be included in approved blasting units. Recent rulemaking in the explosives and blasting safety standards requires that the resistance of the blasting circuit be measured by an appropriate device immediately prior to connecting the blasting circuit to the blasting unit. As a result of this rulemaking, the Agency's concern regarding the resistance of the blasting circuit has been addressed. Accordingly, the requirement for resistance verification and interlocking circuitry is not included in the final rule.

Paragraph (d) requires two safety features for the firing switch of blasting units. These requirements are derived from §§ 25.7(e) and 25.8(b)(3) and 25.7(f), respectively. First, the firing switch is required to operate by a deliberate action to prevent accidental firing. Recessing the switch in the blasting unit enclosure or protecting it with a raised guard are examples of switches which require a deliberate action. The other safety feature for the firing switch is that it not be operable when the voltage necessary to produce the required firing current is not available to the blasting circuit. The firing switch may be made inoperable by either mechanical or electrical means.

Paragraph (e)(1) is new and requires that the blasting unit firing line terminals provide a secure, low resistance connection to the blasting circuit as measured by the firing line terminals test in § 7.68. Although this requirement is new, it does not introduce a more stringent requirement than previously existed. Paragraph 7.64(e)(1) introduces minimum performance requirements to clarify ambigous language such as "suitable materials" and "sound engineering principles" in § 25.7(a) and "adequacy of design and construction," "practically in operation" and "suitability for underground service" in § 25.7(c). Performance requirements in § 7.68 provide that the contact resistance through each firing line terminal not exceed 1 ohm. Poor electrical connections to the firing line terminals can create additional blasting circuit resistance and increase the risk of misfires.

One commenter on the proposed rule suggested that, in addition to stating the requirements for maximum contact resistance, the internal resistance of the blasting unit also be addressed. The internal resistance limits the electric current that is available at the firing line terminals. This is an important parameter in the performance of the blasting unit. It is addressed by test and documentation requirements in the final rule. The performance-oriented output energy test of § 7.66 determines if sufficient electric current is available at the firing line terminals, within the specified capacity of the blasting unit. The parts list and schematic diagram, to be submitted by the applicant under § 7.63(a) (3) and (4), document the values of internal components used in the blasting unit. This information documents the designed internal resistance of the blasting unit.

Under paragraph (e)(2), which is derived from § 25.7(c), the firing line terminals must be constructed of corrosion-resistant material, such as nickel or chromium-plated copper. Blasting units are exposed to corrosive agents in underground mines which could cause deterioration of metal in the firing terminals. This condition could result in a high resistance connection to the blasting circuit and contribute to the risk of misfires.

Paragraphs (e)(3) and (e)(4) address the need for insulation on and around the firing line terminals and are derived from § 25.7(k). Paragraph (e)(3) requires that the firing line terminals be insulated so that no metal conductors are exposed. This protects the user from electric shock. Examples of well-insulated firing line terminals include binding posts which are covered with plastic or rubber and connectors recessed into an insulated blasting unit enclosure. Paragraph (e)(4) requires that an insulated barrier separate the firing line terminals of a blasting unit to prevent the uninsulated ends of the blasting cables from contacting each other when connected to the unit.

Paragraph (f) requires that in the normal operation of the blasting unit, no electric components, other than the batteries, be operated at more than 90 percent of their electrical ratings. It is derived from §§ 25.7(c) and 25.8(b)(1). Electric components operated at less than their power rating reduce the likelihood of component failure which could render the blasting units unsafe.

Paragraph (g) and (h) are derived from § 25.7 (d) and (c), respectively. They address the hazard of blasting units releasing sufficient electric or thermal energy to cause a methane ignition or fire. Blasting units, having the capacity necessary to reliably fire electric detonators, generate incentive energy that can cause such an ignition and may have components that operate at temperatures sufficient to ignite coal dust. These requirements are evaluated in the "normal operation" of the blasting unit as defined in § 7.62.

Paragraph (g) retains the existing requirement that blasting units be incapable of igniting an explosive mixture of methane and air when electric energy is released by making and breaking moveable electric contacts in the unit. Although the energy stored within the blasting unit is capable of igniting explosive gas mixtures, this energy is not to be released, under normal conditions, at operating electric contacts. To determine compliance with this requirement, the rule provides electric current and voltage limitations. These limitations are described by curves which relate electric current and voltage to that amount which will ignite an explosive mixture of methane and air. The curves appear as Figures D–1, D–2, and D–3. The curves address the electric current through an electric contact that interrupts a circuit not containing an inductive component, the voltage applied across an electric contact that discharges a capacitor, and the electric current through an electric contact that interrupts a circuit containing an inductive component. MSHA's Approval and Certification Center has developed these specifications from industry accepted minimum ignition curves for methane-air mixtures used by consensus standards. The Center's curves include a safety factor and have been utilized for a number of years in evaluating electric circuits. The specifications provide an objective basis upon which the applicant can determine whether or not the blasting unit is capable of causing ignition of an explosive methane atmosphere.

Paragraph (h) addresses the risk of fire caused by blasting units and requires that the maximum temperature of any electric component during normal operation not exceed 302 °F (150 °C). This is the maximum surface temperature allowed by 30 CFR 18.23 for electric equipment approved by MSHA and is the minimum ignition temperature of a coal dust layer. Combustible coal dust on heat-producing electric components can cause a fire. Compliance with this requirement can be determined by using a pyrometer or similar device to detect "hot spots" in blasting units and by measuring the temperature of components with a thermocouple or similar device. A commenter expressed concern that an incandescent bulb can ignite a methane-air atmosphere. The maximum temperature restriction of paragraph (h) prohibits the use of incandescent lamps.

Paragraph (i) is derived from § 25.8(b)(2). It requires that blasting units be equipped with an automatic means to dissipate any electric charge remaining in any capacitor after the blasting unit is deenergized and not in use. Dissipating the electric charge in the capacitors in blasting units reduces the risk of causing an ignition in a methane-air atmosphere.

Under paragraph (j), blasting units must meet the acceptable performance criteria of the construction test in § 7.67. This requirement is derived from § 25.7 (c) and (m). The enclosure of a blasting unit needs to be substantially constructed to prevent dust and moisture from being deposited on the electric circuits. Water and corrosive

dusts can cause an internal short circuit, which can result in a fire or blasting unit malfunction. Details of these criteria are described in the explanation of that test.

Paragraph (k) requires that blasting units be equipped with a locking device to prevent unauthorized use and is derived from § 25.7(e). A device such as a key-operated firing switch, lockable cover, a padlock, or a removable firing pin over the firing switch meets the requirements of this paragraph.

Paragraph (l) is derived from § 25.7(m) and 25.8 (b)(4). It retains the requirements that blasting units be sealed to prevent tampering as well as designed and constructed to enable battery replacement without disturbing or damaging other electric components. The rule allows two alternative methods of compliance. Blasting unit enclosures, except for batteries, could be permanently sealed, for example, by continuous welding around the enclosure so that the unit would be destroyed if entered. Alternatively, the electric components could be sealed in a solidified insulating material, such as an epoxy. With this option, the rule requires that the enclosure be assembled with tamper-resistant hardware so that it could be opened only with special tools. Either method provides protection against tampering, such as substitution of inadequate electric components or improper adjustment of potentiometer settings in a blasting unit that may adversely affect its timing or energy output. Such changes in performance could lead to misfires or potential ignition hazards of methane or coal dust.

Section 7.64(l)(1) from the proposed rule has been modified to clarify the intent of the Agency. One commenter pointed out that the battery compartments need to be vented to allow the escape of chemical vapors which are liberated from batteries during charging or discharging. Based on this comment, the final rule does not require battery compartments to be sealed or watertight. Paragraph (b)(5) of the construction test in § 7.67 has also been revised to be consistent with this point. Paragraph (1)(2) of the proposal has been moved to the section on approval marking in § 7.69.

Paragraphs (m) (1) and (2) require that a blocking diode, or equivalent device, be in series with the battery and that the battery charging connector, if provided, be recessed into the blasting unit enclosure. These requirements are derived from § 25.7(d). A blocking diode prevents electric energy in the battery from being available at the charging connector. This energy could cause an ignition of a methane-air atmosphere or initiate an electric detonator. Also, the charging connector is required to be recessed into the blasting unit enclosure to prevent short-circuiting of the connector while the unit is on an electrically-conductive surface, such as a metal work table. Paragraph (m)(3) of the proposal has been relocated to the section on approval marking in § 7.69.

*Section 7.65 Critical characteristics.*

This section is new and lists the critical characteristics which are required to be inspected or tested on each blasting unit having an approval marking. As defined in subpart A of this part, a "critical characteristic" is a feature of a product that, if not manufactured as approved, could have a direct adverse effect on safety. The characteristics identified for inspection or testing on every blasting unit are the blasting unit's output current, voltage cut-off time, the components that control the voltage and current through each making and breaking electric contact, and the operation of the visual indicator and the firing switch.

*Section 7.66 Output energy test.*

The output energy test prescribed by this section is used to determine whether blasting units have energy output sufficient to safely initiate all of the detonators in a blasting circuit. The operating parameters of this test are predicated on certain performance characteristics of electric detonators historically used in underground mining. This test is to be performed on the blasting unit prior to the construction test. It is also performed after each of the three water baths conducted in the construction test.

Paragraph (a) is new and specifies test procedures for determining the output energy by connecting various resistive loads to the blasting unit. There are three different blasting circuit resistance test conditions within the range of the capacity of the blasting unit.

Paragraph (b) provides the criteria for acceptable performance of the blasting unit. Paragraph (b)(1) is derived from § 25.7 (g) and (l). It is revised to require that voltage be cut off at the firing line terminals 10 milliseconds after operation of the firing switch rather than 15 milliseconds as previously provided in § 25.7(g). An approved blasting unit must provide electric energy of sufficient quantity and duration to initiate the detonators in the blasting circuit. After the detonator initiation, the electric energy must be cut off to reduce the risk of generating a spark by the post-firing contact of wires in the blasting circuit. This can happen when the force of the blast disturbs the surrounding area. The blast also releases gas and raises and suspends explosive coal dust which could be ignited if such sparks are generated. The 10 milliseconds provide ample time for the blasting unit to initiate electric detonators and allow for timing variations caused by component tolerances, temperature variations, and component aging within the blasting unit.

Paragraph (b)(2)(i), derived from § 25.7(d), requires that electric current in excess of 50 milliamperes not be available except during firing of the blasting unit. This amount is approximately one-fifth of the maximum no-fire current for typical electric detonators used in underground mines in the U.S. today. According to the 16th edition of the Dupont Handbook, the Institute of Makers of Explosives (IME) has established the maximum "safe" current permitted to flow through an electric blasting cap without hazard of initiation as one-fifth of the minimum firing current, or 0.05 amperes (50 milliamperes). This provides a current safety factor of five or an energy factor of 25. This requirement minimizes the potential hazard of electrical shock to the user and premature firing of electric detonators.

Paragraph (b)(2)(ii) is derived from § 25.7(k) and requires that the electric current be available through the firing line terminals only. This minimizes the potential hazard of electric shock to the user and prevents the user from accidentally or deliberately firing electric detonators from any location on the blasting unit other than at the firing line terminals.

Under paragraph (b)(2)(iii), which is derived from §§ 25.7(h) and 25.26(a), a blasting unit is required to produce an average firing current of at least 2 amperes during the first 5 milliseconds after operation of the firing switch. This paragraph has been revised from the proposal in response to comments to clarify that the 2 ampere firing current is the average value over 5 milliseconds. The test is conducted with resistive loads up to the maximum blasting circuit resistance. An average of 2 amperes for 5 milliseconds represents the current and time necessary to consistently fire a typical electric detonator.

Paragraph (b)(2)(iv) is derived from §§ 25.7(j) and 25.26(b). It requires that the electric current from the blasting unit not exceed an average of 100 amperes during the first 10 milliseconds after the blasting unit is operated to prevent arcing in the detonator. An electric current greater than an average of 100 amperes through a typical electric detonator could result in erratic

detonator timing, a damaged detonator shell, or an ejected detonator sealing plug.

The test procedure, as contained in the proposed rule, included firing the blasting unit into a resistive load exceeding the unit's rating. As explained earlier, this load was to verify operation of the high resistance indicator and interlock of the firing switch, which are not required in this final rule. Therefore, the provisions concerning firing into this load in paragraphs (a) and (b) have been deleted and appropriate modifications and renumbering made to the remaining provisions of these paragraphs.

*Section 7.67 Construction test.*

This section requires that blasting units be tested to determine if they perform reliably when exposed to the physical stresses of the underground mining environment. The construction test provides objective criteria for determining whether a blasting unit is sufficiently rugged for use in mining. It is derived from § 25.7(m), which requires the housing to be mechanically strong for mine service, and § 25.7(c), where moisture resistance, drop test, durability of construction and suitability for underground service have been identified, among other factors, to determine the adequacy of design and construction. For clarity, a statement has been added to this section specifying that this test is to be performed subsequent to the output energy test of § 7.66.

Paragraph (a) sets forth the procedures for testing blasting units. The test is conducted by dropping the blasting unit 20 times from a height of 3 feet onto a concrete floor. The orientation of the blasting unit is to be varied each time it is dropped in an effort to have a different surface, corner, or edge strike the floor first for each drop. Three feet is the height at which a blasting unit is normally carried. If the blasting unit is not rugged, internal circuitry can be damaged and safe performance of the unit can be adversely affected, resulting in misfiring of detonators. Batteries or other components that are ejected from the unit or exposed can provide an ignition source.

This section also requires testing of blasting units for moisture resistance and the ability to operate properly at various temperatures. After being dropped, the blasting unit is required to be submerged for 1 hour under 1 foot of water at each of three temperatures. Operating blasting units at a temperature range of approximately 35 °F to 105 °F (1.7 °C to 40.6 °C) is representative of the broad range of temperatures that occur in the underground mining environment.

The submersion of a blasting unit in 1 foot of water for 1 hour provides an assessment criterion for the requirement, derived from § 25.7(c), that the blasting unit be resistant to moisture. Moisture within the blasting unit could cause corrosion, short circuiting, and physical damage to the components. The test is uncomplicated and does not require special or expensive test equipment to perform.

After operation with the firing line terminals open circuited and short circuited, the blasting unit is to be tested in accordance with the output energy test. This sequence is repeated following removal from each water bath. Operating the blasting unit under these conditions is a common event and should not cause damage to the unit.

One commenter stated that the construction test, as contained in the proposed rule, was too severe and found the requirement to test five units excessive. The construction test has been developed to provide uniform testing and to be representative of the mining environment in which blasting units are used. Blasting units approved under part 25 have been subjected to similar drop tests to determine their ruggedness. Similarly, MSHA utilizes a 3-foot drop test for approval of other hand-held devices such as methane detectors, portable transceivers and dust sampling devices.

The construction test has been modified in the rule to require one blasting unit to be dropped instead of the five units specified in the proposal. Also, the wording has been changed to better define the test procedures. As contained in the proposed rule, the blasting unit would have had to be dropped until each external surface, corner, or edge had struck the floor first at least one time. This criteria was derived to provide an objective means of testing the ruggedness of the blasting unit. This procedure could have, however, resulted in an inordinate number of tests being conducted on a blasting unit to ensure that each surface, corner, or edge struck the floor first. The 20 drops specified in the final rule is consistent with MSHA's procedures when conducting drop tests under other regulations.

The modification of the test enables verification of performance at the same operating parameters as proposed while reducing the number of units which are required to be subjected to this testing. During the development of this rule, the construction test has evolved to provide objective performance criteria for evaluating the ruggedness of blasting units. This test, combined with specific construction requirements contained in § 7.64, ensures a blasting unit design which will function property in the mining environment.

Paragraph (b) provides the criteria for evaluating blasting units tested under this section. Each blasting unit is required to meet the output energy test of § 7.66 after the drop and submersion portions of the construction test set out in (a) (1) and (2) have been conducted. The rule also requires that there be no damage to the firing line terminals which exposes an electric conductor, that the visual indicator be operational, that no batteries be separated from the blasting unit, and that no water be present inside the blasting unit enclosure, except for the battery compartment. Failure of the blasting unit to meet any of these criteria indicates a reduction in the ability of the blasting unit to perform reliably and safely in underground mines.

*Section 7.68 Firing line terminals test.*

This section is new and requires that firing line terminals on blasting units be tested to establish that they provide a secure, low resistance connection, as required by § 7.64(e)(1).

Paragraph (a) requires that the contract resistance through each firing line terminal be determined and that a 10-pound pull be applied to a No. 18 gauge wire that has been connected to each firing line terminal according to the manufacturer's instructions. A No. 18 gauge wire is commonly used for blasting cables. The 10-pound pull test permits the evaluation of the gripping strength of the connection at the firing line terminal to maintain electric contact.

Paragraph (b) sets forth the acceptable performance criteria for this test. Contact resistance through the firing line terminals shall be less than 1 ohm to minimize output energy losses that could reduce the total energy available to the blasting circuit. In the pull test, the wire connected to the blasting unit firing line terminals must remain connected.

A commenter suggested that spring-loaded binding posts not be permitted for blasting unit firing line terminals. The performance requirements of this section are sufficient to determine the suitability of a given type of connecting device. There is no evidence or field experience which suggests that spring-loaded binding posts are inappropriate for blasting units in mines.

*Section 7.69 Approval marking.*

This section is derived from § 25.11. It specifies the information to be marked on each approved blasting unit. This section requires that all blasting units be identified as MSHA approved with a permanent, legible marking securely attached, stamped or molded to the outside of the unit. The approval marking must contain (1) the assigned MSHA approval number, (2) the maximum blasting circuit resistance, (3) a warning that the unit's components not be disassembled or removed, and (4) depending on whether or not rechargeable batteries are used, either the replacement battery types or a warning placed next to the charging connector that the battery be charged only in a fresh air location. The warning against disassembly or removal of components and the requirement to specify replacement battery types are currently included on blasting units under § 25.11(a).

The provision in 7.69(e) is new. It requires that a marking be placed adjacent to the charging connector to warn that the battery is to be charged only in a fresh air location. The marking is intended to address two hazards: one created by ignitable hydrogen gas which may be present when batteries are charged and another created by incendive arcing which can occur during connecting and disconnecting of the charger in an explosive methane-air atmosphere. This warning is required on other MSHA-approved instruments containing chargeable batteries.

In addition, certain detonator characteristics with which the unit will produce reliable detonation must also be included on the marking. These are typical of blasting circuit parameters which must be present in order to ensure compatibility between the blasting unit and detonator so that reliable initiation can occur. The availability of this information to the user is critical to ensure that detonators within the blasting circuit are consistent with the design and demonstrated performance parameters of the blasting unit. These detonators characteristically fire when an average 1.5 amperes is applied for 5 milliseconds. They will not misfire when up to an average 100 amperes is applied for 10 milliseconds. They also will not fire when a current of 250 milliamperes or less is applied. Hazards are encountered when MSHA-approved blasting units are used with detonators not having these characteristics. These hazards are unintended or premature detonation of explosives and misfires resulting in undetonated explosives.

Part 75, subpart N has been revised to require the use of detonators which are compatible with the approved blasting unit. As a result, this final rule has been modified to include this information as necessary to notify the user of the characteristics a detonator must possess to be electrically compatible with the blasting unit as a required by 30 CFR part 75.1310(e).

*Section 7.70 Post-approval product audit.*

This section requires an approval-holder to make an approved blasting unit available to MSHA at a mutually agreeable site and time. The approval-holder may be required to provide, at no cost to MSHA, an approved blasting unit no more than once a year, except for cause. However, MSHA can obtain blasting units from the approval-holder or other sources such as mine suppliers or distributors at any time at MSHA expense.

All post-approval audits of blasting units approved under this part will be conducted in accordance with this section and with § 7.8 of subpart A of this part. Detailed discussion of this provision is found in 53 FR 23486, at 23493–23494 (June 22, 1988).

When deficiencies are found during MSHA audits of approved blasting units, MSHA will require that the approval-holder take the necessary corrective action to address the deficiencies. These actions include, but are not limited to, the approval-holder recalling or retrofitting the approved blasting units involved and issuing user notices. Consistent with part 7, § 7.9, revocation of the approval by MSHA may result when discrepancies in approved blasting units are not successfully corrected.

*Section 7.71 Approval checklist.*

This section requires that manufacturers provide, with each blasting unit, a description of what is necessary to maintain the blasting unit in an approved condition. Maintaining blasting units in an approved condition is fundamental to their safe use in underground mines and is required of all mine operators.

*Section 7.72 New technology.*

The technical requirements for blasting units include both design and performance requirements. MSHA is aware that design requirements can, at times, limit the introduction of technological improvements or hinder new applications of existing technology. To address this, the rule includes a "new technology" provision which applies to either new technology or new applications of existing technology to blasting units.

The rule therefore allows approval of blasting units that incorporate technology for which the specific requirements of this subpart are not appropriate if MSHA determines that the blasting units are as safe as those which have met the requirements of this subpart D. To implement this provision, MSHA will prescribe appropriate technical requirements and test procedures when such approval is sought.

Once MSHA approves a blasting unit under this section, the Agency will make the modified tests and requirements used by MSHA to evaluate a particular technology available to manufacturers and other interested persons. If, over a period of time, MSHA receives a number of applications for the same type of technology or newly adapted technology, MSHA will revise the blasting unit approval regulations through the rulemaking process to recognize such developments.

Derivation Table

The following derivation table lists: (1) Each section number of the final rule (new section) and (2) the section number of the standard from which the section is derived (old section).

| New section | Old section |
|---|---|
| 7.61 | 25.1. |
| 7.62 | 25.2. |
| 7.63 (a), (b) | 25.6(c). |
| 7.63(c) | New. |
| 7.63(d) | 25.6(a). |
| 7.64(a) | 25.7 (g)–(i). |
| 7.64(b) | 25.25. |
| 7.64(c) | 25.7(f). |
| 7.64(d)(1) | 25.7(e) and 25.8(b)(3). |
| 7.64(d)(2) | 25.7(f). |
| 7.64(e)(1) | New. |
| 7.64(e)(2) | 25.7(c) |
| 7.64(e) (3), (4) | 25.7(k). |
| 7.64(f) | 25.7(c) and 25.8(b)(1). |
| 7.64(g) | 25.7(d). |
| 7.64(h) | 25.7(c). |
| 7.64(i) | 25.8(b)(2). |
| 7.64(j) | 25.7 (c), (m). |
| 7.64(k) | 25.7(e). |
| 7.64(l) | 25.7(m) and 25.8(b)(4). |
| 7.64(m) | 25.7(d). |
| 7.65 | New. |
| 7.66(a) | New. |
| 7.66(b)(1) | 25.7 (g) and (l). |
| 7.66(b)(2)(i) | 25.7(d). |
| 7.66(b)(2)(ii) | 25.7(k). |
| 7.66(b)(2)(iii) | 25.7(h) and 25.26(a). |
| 7.66(b)(2)(iv) | 25.7(j) and 25.26(b). |
| 7.67 | 25.7 (c) and (m). |
| 7.68 | New. |
| 7.69 | 25.11 |
| 7.70 | New. |
| 7.71 | New. |
| 7.72 | New. |

Distribution Table

The following distribution table lists: (1) Each section number of the part 25 standard (old section) and (2) each section number of final subpart D of part 7 (new section). New section numbers marked with an asterisk (*) refer to subpart A—General Provisions of part 7 published in 53 FR 23486, at 23500–23502.

| Old section | New section |
|---|---|
| 25.1 | 7.1* and 7.61. |
| 25.2 | 7.2* and 7.62. |
| 25.3 | Removed. |
| 25.4 | 7.3(b).* |
| 25.5 | Removed. |
| 25.6(a) | 7.3(a)* and 7.63(d). |
| 25.6(b) | Removed. |
| 25.6(c) | 7.63 (a) and (b). |
| 25.7(a) | Removed. |
| 25.7(b) | 7.1.* |
| 25.7(c) | 7.64 (e) (2)–(4), (f), (h), (j), and 7.67. |
| 25.7(d) | 7.64 (g), (m) and 7.66(b)(2)(i). |
| 25.7(e) | 7.64 (d)(1), (k). |
| 25.7(f) | 7.64 (c), (d)(2). |
| 25.7(g) | 7.64(a) and 7.66(b)(1). |
| 25.7(h) | 7.64(a) and 7.66(b)(2)(iii). |
| 25.7(i) | 7.64(a). |
| 25.7(j) | 7.66(b)(2)(iv). |
| 25.7(k) | 7.64(e) (3), (4) and 7.66(b)(2)(ii). |
| 25.7(l) | 7.66(b)(1). |
| 25.7(m) | 7.64 (j), (l)(1) and 7.67. |
| 25.7(n) | Removed. |
| 25.8(a) | Removed. |
| 25.8(b)(1) | 7.64(f). |
| 25.8(b)(2) | 7.64(i). |
| 25.8(b)(3) | 7.64(d)(1). |
| 25.8(b)(4) | 7.64(l). |
| 25.9 | 7.4.* |
| 25.10 (a), (b) | 7.5(b).* |
| 25.10(c) | 7.7(c).* |
| 25.11(a) | 7.6(a)* and 7.69. |
| 25.11(b) | 7.69. |
| 25.11(c) | 7.7(c)* and 7.69. |
| 25.11(d) | 7.5(a),* 7.7(c)* and 7.69. |
| 25.12 (a), (b) | 7.3(e).* |
| 25.12(c) | 7.3(e),* 7.6(b).* |
| 25.13 | 7.9.* |
| 25.20 | Removed. |
| 25.21 | Removed. |
| 25.25 | 7.64(b). |
| 25.26(a) | 7.66(b)(2)(iii). |
| 25.26(b) | 7.66(b)(2)(iv). |

## IV. Drafting Information

The principal persons responsible for preparing this final rule are: Kenneth A. Sproul, Arthur E. Page, and Roland Berry Ann, Approval and Certification Center, MSHA; Helen B. Caraway, Office of Standards, Regulations and Variances, MSHA; and Linda B. Fort, Office of the Solicitor, Department of Labor.

## V. Executive Order 12291 and Regulatory Flexibility Act

In accordance with Executive Order 12291, MSHA has prepared an analysis to identify the potential costs and benefits associated with subpart D. This analysis has formed the basis for the Initial Regulatory Flexibility Analysis required by the Regulatory Flexibility Act. In this analysis, MSHA has determined that this rule neither results in major cost increases nor has an incremental effect of $100 million or more on the economy. Therefore, the rule is not within the criteria for a major rule, and a Regulatory Impact Analysis is not required.

The Regulatory Flexibility Act requires that agencies evaluate and include, wherever possible, compliance alternatives that minimize any adverse impact on small businesses when developing regulatory rules. This rule does not significantly alter the existing technical requirements for multiple-shot blasting units.

This rule increases private-sector involvement in the approval of mining equipment. For the first time, in lieu of testing only by MSHA, the applicant or a third party selected by the applicant will test multiple-shot blasting units. The Agency anticipates that this new procedure will reduce duplicate testing of products in some cases and eliminate associated costs and potential delays in equipment approvals. In addition, the procedure is expected to enhance the safety of miners through the more rapid introduction of technological advances in mining products.

Any necessary testing of products required by MSHA either is not substantially different from that currently undertaken or does not impose significant costs compared to the sales value of the product. The application procedures, quality assurance program, and annual audit do not impose significant costs. This subpart D clarifies the standards which must be met by industry for approval of multiple-shot blasting units and makes the approval process more efficient, thereby reducing costs for large as well as small businesses.

The Agency estimates that incremental annual cost increases totaling $8,659 are offset by an annual cost savings of approximately $3,699. The net incremental annual cost impact, therefore, is expected to be $4,960. In addition, the final rule imposes an incremental initial cost of $74 for each blasting unit manufacturer. There are no capital costs.

## List of Subjects

*30 CFR part 7.*

Blasting units, Mine safety and health, Reporting and recordkeeping requirements, Underground mining.

*30 CFR part 25.*

Explosives, Mine safety and health, Research.

Accordingly, chapter I of title 30, Code of Federal Regulations is amended as set forth below.

Dated: November 14, 1989.

**William J. Tattersall,**

*Assistant Secretary for Mine Safety and Health.*

Part 7, subchapter B, chapter I, title 30 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 7 continues to read as follows:

**Authority:** 30 U.S.C. 957.

2. A new subpart D is added to part 7 to read as follows:

## PART 7—TESTING BY APPLICANT OR THIRD PARTY

* * * * *

## Subpart D—Multiple-Shot Blasting Units

Sec.

7.61 Purpose and effective date.
7.62 Definitions.
7.63 Application requirements.
7.64 Technical requirements.
7.65 Critical characteristics.
7.66 Output energy test.
7.67 Construction test.
7.68 Firing line terminals test.
7.69 Approval marking.
7.70 Post-approval product audit.
7.71 Approval checklist.
7.72 New technology.

* * * * *

### § 7.61 Purpose and effective date.

This subpart establishes the specific requirements for MSHA approval of multiple-shot blasting units. It is effective January 22, 1990. Applications for approval or extensions of approval submitted after January 22, 1991 shall meet the requirements of this subpart.

### § 7.62 Definitions.

The following definitions apply in this subpart:

*Blasting circuit.* A circuit that includes one or more electric detonators connected in a single series and the firing cable used to connect the detonators to the blasting unit.

*Blasting unit.* An electric device used to initiate electric detonators.

*Normal operation.* Operation of the unit according to the manufacturer's instructions with fully-charged batteries, with electric components at any value within their specified tolerances, and with adjustable electric components set to any value within their range.

**§ 7.63 Application requirements.**

(a) Each application for approval of a blasting unit shall include the following:

(1) An overall assembly drawing showing the physical construction of the blasting unit.

(2) A schematic diagram of the electric circuit.

(3) A parts list specifying each electric component and its electrical ratings, including tolerances.

(4) A layout drawing showing the location of each component and wiring.

(5) The model number or other manufacturer's designation of the blasting unit.

(b) All drawings shall be titled, numbered, dated, and include the latest revision number. The drawings may be combined into one or more composite drawings.

(c) The application shall contain a list of all the drawings submitted, including drawing titles, numbers, and revisions.

(d) A detailed technical description of the operation and use of the blasting unit shall be submitted with the application.

(Approved by the Office of Management and Budget under control number 1219–0100)

**§ 7.64 Technical requirements.**

(a) *Energy output.* Blasting units shall meet the acceptable performance criteria of the output energy test in § 7.66.

(b) *Maximum blasting circuit resistance.* The maximum value of the resistance of the blasting circuit that can be connected to the firing line terminals of the blasting unit, without exceeding its capacity, shall be specified by the applicant. The specified maximum blasting circuit resistance shall be at least 150 ohms.

(c) *Visual indicator.* The blasting unit shall provide a visual indication to the user prior to the operation of the firing switch when the voltage necessary to produce the required firing current is attained.

(d) *Firing switch.* The switch used to initiate the application of energy to the blasting circuit shall—

(1) Require deliberate action for its operation to prevent accidental firing; and

(2) Operate only when the voltage necessary to produce the required firing current is available to the blasting circuit.

(e) *Firing line terminals.* The terminals used to connect the blasting circuit to the blasting unit shall—

(1) Provide a secure, low-resistance connection to the blasting circuit as demonstrated by the firing line terminals test in § 7.68;

(2) Be corrosion-reistant;

(3) Be insulated to protect the user from electrical shock; and

(4) Be separated from each other by an insulated barrier.

(f) *Ratings of electric components.* No electric component of the blasting unit, other than batteries, shall be operated at more than 90 percent of any of its electrical ratings in the normal operation of the blasting unit.

(g) *Non-incendive electric contacts.* In the normal operation of a blasting unit, the electric energy discharged by making and breaking electric contacts shall not be capable of igniting a methane-air atmosphere, as determined by the following:

(1) The electric current through an electric contact shall not be greater than that determined from Figure D–1.

(2) The maximum voltage that can be applied across an electric contact that discharges a capacitor shall not be greater than that determined from Figure D–2.

(3) The electric current through an electric contact that interrupts a circuit containing inductive components shall not be greater than that determined from Figure D–3. Inductive components include inductors, chokes, relay coils, motors, transformers, and similar electric components that have an inductance greater than 100 microhenries. No inductive component in a circuit with making and breaking electric contacts shall have an inductance value greater than 100 millihenries.

BILLING CODE 4510–43–M

FIGURE D–1

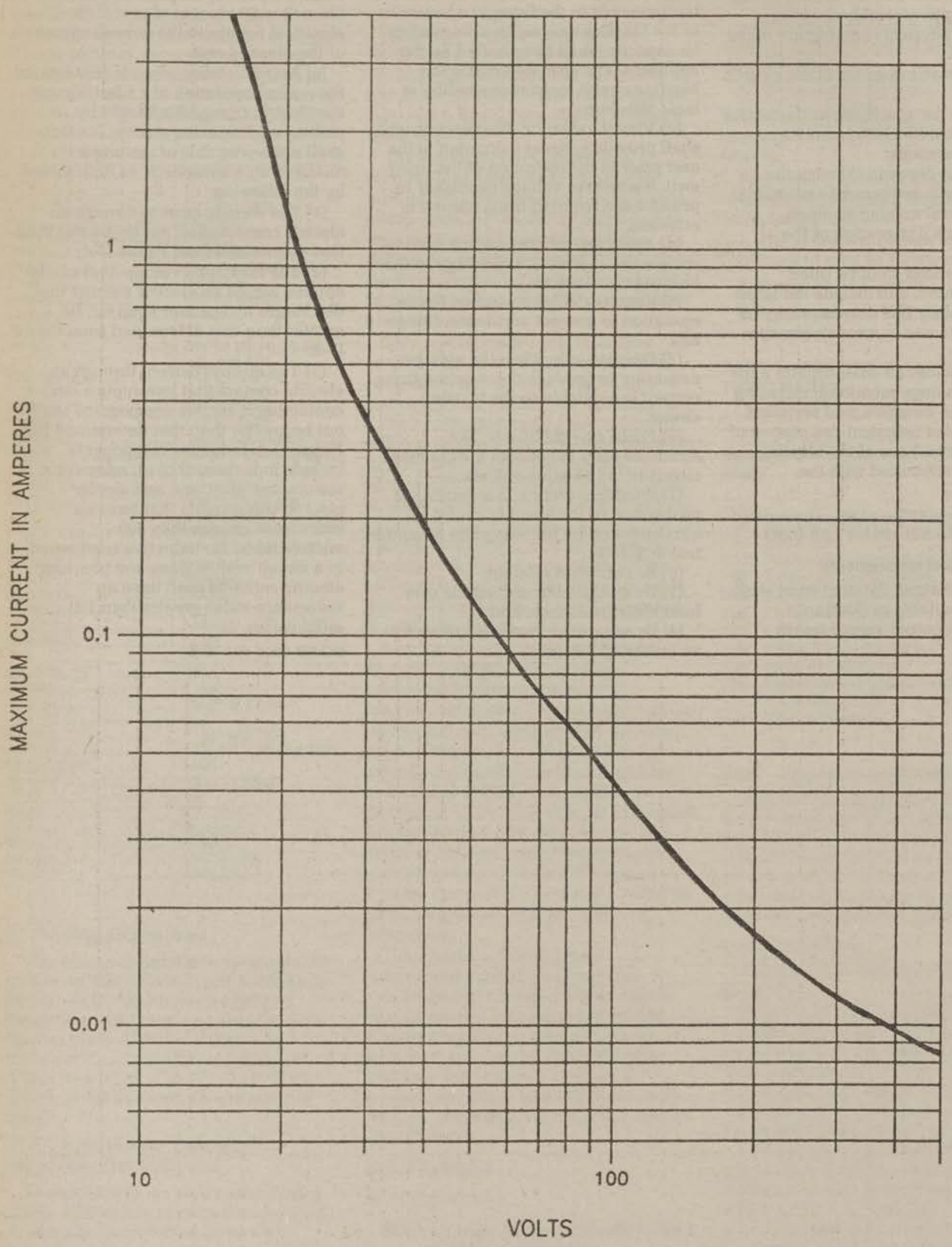


FIGURE D-2

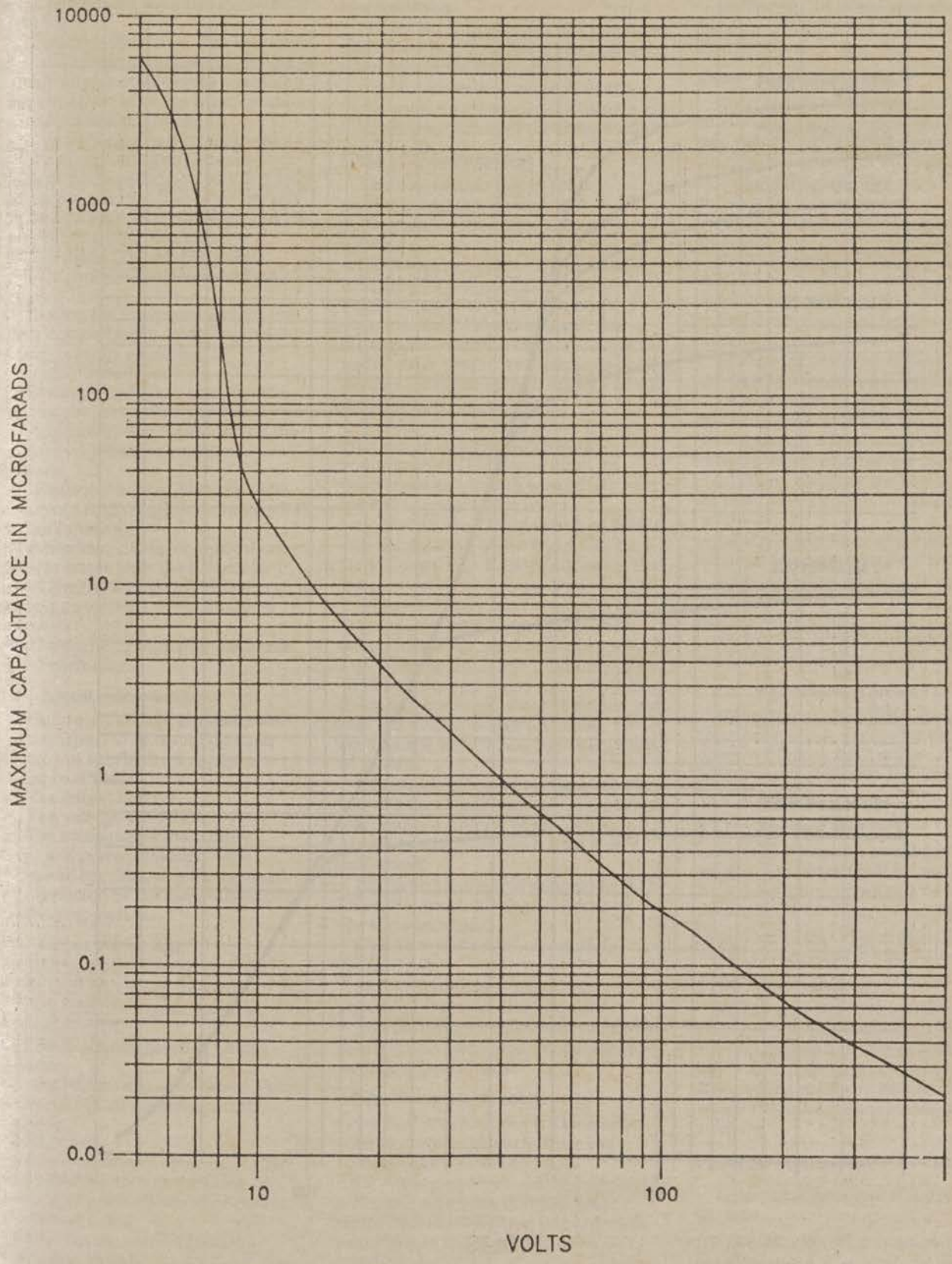
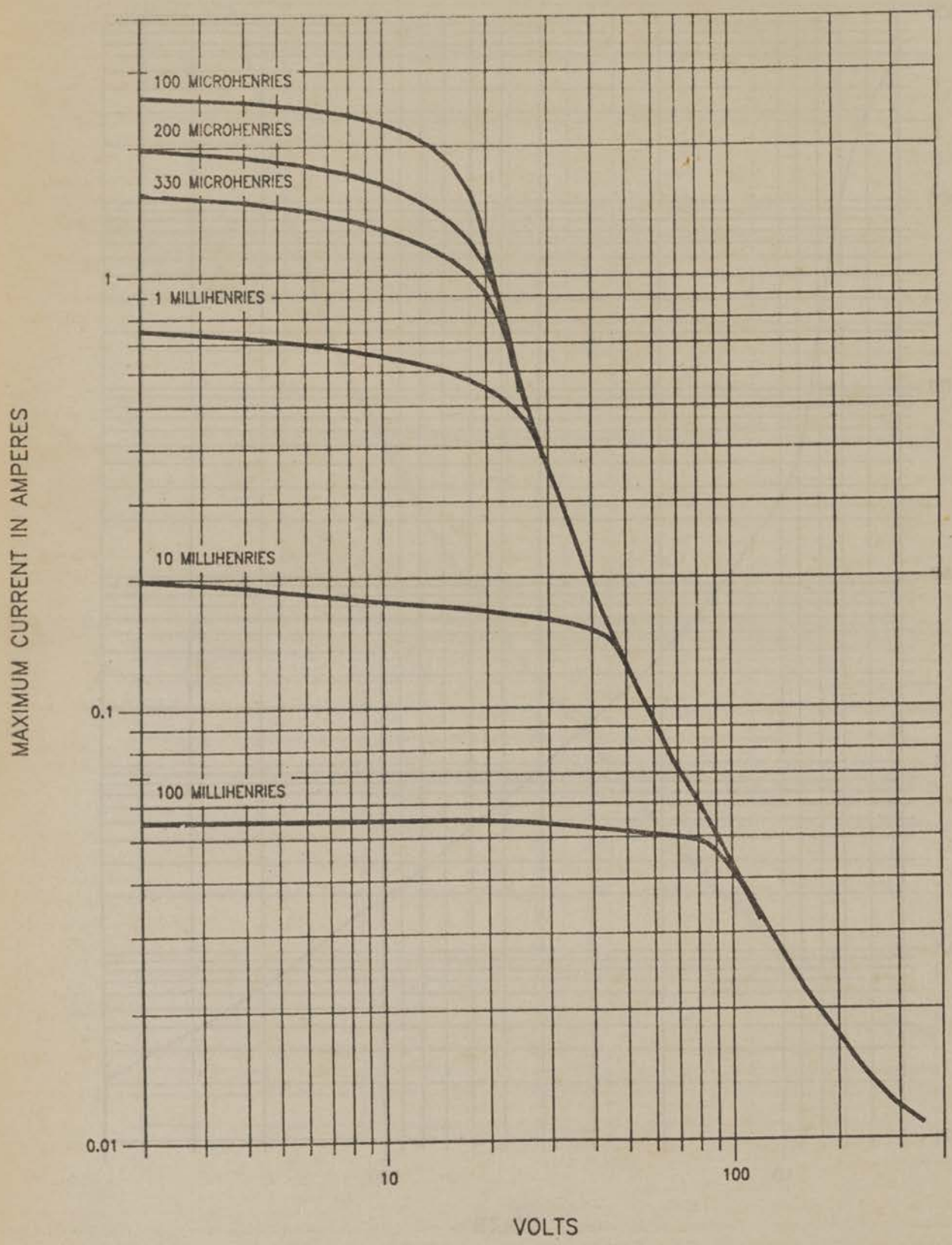

10000
1000
100
10
1
0.1
0.01
MAXIMUM CAPACITANCE IN MICROFARADS
10
100
VOLTS

FIGURE D-3




BILLING CODE 4510-43-C

(h) *Maximum temperature.* In the normal operation of the blasting unit, the maximum temperature of any electric component shall not exceed 302 °F (150 °C).

(i) *Capacitor discharge.* The blasting unit shall include an automatic means to dissipate any electric charge remaining in any capacitor after the blasting unit is deenergized and not in use.

(j) *Construction.* Blasting units shall meet the acceptable performance criteria of the construction test of § 7.67.

(k) *Locking device.* The blasting unit shall be equipped with a locking device to prevent unauthorized use.

(l) *Enclosure.* The blasting unit enclosure shall be protected against tampering by—

(1) Sealing the enclosure, except the battery compartment, using continuous welding, brazing, soldering, or equivalent methods; or

(2) Sealing the electric components, other than batteries, in a solidified insulating material and assembling the enclosure with tamper-resistant hardware.

(m) *Battery charging.* Blasting units that contain rechargeable batteries shall have the following:

(1) A blocking diode, or equivalent device, in series with the battery to prevent electric energy in the battery from being available at the charging connector.

(2) The charging connector recessed into the enclosure.

**§ 7.65 Critical characteristics.**

The following critical characteristics shall be inspected or tested on each blasting unit to which an approval marking is affixed:

(a) The output current.

(b) The voltage cut-off time.

(c) The components that control voltage and current through each making and breaking electric contact.

(d) Operation of the visual indicator and the firing switch.

**§ 7.66 Output energy test.**

(a) *Test procedures.* The blasting unit shall be tested by firing into each of the following resistive loads, within a tolerance of ±1%:

(1) The maximum blasting circuit resistance.

(2) Any resistive load between 3 ohms and the maximum blasting circuit resistance.

(3) One ohm.

(b) *Acceptable performance.* (1) The voltage shall be zero at the firing line terminals 10 milliseconds after operation of the firing switch.

(2) The electric current from the blasting unit shall be:

(i) Less than 50 milliamperes except during firing of the blasting unit.

(ii) Available only through the firing line terminals.

(iii) At least an average of 2 amperes during the first 5 milliseconds following operation of the firing switch.

(iv) Not exceed an average of 100 amperes during the first 10 milliseconds following operation of the firing switch.

**§ 7.67 Construction test.**

The constuction test is to be performed on the blasting unit subsequent to the output energy test of § 7.66.

(a) *Test procedures.* (1) The blasting unit shall be dropped 20 times from a height of 3 feet onto a horizontal concrete floor. When dropped, the orientation of the blasting unit shall be varied each time in an attempt to have a different surface, corner, or edge strike the floor first for each drop.

(2) After the blasting unit has been drop tested in accordance with paragraph (a)(1) above, it shall be submerged in 1 foot of water for 1 hour in each of 3 tests. The water temperature shall be maintained within ± 5 °F (±2.8 °C) of 40 °F (4.4 °C), 70 °F (21.1 °C) and 100 °F (37.8 °C) during the tests.

(3) Immediately after removing the blasting unit from the water at each temperature, the unit shall be operated first with the firing line terminals open circuited, then operated again with the firing line terminals short circuited, and last, the output energy tested in accordance with the output energy test of § 7.66.

(b) *Acceptable performance.* (1) The blasting unit shall meet the acceptable performance criteria of the output energy test in § 7.66 each time it is performed.

(2) There shall be no damage to the firing line terminals that exposes an electric conductor.

(3) The visual indicator shall be operational.

(4) The batteries shall not be separated from the blasting unit.

(5) There shall be no water inside the blasting unit enclosure, except for the battery compartment.

**§ 7.68 Firing line terminals test.**

(a) *Test procedures.* (1) The contact resistance through each firing line terminal shall be determined.

(2) A 10-pound pull shall be applied to a No. 18 gauge wire that has been connected to each firing line terminal according to the manufacturer's instructions.

(b) *Acceptable performance.* (1) The contact resistance shall not be greater than 1 ohm.

(2) The No. 18 gauge wire shall not become disconnected from either firing line terminal.

**§ 7.69 Approval marking.**

Each approved blasting unit shall be identified as permissible by a legible and permanent marking securely attached, stamped, or molded to the outside of the unit. This marking shall include the following:

(a) The assigned MSHA approval number.

(b) The maximum blasting circuit resistance.

(c) A warning that the unit's components must not be disassembled or removed.

(d) The replacement battery types if the unit has replaceable batteries.

(e) A warning placed next to the charging connector that the battery only be charged in a fresh air location if rechargeable batteries are used.

(f) A warning that the unit is compatible only with detonators that will—

(1) Fire when an average of 1.5 amperes is applied for 5 milliseconds;

(2) Not misfire when up to an average 100 amperes is applied for 10 milliseconds; and

(3) Not fire when a current of 250 milliamperes or less is applied.

**§ 7.70 Post-approval product audit.**

Upon request by MSHA, but not more than once a year except for cause, the approval holder shall make an approved blasting unit available for audit at no cost to MSHA.

**§ 7.71 Approval checklist.**

Each blasting unit bearing an MSHA approval marking shall be accompanied by a description of what is necessary to maintain the blasting unit as approved.

(Approved by the Office of Management and Budget under control number 1219-0100)

**§ 7.72 New technology.**

MSHA may approve a blasting unit that incorporates technology for which the requirements of this subpart are not applicable if the Agency determines that the blasting unit is as safe as those which meet the requirements of this subpart.

## PART 25—[Removed]

1. Part 25 is removed effective January 22, 1991.

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