



U.S. ATOMIC ENERGY COMMISSION

REGULATORY GUIDE

DIRECTORATE OF REGULATORY STANDARDS

REGULATORY GUIDE 1.86

TERMINATION OF OPERATING LICENSES FOR NUCLEAR REACTORS

A. INTRODUCTION

Section 50.51, "Duration of license, renewal," of 10 CFR Part 50, "Licensing of Production and Utilization Facilities," requires that each license to operate a production and utilization facility be issued for a specified duration. Upon expiration of the specified period, the license may be either renewed or terminated by the Commission. Section 50.82, "Applications for termination of licenses," specifies the requirements that must be satisfied to terminate an operating license, including the requirement that the dismantlement of the facility and disposal of the component parts not be inimical to the common defense and security or to the health and safety of the public. This guide describes methods and procedures considered acceptable by the Regulatory staff for the termination of operating licenses for nuclear reactors. The Advisory Committee on Reactor Safeguards has been consulted concerning this guide and has concurred in the regulatory position.

B. DISCUSSION

When a licensee decides to terminate his nuclear reactor operating license, he may, as a first step in the process, request that his operating license be amended to restrict him to possess but not operate the facility. The advantage to the licensee of converting to such a possession-only license is reduced surveillance requirements in that periodic surveillance of equipment important to the safety of reactor operation is no longer required. Once this possession-only license is issued, reactor operation is not permitted. Other activities related to cessation of operations such as unloading fuel from the reactor and placing it in storage (either onsite or offsite) may be continued.

A licensee having a possession-only license must retain, with the Part 50 license, authorization for special nuclear material (10 CFR Part 70, "Special Nuclear Material"), byproduct material (10 CFR Part 30, "Rules of General Applicability to Licensing of Byproduct Material"), and source material (10 CFR Part 40, "Licensing of Source Material"), until the fuel, radioactive components, and sources are removed from the facility. Appropriate administrative controls and facility requirements are imposed by the Part 50 license and the technical specifications to assure that proper surveillance is performed and that the reactor facility is maintained in a safe condition and not operated.

A possession-only license permits various options and procedures for decommissioning, such as mothballing, entombment, or dismantling. The requirements imposed depend on the option selected.

Section 50.82 provides that the licensee may dismantle and dispose of the component parts of a nuclear reactor in accordance with existing regulations. For research reactors and critical facilities, this has usually meant the disassembly of a reactor and its shipment offsite, sometimes to another appropriately licensed organization for further use. The site from which a reactor has been removed must be decontaminated, as necessary, and inspected by the Commission to determine whether unrestricted access can be approved. In the case of nuclear power reactors, dismantling has usually been accomplished by shipping fuel offsite, making the reactor inoperable, and disposing of some of the radioactive components.

Radioactive components may be either shipped off-site for burial at an authorized burial ground or secured

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Published guides will be revised periodically, as appropriate, to accommodate comments and to reflect new information or experience.

Copies of published guides may be obtained by request indicating the divisions desired to the U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Director of Regulatory Standards. Comments and suggestions for improvements in these guides are encouraged and should be sent to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Chief, Public Proceedings Staff.

The guides are issued in the following ten broad divisions:

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|-----------------------------------|------------------------|
| 1. Power Reactors | 6. Products |
| 2. Research and Test Reactors | 7. Transportation |
| 3. Fuels and Materials Facilities | 8. Occupational Health |
| 4. Environmental and Siting | 9. Antitrust Review |
| 5. Materials and Plant Protection | 10. General |

on the site. Those radioactive materials remaining on the site must be isolated from the public by physical barriers or other means to prevent public access to hazardous levels of radiation. Surveillance is necessary to assure the long term integrity of the barriers. The amount of surveillance required depends upon (1) the potential hazard to the health and safety of the public from radioactive material remaining on the site and (2) the integrity of the physical barriers. Before areas may be released for unrestricted use, they must have been decontaminated or the radioactivity must have decayed to less than prescribed limits (Table I).

The hazard associated with the retired facility is evaluated by considering the amount and type of remaining contamination, the degree of confinement of the remaining radioactive materials, the physical security provided by the confinement, the susceptibility to release of radiation as a result of natural phenomena, and the duration of required surveillance.

C. REGULATORY POSITION

1. APPLICATION FOR A LICENSE TO POSSESS BUT NOT OPERATE (POSSESSION-ONLY LICENSE)

A request to amend an operating license to a possession-only license should be made to the Director of Licensing, U.S. Atomic Energy Commission, Washington, D.C. 20545. The request should include the following information:

- a. A description of the current status of the facility.
- b. A description of measures that will be taken to prevent criticality or reactivity changes and to minimize releases of radioactivity from the facility.
- c. Any proposed changes to the technical specifications that reflect the possession-only facility status and the necessary disassembly/retirement activities to be performed.
- d. A safety analysis of both the activities to be accomplished and the proposed changes to the technical specifications.
- e. An inventory of activated materials and their location in the facility.

2. ALTERNATIVES FOR REACTOR RETIREMENT

Four alternatives for retirement of nuclear reactor facilities are considered acceptable by the Regulatory staff. These are:

a. **Mothballing.** Mothballing of a nuclear reactor facility consists of putting the facility in a state of protective storage. In general, the facility may be left intact except that all fuel assemblies and the radioactive

fluids and waste should be removed from the site. Adequate radiation monitoring, environmental surveillance, and appropriate security procedures should be established under a possession-only license to ensure that the health and safety of the public is not endangered.

b. **In-Place Entombment.** In-place entombment consists of sealing all the remaining highly radioactive or contaminated components (e.g., the pressure vessel and reactor internals) within a structure integral with the biological shield after having all fuel assemblies, radioactive fluids and wastes, and certain selected components shipped offsite. The structure should provide integrity over the period of time in which significant quantities (greater than Table I levels) of radioactivity remain with the material in the entombment. An appropriate and continuing surveillance program should be established under a possession-only license.

c. **Removal of Radioactive Components and Dismantling.** All fuel assemblies, radioactive fluids and waste, and other materials having activities above accepted unrestricted activity levels (Table I) should be removed from the site. The facility owner may then have unrestricted use of the site with no requirement for a license. If the facility owner so desires, the remainder of the reactor facility may be dismantled and all vestiges removed and disposed of.

d. **Conversion to a New Nuclear System or a Fossil Fuel System.** This alternative, which applies only to nuclear power plants, utilizes the existing turbine system with a new steam supply system. The original nuclear steam supply system should be separated from the electric generating system and disposed of in accordance with one of the previous three retirement alternatives.

3. SURVEILLANCE AND SECURITY FOR THE RETIREMENT ALTERNATIVES WHOSE FINAL STATUS REQUIRES A POSSESSION-ONLY LICENSE

A facility which has been licensed under a possession-only license may contain a significant amount of radioactivity in the form of activated and contaminated hardware and structural materials. Surveillance and commensurate security should be provided to assure that the public health and safety are not endangered.

a. Physical security to prevent inadvertent exposure of personnel should be provided by multiple locked barriers. The presence of these barriers should make it extremely difficult for an unauthorized person to gain access to areas where radiation or contamination levels exceed those specified in Regulatory Position C.4. To prevent inadvertent exposure, radiation areas above 5 mR/hr, such as near the activated primary system of a power plant, should be appropriately marked and should not be accessible except by cutting of welded closures or the disassembly and removal of substantial structures

and/or shielding material. Means such as a remote-readout intrusion alarm system should be provided to indicate to designated personnel when a physical barrier is penetrated. Security personnel that provide access control to the facility may be used instead of the physical barriers and the intrusion alarm systems.

b. The physical barriers to unauthorized entrance into the facility, e.g., fences, buildings, welded doors, and access openings, should be inspected at least quarterly to assure that these barriers have not deteriorated and that locks and locking apparatus are intact.

c. A facility radiation survey should be performed at least quarterly to verify that no radioactive material is escaping or being transported through the containment barriers in the facility. Sampling should be done along the most probable path by which radioactive material such as that stored in the inner containment regions could be transported to the outer regions of the facility and ultimately to the environs.

d. An environmental radiation survey should be performed at least semiannually to verify that no significant amounts of radiation have been released to the environment from the facility. Samples such as soil, vegetation, and water should be taken at locations for which statistical data has been established during reactor operations.

e. A site representative should be designated to be responsible for controlling authorized access into and movement within the facility.

f. Administrative procedures should be established for the notification and reporting of abnormal occurrences such as (1) the entrance of an unauthorized person or persons into the facility and (2) a significant change in the radiation or contamination levels in the facility or the offsite environment.

g. The following reports should be made:

(1) An annual report to the Director of Licensing, U.S. Atomic Energy Commission, Washington, D.C. 20545, describing the results of the environmental and facility radiation surveys, the status of the facility, and an evaluation of the performance of security and surveillance measures.

(2) An abnormal occurrence report to the Regulatory Operations Regional Office by telephone within 24 hours of discovery of an abnormal occurrence. The abnormal occurrence will also be reported in the annual report described in the preceding item.

h. Records or logs relative to the following items should be kept and retained until the license is terminated, after which they may be stored with other plant records:

- (1) Environmental surveys;
- (2) Facility radiation surveys,
- (3) Inspections of the physical barriers, and
- (4) Abnormal occurrences.

4. DECONTAMINATION FOR RELEASE FOR UNRESTRICTED USE

If it is desired to terminate a license and to eliminate any further surveillance requirements, the facility should be sufficiently decontaminated to prevent risk to the public health and safety. After the decontamination is satisfactorily accomplished and the site inspected by the Commission, the Commission may authorize the license to be terminated and the facility abandoned or released for unrestricted use. The licensee should perform the decontamination using the following guidelines:

a. The licensee should make a reasonable effort to eliminate residual contamination.

b. No covering should be applied to radioactive surfaces of equipment or structures by paint, plating, or other covering material until it is known that contamination levels (determined by a survey and documented) are below the limits specified in Table I. In addition, a reasonable effort should be made (and documented) to further minimize contamination prior to any such covering.

c. The radioactivity of the interior surfaces of pipes, drain lines, or ductwork should be determined by making measurements at all traps and other appropriate access points, provided contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement should be assumed to be contaminated in excess of the permissible radiation limits.

d. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated in excess of the limits specified. This may include, but is not limited to, special circumstances such as the transfer of premises to another licensed organization that will continue to work with radioactive materials. Requests for such authorization should provide:

(1) Detailed, specific information describing the premises, equipment, scrap, and radioactive contaminants and the nature, extent, and degree of residual surface contamination.

(2) A detailed health and safety analysis indicating that the residual amounts of materials on surface areas, together with other considerations such as the prospective use of the premises, equipment, or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

e. Prior to release of the premises for unrestricted use, the licensee should make a comprehensive radiation survey establishing that contamination is within the limits specified in Table I. A survey report should be filed with the Director of Licensing, U.S. Atomic Energy Commission, Washington, D.C. 20545, with a copy to the Director of the Regulatory Operations Regional Office having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report should:

(1) Identify the premises;

(2) Show that reasonable effort has been made to reduce residual contamination to as low as practicable levels;

(3) Describe the scope of the survey and the general procedures followed; and

(4) State the finding of the survey in units specified in Table I.

After review of the report, the Commission may inspect the facilities to confirm the survey prior to granting approval for abandonment.

5. REACTOR RETIREMENT PROCEDURES

As indicated in Regulatory Position C.2, several alternatives are acceptable for reactor facility retirement. If minor disassembly or "mothballing" is planned, this could be done by the existing operating and maintenance procedures under the license in effect. Any planned actions involving an unreviewed safety question

or a change in the technical specifications should be reviewed and approved in accordance with the requirements of 10 CFR §50.59.

If major structural changes to radioactive components of the facility are planned, such as removal of the pressure vessel or major components of the primary system, a dismantlement plan including the information required by §50.82 should be submitted to the Commission. A dismantlement plan should be submitted for all the alternatives of Regulatory Position C.2 except mothballing. However, minor disassembly activities may still be performed in the absence of such a plan, provided they are permitted by existing operating and maintenance procedures. A dismantlement plan should include the following:

a. A description of the ultimate status of the facility

b. A description of the dismantling activities and the precautions to be taken.

c. A safety analysis of the dismantling activities including any effluents which may be released.

d. A safety analysis of the facility in its ultimate status.

Upon satisfactory review and approval of the dismantling plan, a dismantling order is issued by the Commission in accordance with §50.82. When dismantling is completed and the Commission has been notified by letter, the appropriate Regulatory Operations Regional Office inspects the facility and verifies completion in accordance with the dismantlement plan. If residual radiation levels do not exceed the values in Table I, the Commission may terminate the license. If these levels are exceeded, the licensee retains the possession-only license under which the dismantling activities have been conducted or, as an alternative, may make application to the State (if an Agreement State) for a byproduct materials license.

TABLE I
ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDE ^a	AVERAGE ^{b c}	MAXIMUM ^{b d}	REMOVABLE ^{b e}
U-nat, U-235, U-238, and associated decay products	5,000 dpm α /100 cm ²	15,000 dpm α /100 cm ²	1,000 dpm α /100 cm ²
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm ²	3000 dpm/100 cm ²	200 dpm/100 cm ²
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm β - γ /100 cm ²	15,000 dpm β - γ /100 cm ²	1000 dpm β - γ /100 cm ²

^aWhere surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

^bAs used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^cMeasurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

^dThe maximum contamination level applies to an area of not more than 100 cm².

^eThe amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

authority of the Commission in the State under chapters 6, 7, and 8, and section 161 of the Act with respect to the following materials:

- A. Byproduct materials as defined in section 11e.(1) of the Act;
- B. Source materials; and
- C. Special nuclear materials in quantities not sufficient to form a critical mass.

Article II

This Agreement does not provide for discontinuance of any authority and the Commission shall retain authority and responsibility with respect to regulation of:

- A. The construction and operation of any production or utilization facility;
- B. The export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility;
- C. The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission;
- D. The disposal of such other byproduct, source, or special nuclear material as the Commission from time to time determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission;
- E. The land disposal of source, byproduct and special nuclear material received from other persons; and
- F. The extraction or concentration of source material from source material ore and the management and disposal of the resulting byproduct material.

Article III

This Agreement may be amended, upon application by the State and approval by the Commission, to include the additional area(s) specified in article II, paragraph E or F, whereby the State can exert regulatory control over the materials stated herein.

Article IV

Notwithstanding this Agreement, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material all not transfer possession or control such product except pursuant to a license or an exemption from licensing issued by the Commission.

Article V

This Agreement shall not affect the authority of the Commission under subsection 161 b. or i. of the Act to issue rules, regulations, or orders to protect the common defense and security, to protect restricted data or to guard against the loss or diversion of special nuclear material.

Article VI

The Commission will use its best efforts to cooperate with the State and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that State and Commission programs for protection against hazards of radiation will be coordinated and compatible. The State will use its best efforts to cooperate with the Commission and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that the State's program will continue to be compatible with the program of the Commission for the regulation of like materials. The State and the Commission will use their best efforts to keep each other informed of proposed changes in their respective rules and regulations and licensing, inspection and enforcement policies and criteria, and to obtain the comments and assistance of the other party thereon.

Article VII

The Commission and the State agree that it is desirable to provide reciprocal recognition of licenses for the materials listed in article I licensed by the other party or by any Agreement State. Accordingly, the Commission and the State agree to use their best efforts to develop appropriate rules, regulations, and procedures by which such reciprocity will be accorded.

Article VIII

The Commission, upon its own initiative after reasonable notice and opportunity for hearing to the State, or upon request of the Governor of the State, may terminate or suspend all or part of this Agreement and reassert the licensing and regulatory authority vested in it under the Act if the Commission finds that (1) such termination or suspension is required to protect the public health and safety, or (2) the State has not complied with one or more of the requirements of section 274 of the Act. The Commission may also, pursuant to section 274j of the Act, temporarily suspend all or part of this Agreement if, in the judgment of the

Commission, an emergency situation exists requiring immediate action to protect public health and safety and the State has failed to take necessary steps. The Commission shall periodically review this Agreement and actions taken by the State under this Agreement to ensure compliance with section 274 of the Act.

Article IX

This Agreement shall become effective on April 1, 1992, and shall remain in effect unless and until such time as it is terminated pursuant to article VIII.

Done at Rockville, Maryland in triplicate, this 16th day of March, 1992.

For the United States Nuclear Regulatory Commission, Ivan Selin, Chairman.

Done at Augusta, Maine, in triplicate, this 25th day of March, 1992.

For the State of Maine, John R. McKernan, Jr., Governor.

Dated at Rockville, this 9th day of April, 1992.

For the United States Nuclear Regulatory Commission,

Sheldon A. Schwartz,

Deputy Director, Office of State Programs.

(FR Doc. 92-8639 Filed 4-15-92; 8:45 am)

GSA FPMR CODE 7550-01-11

Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of availability of NRC action plan.

SUMMARY: The NRC has developed an Action Plan to describe the approach the agency will use to accelerate the cleanup of radiologically contaminated sites listed in NRC's Site Decommissioning Management Plan (SDMP). The objective of this plan is to communicate the Commission's general expectation that sites listed in the SDMP be cleaned up in a timely and effective manner. This plan (1) identifies existing criteria to guide cleanup of contaminated soils, structures, and equipment and emphasizes site-specific application of the As Low As Reasonably Achievable (ALARA) principle; (2) states the NRC's position on the finality of decommissioning decisions; (3) describes the NRC's general expectation that SDMP site cleanup will be completed within a 4-year timeframe after operations cease or 3 years after the issuance of an initial cleanup order; (4) identifies currently available guidance on site

characterization work in support of decommissioning; and (5) describes the process the NRC staff will use to establish and enforce schedules for timely cleanup on a site-specific basis.

ADDRESSES: Other documents referenced in this notice may be reviewed and/or copies for a fee from the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC 20555.

FOR FURTHER INFORMATION CONTACT: John A. Austin, Chief, Decommissioning and Regulatory Issues Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 504-2560.

SUPPLEMENTARY INFORMATION:

I. Introduction and Purpose

Over the past several years, the Nuclear Regulatory Commission (NRC) has identified over 40 nuclear material sites that warrant special attention by the Commission. These sites have buildings, former waste disposal areas, large piles of tailings, groundwater, and soil contaminated with low levels of uranium or thorium (source material) or other radionuclides. Consequently, they present varying degrees of radiological hazard, cleanup complexity, and cost. Some of the sites are still under the control of active NRC licenses, whereas licenses for other sites may have already been terminated or may have never been issued. At some sites, licenses are financially and technically capable of completing cleanup in a reasonable timeframe, whereas at other sites, the licensee or responsible party is unable or unwilling to perform cleanup. In addition, the sites are currently in various stages of decommissioning. At some sites, licensees have initiated decommissioning, whereas at other sites, decommissioning has not yet been planned or initiated.

The NRC believes that the best approach for minimizing the potential for unnecessary radiation exposures and environmental contamination in the future is to ensure that these sites are cleaned up in a timely and effective manner. In 1990, the NRC implemented the Site Decommissioning Management Plan (SDMP) to identify and resolve issues associated with the timely cleanup of these sites. The SDMP provides a comprehensive strategy for NRC and licensee activities dealing with the cleanup and closure of contaminated nuclear material facilities over which the NRC has jurisdiction. The appendix to this document lists the sites that are

currently included in the SDMP (the SDMP does not include more routine decommissioning cases such as nuclear power reactors). The SDMP has been effective in ensuring coordination and resolution of some of the policy and regulatory issues affecting site decommissioning. Progress on actual site remediation, however, continues to be slow. The limited progress to date has prompted the Commission to direct the NRC staff to initiate actions to accelerate the cleanup of SDMP sites.

It should be noted that this Action Plan itself does not contain enforceable standards and is not intended to create new rights or obligations on third parties or to preclude litigation of properly framed issues in any pending proceeding. Implementation of this plan may result in the establishment of legally binding requirements by order or license amendment that may be enforced on a site-specific basis. However, nothing in this Action Plan is intended to affect hearing rights associated with such orders or licensee amendments or the hearing rights of parties to presently pending adjudications and, to the extent that rules promulgated in accord with 5 U.S.C. 553 are not applicable, each case will be judged on its own merits.

II. Action Plan

In accordance with the overall objective of ensuring timely and effective cleanup of SDMP sites, the NRC staff will review site-specific plans and take decommissioning actions consistent with the following elements:

A. Cleanup Criteria

Pending NRC rulemaking on generic radiological criteria for decommissioning, the NRC will continue to consider existing guidance, criteria, and practices listed below to determine whether sites have been sufficiently decontaminated so that they may be released for unrestricted use, pursuant to, or consistent with, the decommissioning rules in 10 CFR 30.38, 40.42, 50.62, 70.38, and 72.54. These cleanup criteria will be applied on a site-specific basis with emphasis on residual contamination levels that are ALARA.

1. Options 1 and 2 of the Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (48 FR 52601; October 23, 1981).

2. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material." Policy and Guidance Directive FC 63-23,

Division of Industrial and Medical Nuclear Safety, November 4, 1983.

3. "Termination of Operating Licenses for Nuclear Reactors," Regulatory Guide 1.86, June 1974, Table 1, for surface contamination of reactor facility structures. Also Cobalt-60, Cesium-137, and Europium-152 that may exist in concrete, components, and structures should be removed so the indoor exposure rate is less than 5 microrentgen per hour above natural background at 1 meter, with an overall dose objective of 10 millirem per year (cf. Letter to Stanford University from James R. Miller, Chief, Standardization and Special Projects Branch, Division of Licensing, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, April 21, 1982, Docket No. 50-141).

4. The Environmental Protection Agency's (EPA's) "Interim Primary Drinking Water Regulations," 40 CFR part 141 (41 FR 38404; July 9, 1976). In accordance with FC 63-23, the maximum contaminant levels for radionuclides in public drinking water as established by the EPA should be used as reference standard for protection of groundwater and surface water resources.

5. The EPA's "Persons Exposed To Transuranium Elements In The Environment" (42 FR 60956; November 30, 1977). This document provides guidelines for acceptable levels of transuranium elements in soil.

The criteria of this section will be considered in establishing site-specific ALARA levels for each of the SDMP sites in license amendments and orders.

B. Finality

The NRC's decision to terminate a license will relieve the licensee from any further obligation to the NRC to conduct additional cleanup, as long as the licensee decommissioned the site in full accordance with an approved decommissioning plan. The licensee will demonstrate compliance with the cleanup levels described in the decommissioning plan by performing a radiologic survey of the site prior to license termination. The NRC usually conducts an independent survey to confirm the accuracy of the licensee's termination survey. Therefore, if a licensee or responsible party cleaned up a site, or was in the process of cleaning up a site, under an NRC-approved decommissioning plan, the NRC will not require the licensee to conduct additional cleanup in response to NRC criteria or standard established after NRC approval of the plan. An exception to this case would be in the event that additional contamination, or

noncompliance with the plan, is found indicating a significant threat to public health and safety. Noncompliance would occur with a licensee or responsible party does not comply with an approved decommissioning plan, or provides false information.

The NRC will inform EPA about specific decommissioning actions at sites. NRC will also inform State and local agencies that have jurisdiction over aspects concerning decommissioning actions.

C. Timing

The NRC staff will address the timing of SDMP site cleanups on a case-by-case basis, with the expectation that cleanup generally be completed within about 4 years after operations that caused the contamination cease or 3 years after issuance of an initial cleanup order. To achieve this objective, major decommissioning milestones should be established within the following timeframes:

1. As soon as practical, but generally not later than 12 months after notification by the NRC that decommissioning is expected to commence, the licensee or responsible party identified by the NRC should submit to the NRC an adequate site characterization report, if that has not yet been completed. The NRC encourages early and substantive coordination and communication between the licensee or responsible party in planning for site characterization, including NRC review of site characterization plans.

2. As soon as practical, but generally not later than 6 months after NRC approval of the site characterization report, the licensee or responsible party should submit to the NRC a site decommissioning plan for approval based on the site characterization results. The decommissioning plan should include schedules for completing site decommissioning work in a timely and effective manner, including plans to dispose of contaminated materials either onsite pursuant to 10 CFR 20.302 (or 10 CFR 20.2002 of the revised 10 CFR part 20), or at a licensed disposal facility offsite.

3. As soon as practical, but generally not later than 18 months after NRC approval of the site decommissioning plan, the licensee or responsible party should complete all decommissioning work and termination surveys, so that sites or facilities can be released for unrestricted use after termination of the license, as appropriate.

In implementing this approach, the NRC will establish specific and enforceable milestones for each phase

of decommissioning through license amendments or orders. These schedules will provide flexibility to allow a licensee or responsible party to demonstrate good cause for delaying cleanup based on technical and risk reduction considerations, or for reasons beyond their control. NRC recognizes that at sites containing hazardous chemical wastes, schedules will depend, at least in part, on the necessary reviews and approvals by other responsible agencies (e.g., EPA or State agencies).

D. Site Characterization

Inadequate site characterization has been one of the technical issues that has delayed timely approval and implementation of site-specific decommissioning actions. Therefore, the NRC is developing new guidance on the content of acceptable site characterization programs conducted in support of decommissioning actions.

The NRC has developed a draft "Guidance Manual for Conducting Radiological Surveys in Support of License Termination" (NUREG/CR-5849) ¹ through Oak Ridge Associated Universities. This draft manual, which will be published for interim use and evaluation in April 1992, should be consulted regarding general aspects of site characterization activities. In addition, this draft manual should be used by licensees when conducting radiological surveys in support of license terminations in the interim until the manual is finalized. NRC is developing additional guidance on specific aspects of site characterization, such as hydrogeologic assessment of contaminated sites.

Until specific NRC guidance on site characterization is developed, licensees should continue to review relevant information from existing documents on site characterization such as those identified below. Although NRC recognizes that these documents do not completely address site characterization needs for decommissioning, use of these references, in addition to site-specific consultation with the NRC staff, will help ensure that site characterization is appropriately planned and conducted so that final site characterization reports are submitted with minimal deficiencies and in a timely manner. The following documents, available from the NRC Public Document Room, should be

reviewed regarding general aspects of site characterization activities:

1. "Survey Procedures Manual for the ORAU Environmental Survey and Site Assessment Program." Oak Ridge Associated Universities, March 1990.

2. "Laboratory Procedures Manual for the Environmental Survey and Site Assessment Program." Revision 5, Oak Ridge Associated Universities, February 1990.

3. "Quality Assurance Manual for the Oak Ridge Associated Universities' Environmental Survey and Site Assessment Program." Revision 3, Oak Ridge Associated Universities, February 1990.

4. "Monitoring for Compliance With Decommissioning Termination Survey Criteria." NUREG/CR-2082, June 1981.

5. "Guidance on the Application of Quality Assurance for Characterizing a Low-Level Radioactive Waste Disposal Site." NUREG-1383, October 1990.

E. Procedures to Compel Timely Cleanup

The NRC staff will seek voluntary cooperation by licensees or other responsible parties in establishing and implementing decommissioning plans in accordance with the objectives of this Action Plan. For sites with active NRC licenses, an approved decommissioning plan that includes appropriate schedules and cleanup levels will be incorporated into the license by amendment through normal licensing procedures. For sites with joint licenses (i.e., facilities that possess both a materials and a non-power reactor license), a coordinated approach under both licenses will be taken in establishing appropriate schedules and plans for decommissioning. If a site is not under an active license, the NRC may impose a decommissioning plan by order.

In cases where voluntary cooperation is ineffective in establishing acceptable schedules for completing decommissioning actions, the NRC will establish legally binding requirements and take enforcement action, as necessary, to compel timely and effective cleanup of SDMP sites. Demands for Information may be used to establish licensee commitments to perform major decommissioning activities. Enforcement actions may

¹ A free single copy of draft NUREG/CR-5849 may be requested by writing to the U.S. Nuclear Regulatory Commission, Attn: Distribution and Mail Services Section, room P-130A, Washington, DC 20555. A copy is also available for inspection and/or copying in the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC.

* Copies of NUREGS may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for inspection and/or copying at the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC.

include issuance of orders, including immediately effective orders, to compel actions by licensees or other responsible parties. If necessary, NRC will issue orders requiring payment of funds into a decommissioning escrow account when a licensee or responsible party fails to meet an agreed upon schedule and has not already established an adequate decommissioning fund pursuant to, or consistent with, the decommissioning funding rules (10 CFR 30.35, 40.36, 50.82, 70.25, and 72.30). The amount of the escrow account will be based upon and be consistent with the estimated cost required to complete site cleanup. Other enforcement actions may include escalated payment of funds into the escrow account based on a licensee's or responsible party's failure to comply with the order. Accumulations into that account will be dedicated for use to finance the cleanup of the site. Finally, the NRC will consider issuing civil penalties where (1) the licensee or responsible party fails to comply with an order compelling payment into an escrow account; or (2) the licensee or responsible party fails to comply with a requirement or an order compelling cleanup when there is already sufficient decommissioning funding. Additionally, NRC may seek court injunctions to compel enforcement of these orders.

Dated at Rockville, Maryland, this 10th day of April, 1992.

For the Nuclear Regulatory Commission,
John H. Austin,

Chief, Decommissioning and Regulatory Issues Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.

APPENDIX—EXISTING SDMP SITES

Site name	Location
Advanced Medical Systems	Cleveland, OH.
ALCOA	Cleveland, OH.
AMAX	Wood County, WV.
Aberdeen Proving Ground	Aberdeen, MD.
Army Arsenal	Watertown, MA.
Babcock and Wilcox	Apollo, PA.
Babcock and Wilcox	Parks Township, PA.
BP Chemicals	Lima, OH.
Budd Company	Philadelphia, PA.
Cabot Corporation	Boyetown, PA.
Cabot Corporation	Reading, PA.
Cabot Corporation	Revere, PA.
Chemtron Corporation (Bert Ave.)	Cleveland, OH.
Chemtron Corporation (Harvard Ave.)	Cleveland, OH.
Chevron Corporation	Pawling, New York.
Dow Chemical	Midland, MI and Bay City, MI.
Elkem Metals	Marietta, OH.
Engelhard	Plainville, MA.
Farsteel	Muskogee, OK.
General Services Administration	Watertown, MA.

APPENDIX—EXISTING SDMP SITES—Continued

Site name	Location
Hartley and Hartley	Bay County, MI.
Heritage Minerals	Lakehurst, NJ.
Kerr-McGee (Cimarron)	Crescent, OK.
Kerr-McGee	Oushing, OK.
Magnesium Elektron	Flemington, NJ.
Molycorp	Washington, PA.
Molycorp	York, PA.
NE Ohio Regional Sewer District	Cuyahoga Heights, OH.
Nuclear Metals	Concord, MA.
Pernagrain	Media, PA.
Pesses Chemical	Putaski, PA.
Remington Arms Company	Independence, MO.
RMI Titanium	Ashtabula, OH.
RTL Inc.	Rockaway, NJ.
Safety Light Corporation	Bloomsburg, PA.
Schott Glass	Dureyes, PA.
Shieldalloy	Cambridge, OH.
Shieldalloy	Newfield, NJ.
Texas Instruments	Attleboro, MA.
United Nuclear Corporation	Wood River, Junction, RI.
Victoreen	Cleveland, OH.
Westinghouse (Waltz Mill)	Madison, PA.
West Lake Landfill	St. Louis, MO.
Whittaker Metals	Greenville, PA.
Wyman-Gordon	North Grafton, MA.
3M Company	Kerrick, MN.

[FR Doc. 92-8338 Filed 4-15-92; 8:45 am]

BILLING CODE 7590-01-M

PENNSYLVANIA AVENUE DEVELOPMENT CORPORATION

Public Information Collection Requirements Submitted to OMB for Review

PADC has submitted (on April 1, 1992) the following public information collection requirement to OMB for review and clearance under the Paperwork Reduction Act of 1980, Pub. L. 96-511 (44 U.S.C. ch. 35). Copies of the submission may be obtained by calling the PADC clearance officer listed. Send comments to the OMB reviewer listed and to the PADC clearance officer.

Pennsylvania Avenue Development Corporation

OMB Number: 3208.

Form Number: No form number available; information requested in the Quarterly Workforce Report for the Federal Triangle Development Project in Washington, DC.

Title: Quarterly Workforce Report.

Description: Under the authority of the Pennsylvania Avenue Development Corporation Act, as amended (Pub. L. 92-578), and PADC's Affirmative Action Policy and Procedure, 38 CFR part 906, PADC has requested the developer of the Federal Triangle site in Washington,

DC to obtain, on a voluntary basis, detailed statistics of racial and ethnic composition of the construction workforce on the project.

Respondents: Construction contractors.

Clearance Officer: Talbot J. Nicholas II, Attorney, (202) 724-8055, PADC, suite 1220 North, 1331 Pennsylvania Avenue, NW., Washington, DC 20004.

OMB Reviewer: Elizabeth Harker, (202) 395-3750, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, 725 17th St., NW., Washington, DC 20503.

Dated: April 10, 1992.

M.J. Brodie,

Executive Director.

[FR Doc. 92-8793 Filed 4-15-92; 8:45 am]

BILLING CODE 7530-01-B

SECURITIES AND EXCHANGE COMMISSION

Forms Under Review by Office of Management and Budget

Agency Clearance Officer—Kenneth Fogash (202) 272-2142.

Upon written request copy available from: Securities and Exchange Commission, Office of Filings, Information and Consumer Services, Washington, DC 20549.

Extension

Rule 206(3)-2—File No. 270-216
Rules 8b-1 through 8b-32—File No. 270-135

Notice is hereby given pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*), that the Securities and Exchange Commission (Commission) has submitted a request for extension for Rule 206(3)-2 under the Investment Advisers Act of 1940 (17 CFR 275.206(3)-2) and Rules 8b-1 through 8b-32 (17 CFR 270.8b-1 to 270.8b-32), a family of rules under section 8(b) of the Investment Company Act of 1940.

Rule 206(3)-2 permits registered investment advisers to comply with section 206(3) of the Investment Advisers Act of 1940 by obtaining a blanket consent from a client to enter into agency cross transactions, provided certain disclosure is made to the client. Approximately 100 respondents utilize the rule annually, necessitating about 122 responses each year, for a total of 12,200 responses. Each response requires about .5 hours, for a total of 6,100 hours.

Rules 8b-1 through 8b-32 provides standard instructions to guide persons

QUESTION 4

ATTACHMENTS

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 20, 30, 40, 50, 51, 70 and 72

RIN 3150-AD65

Radiological Criteria for License Termination

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations regarding decommissioning of licensed facilities to provide specific radiological criteria for the decommissioning of lands and structures. The final rule is intended to provide a clear and consistent regulatory basis for determining the extent to which lands and structures can be considered to be decommissioned. The final rule will result in more efficient and consistent licensing actions related to the numerous and complex site decommissioning activities anticipated in the future.

EFFECTIVE DATE: This regulation becomes effective on August 20, 1997. However, licensees may defer rule implementation until August 20, 1998.

FOR FURTHER INFORMATION CONTACT: Cheryl A. Trottier, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: (301) 415-6232, e-mail CAT1@nrc.gov; Frank Cardile, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: (301) 415-6185; e-mail FPC@nrc.gov; Dr. Carl Feldman, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: (301) 415-6194, e-mail CXF@nrc.gov; or Christine M. Daily, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: (301) 415-6026, e-mail CXD@nrc.gov.

SUPPLEMENTARY INFORMATION:**I. Introduction****II. Background****III. Overview of Public Comments****IV. Summary of Public Comments, Responses to Comments, and Changes From Proposed Rule**

- A. Overall license termination approach and criteria for unrestricted use (proposed rule §§ 20.1402 and 20.1404).**
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 2. Criteria for unrestricted use, including total effective dose equivalent, as low as reasonably achievable, and decommissioning objective.
 3. General comments on the dose criterion.

4. Average member of the critical group.
- B. Criteria for restricted use (proposed rule §§ 20.1402(d) and 20.1405).

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1. Codifying provisions for certain facilities that the proposed rule suggested exempting.

2. Exclusion of uranium/thorium mills proposed in § 20.1401(a).

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D. Groundwater protection criteria (proposed rule § 20.1403).

1. Proposed rule content.
2. Use of Environmental Protection Agency drinking water standards in NRC's regulation.

E. Public participation (proposed rule §§ 20.1406 and 20.1407).

1. Proposed rule content.
2. General requirements on notification and solicitation of comments (proposed rule § 20.1406(a)).

3. Additional requirements on public participation (including those for restricted use, for alternate criteria, and for use of site-specific advisory boards (proposed rule § 20.1406(b)).
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1. State and NRC compatibility.
2. Grandfathering sites with previously approved plans (proposed rule § 20.1401(b)).
3. Finality of decommissioning and future site reopening (proposed rule § 20.1401(c)).
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2. Need for regulatory guidance.
3. Need for flexibility.
4. Consistency with NRC's timeliness rule.
5. Comments from power reactor decommissioning rulemaking.
6. Mixed waste, hazardous waste, and naturally occurring and accelerator-produced radioactive material.
7. Recycle.
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V. Agreement State Compatibility**VI. Relationship Between the Generic Environmental Impact Statement and Site-Specific Decommissioning Actions****VII. Final Generic Environmental Impact Statement: Availability****VIII. Paperwork Reduction Act Statement****IX. Regulatory Analysis****X. Regulatory Flexibility Certification****XI. Backfit Analysis****XII. Small Business Regulatory Enforcement Fairness Act****I. Introduction**

The Nuclear Regulatory Commission is amending its regulations regarding decommissioning of licensed facilities to provide specific radiological criteria for the decommissioning of lands and structures. This action is necessary to ensure that decommissioning will be carried out without undue impact on public health and safety and the environment.

These criteria apply to the decommissioning of licensed facilities and facilities subject to the NRC's jurisdiction. The Commission will apply these criteria in determining the adequacy of remediation of residual radioactivity resulting from the possession or use of source, byproduct, and special nuclear material. The criteria apply to decommissioning of nuclear facilities that operate through their normal lifetime and to those that may be shut down prematurely.

The intent of this rulemaking is to provide a clear and consistent regulatory basis for determining the extent to which lands and structures must be remediated before decommissioning of a site can be considered complete and the license terminated. The Commission believes that inclusion of criteria in the regulations will result in more efficient and consistent licensing actions related to the numerous and frequently complex site remediation activities anticipated in the future. The Commission has reassessed residual contamination levels contained in existing guidance based on changes in basic radiation protection standards, improvements in remediation and radiation detection technologies, decommissioning experience, public comments received on rule drafts and public comments presented at workshops held as part of the rulemaking effort and public comments received on the proposed rule.

The NRC has previously applied site release criteria for decommissioning on a site-specific basis using existing guidance. Although site-specific situations will still occur, the Commission believes that codifying radiological criteria for decommissioning in the regulations will allow the NRC to more effectively carry out its function of protecting public health and the environment at decommissioned sites by providing for more efficient use of NRC and licensee resources, consistent application across all types of licenses, and a predictable basis for decommissioning planning.

II. Background

On August 22, 1994 (59 FR 43200), the NRC published a proposed rule for comment in the *Federal Register* to amend 10 CFR part 20 of its regulations "Standards for Protection Against Radiation" to include radiological criteria for license termination. The public comment period closed on January 20, 1995. Comments received on the proposed rule were summarized in NUREG/CR-6353. A workshop was held on December 6-8, 1994, to solicit additional comments related to site-specific advisory boards as described in the proposed rule. Comments received during that workshop were summarized in NUREG/CR 6307¹. A workshop was also held on September 29, 1995, to specifically discuss methods for implementing the rule. Additionally, communication with the public on the proposed rule was maintained through the Electronic Bulletin Board system.

III. Overview of Public Comments

Over 100 organizations and individuals submitted comments on the proposed rule. The commenters represented a variety of interests. Comments were received from Federal and State agencies, electric utility licensees, material and fuel cycle licensees, citizen and environmental groups, industry groups, native American organizations, and individuals. The commenters offered from 1 to over 50 specific comments and represented a diversity of views. The commenters addressed a wide range of issues concerning all parts of the rule. The reaction to the rule in general and to specific provisions of the rule was varied. Viewpoints were expressed both in support of and in disagreement with nearly every provision of the rule.

IV. Summary of Public Comments, Responses to Comments, and Changes From Proposed Rule

The following sections describe the principal public comments received on the proposed rule (organized according to the major subject areas and sections of the proposed rule), present NRC responses to those comments, and explain principal changes to the proposed rule (where they occur) in response to those comments. The comments are organized according to

the following major subject areas and sections of the proposed rule and are presented in the following subsections:

(a) Overall license termination approach (unrestricted use, restricted use, exemptions, and alternate criteria), and specific issues on criteria for unrestricted use (including total effective dose equivalent (TEDE), as low as is reasonably achievable (ALARA), objective of decommissioning, average member of critical group);

(b) Specific issues on criteria for restricted use (bases for using restricted use, reliance on institutional controls, 1 mSv (100 mrem) TEDE cap, engineered barriers, financial assurance);

(c) Specific issues on exemptions and alternate criteria for license termination (facilities with large volumes of low level wastes, uranium and thorium mills, exemptions);

(d) Groundwater protection criteria (use of Environmental Protection Agency (EPA) drinking water standards of 40 CFR 141 in NRC's regulation);

(e) Public participation (means of notification, site-specific advisory boards (SSABs));

(f) Other procedural and technical issues (state compatibility, grandfathering, finality, minimization of contamination, readily removable residual radioactivity, radon, calculation of TEDE over 1000 years to demonstrate compliance with dose standard); and

(g) Other comments (definitions, regulatory guidance; timeliness rule; wastes; recycle; rulemaking process).

The comments received from both public comment and the workshops have been factored into the Commission's decisionmaking on the final rule and into the technical basis for guidance documents implementing the final rule. The description of changes to the final rule made as a result of the comments in each of the major subject areas follows each comment/response section.

A. Overall License Termination Approach and Criteria for Unrestricted Use (Proposed Rule §§ 20.1402 and 20.1404)

A.1 Proposed Rule Content

The proposed rule (§ 20.1402(d)) presented an overall approach for license termination involving either of two basic methods, i.e., unrestricted use or restricted use of sites after license termination. The proposed rule indicated that unrestricted use was generally preferred, but that restricted use was also permitted because it was recognized that there may be cases where achieving unrestricted use would not be reasonable.

Specific requirements for use of each of these two basic methods were presented in the proposed rule. The preamble to the proposed rule also indicated that there may be certain licensees that would seek exemptions from the decommissioning criteria of the proposed rule, although it did not codify this exemption path.

Section IV.A.2 reviews in detail the development of unrestricted use criteria; and, in doing so it also indicates, in general, how the overall approach for license termination has been reexamined to consider public comments. Specific issues and requirements regarding other areas, specifically restricted use, exemptions, and alternate criteria, are discussed in more detail in Sections IV.B and IV.C of this preamble.

Section 20.1402(a) of the proposed rule indicated that the objective of decommissioning is to reduce residual radioactivity in structures, soils, groundwater, and other media at the site so that the concentration of each radionuclide that could contribute to residual radioactivity is indistinguishable from the background radiation concentration for that nuclide. Section 20.1402(a) further noted that, as a practical matter, it would be extremely difficult to demonstrate that such an objective had been met and that a site release limit for unrestricted use was being proposed.

Section 20.1404 of the proposed rule indicated that a site would be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in TEDE to an average member of the critical group of 0.15 mSv/y (15 mrem/y) and has been reduced to levels that are ALARA.

Section 20.1402(d) of the proposed rule indicated that release for unrestricted use of a facility is the preferred approach but that the alternative of release for restricted use would also be allowed if its use were justified (see Section IV.B).

A.2 Criteria for Unrestricted Use, Including TEDE, ALARA, and Decommissioning Objective

A.2.1 Comments. Some commenters (including EPA) agreed that 0.15 mSv/y (15 mrem/y) is an acceptable criterion because it is attainable, provides a margin of safety, and isn't unjustifiably costly. The Department of Energy (DOE) agreed that 0.15 mSv/y (15 mrem/y) could be acceptable if reasonable scenarios were considered although it preferred 0.25 mSv or 0.3 mSv/y (25 or 30 mrem/y) with ALARA. However, most commenters did not agree with the

¹Copies of NUREGS may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for inspection and/or copying at the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC.

0.15 mSv/y (15 mrem/y) criterion. Some opposed 0.15 mSv/y (15 mrem/y) as being too high and preferred alternatives that reduced the contamination level to lower levels, including preexisting background. The majority of commenters opposed 0.15 mSv/y (15 mrem/y) as being too low and gave alternatives that generally included increasing the limit to 0.25, 0.3, 0.5, or 1 mSv/y (25, 30, 50, or 100 mrem/y) with further reduction based on ALARA. The categories of reasons given by commenters opposing 0.15 mSv/y (15 mrem/y) as either too high or too low included potential health impacts or the lack of demonstrable health effects at these levels, consistency with national and international standards, effect of multiple sources, consistency with other NRC/EPA regulations, analysis of costs vs. benefits, ability to measure, effect on disposal capacity, effect on sites with naturally occurring radioactive material (NORM), and responsibility for cleanup of sites.

The proposed rule indicated that licensees would be expected to demonstrate that doses are ALARA below the proposed 0.15 mSv/y (15 mrem/y) dose criterion. Some commenters endorsed ALARA analyses in specific cases to determine if doses should be reduced below 0.15 mSv/y (15 mrem/y) and recommended that a value of 0.03 (or less) mSv/y (3 (or less) mrem/y) be the ALARA objective. Some of these commenters also requested that the NRC explicitly mandate that technical and economic analyses be performed. Other commenters indicated that ALARA principles and analyses should not be required to determine if cleanup should be performed to reduce doses below 0.15 mSv/y (15 mrem/y) because the costs are large in comparison with the small reduction in risk. Several commenters indicated, alternatively, that ALARA should be allowed above 0.15 mSv/y (15 mrem/y) and that the rule should allow ALARA analyses to be used to permit a licensee to release its site at a value higher than 0.15 mSv/y (15 mrem/y) (up to 1 mSv/y (100 mrem/y)) if ALARA calculations support this alternative. Another commenter disagreed and recommended that ALARA analyses be applied only to demonstrate if additional cleanup is required below 0.15 mSv/y (15 mrem/y). Some commenters stated that guidance should be provided describing how ALARA should be achieved, how doses would be quantified, how models and parameters would be selected, what \$/person-rem value would be used, how nonradiological risks would be considered, how net risks would be

evaluated, how flexibility would be incorporated, what degree of simplification of complex models would be incorporated, and what final criteria would be used.

The proposed rule also contained, in § 20.1402(a), a decommissioning objective of reducing residual radioactivity to levels that are indistinguishable from background. Section 20.1402(a) further noted that such an objective may be difficult to meet as a practical matter. Many commenters opposed establishment of the decommissioning objective because it is arbitrary, serves no purpose for industrial sites, is costly and a waste of resources, is unlikely to be achieved, and cannot be measured. Some commenters supported establishing the proposed objective because it is reasonable from a health standpoint. Others suggested alternative objectives such as ALARA or using a dose that is indistinguishable from the variation in background.

A.2.2 Response. The preamble to the proposed rule described three broad considerations as providing the overall rationale for the proposed rule's approach to license termination. The first two considerations were related to health and safety, i.e., level of risk and need for a constraint or margin of safety below the 1 mSv/y (100 mrem/y) public dose limit of 10 CFR part 20 to account for the potential effect of multiple sources of radiation exposure. The third consideration was related to practicality and reasonableness of costs. The preamble to the proposed rule noted that the risk implied by use of the proposed 0.15 mSv/y (15 mrem/y) dose is comparable to other standards and practices of EPA and NRC for areas of unrestricted access in the vicinity of facilities, and that the proposed 0.15 mSv/y (15 mrem/y) standard provides a substantial margin of safety (constraint) for a single source below the 1 mSv/y (100 mrem/y) public dose limit in 10 CFR part 20 to account for the potential exposure of a member of the public to other sources. This "constraint" approach was noted as being consistent with generic constraint recommendations made by national and international scientific bodies such as the International Commission on Radiation Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP). Requirements related to ALARA, the decommissioning objective, and restricted use were included in the rule based on the NRC staff analysis in the Draft Generic Environmental Impact Statement (GEIS) (NUREG-1496) that showed that the costs of reducing

exposures to, or in some cases below, a 0.15 mSv/y (15 mrem/y) criterion would not generally be unduly burdensome for most licensees, although in those cases where the costs would present an unreasonable burden, release of the site with restrictions placed on its use would provide an alternative means for achieving the same level of protection. Achieving levels of less than 0.15 mSv/y (15 mrem/y), including achieving the decommissioning objective, was generally seen as not cost-effective because increasingly larger volumes of concrete and soil would have to be removed at a greater net risk due to deaths from transportation accidents and because more difficult survey measurements would have to be made with little net benefit in dose reduction.

The NRC considered alternatives suggested in public comments and reexamined the rationale of the proposed rule. A summary of that reexamination, along with a description of particular comments on the rationale, is contained in the following subsections.

A.2.2.1 Level of risk and consistency with other EPA/NRC standards. Some commenters criticized the health risk associated with a 0.15 mSv/y (15 mrem/y) limit as too high thereby providing inadequate public protection. In particular, they objected to the NRC's reliance on ICRP and NCRP because recent research (including findings in the aftermath of the 1986 Chernobyl accident and in the 1990 report on Biological Effects of Ionizing Radiation (the BEIR V report)) showed risks to be higher than ICRP or NCRP indicated, or suggested other sources for limits, including a British standard and a National Academy of Sciences statement on radiation safety. Commenters also indicated that 0.15 mSv/y (15 mrem/y) was too high because it is higher than other NRC or EPA standards such as those for operating reactors.

The majority of commenters criticized 0.15 mSv/y (15 mrem/y) as too low for reasons which included that it is far below the level at which health effects have been observed in studies, that the risks associated with other EPA and NRC standards (including 10 CFR parts 20, 60 and 61, 40 CFR parts 190 and 191, and EPA's radon action level) are higher, and that it is based on the linear non-threshold theory which is not appropriate for setting such standards. These commenters also criticized the relationship of the risks implied by this rule to those implied by standards for chemical hazards.

In general, many commenters stated that the NRC should work closely with

the EPA in developing its decommissioning regulations to assure that there are no conflicting or duplicate requirements and that the acceptable risk levels and associated requirements developed by the two agencies are compatible or the same. DOE noted that a nonuniform approach could significantly impact the DOE environmental restoration program and that NRC/EPA regulations will have an impact beyond NRC licensees. There was some commenter disagreement as to whether EPA or NRC should take the lead in issuance of exposure standards. In its comments on the NRC's proposed rulemaking, the EPA supported the 0.15 mSv/y (15 mrem/y) limit.

In response, the NRC has considered recent information and recommendations in ICRP Publication 60 and NCRP No. 116. These documents are developed by recognized experts in the fields of radiation protection and health effects and contain reviews of current significant research in radiation health effects. The NCRP is a nonprofit corporation chartered by the U.S. Congress to develop and disseminate information and recommendations about protection against radiation and to cooperate with the ICRP and other national and international organizations with regard to these recommendations. The ICRP has continued to update and revise its estimates of health effects of radiation since its inception in 1928. In its deliberations, ICRP maintains relationships with United Nations health and labor organizations.

In addition, the NRC evaluated the proposed Federal Radiation Protection Guidance for Exposure of the General Public (FRG) as published for comment on December 23, 1994 (59 FR 66414), in which the EPA, under its charter, made recommendations to the President of the United States concerning recommended practices for protection of the public and workers from exposure to radiation.

Recent recommendations contained in ICRP 60, NCRP No. 116, and the proposed FRG are essentially similar. Use of these sources for formulating basic radiation protection standards is consistent with NRC's general approach regarding risk decisions as is noted in the preamble to issuance of 10 CFR part 20 on May 21, 1991 (56 FR 23360). The NRC considers it reasonable and appropriate to use the findings of these bodies in developing criteria for license termination to apply to its licensees.

The ICRP and NCRP and EPA have reviewed current, significant studies made by other health research bodies, such as the National Academy of Sciences-National Research Council's Committee on the Biological Effects of

Ionizing Radiation (BEIR) and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), and have developed recommendations regarding limitations on exposure to radiation. In particular, the BEIR Committee conducted major reviews of the scientific data on health risks of low levels of ionizing radiation in 1972, 1980, 1988, and 1990, and similar reviews were published by UNSCEAR in 1977, 1982, 1986, and 1988. As noted in the proposed FRG, these studies have provided more certainty about radiation risks at high doses and dose rates. Using that information and assumptions of linearity with low dose/dose rate reduction factors, BEIR V contains updated risk factors.

Concerning recent information from the Chernobyl accident noted by a commenter, there are still ongoing studies of the effects of the accident. A report published by the principal international organization studying health effects from the accident, the Organization for Economic Co-operation and Development (OECD), entitled "Chernobyl: Ten Years On; Radiological and Health Impact," summarized the findings regarding health impacts by noting that scientific and medical observation of the population has not revealed any increase in cancers or other radiation induced disease that could be attributable to the Chernobyl accident. The only area where an increase was noted was for thyroid cancer. However, these effects most likely resulted from the release of short-lived radioiodine from the accident and the affinity of the thyroid gland for iodine. Similar effects would not be applicable in decommissioning because radioactive iodine is not expected to be a significant contaminant. The report further notes that, while studies continue on long term effects, it is unlikely that the exposure to contaminants in the environment will lead to discernible radiation effects in the general population. Thus, this research does not appear to indicate that the findings of the ICRP and NCRP will be shown to underestimate risks.

Specifically with regard to the risk level, some of the commenters stated that the risk of fatal cancers from 0.15 mSv/y (15 mrem/y) is too high in comparison with risk goals in the range 1×10^{-4} to 1×10^{-6} used by EPA in Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulations. Other commenters disagreed and stated that precedents from earlier NRC rulemakings support a level of risk significantly greater than that and more

appropriately in a range of 1×10^{-2} to 1×10^{-3} (e.g., the level of lifetime risk corresponding to the 1 mSv/y (100 mrem/y) public dose limit of 10 CFR Part 20, that is NRC's basic standard for public safety, is about 1.5×10^{-3}). Several of these commenters also criticized 0.15 mSv/y (15 mrem/y) as too low because the linear non-threshold model overestimates the risk and should not be used in the analysis. In response to comments on the risk level, constant exposure over a 30-year time period to dose levels of about 0.15–0.25 mSv/y (15–25 mrem/y), results in an estimated lifetime risk of fatal cancer of about 2.3×10^{-4} to 3.8×10^{-4} which is at the upper end of the acceptable risk range suggested by EPA in their comments on NRC's proposed rule but lower than that in NRC's public dose limits.² These estimates are based on use of the linear non-threshold model for calculating risk estimates. In response to specific comments on use of the linear non-threshold model in estimating risk, use of the linear non-threshold model for estimating incremental health effects per radiation dose incurred is considered a reasonable assumption for regulatory purposes by international and national scientific bodies such as ICRP and NCRP. The principal international and national radiological protection criteria, including the NRC's, are based on this assumption as a measure of conservatism. NRC's policy regarding use of the linear non-threshold model was stated in the preamble to the issuance of 10 CFR part 20 (56 FR 23360; May 21, 1991) noting that the assumptions regarding a linear non-threshold dose effect model are appropriate for formulating radiation protection standards. Although this matter continues to be the subject of further consideration at this time, there is not sufficient evidence to convince the NRC to alter its policy as part of this rulemaking.

To provide some perspective on the conservatism of considering dose criteria in the range of 0.15–0.25 mSv/

² The risks are estimated assuming a risk coefficient of 5×10^{-4} per rem and a 30-year lifetime exposure that is used by EPA in estimating risk from contaminated sites based on the assumption that it is unlikely that an individual will continue to live or work in the same area for more than 30 years. Such an estimate is seen as providing a conservative estimate of potential risk because land use patterns are generally such that persons living at or near a site will not continuously receive the limiting dose, and, for most of the facilities covered by this rule, the TEDE is controlled by relatively short-lived nuclides of half-lives of 30 years or less for which the effect of radioactive decay will, over time, reduce the risk significantly (e.g., at reactors where much of the contamination is from Co-60 with a half-life of 5.3 years).

y (15–25 mrem/y), it should be noted that, as described in the Final GEIS (NUREG–1496) prepared in support of this rulemaking, these levels are small when compared to the average level of natural background radiation in the United States (about 3 mSv/y (300 mrem/y)) and the variation of this natural background across the United States. In addition, although as noted above NRC is not altering its policy regarding use of the linear non-threshold model as part of this rulemaking, there is uncertainty associated with estimating risks at such dose levels. This uncertainty occurs because evidence of radiation dose health effects has only been observed at high dose levels (200 mSv (20,000 mrem) and above) and significant uncertainty in risk estimation is introduced when extrapolating to the very low dose levels being considered in this rulemaking. The health effects resulting from even a dose of 1 mSv (100 mrem) are uncertain. The BEIR Committee stated in its 1990 report (BEIR V) that “Studies of populations chronically exposed to low-level radiation, such as those residing in regions of elevated natural background radiation, have not shown consistent or conclusive evidence of an associated increase in the risk of cancer.”

The risk associated with a dose criterion in the range of about 0.15–0.25 mSv/y (15–25 mrem/y) is generally consistent with the risk levels permitted in the performance objectives for low-level waste facilities in 10 CFR 61.41, and for fuel cycle facilities and for spent fuel and high level waste in EPA’s 40 CFR 190 and 191. In addition, doses in the range of 0.15–0.25 mSv/y (15–25 mrem/y) are comparable to current NRC practices for decommissioning of reactors and certain materials facilities and fuel cycle facilities. Specifically, reactors have been decommissioned in accordance with Regulatory Guide 1.86 and with an NRC license termination letter to Stanford University (April 21, 1982, Docket No. 50–141). Materials facilities have been released in accordance with the levels for external radiation for beta/gamma exposure in NRC’s Policy and Guidance Directive FC 83–23. In addition, a dose criterion in the range of 0.15–0.25 mSv/y (15–25 mrem/y) is generally at the low end of the range of values estimated for Option 1 of the 1981 Branch Technical Position (BTP) for sites with uranium and thorium and used for Ra-226 in 10 CFR 40, Appendix A, for uranium mill contamination.

A.2.2.2 Effect of multiple sources and margin of safety below 1 mSv/y (100 mrem/y). Some commenters

suggested that 0.15 mSv/y (15 mrem/y) is too low and indicated that the NRC limit was inconsistent with ICRP and NCRP especially with regard to considerations of multiple sources of exposure, and that it would be unusual for an individual to be exposed to multiple sources approaching the 1 mSv/y (100 mrem/y) limit. These commenters suggested that 25–30 percent of 1 mSv (100 mrem) is an adequate margin to account for multiple sources.

In response, and by way of background, it is noted that the NCRP in its publication No. 116 (Chapter 15) recommends that, for continuous exposure, the effective dose to members of the public not exceed 1 mSv/y (100 mrem/y) from all man-made sources, other than medical and not including natural background sources. Similarly, ICRP, in Table 6 of ICRP Publication 60, recommends a limit of 1 mSv/y (100 mrem/y) as the dose limit for the public, and recommendation No. 3 of the draft EPA Federal Radiation Protection Guidance (FRG) indicates that the combined radiation doses incurred in any single year from all sources of exposure (excluding medical and natural background) should not normally exceed 1 mSv (100 mrem) and that continued or chronic exposure of an individual over substantial portions of a lifetime at or near 1 mSv/y (100 mrem/y) should be avoided. Consistent with these bodies, the NRC issued 10 CFR part 20 (56 FR 23360) in 1991 that established a public dose limit of 1 mSv/y (100 mrem/y) in 10 CFR 20.1301.

These national and international bodies also note and agree that, although the limit for the public dose should be 1 mSv/y (100 mrem/y) from all man-made sources combined, it would seem appropriate that the amount that a person would receive from a single source should be further reduced to be a fraction of the limit to account for the possibility that an individual may be exposed to more than one source of man-made radioactivity, thus limiting the potential that an individual would receive a dose at the public dose limit. Recommendations from these bodies, as well as from the NRC’s Advisory Committee on Nuclear Waste (ACNW), regarding what the fraction from a source should be are:

(a) NCRP No. 116, Chapter 15, notes that no single source or set of sources under one’s control should result in an individual being exposed to more than 0.25 mSv/y (25 mrem/y). This fraction was presented as a simple alternative to having a site operator (where a site could expose individuals to levels greater than 0.25 mSv/y (25 mrem/y))

investigate all man-made exposures that an individual at the site would be exposed to so as to demonstrate that the total dose does not exceed 1 mSv/y (100 mrem/y). The clear implication in this simple alternative is that, if individual sources are constrained to 0.25 mSv/y (25 mrem/y), NCRP believes it likely, given the low potential for multiple exposures, that the public dose limits will be met. Further reductions considering ALARA would still be considered by NCRP No. 116.

(b) ICRP 60, Section 5.5.1, in discussing the principles of constraints and limits, notes that it is appropriate to select dose constraints applied to each source to allow for contributions from other sources so as to maintain doses below the 1 mSv/y (100 mrem/y) limit. ICRP 60 does not contain numerical guidance on dose constraints for particular practices, but notes that cumulative exposures to individuals from existing sources near 1 mSv/y (100 mrem/y) are rarely a problem primarily because of the widespread use of source-related dose constraints.

Further explanation of the fundamental concepts of ICRP 60 are contained in the paper, “The ICRP Principles of Radiological Protection and Their Application to Setting Limits and Constraints for the Public from Radiation Sources,” by Professor Roger Clarke, Chairman of the ICRP (January 12, 1995; a copy is available in the file for this rulemaking in the NRC Public Document Room, 2120 L Street NW, (Lower Level), Washington, DC). The paper notes that the constraint approach derives from the optimization principle of radiation protection in which, for any source, individual doses should be ALARA and also be constrained by restrictions on doses to individuals (i.e., dose constraints). The paper further notes that a constraint is an individual related criterion applied to a single source to ensure that the overall dose limits are not exceeded, and that a dose constraint would therefore be set at a fraction of the dose limit as a boundary on the optimization of that source. Based on the principles presented in the paper, the constraint recommended in the paper for a decommissioned site is 0.3 mSv/y (30 mrem/y) and that further optimization through the ALARA principle is appropriate. As is the case for NCRP No. 116, the implication of the paper and ICRP 60 is that the constraint level is a boundary on the dose from this source and is sufficient to assure that members of the public are not exposed to levels in excess of the public dose limit. The rationale for this is expressed in Section 5.5.1 of ICRP 60 where it is noted that the critical group

is not normally exposed to the constraint level from more than one source although it may be exposed to some dose level less than the constraint level from more than one source.

(c) The proposed FRG in recommendation No. 4 indicates that individual sources should have "authorized limits" set at a fraction of the 1 mSv/y (100 mrem/y) limit for all sources combined. The draft FRG notes that the basis for this recommendation is the various categories of activities using radiation that can lead to exposure to members of the public, and also notes the need for broad assumptions about future activities involving radiation use.

The draft FRG does not recommend a level for any one source although it does note that setting such a fraction will necessarily be a broad judgment based on a general observation of the characteristics of existing activities, projections for continuing those activities in the future, and the potential for other uses in the future that can be identified now. Thus, the draft FRG notes that, in the case of authorized limits for broad categories of sources, the judgments will often necessarily be broad and may lead to somewhat higher values, with further implementation of the ALARA process left to management of individual sources within a category. The draft FRG does not indicate how this judgment is to be made although it cites authorized standards for certain sources that currently exist, including 40 CFR part 190 for the nuclear fuel cycle, Appendix I to 10 CFR part 50 for power reactors, 10 CFR part 61, and 40 CFR part 141. All of these set authorized fractions at 25 percent or less of the 1 mSv/y (100 mrem/y) public dose limit. NRC, in its comments on EPA's draft FRG, questioned what was the appropriate fraction of the public dose limit in 10 CFR part 20 that should be used in setting constraints that would become "authorized" limits.

(d) In its review of how the principles and recommendations of the ICRP, NCRP, and FRG are relevant to the proposed NRC rule, NRC's Advisory Committee on Nuclear Waste (ACNW) noted that 0.15 mSv/y (15 mrem/y) represented an unnecessarily conservative fraction of the 1 mSv/y (100 mrem/y) annual limit. The ACNW agreed that the need to partition the annual recommended dose limit among several sources to which a person is likely to be exposed appears justifiable and noted that no explicit guidance from the various national and international bodies on this subject exists. ACNW stated that a constraint of 25 percent or 30 percent of the 1 mSv/

y (100 mrem/y) limit appears more justified and appropriate based on the likelihood that no more than 3 or 4 separate regulated sources will affect the critical group at any instance. ACNW further noted that the selection of 0.15 mSv/y (15 mrem/y), that represents about $\frac{1}{4}$ of the annual limit, assumes that a person will encounter a simultaneous dose from seven different regulated sources and that this appears to them to be unjustified, particularly because the ALARA principle accompanies all such NRC regulatory actions.

The recommendations of the previously cited organizations can be summarized as suggesting that a constraint value should be set as part of the process of optimizing the dose from a particular source and that this constraint value should be set as a boundary value below which further optimization or ALARA principles should be employed. The recommendations also appear to suggest that setting a source constraint of 25-33 percent of the annual dose limit of 1 mSv/y (100 mrem/y) is appropriate and adequate to ensure that the dose limit is met, and do not tend to lend support to 0.15 mSv/y (15 mrem/y) as the appropriate fraction to which to constrain the dose from an individual source because it is not likely that a critical group will be exposed to as many as seven sources. Thus, the recommendations appear to indicate that the constraint value should be set using a more reasonable approach.

In discussing the bases for the 0.15 mSv/y (15 mrem/y) dose criterion in the proposed rule, the Commission noted in the preamble (at 59 FR 43219; August 22, 1994) that 0.15 mSv/y (15 mrem/y) would provide a "substantial" margin of safety and be appropriate for decommissioned facilities. As part of its review of the public comments, the Commission considered the recommendations of the standards-setting bodies previously cited. Further, in making a judgment on the appropriate value of the fraction, the Commission also considered principles of optimization, numbers and types of sources, potential for exposure of critical groups to more than one source at the constraint value, and assumptions regarding the manner in which a critical group would be exposed. NRC reviewed the assumptions of the Draft and Final GEIS regarding exposure pathways and also NUREG/CR-5512 upon which the Draft and Final GEIS are based. NUREG/CR-5512 provides an analysis of exposure pathways for critical groups at decommissioned facilities. The principal limiting scenarios include: (a)

Full time residence and farming at a decommissioned site, (b) exposure while working in a decommissioned building, and (c) renovation of a newly decommissioned building. These principal limiting exposure scenarios are intended to overestimate dose and also tend to be somewhat mutually exclusive; i.e., a person living near a decommissioned nuclear facility would only receive a dose near the constraint level if his living pattern includes full-time residency and farming at the site. This living pattern would make it difficult for the member of this critical group to also be a member of the critical group from other licensed or decommissioned sources. Conversely, a person having less residency than a full time farmer (e.g., apartment dweller, homeowner who works away from the site) might receive doses from other sources but would receive less than the constraint value from the decommissioned site because the exposure time and the number of pathways would be reduced. Thus, given the assumptions regarding living patterns made in evaluating compliance with the constraint level, it is difficult to envision an individual receiving levels approaching constraint levels from more than one licensed or decommissioned source. It is also likely that individuals at a decommissioned site will actually be exposed to doses substantially below the constraint level because of ALARA considerations and because of the nature of the cleanup process itself, i.e., the process of scabbling of concrete removes a layer of concrete which likely contains a large fraction of the remaining radioactivity, and the process of soil excavation is a gross removal process that is also likely to remove large fractions of the radioactivity. For example, the Final GEIS indicates that, for the reference cases analyzed, removal of a layer of concrete by scabbling will result in doses at levels from 2 to more than 10 times lower than a constraint value. In addition to consideration of decommissioned sources, it is also difficult to envision that an individual could come in contact with more than a few other sources as part of normal living patterns. For example, the NCRP in NCRP No. 93, "Ionizing Radiation Exposure of the Population of the United States," September 1987, reviewed likely radiation exposures to the public from consumer products, air emissions, and fuel cycle facilities (including nuclear power plants) and found that, in general, exposure to the public is a small fraction of 1 mSv/y (a few mrem/y). Recent experience on

nuclear power plant emissions and dose commitments (NUREG/CR-2850) tends to support the conclusions of NCRP No. 93 about power plant exposures.

NRC's generic evaluation of uses of and doses from various sources, including decommissioned sources, supplemented by the recommendations of the standards setting bodies and advisory committee noted above, suggests that the substantial added margin of safety provided by the 0.15 mSv/y (15 mrem/y) value may be too restrictive for its intended purpose of constraining doses from this category of sources in establishing an appropriate boundary constraint. Rather, the evaluation leads NRC to conclude that 25 percent of the public dose limit is a sufficient and ample fraction to use as the limitation for decommissioned sources.

Thus, the Commission concludes that a generic dose constraint or limitation for decommissioning sources of 0.25 mSv/y (25 mrem/y) for unrestricted release of a site is reasonable from the standpoint of providing a sufficient and ample margin of safety for protection of public health and safety. It is recognized that this conclusion reflects a judgment regarding the likelihood of individuals being exposed to multiple sources with cumulative doses approaching 1 mSv/y (100 mrem/y) rather than an analysis based on probability distributions for such exposures. However, considering the kinds of occupancy time typically assumed for the average member of the critical group at a site, it is highly unlikely that individuals could realistically be expected to experience exposures to other sources with a cumulative effect approaching 1 mSv/y (100 mrem/y).

A.2.2.3 Cost and practicality of standard. Comments received on cost and practicality were analyzed to determine whether such an analysis can provide additional information related to the criteria of this rule. This analysis includes how, and to what level, ALARA efforts should be made, how the proposed decommissioning objective of returning a site to background should be applied, and what provisions should there be (e.g., restricted use) for sites where it is unreasonable or unwise to attain the unrestricted dose criterion.

Some commenters criticized the proposed rule for including considerations of cost-effectiveness, objecting to using cost in decisionmaking. Other commenters criticized the rule because, although they favored use of cost-benefit analyses in decisionmaking, they believed that the cost-benefit analysis in the draft GEIS and draft Regulatory Analysis (RA)

was inadequate to justify a 0.15 mSv/y (15 mrem/y) dose criterion because it used an improper approach (i.e., combining the building and soil analysis). They also believed that it underestimated the amount of contamination at reference facilities, as well as the costs of remediation and final site closeout surveys.

The Commission considered the concerns of commenters who criticized inclusion of cost as a consideration in decisionmaking. NRC methods and policy regarding cost considerations are stated in NUREG/BR-0058, Rev. 2, and call for preparation of an appropriate regulatory analysis in support of regulatory decisions. NUREG/BR-0058 does note that costs cannot be considered for regulatory actions necessary to ensure adequate protection of the health and safety of the public; however, it further notes that costs can be a factor in those cases where there may be more than one way to reach a level of adequate protection. Thus, the analysis in the GEIS and RA was prepared in support of the rulemaking to provide additional information to decisionmakers about the rule criteria being considered.

The Commission has also considered the concerns of those commenters that criticized the analysis of costs and risks as incomplete and inadequate and reviewed information submitted in support of those comments. In general, some of the major comments suggested, and provided data on, the following:

(a) Additional data from actual decommissionings should be included that would consider variations in site contamination characteristics, including the concentration and volume of contamination and the profile of the contamination with depth;

(b) Reevaluation of remediation and survey costs should be conducted, including consideration of variation in waste burial charges, remediation methods, and survey procedures;

(c) Separate analyses of the cost-effectiveness of soil removal and building removal should be performed. A commenter illustrated that separate analyses would clarify differences between costs and impacts of cleanup of soils and structures that were not obvious in the Draft GEIS. Commenters also suggested deleting the "knee-in-curve" approach as not clearly illustrating the information regarding costs and impacts for cleanup of both soils and structures; and

(d) Potential alternative uses of the site lands and facilities should be considered to provide a higher level of realism in the dose estimates. These alternative uses can result in variations

in direct exposure and ingestion pathways and in the number of persons exposed and thus the collective exposure and net health effects.

Based on the comments and information received, additional information has been added to the GEIS. Data on contamination submitted by the commenters were reviewed, compared with other existing data, including that in the Draft GEIS, and incorporated into the Final GEIS as appropriate. The Final GEIS thus considers additional soil contamination data as well as soil and building contamination comparable to that in the draft GEIS. It also considers the range of disposal costs and survey methods and costs presented in the Draft GEIS, as well as those suggested in the comments. The Commission agrees with the commenters that consideration of soil and buildings separately can provide added information. Thus the Final GEIS has used the analysis of the Draft GEIS, that contained the data for performing separate analyses, and has presented the data more clearly in revised tables. In addition, the "knee-in-curve" figures, that provided general information about behavior of costs and impacts associated with cleanup, have been replaced with a simpler set of tables similar to the presentation in the Draft Regulatory Analysis, in Tables 6.1 and 6.2. In response to comments suggesting that the Final GEIS consider more realistic post decommissioning uses, the Final GEIS considers a range of possible uses, including residential farming, denser residential use, industrial/office use, and higher building occupancy rates.

Given the range of possible parameters, scenarios, and site-specific situations, the Final GEIS concludes, in a manner similar to the Draft GEIS, that there is a wide range of cost-benefit results among the different facilities and within facility types and that there is no unique algorithm that decisively produces an ALARA result for all facilities. Despite these difficulties, the Final GEIS and RA provide the following results that can be helpful for gaining insight in making decisions regarding ALARA, the decommissioning objective, and whether restricted use should be permitted:

(a) *Achieving, as an objective of ALARA, reduction to preexisting background.* The objective of returning a site to preexisting background conditions is consistent with the concept of returning a site to the radiological condition that existed before its use. However, the question of whether this objective, as a goal of ALARA, should be codified by rule depends on a variety of factors,

including cost, practicality (e.g., measurability) of achieving the objective, and the type of facility involved.

As noted in Section 7.3.1 of the Draft GEIS, decommissioning is expected to be relatively easy for a certain class of non-fuel-cycle nuclear facilities (i.e., those that use either sealed radioactive sources or small amounts of short-lived nuclides), because there is usually no residual radioactive contamination to be cleaned up and disposed of, or, if there is any, it should be localized or it can be quickly reduced to low levels by radioactive decay. Decommissioning operations will generally consist of disposing of a sealed source or allowing licensed short-lived nuclides to decay in storage, submitting Form NRC-314, and demonstrating (either through radiation survey or other means such as calculation of reduction of the contamination level by radioactive decay) compliance with the requirements for license termination. Because contamination at these facilities is expected to be negligible or to decay to negligible levels in a short time, achieving an objective of returning these facilities to background would not appear to be an unreasonable objective of ALARA.

However, in general, for those nuclear facilities where contamination exists in soils and/or structures, the Final GEIS analysis shows, in a manner similar to the Draft GEIS, that achieving an ALARA decommissioning objective of "return to a preexisting background" is not reasonable as it may result in net detriment or because cost cannot be justified because detriments and costs associated with remediation and surveys tend to increase significantly at low levels, while risk reduction from radiation exposure from criteria near background is marginal.

(b) *ALARA analysis for soil contamination.* Soil contamination can exist onsite at nuclear facilities because of a variety of reasons including spills or leaks, deposition from airborne effluents, or burial or placement of system byproducts or other waste materials in onsite soils. The level of soil contamination for the large majority of NRC-licensed facilities (>6000) is either zero or minimal (it is expected that the large majority of Agreement State licensees would have similar contamination). Certain facilities (e.g., power reactors, fuel facilities, industrial facilities) may have greater soil contamination, and certain of these facilities have been identified as having extensive soil contamination (albeit generally at relatively low levels) and have been placed in the Site

Decommissioning Management Plan (SDMP) (see NUREG-1444, October 1993). These sites warrant specific NRC attention regarding their decommissioning.

For the generic scenarios considered, the results of the Final GEIS evaluation indicate that there is a wide range of possible cost-benefit ratios. Nevertheless, there appears to be a strong indication that removing and transporting soil to waste burial facilities to achieve exposure levels at the site at or below a 0.25 mSv/y (25 mrem/y) unrestricted use dose criterion is generally not cost-effective when evaluated using NRC's regulatory analysis framework presented in NUREG/BR-0058 and NUREG-1530. Further, even for a range of cleanup levels at or above a 0.25 mSv/y (25 mrem/y) criterion, there can also be cases where costs are unreasonable in comparison to benefits realized.

(c) *ALARA analysis for structures containing contamination.* Building floors and walls at nuclear facilities can be contaminated for a variety of reasons, including system leaks, spills, tracking, and activation. The large majority of NRC licensed facilities have zero or limited building contamination. Generally, contamination does not penetrate the surface of concrete and can be readily removed by water jets or concrete scabbling. If the building is reused for some new industrial, office, or other use after license termination, persons can be in direct contact with the decommissioned floors and walls.

For the range of generic situations considered, the results of the Final GEIS evaluation indicate that there is a wide range of possible cost-benefit ratios. It appears that cleanup of concrete to levels at or below 0.25 mSv/y (25 mrem/y) can be cost effective, depending on the number of individuals projected to be occupying a building, when using the decisionmaking guidelines of NUREG/CR-0058 and NUREG-1530.

A.2.3 Conclusions regarding overall approach to license termination and unrestricted dose criterion. Based on the above discussion, the Commission has concluded that the overall license termination approach of this final rule should include:

- An unrestricted use dose criterion of 0.25 mSv/y (25 mrem/y) applicable on a generic basis without site-specific analysis;
- Considerations regarding ALARA, including the decommissioning objective;
- A tiered approach of unrestricted use and allowing restricted use if certain provisions are met; and

- Codifying alternate criteria in the rule to alleviate the need for exemptions in certain difficult site-specific circumstances.

The reasons for these conclusions are discussed in the following subsections.

A.2.3.1 An unrestricted use dose criterion of 0.25 mSv/y (25 mrem/y) applicable on a generic basis without site-specific analysis. For the reasons described above, the Commission is establishing a dose of 0.25 mSv/y (25 mrem/y) as an acceptable criterion for release of any site for unrestricted use without further analysis of the potential for exposures from other man-made sources excluding medical. The Commission concludes that a generic dose constraint or limitation for decommissioning sources of 0.25 mSv/y (25 mrem/y) for unrestricted use of a site appears reasonable from the standpoint of providing a sufficient and ample margin of safety in protection of public health and safety. This conclusion reflects the Commission's judgment that the likelihood of individuals being exposed to multiple sources with cumulative doses approaching 1 mSv/y (100 mrem/y) is quite small. This conclusion is based on consideration of the kinds of occupancy times generally expected for the average member of the critical group at typical decommissioned sites and the low probability that individuals could realistically be expected to experience significant exposures to other sources, particularly with a cumulative effect approaching 1 mSv/y (100 mrem/y). In view of these perspectives, the Commission believes that a generic dose criterion of 0.25 mSv/y (25 mrem/y) provides a sufficient and ample, although not necessary, margin to protect the public.

A.2.3.2 Considerations regarding ALARA, including the decommissioning objective. The ICRP, NCRP, and draft FRG all suggest that, in addition to setting a constraint value for an individual source, achievement of exposures that are ALARA should continue to be considered as a means of optimization. For this reason and because the generic analysis of the Final GEIS tends to indicate that achieving doses below 0.25 mSv/y (25 mrem/y) may be ALARA for some cases, the rule continues to require an ALARA evaluation below the unrestricted dose criterion.

It would be useful if the analyses in the Final GEIS could have arrived at a value of ALARA for all facilities or classes of facilities so that no further estimate of ALARA would be needed in site-specific cases. However, it was not feasible for the Commission to use the

results of the Final GEIS to determine a generic optimum ALARA dose because of the variety of possible scenarios, assumptions, parameters, and site-specific conditions that could exist. Nevertheless, the Final GEIS does contain information about certain trends in impacts and costs of decommissioning that can be useful in preparation of regulatory guidance supporting site-specific ALARA provisions. In particular, it is clear from the Final GEIS that removal of soil to achieve dose levels below the 0.25 mSv/y (25 mrem/y) dose criterion is generally unlikely to be cost-effective, whereas it may be for concrete in certain cases. It is also clear that removal of soil or concrete to "pre-existing background" levels is generally not cost effective.

Thus, for those facilities where soil or building contamination exists, it would be extremely difficult to demonstrate that an objective of return to background had been achieved. Therefore it is concluded, as was previously done in the proposed rule, that for these sites use of the unrestricted dose criterion with appropriate ALARA considerations would be appropriate. For restricted use, the Final GEIS suggests that although removal of soil to achieve dose levels below 0.25 mSv/y (25 mrem/y) may not be cost-effective, other simple and less costly measures to restrict the use of the site such as fencing or barrier plantings may be cost-effective and should be considered as part of the ALARA process. For groundwater contamination, as discussed later in Section IV.D, ALARA considerations should consider the situation where populations use groundwater plumes from a facility as drinking water.

In actual situations, it is likely that, even if no specific analysis of ALARA were required for soil and concrete removal, the actual dose will be reduced to below 0.25 mSv/y (25 mrem/y) because of the nature of the removal process. For example, the process of scabbling of concrete removes a layer of concrete that likely contains a large fraction of the remaining radioactivity, and the process of soil excavation is a gross removal process that also is likely to remove large fractions of the radioactivity.

To clarify the concept of ALARA, the regulatory guidance to be prepared will refer to the existing requirements of §§ 20.1003 and 20.1101 where ALARA is defined to include considerations of the state of technology, economics of improvement in relation to the state of technology, economics of improvements in relation to benefits to the public

health and safety, and other societal and socio-economic considerations. Although preparation of guidance is in a preliminary stage, it is anticipated that this guidance would likely indicate that ALARA during decommissioning should include typical good practice efforts (e.g., floor and wall washing, removal of readily removable radioactivity in buildings or in soil areas), as well as ALARA analyses for buildings to levels less than 0.25 mSv/y (25 mrem/y) based on the number of individuals projected to be occupying the building, but that an ALARA analysis below 0.25 mSv/y (25 mrem/y) for soil removal would not need to be done. It is expected that use of the dose criterion of the final rule and the regulatory guidance on ALARA would achieve consistency with current practices where it is cost-effective to do so.

The Commission also believes that, in any ALARA analysis conducted to support decisions about site cleanup, all reasonably expected benefits and detriments resulting from the cleanup activities should be taken into consideration in balancing costs and benefits. An example of such a detriment would be transportation deaths that might occur as contaminated waste is transported away from the site.

A.2.3.3 Tiered approach of unrestricted use and allowing restricted use if certain provisions are met. It appears reasonable to retain the basic structure presented in the proposed rule and allow for both unrestricted and restricted use of sites. Allowance of restricted use is appropriate because there can be situations where restricting site use can provide protection of public health and safety by reducing the TEDE to 0.25 mSv/y (25 mrem/y) in a more reasonable and cost-effective manner than unrestricted use. This protection is afforded by limiting the time period that an individual spends onsite or by restricting agricultural or drinking water use. For many facilities, the time period needed for restrictions can be fairly short; i.e., long enough to allow radioactive decay to reduce radioactivity to levels that permit release for unrestricted use. For example, at reactors, manufacturing facilities, or broad scope licensees, where the principal contaminants can have half-lives of 5–30 years (e.g., Co-60, Cs-137), restricting site use for about 10–60 years can result in achieving unrestricted use levels. Thus, it continues to be appropriate to allow restricted use if accompanied by provisions that ensure the restrictions remain in place to achieve a dose of 0.25 mSv/y (25 mrem/y). Considerations for

assuring that restrictions remain in place and that public health and safety is protected are discussed further in Section IV.B. In addition, because restricting site use can affect the local community, Sections IV.B and IV.E indicate that licensees should seek advice from such affected parties and, in seeking that advice, provide for: (1) Participation by representatives of a broad cross section of community interests, (2) an opportunity for a comprehensive, collective discussion on the issues, and (3) a publicly available summary of the results of all such discussions.

A.2.3.4 Codifying alternate site-specific criteria in the rule to alleviate the need for exemptions in special circumstances. The preamble to the proposed rule recognized that there could be certain difficult sites presenting unique decommissioning problems where licensees would seek exemptions from the rule's requirements. However, as noted in Section IV.C below, because the Commission finds that it would be preferable to deal with those facilities under the aegis of a rule rather than as exemptions, the Commission has included in its final rule a provision under which the Commission may terminate a license using alternate criteria in certain specific cases. In allowing such a provision, it is nevertheless the Commission's judgment that: (1) It is generally preferable for sites to reduce doses to 0.25 mSv/y (25 mrem/y) due to the uncertainty over the number of sources where nuclides may be present for a long time-frame; (2) the large majority of sites can reduce doses to less than 0.25 mSv/y (25 mrem/y) through restricting site use; and (3) permitting large numbers of licensees to propose alternate criteria is not advisable because it would be contrary to one of the goals of this rulemaking to achieve more efficient and consistent licensing actions. Therefore, the Commission has limited the conditions under which a licensee could apply for alternate criteria and expects that its use would be rare. A licensee proposing to terminate a license at a site-specific level above 0.25 mSv/y (25 mrem/y) would be required to:

(a) Provide assurance that public health and safety would continue to be protected by means of a complete and comprehensive analysis of possible sources of exposure so that it is unlikely that the dose from all potential man-made sources combined, other than medical, would exceed the 1 mSv/y (100 mrem/y) public dose limit of 10 CFR part 20;

(b) Employ, to the extent practical, restrictions on site use for minimizing exposures at the site using the provisions for restricted use outlined in Section IV.B, below; and

(c) Reduce doses to ALARA levels.

(d) Seek advice from affected parties regarding this approach and, in seeking such advice, provide for: (1) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning, (2) an opportunity for a comprehensive, collective discussion on the issues, and (3) a publicly available summary of the results of all such discussions, and

(e) Obtain the specific approval of the Commission. The Commission will make its decision on allowing use of alternate criteria in specific cases only after consideration of the NRC staff's recommendations that will address any comments provided by the Environmental Protection Agency and any public comments submitted regarding the decommissioning or license termination plan.

A description of these circumstances and potential resolutions on a site-specific basis, short of exempting a facility from this rule, appears in Section IV.C.

If license termination still cannot be met even under alternate criteria, it may be necessary for the site (or a portion thereof) to be kept under license in order to ensure that exposures to the public are appropriately monitored. The evaluation of the maintenance of a site or a portion thereof under a continued license is outside the scope of this rulemaking because this rule contains provisions addressing radiological criteria that apply to termination of a license.

A.2.4 Summary of rule revisions on unrestricted use and plans for implementation. The final rule has been modified to indicate that the dose criterion for unrestricted use is 0.25 mSv/y (25 mrem/y). Requirements that a licensee consider how the ALARA requirements of 10 CFR part 20 can be applied to achieve a dose below the dose criterion have been retained.

Regulatory guidance is planned on how to meet these existing ALARA requirements. In addition, to assist in implementing the dose criterion, regulatory guidance will also be issued to provide clear guidance to licensees on how to demonstrate compliance with the dose criterion by using either:

(a) Screening analyses that use relatively simple approaches for demonstrating compliance; or

(b) Site-specific modeling for more complex sites and contamination.

Regulatory guidance will also be issued to provide clear guidance on statistical tests and survey methods available to licensees for demonstrating compliance.

The Commission is retaining the distinguishable from background provision in the final rule to allow release of sites when residual contamination, if any, cannot be distinguished from background on a statistical basis using proper survey techniques. In particular, at the levels of the dose criterion, concentrations of uranium and thorium in soil are extremely low and may not be distinguishable from background on a statistical basis even when using proper survey techniques.

A.3 General Comments on the Dose Criterion

A.3.1 Comments. Comments were received on the 0.15 mSv/y (15 mrem/y) dose criterion that questioned its effect on disposal capacity, the relationship to naturally occurring radioactive material (NORM), and the issue of fixing the responsibility for cleanup.

A.3.2 Response. Some commenters were concerned about the effect of 0.15 mSv/y (15 mrem/y) criterion on disposal capacity. As noted in Section IV.A.2.2, several of the assumptions, models, and approaches in the GEIS and Regulatory Analysis have been revised to include additional data and alternate waste disposal costs. A complete discussion of these revisions and analysis of disposal capacity is in the Final GEIS and the Regulatory Analysis.

Some commenters questioned the relationship of this rule to NORM. In response, the criteria of this rule apply to residual radioactivity from activities under a licensee's control and not to naturally occurring background radiation. Issues related to NRC-licensed sites containing materials that occur in nature are discussed in Sections IV.B and IV.C.

There is a wide variety of sites containing NORM subject to EPA jurisdiction and not licensed by the NRC. The extent to which criteria in this rule would apply to these sites would be based on a separate evaluation although certain aspects of the rule, for example control of sites with restrictions imposed, could be similar. For further discussion, see also Section IV.G.6.

With regard to responsibility for cleanup, several commenters stated that the 0.15 mSv/y (15 mrem/y) limit is too high because licensees should have to clean up contamination that they created. Because these are final licensing actions before releasing the site to the public, they stated that only

a lower criterion such as return to background would adequately protect the public. In response, the NRC agrees with the need to fix responsibility for decommissioning of licensed sites. The planning and financial assurance requirements adopted June 27, 1988 (53 FR 24018), recognized the responsibility of licensees to plan for the cleanup of their sites and to provide adequate financial assurance for that cleanup. Similarly in this regulation, licensees are not permitted to release a facility for unrestricted or restricted public use unless the dose criteria stipulated in the rule have been satisfied. As noted in the Final GEIS, further cleanup to levels such as background is not generally reasonable because it results in very little additional health benefit with very large costs incurred and could result in an increase in the overall risk associated with cleanup of a particular site when all factors (e.g., estimated fatalities due to transportation accidents during transport of radioactive wastes) are considered. Therefore, for the reasons discussed in Section IV.A.2.2, the criteria in the final rule are considered appropriate to protect public health and safety and to permit release of the sites and termination of license.

A.4 Average Member of the Critical Group

A.4.1 Comment. Some commenters agreed with provisions of the rule that would apply the dose limit to an average member of the critical group rather than to the "reasonably maximally exposed (RME) individual" because it is consistent with ICRP and provides an appropriate protection standard. Other commenters objected to use of "an average member of the critical group." These commenters favored applying the dose limit to the most exposed person rather than to an average person. They asserted that this would be consistent with the approach used for other licensed activities and environmental protection.

A.4.2 Response. Section 20.1003 of the proposed rule defined the term "critical group" as the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances. For example, if a site were released for unrestricted use, the critical group would be the group of individuals reasonably expected to be the most highly exposed considering all reasonable potential future uses of the site. As noted in the preamble to the proposed rule (at 59 FR 43218; August 22, 1994), NUREG/CR-5512 defines the critical group as an individual or relatively homogeneously exposed

group expected to receive the highest exposure within the assumptions of a particular scenario and the dosimetric methods of 10 CFR part 20. The average member of the critical group is an individual who is assumed to represent the most likely exposure scenario based on prudently conservative exposure assumptions and parameter values within model calculations. For example, the critical group for the building occupancy scenario can be the group of regular employees working in a building that has been decontaminated. If a site were converted to residential use, the critical group could be persons whose occupations involve resident farming at the site, not an average of all residents on the site.

Although the terms "critical group" and "average member" are new terms in NRC regulations, they are consistent with ICRP practice of defining and using a critical group when assessing individual public dose from low levels of radioactivity similar to those expected from a decommissioned site. ICRP recommends that such analyses should consider exposure to individuals representative of those expected to receive the highest dose using cautious but reasonable assumptions. This approach has been adopted in the proposed FRG and is also consistent with the recommendations of the National Academy of Sciences on the Yucca Mountain Standards (August 1995).

A.4.3 Summary of rule revisions. Based on this discussion, the proposed rule has not been changed.

B. Criteria for Restricted Use (Proposed Rule §§ 20.1402(d) and 20.1405)

B.1 Proposed Rule Content

As described in the proposed rulemaking and restated in Section IV.A.2.2, there are potential situations under which termination of a license under restricted conditions could be used in the decommissioning of a site. Proposed § 20.1405 indicated that a site would be considered acceptable for license termination under restricted conditions if the licensee:

(1) Made provisions for institutional controls that provide reasonable assurance that the TEDE to the average member of the critical group would not exceed the unrestricted use dose criterion;

(2) Reduced residual radioactivity at the site so that, if the controls were no longer in effect, there is reasonable assurance that the TEDE would not exceed 1 mSv/y (100 mrem/y);

(3) Demonstrated that complying with the unrestricted use dose criterion

would be prohibitively expensive, result in net public or environmental harm, or not be technically achievable;

(4) Obtained advice on the restrictions from the affected community by convening a site-specific advisory board, and;

(5) Provided financial assurance to ensure the controls remain in place.

B.2 Comments on Acceptability of Restricted Use for Decommissioned Sites

A variety of comments was received on the restricted use option. The major comment categories are listed below. Although the comment categories address somewhat separate issues, they are listed and answered together to develop a unified response on the issue of restricted use.

B.2.1 The general concept of restricted use. Some commenters agreed with the proposal to permit restricted use of decommissioned sites because it may be financially impractical to reach unrestricted levels, especially if health and safety considerations do not warrant it and because restricted release allows realistic land uses to be considered. Some commenters opposed the concept of any planned restricted release of decommissioned sites because of concerns over the durability and effectiveness of institutional controls, and because license termination should be a final action with full licensee responsibility for site disposition and cleanup costs previously considered.

B.2.2 The need for licensees to demonstrate that restricted use is appropriate for their sites. In allowing restricted use, the proposed rule would have required licensees to demonstrate the appropriateness of restricting site use for their particular situation by showing that it would be "prohibitively expensive," "technically unachievable," or cause "net public or environmental harm" to achieve unrestricted use (proposed § 20.1405(a)). Some commenters supported the restricted use of sites but indicated that the proposed requirements for demonstrating its appropriateness were unreasonably restrictive. These commenters stated that the provisions in proposed § 20.1405(a) were structured so narrowly that few sites would be able to qualify for license termination under restricted conditions. Commenters stated that these terms should be explained, deleted, or replaced with a less onerous requirement allowing restricted use if justified by an ALARA analysis or if there were continued ownership and industrial use of the site.

B.2.3 The durability of institutional controls. Several commenters opposed or expressed concern about the ability of institutional controls to provide needed protection of public health and safety at decommissioned sites because they cannot be enforced indefinitely into the future and can be struck down or become ineffective. Other commenters favored reliance on more flexible institutional controls and recommended that the rule should not assume that they will eventually fail. Approaches for using institutional controls were suggested including Federal Government ownership of sites or legislative solutions for complex sites similar to the National Waste Policy Act (NWPA) of 1982.

B.2.4 The 1 mSv/y (100 mrem/y) cap if institutional controls fail. Some commenters stated that the proposed 1 mSv/y (100 mrem/y) restriction is unreasonably low when used to assess the worst case scenario. They recommended that the rule should not stipulate that a licensee must assume that all institutional controls will eventually fail. Alternatively, they recommended that a 5 mSv/y (500 mrem/y) backup limit be allowed if restrictions such as institutional controls or engineered features fail. The commenters believed that a 5 mSv/y (500 mrem/y) limit is consistent with other regulations, since residential use of an industrial site is unlikely, and failure of controls is speculative. Several commenters objected to the last sentence of proposed § 20.1405(d), that stated that licensees may not assume any benefits from an earthen cover, other earthen barriers, or engineered controls in complying with the 1 mSv/y (100 mrem/y) cap unless specifically authorized by the Commission and recommended that the sentence be deleted. Some commenters recommended that the rule specify the extent to which licensees may take credit for engineered barriers. Other commenters stated that 1 mSv/y (100 mrem/y) is too high and that a lower value (e.g., 0.15, 0.3, 0.5, 0.75 mSv/y (15, 30, 50, or 75 mrem/y)) should be applied because institutional controls are uncertain, concerns over health effects would exist, and doses in excess of 40 CFR Part 190 are unreasonable. Some commenters agreed with establishing a maximum TEDE of 1 mSv/y (100 mrem/y) in the event institutional controls are no longer in effect.

B.2.5 Financial assurance for restricted use. Some commenters questioned the need for financial assurance provisions and suggested that more flexibility be provided for

licensees. Other commenters questioned whether the financial assurance provisions were adequate. One commenter stated that there should be more detail on financial assurance provided in the rule.

B.3 Response

B.3.1 The general concept of restricted use. Current NRC regulations pertaining to decommissioning, issued on June 27, 1988 (53 FR 24018), do not contain provisions for release of a facility for restricted use but limit a licensee's options in decommissioning to release of a facility for unrestricted use. Experience with decommissioning of facilities since 1988 has indicated that for certain facilities, achieving unrestricted use might not be appropriate because there may be net public or environmental harm in achieving unrestricted use, or because expected future use of the site would likely preclude unrestricted use, or because the cost of site cleanup and waste disposal to achieve unrestricted use is excessive compared to achieving the same dose criterion by restricting use of the site and eliminating exposure pathways. The input received from the rulemaking workshops held from January through May 1993 confirmed this experience and indicated that restricted use of a facility, if properly designed and if proper controls were in place, was a reasonable means for terminating licenses at certain facilities.

Current NRC-licensed sites that might request restricted use are largely industrial sites. It is reasonable for them to remain industrial because of their locations and previous siting considerations. Nevertheless, there may be instances where, if a site had high cultural value, such considerations would be presented as part of the public input that is part of the process of restricted use (see Section IV.E) and could be considered as a socioeconomic effect under the ALARA process.

The proposed rule thus provided for both unrestricted and restricted use of sites. Both the Draft and Final GEIS provide discussions of the environmental impact of decommissioning for the reference sites and of the costs related to decommissioning. From this it may be concluded that release of certain facilities for restricted use is an appropriate option assuming the presence of the specific provisions described below to ensure that appropriate controls are in place so that the restrictions on use remain in effect.

B.3.2 The need for licensees to demonstrate that restricted use is appropriate for their sites. As described

in Section IV.B.3.1, the proposed rule allowed restricted use because release of a site under restricted conditions can be an appropriate method of decommissioning from both health and safety, and cost-benefit bases, especially for certain facilities with soil contamination. Nevertheless it did so under the philosophy (stated in § 20.1402(d)) that, in general, termination of a license for unrestricted use is preferable because it requires no additional precautions or limitations on use of the site after licensing control ceases, in particular for those sites with long-lived nuclides. In addition, there may be societal or economic benefits related to future value of the unrestricted use of the land to the community. Thus, § 20.1405(a) of the proposed rule stated the provisions the NRC would consider in evaluating a request for termination of a site under restricted conditions, including that it is "prohibitively expensive" or there is "net public or environmental harm" in achieving unrestricted release.

The Commission continues to believe that unrestricted use is generally preferable for the reasons noted. However, the NRC has reexamined the provisions for allowing restricted use because of the potential benefits. In explaining the provision of "prohibitive" cost, the proposed rule noted (at 59 FR 43220) that costs to achieve unrestricted use may be "excessive," indicating that this means there may be situations where removal and disposal of large quantities of material is simply "not reasonable" from a cost standpoint. Consistent with this, the proposed rule noted in § 20.1402(d) that the Commission expected licensees to make every reasonable effort to achieve unrestricted release. The specific cost that would be considered excessive, not reasonable, or prohibitive was not included in the proposed rule. This value depends on costs of unrestricted and restricted use, and on an evaluation of these alternatives using the regulatory analysis framework presented in NUREG/BR-0058 and NUREG-1530. NUREG/BR-0058 provides a decisionmaking tool for deciding between regulatory alternatives. As noted in the discussion below, restricted use with appropriate institutional controls (accompanied by sufficient provisions for ensuring their effectiveness) can provide protection of public health and safety because the dose level will be reduced to the same 0.25 mSv/y (25 mrem/y) criterion as for unrestricted use. Thus, use of the guidelines in NUREG/BR-0058 is

appropriate for determining whether restricted use should be permitted. Therefore, the Commission has modified the rule to incorporate an ALARA standard rather than prohibitive costs as the basis for selecting restricted use. To support a request for restricted use, a licensee would perform an ALARA analysis of the risks and benefits of all viable alternatives and include consideration of any detriments. This could include estimated fatalities from transportation accidents that might occur as the result of transport of wastes from cleanup activities, and societal and socioeconomic considerations such as the potential value to the community of unrestricted use of the land.

The proposed rule also noted that because the net public or environmental damage through removal, transport, and disposal of materials could be larger than the benefit in dose reduction at the site, it may be more reasonable for the material to remain onsite. The Final GEIS illustrates when it may be inappropriate, when considering such relative impacts, to completely remediate a site to an unrestricted level that assumes activities such as farming or residence, and then, as would be the case for a number of currently licensed sites, actually employ a commercial or industrial use that would eliminate significant pathways of exposure. Specific examples include reactors or other materials facilities where the dose is controlled by relatively short-lived nuclides (e.g., Co-60 and Cs-137 with half-lives of 5.3 and 30 years, respectively) that will decay to unrestricted dose levels in a finite time period of institutional control (e.g., about 10-60 years). For these facilities, there may be net public or environmental harm from removing and transporting soil to achieve unrestricted use compared to restricting use for a period of time associated with a reasonable decay period (see the Final GEIS, Chapter 6). Thus, the consideration of potential detriments from cleanup activities and the possibility of net harm have been retained in the final rule. Both terms, net public harm and net environmental harm, are retained in the final rule to indicate that a licensee's evaluation should consider the radiological and nonradiological impacts of decommissioning on persons who may be impacted, as well as the potential impact on ecological systems from decommissioning activities.

B.3.3 The durability of institutional controls. As described in Sections IV.B.3.1 and IV.B.3.2, use of restrictions that employ institutional controls appears appropriate in specific

situations. However, an important question raised in the public comments relates to the durability of institutional controls, i.e., whether the controls provide reasonable assurance that the exposure will be limited to the dose criterion in the rule over the periods in question.

For many types of decommissioned sites released under restricted conditions where potential doses to an individual are caused by relatively short-lived nuclides, the radiation exposure that could potentially be received were controls to fail will gradually decrease to below the unrestricted dose criterion so the restrictions on use would no longer be necessary. Examples of facilities with nuclides of this type include reactors or materials facilities for which the principal dose contributing nuclides after decommissioning are Co-60 or Cs-137 (half-lives 5.3 and 30 years, respectively), or other similarly short-lived nuclides. The Commission has considered the effectiveness of institutional controls for up to 100 years in similar contexts such as low-level waste disposal sites. Because decommissioned facilities will have minimal contamination compared to large volumes buried at low-level disposal sites, the Commission believes that institutional controls using relatively simple deed restrictions can provide reasonable assurance that the TEDE will be below the 0.25 mSv/y (25 mrem/y) dose criterion with restrictions in place.

In a limited number of cases, in particular those involving large quantities of uranium and thorium contamination, the presence of long-lived nuclides at decommissioned sites will continue the potential for radiation exposure beyond the 100-year period. More stringent institutional controls will be required in these situations, such as legally enforceable deed restrictions and/or controls backed up by State and local government control or ownership, engineered barriers, and Federal ownership, as appropriate. Federal control is authorized under Section 151(b) of the National Waste Policy Act (NWPA). Requiring absolute proof that such controls would endure over long periods of time would be difficult, and the Commission does not intend to require this of licensees. Rather, institutional controls should be established by the licensee with the objective of lasting 1000 years to be consistent with the time-frame used for calculations (and discussed in Section IV.F.7). Having done this, the licensee would be expected to demonstrate that the institutional controls could

reasonably be expected to be effective into the foreseeable future.

To provide added assurance that the public will be protected, the final rule incorporates provisions (§ 20.1405(c)) for financial assurance to ensure that the controls remain in place and are effective over the period needed. With these provisions, the Commission believes that the use of reliable institutional controls is appropriate and that these controls will provide a high level of assurance that doses will not exceed the dose criterion for unrestricted use.

Although the Commission believes that failure of active and passive institutional controls with the appropriate provisions in place will be rare, it recognizes that it is not possible to preclude the failure of controls. Therefore, in the proposed rule, the Commission included a requirement that remediation be conducted so that there would be a maximum value ("cap") on the TEDE from residual radioactivity if the institutional controls were no longer effective in limiting the possible scenarios or pathways of exposure. The cap included in the proposed rule was 1 mSv/y (100 mrem/y), which is the public dose limit codified in 10 CFR part 20. Public comments on the proposed rule suggested other values for the cap, both higher than and lower than the proposed value. The analysis of those comments, and their potential effect on the institutional controls used, is discussed in Section IV.B.3.4.

The Commission believes, based on the discussion in this section on the viability of controls and on the provisions for financial assurance and for a "cap," described in Sections IV.B.3.4 and IV.B.3.5, that the provision for restricted use and institutional controls will provide a high level of assurance that public health and safety will be protected. Licensees seeking restricted use will be required to demonstrate, to NRC's satisfaction, that the institutional controls they propose are comparable to those discussed above, are legally enforceable, and are backed by financial assurance. Licensees will also be required to demonstrate that the cap will be met. The Commission believes that the provision for restricted use should be retained in the final rule.

B.3.4 The 1 mSv/y (100 mrem/y) cap if institutional controls fail. A "cap" of 1 mSv/y (100 mrem/y), corresponding to the public dose limit, was proposed in § 20.1405(d) of the proposed rule. Various possible "cap" values were suggested by the commenters, both lower than (e.g., values such as 0.15,

0.3, or 0.85 Sv/y (15, 30, or 85 mrem/y)) or higher than the proposed cap.

The Commission has reviewed the comments suggesting that the specific cap value be set at levels other than 1 mSv/y (100 mrem/y). The rationale for setting the cap at 1 mSv/y (100 mrem/y) presented in the proposed rule (at 59 FR 43221) was that the value of the cap coincides with NRC's public dose limit of 10 CFR Part 20. This value was premised on the assumption that circumstances could develop in which the restrictions might no longer be effective in limiting the exposure scenarios or pathways. Although this occurrence need not be assumed for planning purposes, a safety net is needed to prevent exposures in excess of the public dose limits. A cap using the public dose limits would provide an additional level of protection in the unlikely event that restrictions were not effective. Although, as noted in Section IV.A.2, the Commission has used a fraction of the public dose limit in setting the 0.25 mSv/y (25 mrem/y) dose limit for decommissioning, it indicated in the proposed rule that, in the case of the "cap" or "safety net," it did not believe that fractionation, i.e., setting a cap value less than 1 mSv/y (100 mrem/y), would be necessary because:

(a) The 1 mSv/y (100 mrem/y) cap is less than values suggested in the proposed FRG for members of the public in unusual circumstances and less than values used for other types of facilities where some type of institutional control is used;

(b) The Commission believes that failure of all site restrictions at decommissioned sites is a highly unlikely event; and

(c) Radioactive decay for relatively short-lived nuclides (e.g., Co-60 and Cs-137), that are the principal dose contributing contaminants at the large majority of NRC licensed facilities, will actually reduce the dose level over a period of time for most sites that will provide an additional margin of safety equivalent to fractionation of the limit.

The rationale for setting a cap value at 1 mSv/y (100 mrem/y) continues to appear appropriate. In addition, setting a cap at a lower value does not appear warranted because: (1) It appears arbitrary to assume that the same person would be an average member of the critical group both near a facility where there was failure of controls and near another decommissioned facility; and (2) the failure of restrictions would be infrequent and therefore it is likely that the overall lifetime risk to the critical group would still be maintained at levels comparable to unrestricted use

while providing a more cost-effective use of resources.

Although the Commission did not fractionate the cap, it did include in the proposed rule, and continues to include in the final rule, a provision that would require exposures to be below the cap to a degree that is ALARA. The purpose of this requirement is that licensees would not simply leave behind contamination corresponding to the value of the cap but would evaluate the level below the cap that is cost effective and reduce the contamination to that level. This will provide a requirement that will effectively fractionate the doses and result in doses not dissimilar from those suggested by the commenters if it is cost-effective to do so. This approach is consistent with the current requirements in 10 CFR part 20.

Based on its experience with sites with difficult contamination issues, in particular those sites treated in NRC's SDMP, and as described in the Final GEIS, the Commission anticipates that there may be sites where compliance with the 1 mSv/y (100 mrem/y) cap could cause impacts resulting from cleanup to that level (e.g., estimated industrial or traffic fatalities associated with removing or transporting waste) that exceed the benefits of averting radiation exposure (thus causing a net detriment to public health or the environment) or that diminish the net benefit to where costs of cleanup would be prohibitive compared to the net benefit. Although the NRC recognizes that it is always the licensee's responsibility to clean up the contamination that it has caused, the appropriate course of action should not result in net public or environmental harm from a cleanup, and it is not clear that it is beneficial if resources are spent in a manner prohibitive in relation to other benefits which could be achieved, or if a licensee is put into a financial position where it cannot continue to perform the cleanup safely.

Although a cap higher than 1 mSv/y (100 mrem/y) would result in using a value in excess of the public dose limit in § 20.1301(a), existing requirements in § 20.1301(c) permit levels up to values of 5 mSv/y (500 mrem/y), provided that a licensee would apply to the Commission for permission to operate at that level, submit reasons why it is necessary, and indicate procedures to maintain doses ALARA. The proposed FRG, Recommendation No. 4, states that the dose from all sources should not exceed 1 mSv/y (100 mrem/y) although it may be exceeded temporarily in unusual situations that are not expected to recur.

Based on this existing requirement, the Commission has incorporated a specific provision in the final rule under which a licensee could propose exceeding the 1 mSv/y (100 mrem/y) cap in unusual site-specific circumstances if, in addition to the normal provisions of restricted use, it also met the following additional stringent provisions:

(a) A licensee would have to demonstrate that it cannot meet the 1 mSv/y (100 mrem/y) cap because of net public or environmental harm or prohibitive costs by means of a site-specific evaluation of the issues associated with complying with the 1 mSv/y (100 mrem/y) cap. The NRC expects that only a very few facilities (e.g., sites with soil contaminated with naturally occurring radionuclides in small radioactivity levels but large volumes, certain SDMP sites) could provide sufficient rationale for seeking a higher cap. Although the proposed rule contained a reference to the use of prohibitive cost, it did not quantify or define these costs beyond noting that they would be excessive or unreasonable. The Commission believes it appropriate to consider a prohibitive cost to be one that would be an order of magnitude greater than that contained as part of the decisionmaking guidelines in NUREG/BR-0058, although a lower factor may be appropriate in specific situations when a licensee could become financially incapable of carrying out decommissioning safely;

(b) Under these circumstances, the licensee would be required to reduce contamination so doses would be no greater than the 5 mSv/y (500 mrem/y) value currently contained in § 20.1301(a). Also, the actual dose level to which the licensee would have to clean the site would be less than that value based on an ALARA evaluation of the site. This provision is consistent with existing requirements in § 20.1301(c) that permit levels up to values of 5 mSv/y (500 mrem/y) for specific cases;

(c) Durable institutional controls must be in place. These controls could include significant engineered barriers and/or State, local, or Federal Government control of sites or maintenance of site deed restrictions so that site access is controlled. Under Section 151(b) of the NWPA of 1982, the DOE has already been authorized to take possession of waste disposal sites in certain situations. A similar provision in Section 151(c) was used as the vehicle to transfer custody of the Amax site from Amax to DOE;

(d) A licensee would make provisions for a verification of the continued

effectiveness of institutional controls at the site every 5 years after license termination to ensure that the institutional controls are in place and the restrictions are working, and that there is financial assurance to reestablish controls if the recheck indicates otherwise. This 5-year recheck is consistent with 10 CFR Part 20 and also with the FRG, Recommendation No. 4, that states that in some unusual situations the 1 mSv/y (100 mrem/y) may be exceeded temporarily in situations that are not anticipated to recur. It is also consistent with the approach for institutional controls used in CERCLA that allows for release of sites without a cap providing there is continuous checking on the status of the controls.

The NRC would retain the authority to take appropriate action in those unusual situations when both the 5 mSv/y (500 mrem/y) cap was in effect and the controls had failed. This action might include oversight of actions needed to reinstate the controls and any necessary cleanup and/or monitoring actions.

B.3.5 Financial assurance. As a second provision for ensuring that the institutional controls provide protection of public health and safety, financial assurance requirements were included to ensure that funds will be available to enable an independent third party, including a governmental custodian of a site, to implement and ensure continued effectiveness of institutional controls. Some commenters questioned whether these provisions were necessary while others questioned whether they went far enough. In response, the Commission continues to believe the proposed provisions are reasonable and adequate for their purpose. The provisions are consistent with financial assurance requirements currently in 10 CFR Parts 30, 40, 50, 61, 70, and 72 which call for financial assurance to provide funds for decommissioning in cases when licensees might otherwise be financially unable to remediate a site. Reference to an independent third party is necessary in the regulations because after the license is terminated, the licensee may no longer be the party ensuring the effectiveness of the controls. Because the purpose of this provision is to provide broad requirements for financial assurance necessary to ensure that the controls continue to limit the dose, more specific details are not included in the rule. The level of detail in the rule is similar to that in other similar NRC regulations on financial assurance. As requested by a commenter, the funding provisions include a trust fund (or similar funding mechanism) for

surveillance and enforcement of the institutional controls. The financial assurance requirements must be in place before the license is terminated and be flexible enough to allow for the necessary site-specific details.

B.4 Summary of Rule Revisions on Restricted Use

Based on the discussions above, restricted use has been retained in the final rule. Based on its analyses in the Final GEIS and its experiences with actual decommissioned sites, the Commission recognizes that, although unrestricted use is generally preferred, restricted use (when properly designed in accordance with the rule's provisions discussed in Section IV.B.3) can provide a cost-effective alternative to unrestricted use for some facilities and maintain the dose to the average member of the pertinent critical group at the same level. Thus, the Commission has replaced the prohibitively expensive provision for justifying restricted use with a reasonable cost provision. The net harm provision remains the same. The general cap value has been retained at 1 mSv/y (100 mrem/y) as has the requirement that licensees reduce the actual level of contamination to levels as far below the cap as is ALARA, where appropriate. The rule has been modified to allow for exceeding the 1 mSv/y (100 mrem/y) cap in site-specific situations and under specific provisions. No change has been made to the financial assurance provisions of the rule.

A number of comments were also received on public participation aspects of restricting site use. The final rule will require that licensees proposing to decommission by restricting use of a site shall seek advice from individuals and institutions in the community who may be affected by the decommissioning and that, in seeking that advice, the licensee shall provide for: (1) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning; (2) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and (3) a publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues. The details of the comments received and the rationale for the public participation aspects of the final rule are discussed in Section IV.E.

C. Alternate Criteria for License Termination

C.1 Codifying Provisions for Certain Facilities That the Proposed Rule Suggested Exempting

C.1.1 Proposed rule content. The preamble to the proposed rule noted that there were several existing licensed sites where public health and the environment may best be protected by use of alternate criteria, although these situations were not codified in the proposed rule; rather, it was thought that these facilities might seek exemptions (under § 20.2301) from the criteria of this rule.

C.1.2 Comments. Some commenters recommended that the rule should not apply to any facility that possesses large volumes of low-level contaminated wastes (including SDMP sites) and should provide a specific exemption or exemption procedures for the "tens" of existing facilities for which application of the proposed criteria is inappropriate and too restrictive. Commenters suggested that guidance is needed on sites that should be turned over to the Federal Government after license termination and sites that should be kept under license. Commenters also recommended that NRC ask Congress to amend the NWPA of 1982 to allow Federal ownership of extensively contaminated sites. Other commenters objected to exempting facilities from the proposed radiological criteria and stated that the rule should cover all decommissioning cases.

C.1.3 Response. For the very large majority of NRC-licensed sites, the Commission believes that the 0.25 mSv/y (25 mrem/y) unrestricted and restricted use dose criterion in the rule is an appropriate and achievable criterion for decommissioning.

However the Commission is concerned about the possible presence of certain difficult sites presenting unique decommissioning problems. Licensees of these sites who would have sought exemptions to the proposed rule's criteria would have had to follow processes similar to the other facilities covered by the rule. In addition, licensing efficiency, consistency of application of requirements, and oversight of these facilities can best be achieved by codifying application of criteria to all facilities. Therefore, the Commission believes that it is preferable to codify provisions for these facilities under the aegis of the rule rather than requiring licensees to seek an exemption process outside the rule as was contemplated in the proposed rulemaking.

In addition, as discussed in Section IV.A, the Commission has concluded that for any site where the 0.25 mSv/y (25 mrem/y) dose criterion is met, there will be a very low likelihood that individuals who use the site will be exposed to multiple man-made sources combined, excluding medical, with cumulative doses approaching 1 mSv/y (100 mrem/y). Thus, the discussion in Section IV.A of this notice establishes this level as a sufficient and ample, but not necessary, margin of safety.

Based on these considerations, the Commission has included in the final rule a provision under which the Commission may terminate a license using alternate criteria in its final rule. The Commission expects the use of alternate criteria to be confined to rare situations. Therefore, for the reasons previously listed in Section A.2.3.4, the Commission has limited the conditions under which a licensee would apply to the NRC for, or be granted use of, alternate criteria to unusual site-specific circumstances subject to the following provisions:

(a) A licensee must provide assurance that, for the site under consideration, it is unlikely that the dose to an average member of the critical group for that site from all potential man-made sources combined, other than medical, would exceed the 1 mSv/y (100 mrem/y) public dose limit of 10 CFR Part 20. The Commission envisions that a licensee proposing to use alternate criteria will have to provide a complete and comprehensive analysis that would build upon generic considerations such as those discussed in Section IV.A.2, and also include site-specific considerations. To guide the Commission in its review of such analyses, the NRC is continuing to develop generic information on the potential for exposure to radioactivity from various sources, including decommissioned sources, to supplement currently available knowledge, and is planning to make this information publicly available through publication of a NUREG report. Site-specific factors that the Commission might review in such cases could include soil and aquifer characteristics, the nature of the critical groups likely to use the site, the detailed nature of the contamination patterns at the site, and the characteristics of residual radionuclides remaining at the site, including considerations related to whether the nuclides are long-lived or short-lived;

(b) A licensee will employ, to the extent practical, restrictions on site use for minimizing exposure at the site using the provisions for restricted use

outlined in IV.B, above, and in § 20.1403;

(c) A licensee will indicate that a comprehensive analysis had been performed of the risks and benefits of all viable alternatives and consideration of any detriments, such as transportation fatalities that might occur as the result of cleanup activities, to reduce the residual radioactivity at the site to levels that are ALARA;

(d) A licensee will seek advice from affected parties regarding this approach. In seeking such advice, the licensee will provide for: (1) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning; (2) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and (3) a publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues (the rationale for these public participation aspects are discussed in more detail in Section IV.E); and

(e) A licensee will obtain the specific approval of the Commission for the use of alternate criteria. The Commission will make its decision after consideration of the NRC staff's recommendations that will address any comments provided by the Environmental Protection Agency and any public comments submitted regarding the decommissioning or license termination plan.

If the license termination conditions under alternate criteria cannot be met, it may be necessary for the site (or portion thereof) to be kept under license to ensure that exposures to the public are appropriately monitored. The evaluation of maintenance of a site or a portion of that site under continued license is outside the scope of this rulemaking because this rule contains provisions, including radiological criteria, that apply to termination of a license.

With regard to the comment on the NWSA, it should be noted that Section 151(b) of the NWSA already authorizes ownership by the U.S. Department of Energy, if NRC makes certain determinations. Therefore, no further legislation is needed to grant this authority. The rule language has been clarified to ensure that this authority may be implemented by NRC and DOE.

C.1.4 Summary of revisions to rule on codifying provisions for certain facilities. The rule has been modified to include the use of alternate criteria in

specialized circumstances and under the provisions described above.

C.2 Exclusion of Uranium/Thorium Mills Proposed in § 20.1401(a)

C.2.1 Proposed rule content. The proposed rule stated that, for uranium mills, the criteria of the rule apply to the facility but do not apply to the disposal of uranium mill tailings or to soil cleanup. The proposed rule referred to 10 CFR Part 40, Appendix A, where criteria already exist (§ 20.1401(a)).

C.2.2 Comments. Comments on the proposed rule generally agreed with the exclusion for disposal of mill tailings and soil cleanup. Commenters also recommended that the rule exempt conventional thorium and uranium mill facilities and in situ leach (ISL) (specifically uranium solution extraction) facilities from the scope of coverage because they stated that the decommissioning of these sites is covered by Appendix A to 10 CFR part 40 and 40 CFR part 192.

C.2.3 Response. Currently, there are regulations applicable to remediation of both inactive tailings sites, including vicinity properties, and active uranium and thorium mills. Under the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978, as amended, EPA has the authority to set cleanup standards for uranium mills and, based on that authority, issued regulations in 40 CFR part 192 which contain remediation criteria for these facilities. NRC's regulations in 10 CFR part 40, Appendix A, apply to the decommissioning of its licensed facilities and conform to EPA's standards for uranium mills. At ISLs, the decommissioning activities are similar to those at uranium mills and consist mainly of the cleanup of byproduct material as defined in Section 11e.(2) of the Atomic Energy Act of 1954, as amended.

Thus, applicable cleanup standards already exist for soil cleanup of radium in 10 CFR part 40, Appendix A, Criterion 6(6). Radium is the main contaminant at mills in the large areas (20-400 hectares (50 to 1000 acres) for uranium mills) where windblown contamination from the tailings pile has occurred, and at ISLs (in holding ponds). These standards require that the concentration of radium in those large areas not exceed the background level by more than 0.19 Bq/gm (5 pCi/gm) in the first 15 cm (6 inches) of soil, and 0.56 Bq/gm (15 pCi/gm) for every 15 cm (6 inches) below the first 15 cm (6 inches). Cleanup of radium to these concentrations would generally result in doses higher than the unrestricted use dose criterion of this rulemaking,

although, in actual practice, cleanup of uranium mill tailings results in radium levels lower than the 10 CFR part 40 standards, and radium is usually removed to background levels during cleanup of uranium and thorium to the levels in existing NRC guidance documents.

However, in other mill and ISL site areas proximate to locations where radium contamination exists (e.g., under the mill building, in a yellow cake storage area, under/around an ore pad, and at ISLs in soils where spray irrigation has occurred as a means of disposal), uranium or thorium would be the radionuclide of concern. A difficulty in applying 10 CFR part 40, Appendix A, as a standard for uranium and thorium, is that it does not have any cleanup standards for soil contamination from radionuclides other than radium. Application of the decommissioning dose criterion of the final rule to these areas (while retaining the 10 CFR 40, Appendix A, standard for radium) would result in a situation where the cleanup standard of that small portion of the mill site would be lower than the standard for the large windblown tailings areas where radium is the nuclide of concern. This would result in situations of differing criteria being applied across essentially the same areas and would be a problem for contamination existing both in uranium mill soils and buildings.

The Commission has considered the most appropriate means to address requirements for cleanup at uranium and thorium mills and ISLs (collectively referred to as UR facilities) for unrestricted release of the site other than tailings disposal and reclamation subject to the requirements of 10 CFR part 40, Appendix A. One way would be to include criteria for UR facilities as part of this rulemaking. However, as noted above, there are complexities associated with decommissioning of these unique facilities which could cause practical problems in applying the standards of this rulemaking to UR facilities. Therefore, the Commission has decided to exclude UR facilities from the scope of this rulemaking.

To allow for full consideration by the Commission and affected parties of the issues associated with decommissioning UR facilities and of the regulatory options listed above, the Commission is publishing a separate notice in this Federal Register reopening the comment period to specifically request additional comment on the regulatory options for decommissioning criteria for UR facilities. The Commission is not reopening the comment period for any other issue discussed in this Federal

Register notice. In the interim, the Commission will continue its current practices for decommissioning UR facilities.

C.2.4 Summary of rule revisions for uranium/thorium mills. The Commission is excluding uranium/thorium mills from the scope of this rulemaking and is publishing a separate notice requesting additional comment on the specific standard for license termination of UR facilities.

C.3 Other Exemptions

C.3.1 Comments. Commenters suggested certain other exemptions be specifically provided for in the rule including:

- (1) Licensees that possess and hold only sealed sources or limited quantities; and
- (2) Radioactive waste materials disposed of in accordance with NRC regulations in formerly used §§ 20.302 and 20.304 because ALARA was applied on a site-specific basis for these facilities.

Other commenters disagreed and stated that all such waste must be decommissioned. In addition, there were commenters who stated that exemption procedures should be spelled out.

C.3.2 Response. No exemption from the rule for sealed source or limited quantity users is necessary. Under provisions of 10 CFR Parts 30, 40, and 70, §§ 30.36(c)(1)(v), 40.42(c)(1)(v), and 70.38(c)(1)(v), the licensee could provide assurance that building or soil contamination has never occurred or demonstrate that the level of radioactive material contamination in the facility conforms with screening criteria.

With regard to burials, as discussed in the preamble to the proposed rule, the determination of whether the licensee meets the radiological criteria of the final rule includes consideration of all residual radioactivity at the site, including burials made in conformance with 10 CFR part 20 (both existing § 20.2002 and formerly used §§ 20.302 and 20.304). This is consistent with prior Commission statements made in the preamble to the 1988 rulemaking on general requirements for decommissioning (53 FR 24018; June 27, 1988) and in promulgation of the final rule on timeliness of decommissioning (59 FR 36026; July 15, 1994). More recent past burials (1981 to present) were frequently made in conformance with guidelines defined in "Onsite Disposal of Radioactive Waste," NUREG-1101, Volumes 1 through 3. This guidance was based on a maximum annual whole body or critical organ dose of 0.25 mSv (25 mrem). Although

numerically similar to the existing low-level waste disposal criteria in 10 CFR part 61, the Commission believes that, as a whole, the regulations applicable to low-level waste disposal sites are much more restrictive than those applicable to onsite burials. The pathway parameters on which NUREG-1101 is based may not be comparable to those used to define the rule's unrestricted release criteria. Nevertheless, case-by-case analysis of the potential radiological impacts could indicate that leaving the burials in place could be consistent with unrestricted or restricted release of the affected site. For past burials that have involved long-lived nuclides, site-specific modeling may also justify leaving these burials in place. Thus, the Commission sees no reason to specifically exempt these burials from consideration under this final rule but would continue to require an analysis of site-specific overall impacts and costs in deciding whether or not exhumation of previous buried waste is necessary for specific sites. In addition, the general exemption provisions of 10 CFR part 20 are available to consider unique past burials on a case-by-case basis.

With regard to specific provisions in the rule for exemptions, the Commission is not convinced that a significant number of exemptions to the unrestricted or restricted use provisions of the final rule will be necessary. The Commission believes that the options in this rule for release under alternate criteria and the flexibility contained in the rule including the use of realistic site-specific screening and modeling provide licensees with sufficient latitude.

D. Groundwater Protection Criteria (Proposed Rule § 20.1403)

D.1 Proposed Rule Content

The proposed rule (§ 20.1403(d)) indicated that a licensee must demonstrate a reasonable expectation that residual radioactivity from the site will not cause the level of radioactivity in groundwater that is a current or potential source of drinking water to exceed the limits specified in 40 CFR part 141. This groundwater requirement would have been in addition to the proposed dose criterion for unrestricted use and was included as part of the proposed rule on EPA's recommendation. The preamble to the proposed rule solicited responses to three specific questions on this proposal, including whether a separate standard was appropriate as a supplement to an overall radiological dose criterion that applies to all exposure pathways.

D.2 Use of EPA Drinking Water Standards in NRC Rule

D.2.1 Comments. A number of commenters disagreed with the inclusion of a separate groundwater requirement. In response to the specific questions asked, many of these commenters stated that a separate requirement for groundwater was not necessary if the rule included an all-pathways standard. A commenter also noted that application of Maximum Contaminant Levels (MCLs) to groundwater was inappropriate because the MCLs of EPA's drinking water standards were based on outdated dosimetry (ICRP2) and were applicable to public water systems rather than to groundwater directly. Other commenters supported establishing a separate groundwater requirement as being consistent with the EPA standard.

D.2.2 Response. As noted in Section IV.D.1, the NRC's proposed rule included separate requirements for groundwater protection. The NRC staff has reviewed the public comments on its proposed rule, including the EPA comments supporting the separate requirement, has reviewed the bases and rationale for a separate groundwater standard, and has conducted further technical analyses of groundwater protection in the Final GEIS.

As described in some detail in Section IV.A.2.2, there were three broad considerations that provided the overall rationale for the proposed rule's contents. The first two considerations were related to the health and safety aspects, and the third was related to cost and practicality aspects. As was done in Section IV.A.2.2, regarding the establishment of unrestricted and restricted dose criteria, this section reexamines these three considerations in the context of determining appropriate groundwater cleanup requirements for decommissioning.

With regard to the first two considerations, as described in Section IV.A.2.2, above, this final rule contains acceptable criteria (including the dose criterion for unrestricted use, and provisions for ALARA, restricted use, and alternate site-specific criteria) to protect the public from radiation from all of the pathways that they could be exposed to from a decommissioned facility (e.g., direct exposure to radiation, ingestion of food, inhalation of dust, and drinking water). The bases used in selecting the dose criterion for this final rule are stated in Section IV.A.2.

The dose criterion codified in § 20.1402 of this final rule limits the amount of radiation that a person can

potentially receive from all possible sources at a decommissioned facility. Therefore, it is an "all-pathways" standard. Examples of these pathways include:

- (a) Direct exposure to radiation from material on the soil surface;
- (b) Eating food grown in the soil and eating fish from surface waters;
- (c) Inhalation of dust from soil surfaces; and
- (d) Drinking water obtained from the groundwater.

Because equivalent doses received through any pathways of exposure would involve equivalent risks to the person exposed, NRC concludes the following with regard to the need to set a separate standard for groundwater:

(a) There is no reason from the standpoint of protection of public health and safety to have a separate, lower dose criterion for one of the pathways (e.g., drinking water) as long as, when combined, the dose from all the pathways doesn't exceed the total dose standard established in the rule;

(b) A standard imposed on a single pathway, such as drinking water, may have been appropriate in the past for site cleanups when a dose-based standard for decommissioning did not exist. It may also be appropriate for chemical contamination when no total limit on exposure exists. However, NRC's final rule on decommissioning would issue an overall TEDE criterion for all radionuclides combined and for all pathways of exposure combined, including drinking water, thus removing the need for a single-pathway standard for groundwater. This is a more uniform method for protecting public health and safety than was contained in NRC's proposed rule that set separate requirements using the MCLs contained in 40 CFR part 141. This is because the MCL requirements do not cover all radionuclides and do not provide a consistent risk standard for different radionuclides as will be provided by adoption of a single dose criterion in the final rule. In addition, the MCLs are based on a modeling approach that has not been updated to reflect current understandings of the uptake and doses resulting from ingestion of radionuclides through drinking water.

The Commission agrees with the commenters that exposures from drinking contaminated groundwater need to be controlled; with the EPA's groundwater protection principles contained in the document "Protecting the Nation's Groundwater: EPA Strategy for the 1990's," 212-1024 (July 1991); and with the EPA position that the environmental integrity of the nation's groundwater resources needs to be

protected. Nonetheless, it is the Commission's position that protection of public health and safety is fully afforded by limiting exposure to persons from all potential sources of radioactive material by means of a TEDE at a decommissioned facility. There is, therefore, no compelling reason to impose a separate limit on dose from the drinking water pathway, and the rule has been modified to delete a separate groundwater standard. To make clear NRC's concern over the importance of protecting this resource as a source of potential public exposure, the rule has also been modified to include a direct reference to the groundwater pathway in the all-pathways unrestricted use dose criterion in § 20.1402.

In actual situations, based on typical operational practices of most nuclear facilities and on the behavior of radionuclides in the environment for the very large majority of sites, concentrations of radionuclides in the groundwater will be well below the dose criterion of this final rule and would be either below or only marginally above the MCLs codified in 40 CFR Part 141 as referenced in the proposed NRC rule. For example, because the large majority of NRC licensees either use sealed sources or have very short-lived radionuclides, it is highly unlikely that contamination from these facilities would reach the groundwater. Even for facilities like reactors or certain industrial facilities, whose major contaminants are relatively short-lived nuclides like Co-60 or Cs-137, the migration of these nuclides through soil is so slow that it precludes groundwater contamination of any significance. In addition, it is not anticipated that decommissioned nuclear facilities will be located near enough to public water treatment facilities so that treatment facilities would be affected by the potential groundwater contamination from decommissioned facilities.

As further described in Section IV.A.2, the Commission is basing its decision on analyses in the Final GEIS, that consider cost and practicality factors, to provide additional information regarding decisions on issues such as achieving ALARA levels below the dose criterion of § 20.1402 and allowing restricted use. These analyses also consider how these issues relate to groundwater cleanup, including how, and to what level, ALARA efforts should be made, and if, and in what manner, restrictions on use should be considered. The analysis of impacts to populations and the cost of remediating those impacts is particularly important for groundwater

because this resource can be used in a variety of public uses away from the site being decommissioned. The Final GEIS draws from NRC's experience and the public comments regarding contaminated sites. In particular, considerations with regard to groundwater remediation include potential remediation methods such as removal of soil to preclude prospective contamination, pump and treat processes for the cleanup of existing groundwater contamination, and the supply of alternate sources of drinking water, as well as a consideration of administrative costs associated with predicting and measuring levels of contaminated groundwater.

Because of the range of possible parameters, scenarios, and site-specific situations, Section IV.A.2 notes that the analyses in the Final GEIS indicate that there is a wide range of cost-benefit results and there is no unique algorithm that is a decisive ALARA result for all facilities. This finding is especially true for groundwater contamination where the behavior of radionuclides in soil and in the aquifer is highly site-specific; much more so than in concrete. The results of the overall considerations of Section IV.A.2 for all pathways would be applicable to the groundwater component. As pointed out in Section IV.A.2.3.2, it is intended that the regulatory guidance to be developed to support the final rule will provide guidance on these considerations. Although preparation of this guidance is in a preliminary stage, it is anticipated that this guidance would likely indicate that reducing doses to values less than the dose criterion of 0.25 mSv (25 mrem/y) is generally not likely to be cost-effective when evaluated using NRC's regulatory analysis framework presented in NUREG/BR-0058 and NUREG-1530, although there may be ALARA considerations for sites with a relatively large population obtaining all their drinking water from the site plume.

D.2.3 Summary of rule revisions on groundwater and plans for implementation. Based on the above, the Commission concludes that application of a separate groundwater protection limit, in addition to the all pathways dose limit, is not necessary or justified and has deleted this requirement from its final rule.

As noted above, regulatory guidance to be prepared in support of the final rule will likely describe site-specific conditions under which an ALARA analysis could identify the need to consider reducing the dose below the unrestricted use dose criterion (e.g., large existing population deriving its

drinking water from a downstream supply using a downstream plume).

E. Public Participation (Proposed Rule §§ 20.1406 and 20.1407)

E.1 Proposed Rule Content

The proposed rule included a general requirement in § 20.1406(a) that upon receipt of a decommissioning plan or proposal for restricted use from a licensee, the NRC must notify and solicit comments from local and State governments and Indian nations in the vicinity of the site and publish a notice in a forum that is readily accessible to persons in the site vicinity to solicit comments from affected parties.

The proposed rule also contained additional requirements, in §§ 20.1406(b) and 20.1407, for decommissionings when the licensee does not propose to achieve unrestricted release (i.e., instead restrict site use after license termination). In those cases, the licensee would be required to convene a site-specific advisory board (SSAB) for the purpose of obtaining advice from affected parties on the decommissioning. The Commission envisioned that the advice obtained would address issues as to whether:

(a) There are ways to achieve unrestricted release that would not be prohibitively expensive or cause net public or environmental harm;

(b) Institutional controls proposed by the licensee will provide reasonable assurance that the TEDE does not exceed the dose criterion, will be enforceable, and will not impose an undue burden on affected parties; and

(c) There is sufficient financial assurance to maintain the institutional controls.

Public comments received on the general requirements related to notification and solicitation are discussed in Section IV.E.2. Comments received on the additional requirements on public participation for restricted use are discussed in Section IV.E.3.

E.2 General Requirements on Notification and Solicitation of Comments (Proposed Rule § 20.1406(a))

E.2.1 Comments. Several commenters supported the public notification requirements in proposed § 20.1406(a). Other commenters stated that the proposed notification requirements exceeded requirements of the Administrative Procedures Act (APA) and that NRC has not demonstrated a health and safety need for these requirements. Suggestions for public participation offered by some commenters included that the public not only be informed but be able to

participate effectively in all decommissioning cases, not just those related to SSABs. Other specific comments addressed the type and timing of the notification, meetings to be held, who should bear the cost of public participation, the availability of licensee documents, NRC's role, and the need for exemptions.

E.2.2 Response. A variety of comments have been provided on this issue during all phases of this rulemaking from the earliest workshops through comments on the NRC staff draft rule (February 2, 1994; 59 FR 4868) and the proposed rule, and in a workshop on public participation aspects of the rule held in December 1994. Comments provided in these forums have been similar to those noted above. A common theme of the December 1994 workshop was that there are many approaches for involving the public in the decommissioning process. Participants generally favored exploration of site-specific alternatives as opposed to generally mandated processes, like SSABs. Many commenters suggested that there was merit to having a public participation plan developed by the licensee in cooperation with interested parties so the public's participation could be tailored to the needs of the community and the licensee.

The Commission agrees that public participation can be an important component for informing and involving the public. The Commission recognizes the potential benefit for all decommissionings and site releases of significant community concern to keep the public informed and educated about the status of decommissioning at a particular site and to elicit public concerns about the decommissioning process at that site. Based on the comments received and on a consideration of current Commission practices, the general provisions in § 20.1405 that provide for notification of the public and government entities and solicitation of comment have not been modified although a specific reference to notifying and soliciting comments from the EPA has been added to § 20.1405. The reason that the general provisions of § 20.1405(a) have not been modified in response to the public comments received is because existing Commission policies and practices, coupled with the provisions of this rule and a recent rulemaking on power reactor decommissioning, appear reasonable by providing for public participation in the decommissioning and site release process. Specifically in the case of power reactors, as is noted in the preamble to the separate final rule

entitled "Decommissioning of Nuclear Power Reactors" that was published on July 29, 1996 (61 FR 39278), the Commission has held public meetings and informal hearings for plants undergoing decommissioning, even though limited formal requirements exist for this type of involvement. To codify those activities, that rule requires a public meeting to be held at the time of submittal of a reactor licensee's Post-Shutdown Decommissioning Activities Report (PSDAR) and requires that this meeting be noticed in a local public forum and held in the vicinity of the facility. The PSDAR must also be made available for public review and comment. In addition, a licensee is required to hold a public meeting on the License Termination Plan (LTP), that for power reactors now replaces the decommissioning plan, in the vicinity of the facility following notice of the meeting in a local public forum. The LTP is also required to be made available for public comment with full hearing rights under Subpart G or L of 10 CFR 2.1201, depending on the disposition of the spent fuel.

Similarly, for materials facilities involving significant decommissioning efforts, the Commission has implemented efforts to inform and involve the public in the process. These efforts were intended to provide early and meaningful opportunities for public involvement in the decommissioning process. For example, the NRC staff has initiated public information meetings at the Parks Township shallow land disposal area and the Sequoyah Fuels Corporation facility and conducted public information roundtables at various sites. Stakeholder representatives are routinely invited to participate in roundtable discussions and information exchanges on the status and issues associated with the decommissioning project. These initiatives are consistent with the NRC staff's public responsiveness plan in NUREG/BR-0199. Where appropriate, the Commission plans to use these public involvement mechanisms and other public information meetings and involvement efforts, such as community information boards, at other facilities in the future on a site-specific basis to address specific needs that exist in affected communities.

Based on these considerations, current practices and procedures and existing rule provisions are appropriate to provide for public participation in the decommissioning and license termination process and to provide sufficient flexibility to accommodate different situations, and therefore the general requirements of § 20.1405 on

notification and solicitation of comments have been retained. Sections 20.1405 (a) and (b) provide for the notification of specific government entities and the public in the vicinity of the site when a licensee submits a LTP or decommissioning plan for any of the license termination approaches described in Section IV.A.2.3 or specifically proposes to use restricted use (see Section IV.B) or alternate criteria (see Section IV.C). The NRC will review public comments gathered by the licensee prior to final NRC actions on the licensee's request for license termination. A specific reference has been added in § 20.1405(a) to provide for specific notification and solicitation of comment from EPA where the licensee proposes to use alternate criteria. To the extent that EPA has an interest in commenting on proposed decommissionings other than those under alternate criteria, EPA comments would be considered under the general notice and comment provisions of § 20.1405.

Specific additional requirements for public participation in cases where restricted use or alternate criteria are proposed by a licensee are discussed further in Section IV.E.3.

E.2.3 Summary of rule revisions on general requirements on public participation and notifications. No overall changes were made to the provisions for public notification in the final rule, except to include specific reference to notifying and soliciting comments from the EPA where the licensee proposes to use alternate criteria for license termination.

E.3 Additional Requirements on Public Participation (Including Those for Restricted Use, for Alternate Criteria, and for Use of SSABs) (Proposed Rule § 20.1406(b))

E.3.1 Comments. Comments were specifically submitted on the requirement in § 20.1406(b) for the use of SSABs. These comments were submitted both in response to the proposed rule, as well as in connection with the NRC workshop on SSABs held on December 6–8, 1994 (see NUREG/CR-6307 for a summary of the workshop).

Some commenters supported the proposed requirement in § 20.1406(b) that would require licensees to convene a SSAB for restricted release of a site. Other commenters objected to the use of a SSAB in each case involving a restricted release of a site. These commenters expressed concern that use of SSABs was inconsistent with the timeliness rule or that exemptions or other relief from the timeliness rule

would be needed; that a need for SSABs has not been demonstrated; and that SSABs are inconsistent with Federal Advisory Committee Act, Administrative Procedures Act, and Atomic Energy Act requirements. Commenters suggested alternatives to mandatory SSABs, such as addressing the need for a board in a public participation plan or providing more flexibility in deciding when to use SSABs. Some commenters indicated that use of SSABs should be extended to the unrestricted use of sites.

E.3.2 Response. One of the major issues raised by the comments and in the workshop discussions on the SSAB was the advisability of mandating a specific public involvement mechanism such as a SSAB as opposed to establishing broad performance criteria that would allow the licensee flexibility in selecting the appropriate public involvement mechanism for a particular site. There was general agreement that flexibility was always desirable, in establishing meaningful performance criteria. However, it should be emphasized that some of those who supported the use of performance criteria did so only in the context of the expansion of the scope of licensee public involvement requirements, including an SSAB, to cover facilities beyond the restricted use category. An additional issue of concern to commenters was whether it was more appropriate for the licensee to establish the SSAB, as contemplated by the proposed rule, or whether the Commission should establish the SSAB. The resolution of this issue depends not only on the objectives that the Commission believes will be served by an SSAB, but also on what the Commission's broader responsibilities are in the public involvement area. This, in turn, relates to another issue raised by the commenters: the scope and duration of a SSAB's responsibilities.

In proposing a requirement for obtaining advice from affected parties on restricted use, the Commission's objective is to involve diverse community interests directly with the licensee in the development of the LTP or decommissioning plan for a proposed restricted use decommissioning. Community concerns, as well as community-based knowledge on the appropriate selection of institutional controls, risk issues, and economic development, can be potentially useful in the development of the LTP or decommissioning plan. For Commission and licensee resources to be used efficiently, the Commission believes that this type of information should be considered and incorporated as

appropriate into the LTP or decommissioning plan before the plan is submitted to the NRC for review. The licensee is the appropriate entity to accomplish this.

In considering a requirement to convene a SSAB or similar group, the Commission has considered alternatives regarding the most effective way to ensure that the licensee considers the diversity of views in the community. Small group discussions can be a more effective mechanism than written comments or large public meetings for articulating the exact nature of community concerns, determining how much agreement or disagreement there is on a particular issue, and facilitating the development of acceptable solutions to issues. Also, the type of close interaction resulting from a small group discussion could serve the licensee well in developing a credible relationship with the community in which it is operating.

Use of public participation methods is consistent with a variety of initiatives being undertaken both within NRC and at other Federal agencies regarding stakeholder involvement in the decommissioning process. Examples of community involvement at NRC-licensed sites being decommissioned under the SDMP are described above in Section IV.E.2.2. Similarly, several Federal agencies (including EPA, DOE, the Department of Defense (DOD)) that make up the Federal Facilities Environmental Restoration Dialogue Committee, in their evaluation of the cleanup of Federal facilities, have prepared a set of "Principles for Environmental Cleanup of Federal Facilities," dated August 2, 1995. Principle No. 14 notes the need for agencies to provide for involvement of public stakeholders from affected communities in facility cleanup decisionmaking. It also notes that rather than being an impediment, meaningful stakeholder involvement has, in many instances, resulted in significant cleanup cost reductions.

The Commission envisions that a process for obtaining advice from affected interests would provide the opportunity for public involvement in the important issues related to restricted use of a site similar to those described in Section IV.E.2.2. In particular, one of the important issues would likely be the unavailability of the site for full unrestricted public use. In its deliberations on the rule, the Commission has envisioned that the following should occur:

(1) The licensee would present information to, and seek advice from, affected parties on the provisions for

limiting the dose to meet the criteria in the rule (e.g., limiting use to commercial/industrial use with elimination of the resident pathway), how the restrictions would be enforced (e.g., use of deed restrictions, engineered barriers, State or Federal control or ownership), the effect on the community, and the adequacy of the level of financial assurance (e.g., sufficient funds for maintenance of the deed or of fencing). In seeking such advice, a broad cross section of the affected parties in the community would be involved and there would be opportunity for a comprehensive discussion of the issues by those parties. The information presented would be similar to that which the rule would require the licensee to prepare and submit to NRC to demonstrate the appropriateness and safety aspects of the restrictions on site use.

As an example, in the specific case where the nuclides involved are relatively short-lived (e.g., Co-60 and Cs-137), as discussed in Section IV.B.3, calculations could demonstrate that it is preferable to restrict use of the site for a finite time period to allow for radioactive decay than it is to ship large quantities of soil. These calculations would also show the length of time that the restrictions would need to remain in force to allow for radioactive decay to reduce residual levels below the unrestricted dose criterion. In addition, these calculations could show that restricting the site to industrial use through deed restrictions during this time period would eliminate or decrease certain pathways and limit the dose to less than the 0.25 mSv/y (25 mrem/y) dose criteria in the rule. Finally, such an analysis could indicate that continued use of the site for an industrial purpose similar to its currently existing use should not adversely impact the community. Consideration of community advice on appropriate institutional controls for controlling access to the site during this decay period would provide the licensee with useful information in developing the necessary institutional controls. As part of the process of public participation, the licensee would make public a summary of the advice received and the results of the discussions on that advice.

For more complex cases where large volumes of uranium/thorium contamination would remain under a form of restricted use, the long-lived nature of these nuclides would result in the restrictions having to remain in force in the community for a long period of time. The information presented by the licensee would be similar to that for shorter-lived nuclides, including the

rationale for how use of restrictions can eliminate exposure pathways (e.g., for uranium, elimination of the resident farmer pathway greatly reduces the dose because most of the dose received from uranium is through the agricultural pathway); the nature of the institutional controls expected to restrict use over extended time periods (e.g., deed restrictions, engineered barriers such as fencing, restricted cells, etc., and/or government control of the restricted area); and other special provisions such as periodic rechecks of the restricted area and the continued effectiveness of institutional controls (see Section IV.B.3). As discussed previously in Section IV.E.2.2, because community involvement already exists either formally or informally at a number of complex sites, this provision would not change the situation at these sites significantly.

(2) Following solicitation of advice from affected parties, the licensee will include the recommendations from these parties in the LTP or decommissioning plan and indicate how those recommendations were addressed along with the technical basis for addressing them. The technical basis for dealing with the recommendations would presumably derive from the presentation made to the affected parties described above and is the type of analysis that would be necessary to demonstrate to the NRC the acceptability of restricted use provisions.

Based on the above, it appears reasonable to retain the requirement for sites to seek advice from individuals and institutions in the community who may be affected by the decommissioning where restricted use is proposed. In retaining this requirement, the Commission has decided to modify the rule to include general provisions that require that such advice be sought on the fundamental performance objective of institutional controls, namely that they function to provide reasonable assurance that the TEDE does not exceed the dose criteria of the rule, that they are enforceable, and that they will not impose undue burdens on the local community. This general provision replaces the specific reference contained in the proposed rule (§ 20.1406(b)) that advice must be obtained by convening a SSAB. The rationale for this modification derives from the discussion above on site flexibility, protecting public health and safety, and ensuring community involvement. Specifically, it is anticipated that these requirements will contain the beneficial provisions of ensuring timely and meaningful opportunity for advice from

affected parties to be considered and will allow licensees additional flexibility in determining the best methods for obtaining that advice based on site-specific considerations. For example, there may be situations where the creation of a SSAB may not be appropriate as in cases where an existing organization is already in place to assume this role, or where it is clear that the community is willing to rely on local government institutions to interact with the licensee. Appropriate mechanisms for seeking advice from affected parties could include a public meeting or series of meetings, a specific process for obtaining written or computerized public comment by internet or web-site means, or by convening small groups such as a SSAB. Any of these processes would result in an opportunity for a comprehensive, collective discussion of the issues by the affected parties. All of these approaches have been used in prior decommissionings.

To ensure that there will continue to be significant opportunity for public involvement in the decommissioning process, the modified final rule has retained the principal objectives of an SSAB from § 20.1407 of the proposed rule, namely that a licensee seeking community advice on the proposed restricted use will provide for: (1) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning; (2) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and (3) a publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

Advice sought from affected parties in the manner noted above would be considered in development of the LTP or decommissioning plan, and the NRC will review public comments gathered by the licensee prior to final NRC action on the licensee's request for license termination.

As discussed in Section IV.C, the Commission included requirements for consideration of alternate criteria for certain difficult sites because inclusion of such requirements is preferable to having these facilities apply for exemptions. To ensure that there is full public participation in any decision regarding such sites, licensees will be required to seek advice regarding this approach from affected parties in the same manner as described above for restricted use and described in detail in

Section IV.C.3. In addition, use of alternate criteria will only be considered by the Commission after review of the NRC staff's recommendations that fully address any comments provided by the public and EPA regarding the decommissioning or license termination plan.

E.3.3 Summary of rule revisions on SSABs. Specific text referring to SSABs has been replaced with a requirement that licensees seek community involvement and advice on any plans for restricted use or alternate criteria for decommissioning through a variety of methods. This requirement includes provisions for specifically how that advice is to be sought and documented in the LTP or decommissioning plan. Regulatory guidance is planned which will include criteria for establishing and using the processes for seeking such advice, including establishing SSABs, and for delineating those situations in which an SSAB may not be appropriate. The guidance will discuss that the expected starting point in providing an opportunity for public involvement is the establishment of an SSAB; however, the provisions of the rule provide licensees the flexibility to use other approaches where appropriate.

E.4 Specific Questions on Functioning of SSABs

E.4.1 Comments. A number of comments were received on the functioning of SSABs including their responsibilities, membership, independence and support, meetings, and results.

(1) Some commenters recommended that SSABs should be given responsibilities beyond those specified in proposed § 20.1407(a). Other commenters stated that the rule should restrict SSAB activities to a specific mission which is advisory only and nontechnical.

(2) With regard to membership in SSABs, a number of comments recommended specifically how the SSAB and its membership should be constituted. Some commenters stated that many of the proposed SSAB issues that are listed appear to require specialized expertise that members of the general public might not have. Some commenters questioned whether NRC and other Government agencies should be prohibited from participating in SSABs because of conflict of interest questions. Other commenters stated that the NRC should be officially represented on the SSAB.

(3) With regard to independence of and support for SSABs, some comments received stated that an SSAB should be selected and operated independently of

the licensee. One commenter stated that the SSAB would be unique as presently proposed because it does not appear to be accountable to its employer.

Comments were received regarding how SSAB costs would be contained and how they would be paid, including costs of technical consultants to the SSAB or independent SSAB labs and experts.

(4) With regard to SSAB meetings and records, comments were provided concerning frequency, advertisement and openness of meetings, and access to licensee official documents, both those that are part of the public docket and those that contain proprietary or other confidential information;

(5) With regard to use of SSAB results, comments were received concerning the actions expected to be taken by the licensee and the NRC on the advice or comments of the SSAB. These actions include a licensee's analysis of SSAB recommendations, the need to obtain the SSAB's consensus on aspects of the decommissioning plan, and the effect on time restraints of submitting a decommissioning plan reconciling SSAB advice.

E.4.2 Response. Based on the discussion in Section IV.E.3.2 regarding the need to explore site-specific alternatives as opposed to generally mandated SSABs, the rule contains broad provisions for obtaining community advice and recommendations through such bodies. The purpose of the requirements on public involvement is to obtain meaningful public input into preparation of the plan for decommissioning the site when restrictions on future use or proposals for alternate criteria are planned. To allow for flexibility, Section IV.E.3.2 indicates that the final rule has been modified to establish general requirements for obtaining such advice while retaining the principal objectives of an SSAB from § 20.1407(b)-(f) of the proposed rule. The details, such as specific issues of size, membership, responsibilities, administration, meetings, and records requested in these comments are more appropriately contained in regulatory guidance. With regard to issues of funding public involvement, reasonable efforts towards obtaining advice from affected parties should be undertaken by the licensee, such as sponsoring and holding community meetings and distributing information at those meetings regarding the rationale for and nature of the restricted use. Examples of these meetings are those held for reactor facilities and those held for several

SDMP sites, for example the Cushing site.

E.4.3 Summary of rule revisions on functioning of SSABs. As noted in Sections E.3.2 and E.4.2 above, the principal objectives of SSABs have been retained in § 20.1403(d) which replaces the detailed provisions in proposed § 20.1407 (b) through (f) of the proposed rule. The guidance that the NRC develops to implement the final rule will include additional guidance on seeking advice from affected parties, including establishing and using SSABs.

F. Other Procedural and Technical Issues

F.1 State and NRC Compatibility

F.1.1 Comments. Some commenters stated that States should have the authority to demand stricter radiation protection standards than the Federal Government. Some commenters recommended that States not be allowed to set less strict conditions. Other commenters stated that radiological criteria should be an area of strict compatibility and States should not be permitted to impose more stringent standards. Specific comments raised included questions as to which standard would apply if there was a conflict, whether a State would need NRC approval to require more strict standards, application of ALARA provisions, who should pay for costs if more strict State standards are applied, exemptions, and grandfathering provisions similar to those in Section IV.F.2.

F.1.2 Response. The proposed rule did not propose a compatibility determination because the Commission was in the process of developing a compatibility policy. Instead, comments were requested on compatibility and the comments received were divided on this issue.

The current compatibility policy categorizes rules into four "divisions." Division 1 rules are those that Agreement States must adopt, essentially verbatim, into their regulations. These rules include provisions that form the basic language of radiation protection and include technical definitions and basic radiation protection standards such as public dose limits, occupational exposure limits and effluent release limits. Division 2 rules address basic principles of radiation safety and regulatory functions. Although Agreement States must address these principles in their regulations, the use of language identical to that in NRC rules is not necessary if the underlying principles are the same. Also, the Agreement States

may adopt requirements more stringent than NRC rules.

Because the dose criterion in the rule is not a "standard" in the sense of the public dose limits of 10 CFR part 20 but is a constraint within the public dose limit that provides a sufficient and ample margin of safety below the limit, it is reasonable that the rule would be a Division 2 level of compatibility under the current policy. This means the Agreement States would be required to adopt the regulation but would have significant flexibility in language, and would be allowed to adopt more stringent requirements.

The Commission has not yet approved a new final policy on compatibility that revises the current policy, although it is currently considering the implementing procedures for this policy (SECY-96-213 dated October 3, 1996). Until the new policy becomes effective, NRC will continue to apply the current Agreement State compatibility policy.

F.2. Grandfathering Sites With Previously Approved Plans (Proposed Rule 20.1401(b))

F.2.1 Proposed rule contents.

Section 20.1401(b) of the proposed rule indicated that the criteria do not apply to sites already covered by a decommissioning plan approved by the Commission before the effective date of the final rule and in accordance with the criteria identified in the SDMP Action Plan of April 16, 1992 (57 FR 13389).

F.2.2 Comments. Some commenters supported the provision of grandfathering sites covered by a decommissioning plan approved by the Commission (and suggested extending it to plans under review) because it is consistent with previous NRC statements in the SDMP Action Plan. Some commenters suggested that criteria other than those in the SDMP Action Plan should also be used for grandfathering. Other commenters opposed grandfathering because criteria used in those cases would be different than those in the rule.

Commenters recommended that the rule address how the criteria would apply to portions of sites. Some commenters recommended that the grandfathering provision cover an NRC-approved decommissioning plan even if it is for a portion of a site.

F.2.3 Response. The Commission continues to believe that sites being decommissioned under previously approved decommissioning plans should be grandfathered from the provisions of the final rule. Similarly provisions should apply to licensees whose decommissioning plans are in

the final stages of preparation or of NRC review. From a health and safety perspective, the NRC believes the criteria identified in the SDMP Action Plan are reasonably consistent with the final rule's dose criteria. The contamination levels defined in the SDMP Action Plan are within the range of measurable values that could be derived through the site-specific screening and modeling approaches defined in guidance supporting this final rule. The Commission believes the grandfathering approach will facilitate the timeliness of decommissioning and ensure licensees that resources spent to develop and implement a decommissioning plan are justified.

With regard to criteria other than the SDMP Action Plan, the grandfathering provision in the proposed rule was conditioned on the license being terminated in accordance with the criteria identified in the SDMP Action Plan, because those criteria are consistent with the final rule. However, the grandfathering provision does not extend to any former decommissioning actions in general because that would not provide assurance that such actions were adequate to protect the public. As part of its overall upgrading of its oversight of decommissioning actions, NRC has conducted a systematic review of a large number of license terminations to identify sites with significant contamination and has identified a number of sites warranting additional NRC attention. Broadening the grandfathering exclusion in the rule would not be consistent with the objectives of this comprehensive agency review and is not supported by existing information and experience.

The NRC staff anticipates that grandfathering would occur as follows:

- (1) Licensees would have up to 12 months after the effective date of the rule to submit sufficient LTPs or decommissioning plans (if required) in accordance with the SDMP Action Plan criteria;
- (2) The NRC staff would have up to 24 months after the effective date of the rule to approve those plans;
- (3) Any plan submitted after 12 months or approved after 24 months of the effective date would have to be consistent with the new rule; and
- (4) There would be provisions for day-for-day extension if an EIS is required in the submittal; i.e., if development of an EIS is required before NRC can reach a decision regarding the decommissioning, then the 12-month window for submitting an LTP or decommissioning plan would be extended by the same number of days

required for the Commission to issue a record of decision.

In submitting the decommissioning plan for the licensed activities that are to cease on portions of sites, the licensee must identify the areas associated with the ceased operations. These areas must be remediated to achieve acceptable radiological criteria for release, either those in the final rule or previous acceptance criteria that would achieve comparable protection as the criteria in the final rule. The area for continuing licensed operations could continue to contain radioactivity above the radiological criteria. When the continuing operations cease, the radiological criteria of the final rule would then be required to be met for the portion of the site for which operations had most recently ceased. The decision on grandfathering previously released portions of the site depends on whether the criteria previously used are still acceptable (e.g., part of the SDMP Action Plan) and whether it can be demonstrated that these areas have not been affected by the continued operations. NRC intends to develop comprehensive guidance on how licensees should address previously released portions of licensed sites in demonstrating compliance with the dose criteria.

Not all licensees are required to submit decommissioning plans, and instead, may submit appropriate documentation including a report of the results of the radiation survey of the premises (see for example, 10 CFR 30.36). Because the rationale discussed above applies in general to all facilities, these grandfathering provisions apply to all licensees, independent of the type of documentation for license termination that has received NRC approval.

An aspect of grandfathering is those sites that were not previously licensed but are discovered to have radioactivity levels that are licensable or are in excess of the levels presented here as appropriate for unrestricted site use. These cases have arisen as part of the SDMP and are described in NUREG-1444. It is intended that the criteria of this rule will also apply, as appropriate, to residual radioactivity at sites that were not previously licensed.

F.2.4 Summary of rule revisions on grandfathering. The final rule has retained the grandfathering provision. However, it has been modified to include facilities whose plans are in the final stages of decommissioning plan preparation and decision.

F.3 Finality of Decommissioning and Future Site Reopening (Proposed Rule § 20.1401(c))

F.3.1 Proposed rule contents.

Proposed § 20.1401(c) stated that after a site has been decommissioned and the license terminated in accord with the criteria of the proposed rule, the Commission will require additional cleanup only if, based on new information, it determined that residual radioactivity remaining at the site could result in significant public risk.

F.3.2 Comments. Some commenters stated that decommissioning a nuclear facility and releasing a site should be accomplished as a final regulatory action unless new information indicates there is a significant health and safety risk and net benefit to future cleanup. These commenters cited financial reasonableness, the low risk associated with the criteria, and the incentive to complete decommissioning. Other commenters stated that they did not agree that these actions should be final and that the site should be cleaned up to account for mistakes, discovery of contamination, or new health findings. It was noted that the terms "significant public risk" and "new information" used in proposed § 20.1401(c) needed to be explained and appropriately defined.

F.3.3 Response. The wording of final § 20.1401(c) states that the Commission will require additional cleanup only if, based on new information, it determines that residual radioactivity remaining at the site could result in significant public risk. The low level of estimated risk associated with the final rule's dose criteria, coupled with the conservatism in the methodologies that convert these dose criteria to levels of measurable contamination in the environment, should minimize the likelihood that new information, including errors during the decommissioning processes, would significantly impact the protection of public health and safety or the environment.

The Commission believes the fundamental reason for requiring additional cleanup would hinge on the public risk associated with the remaining radioactivity at the site. The existence of additional contamination or noncompliance with the decommissioning plan at a level in excess of the dose criteria but less than the public dose limits in 10 CFR Part 20 would not, by themselves, be sufficient to invalidate the finality provision. Therefore, the wording of § 20.1401(c) captures the fundamental issue.

The Commission believes the terms "significant public risk" and "new information," as used in § 20.1401(c), do

not require specific definition or clarification. The reason lies in the fact that under the provisions of the rule, a licensee is allowed to demonstrate compliance with the dose criteria through use of several screening and modeling approaches. Each approach has a degree of conservatism associated with the relationship of the measurable level of a contaminant in the environment to the final rule's dose criterion. Because of the surveys required of the licensee and confirmatory surveys routinely performed by NRC, the chances of previously unidentified contamination being discovered would be expected to be small. Also, contamination that would pose a significant public risk above the levels implied by the dose criterion is expected to be smaller still.

Another possibility is that ongoing studies will lead to the conclusion that an increased risk associated with a given exposure to radiation exists. Although such an increase can occur as indicated by the continuing studies of Japanese atomic bomb survivors, the Commission believes that demographic studies of populations exposed to differing background exposure levels provide a defensible bound on the magnitude of any increase in the dose to risk conversion factor. Taken alone, any such increase would not be expected to affect finality decisions.

Thus, because any challenge to finality is likely to involve some unexpected combination of factors, the Commission believes that attempting to specifically define what constitutes "new information" or "significant public risk" is ill-advised because the determination would be made on a case-by-case basis.

As noted in Sections IV.A and IV.D, there are issues that have been raised by EPA regarding the acceptability of the unrestricted dose criterion as well as the inclusion of a separate groundwater standard. These issues were raised during the public comment period as well as during a public meeting held April 21, 1997 to explore differences between NRC and EPA on certain issues in the final rule. As noted in those sections, EPA has indicated that it preferred a 0.15 mSv/y (15 mrem/y) TEDE dose criterion for unrestricted use and inclusion of a separate groundwater standard as were proposed in NRC's proposed rule. At the April 21, 1997 meeting, EPA also indicated that it had concerns with inclusion of alternate criteria and with certain public participation aspects of the rule. For the reasons described in some detail in Sections IV.A, IV.C, IV.D, and IV.E, the Commission has included in the final

rule a 0.25 mSv/y (25 mrem/y) dose criterion which would apply to all exposure pathways including groundwater, an alternate criteria provision for certain difficult cases to reduce the need for requests for exemptions, and provisions for substantive participation by the public, including EPA.

As described in some detail in Sections IV.A-IV.E, the Commission believes that the overall approach to license termination in this final rule (that includes unrestricted and restricted use dose criteria, alternate criteria, and ALARA considerations) protects public health and safety, and that the approach to drinking water protection in the final rule provides an appropriate and more consistent level of protection of public health and safety than use of MCLs. In addition, as is further described in those sections, it is anticipated that in the large majority of situations the combination of ALARA considerations, the nature of the concrete and soil removal processes, the use of restrictions on site use where appropriate, and the effects of radionuclide decay and transport mechanisms in the environment will result in the large majority of NRC licensees meeting the criteria preferred by EPA. Those sections also clearly indicate that alternate criteria will be confined to rare situations and require specific Commission approval of the license termination in those cases. In addition, the Commission believes that the provisions of the final rule as described in Section IV.E provide for a substantive level of public involvement in the decommissioning process.

Thus the Commission believes that the criteria of this final rule provides protection comparable to that preferred by EPA and that therefore it would be reasonable for EPA to find NRC's rule sufficiently protective.

Licensees should be aware that if they terminate a license using the criteria of this rule, there is some potential that the license termination may be revisited as part of an EPA proceeding, although such an action would not seem reasonable for the same reasons that site cleanups noted above would not be revisited, i.e., it is not believed that significant public risk would be determined to exist.

F.3.4 Summary of rule revisions on finality. Based on this discussion, the rule has not been changed with regard to the finality issue.

F.4 Minimization of Contamination (Proposed Rule §§ 20.1401(d) and 20.1408)

F.4.1 Proposed rule contents. Proposed § 20.1401(d) indicated that applicants for licenses, other than renewals, would be required to describe in the application process how facility design and procedures for operation will minimize contamination of the facility and the environment, facilitate eventual decommissioning, and minimize the generation of radioactive waste.

F.4.2 Comments. Some commenters recommended that the requirements for describing facility design and procedures for waste minimization should apply to all license applicants and not only to applicants for new licenses. One commenter recommended that the rule remain as proposed and not apply to renewal licenses.

F.4.3 Response. The intent of this provision is to emphasize to a license applicant the importance, in an early stage of planning, for facilities to be designed and operated in a way that would minimize the amount of radioactive contamination generated at the site during its operating lifetime and would minimize the generation of radioactive waste during decontamination. Applicants and existing licensees, including those making license renewals, are already required by 10 CFR part 20 to have radiation protection programs aimed towards reducing exposure and minimizing waste. In particular, § 20.1101(a) requires development and implementation of a radiation protection plan commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of 10 CFR part 20. Section 20.1101(b) requires licensees to use, to the extent practicable, procedures and engineered controls to achieve public doses that are ALARA. In addition, lessons learned and documented in reports such as NUREG-1444 have focused attention on the need to minimize and control waste generation during operations as part of development of the required radiation protection plans. Furthermore, the financial assurance requirements issued in the January 27, 1988 (53 FR 24018), rule on planning for decommissioning require licensees to provide adequate funding for decommissioning. These funding requirements create great incentive to minimize contamination and the amount of funds set aside and expended on cleanup.

Thus, current requirements require both applicants and existing licensees,

including renewals, to minimize contamination. Specific minimization requirements contained in the proposed rule are directed towards those making application for a new license because it is more likely that consideration of design and operational aspects that would reduce dose and minimize waste can be cost-effective at that time compared to such considerations during the license renewal stage where the existing design and previous operations may be major constraints. The Commission continues to believe that the emphasis should continue to be directed at such new designs and, therefore, the requirement for minimization has been retained as proposed.

F.4.4 Summary of rule revisions on minimization of contamination. The requirement in the proposed rule for imposition of the requirement on applicants for new licenses has been retained in the final rule in § 20.1406 but has not been further extended.

F.5 Provisions for Readily Removable Residual Radioactivity

F.5.1 Proposed rule contents. Proposed § 20.1403(c) indicated that licensees are to take reasonable steps to remove all readily removable residual radioactivity from the site.

F.5.2 Comments. Some commenters recommended either deletion, modification, or clarification of the provision for readily removable residual radioactivity.

F.5.3 Response. The provision for removal of "readily removable" residual radioactivity was intended to provide guidance on what materials should be removed even if the removal would have little effect on dose. The intent of this provision is to define the basic remedies that are a matter of "good practice" such as common housekeeping techniques (e.g., washing with moderate amounts of detergent and water) that do not generate large volumes of radioactive waste requiring subsequent disposal. As noted in the preamble to the proposed rule, removal of this material is considered a necessary and reasonable step toward ensuring that doses to the public from residual radioactivity are ALARA. These considerations should be considered as part of an ALARA evaluation for planning decommissioning activities in a licensee's radiation protection program as required by § 20.1101(b).

F.5.4 Summary of rule revisions for readily removable radioactivity. Because there is no purpose in duplicating an already existing requirement for ALARA, the specific provision

regarding "readily removable" has been deleted from the final rule.

F.6 Separate Standard for Radon

F.6.1 Proposed rule contents. Proposed § 20.1404(a) did not contain a separate standard for radon.

F.6.2 Comments. Some commenters indicated that the rule should specifically include reference to radon whereas other commenters stated that the rule should not include standards for radon or expressed concerns about the complications introduced by these considerations and the fact that background radon levels are so high.

F.6.3 Response. Radon is a radioactive gas formed by the radioactive decay of radium. Radium is a member of the naturally-occurring uranium-238 radioactive decay chain. Radionuclides from this decay chain are found in natural background in various concentrations in most soils and rocks. Estimation of radon dose is a consideration for this rulemaking only at those very few facilities which have been contaminated with radium as a result of licensed activities.

Following the approach taken in the proposed rule, this final rule includes radiological criteria for residual radioactivity that is distinguishable from background. Because of natural transport of radon gas in outdoor areas due to diffusion and air currents, doses from exposure to radon in outside areas due to radium in the soil are negligible. Within buildings, wide variation in local concentrations of naturally occurring indoor radon, well in excess of the 0.25 mSv/y (25 mrem/y) dose criterion discussed in Section IV.A, have been observed in all regions of the United States. The dominant factor in determining indoor radon levels are the design features of any structures at a site where radium is present in the soil. Certain structural features, including energy saving measures that reduce air exchange with the outside, can have the effect of trapping radon gas within a building, thus allowing buildup of radon to elevated levels. In addition, indoor radon levels can vary significantly over time due to seasonal changes and the rate of air flow in rooms.

Another variable in radon levels is introduced by the use of radon mitigation techniques in buildings which can have the effect of reducing radon levels by deliberate venting of the gas to outside areas. In many parts of the country, local building codes have been enacted for the purpose of reducing radon levels in homes, in particular in areas where there are high levels of naturally occurring radium and radon.

The variations in radon levels described above make it very difficult to distinguish between naturally occurring radon and radon resulting from licensed material. In addition, it is impractical to predict prospective doses from exposure to indoor radon due to problems in predicting the design features of future building construction. Because of these variations and the limitation of measurement techniques, the Commission believes that it is not practical for licensees to distinguish between radon from licensed activities at a dose comparable to a 0.25 mSv/y (25 mrem/y) dose criterion and radon which occurs naturally. Therefore, in implementing the final rule, licensees will not be expected to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis. Instead this may be considered to have been demonstrated on a generic basis when radium, the principal precursor to radon, meets the requirements for unrestricted release, without including doses from the radon pathway.

In some instances it may not be reasonable to achieve levels of residual concentrations of radon precursors within the limit for unrestricted use. As discussed in Section IV.B for cases such as these, restricting site use by use of institutional controls could be considered by a licensee as a means to limit the doses from precursors by limiting access to the site. Under the restricted use provisions of the rule, these doses are required to be further reduced based on ALARA principles. In developing guidance on the application of ALARA in such cases, the Commission will also consider the practicality of requiring as part of controls the use of radon mitigation techniques in existing or future structures.

F.6.4 Summary of rule revisions. No change to the final rule has been made.

F.7 Calculation of TEDE Over 1000 Years to Demonstrate Compliance With Dose Standard (Proposed Rule § 20.1403(a))

F.7.1 Proposed rule contents. Proposed § 20.1403(a) stated that when calculating the TEDE, the licensee shall base estimates on the TEDE expected within the first 1000 years after decommissioning.

F.7.2 Comments. Some commenters objected to the proposed 1000-year time frame for calculating dose and wanted it lengthened to better predict health effects over the hazardous life of each isotope. Other commenters wanted the proposed 1000-year time frame shortened because it is inconsistent

with 10 CFR part 40, Appendix A, and 10 CFR part 61 that use times of 200–500 years.

F.7.3 Response. As previously discussed in the preamble to the proposed rule, the Commission believes use of 1000 years in its calculation of maximum dose is reasonable based on the nature of the levels of radioactivity at decommissioned sites and the potential for changes in the physical characteristics at the site over long periods of time. Unlike analyses of situations where large quantities of long-lived radioactive material may be involved (e.g., a high-level waste repository) and where distant future calculations may provide some insight into consequences, in the analysis for decommissioning, where the consequences of exposure to residual radioactivity at levels near background are small and peak doses for radionuclides of interest in decommissioning occur within 1000 years, long term modeling thousands of years into the future of doses that are near background may be virtually meaningless. In 10 CFR part 40, Appendix A makes reference to both a 200-year and 1000-year time frame. 10 CFR part 61 references the design of a physical barrier rather than a calculation of exposure.

F.7.4 Summary of rule revisions. This provision has been retained in § 20.1401(d) of the final rule.

G. Other Comments

G.1 Definitions (Proposed Rule § 20.1003)

G.1.1 Comments. There were comments on several definitions in § 20.1003 of the proposed rule including the following:

(1) With regard to the definition of background radiation, several commenters opposed defining "background radiation" in terms of currently existing levels and proposed defining it at the level existing when human beings and other organisms evolved; i.e., man-made sources of radiation should not be considered to be a part of "background radiation." One commenter suggested that the term "naturally occurring radioactive material," that is used in the definition of "background radiation," should also be defined. This commenter also suggested that the word "like," that precedes "Chernobyl," should be replaced with the words "such as" to clearly indicate that an example is being provided.

(2) With regard to the definition of decommissioning, several commenters recommended that license termination

not be specified in the definition of decommissioning because it is a separate issue from decommissioning. Some commenters stated that licenses should be terminated only when sites are given unrestricted release and that restricted use should not be permitted or included in the definition.

(3) Other comments were also received requesting clarification of other definitions contained in the rule, including inclusion of radon in the definition of background and the definitions of critical group, restricted use, release of portions of sites, indistinguishable from background, readily removable radioactivity, and SSABs.

G.1.2 Response. The only modification that the proposed rule made to the existing definition of background in 10 CFR part 20 was the inclusion of the phrase "or from past nuclear accidents like Chernobyl that contribute to background radiation and are not under the control of the licensee." The reason for this modification was to further clarify the existing requirement regarding sources of radiation and radionuclides that can be excluded from licensee evaluation. After review of the comments, the Commission continues to believe that the inclusion in background of global fallout from weapons testing and accidents such as Chernobyl is appropriate. No compelling reason was presented that would indicate that remediation should include material over that the licensee has no control and that is present at comparable levels in the environment both on and offsite.

The existing definition of decommissioning in 10 CFR parts 30, 40, 50, 70, and 72 was incorporated into the regulations on June 27, 1988 (53 FR 24018). The Commission continues to believe that "decommissioning" is a term for a process which ultimately leads to termination of an NRC license for unrestricted use. The only change to the existing definition made by the proposed rule would be adding "release of property under restricted conditions" to the process of termination of the license. In response to commenters who disagreed with permitting restricted use, Section IV.B contains a detailed review of issues on acceptability of restricted use. Based on that review, the final rule continues to permit restricted use. Therefore, the definition in the proposed rule is not changed.

The remaining comments on definitions reflect specific technical concerns regarding use of the terms rather than the definition itself. These concerns are discussed in detail in the responses to the technical issues

addressed in Sections IV.A through IV.F.

G.1.3 Summary of rule revisions. The only change to § 20.1003 is a change in the wording of the definition of background to replace the word "like" with the words "such as" before "Chernobyl" as suggested by a commenter.

G.2 Need for Regulatory Guidance

G.2.1 Comments. Commenters requested that additional regulatory guidance be provided on a number of subjects including decommissioning planning for sites and portions of sites, methods for demonstrating compliance with the dose criteria and with ALARA, means for complying with restricted use provisions (including SSAB operations), and contents of a public participation plan. Specific comments were received regarding need for guidance on modeling (including methods for translating contamination levels to dose) and surveys (including measurement of contamination at low levels), and clarification of several terms.

G.2.2 Response. Regulatory guidance is being developed in the areas requested. Regulatory guidance being prepared on dose calculations and surveys for radiological criteria for decommissioning describes acceptable survey methods that licensees can use. This guidance describes methods that licensees can use to convert site contamination to dose for the purpose of compliance with the rule criteria and for estimating ALARA. The guidance is the further development of NUREG-1500 issued with the proposed rule and presents an approach for assessing dose coupled with the ability to incorporate site-specific parameters. Further guidance on public participation and restricted use is also being considered to support this rule.

G.3 Need for Flexibility

G.3.1 Comments. Commenters indicated that it is important to provide flexibility in compliance with rule requirements by use of site-specific conditions, ALARA, and exemptions in implementation of the criteria.

G.3.2 Response. Use of site-specific conditions, especially in calculation of acceptable contamination levels based on site-specific parameters, contamination levels and volumes, and usage of the site, is permitted in complying with the regulations. This will be discussed more fully in the regulatory guidance. Furthermore, the final rule provides for establishing alternate license termination criteria based on site-specific considerations.

G.4 Consistency With NRC's Timeliness Rule

G.4.1 Comments. Some commenters indicated that the rule is inconsistent with NRC's timeliness rule (59 FR 36026; July 15, 1994).

G.4.2 Response. The timeliness rule requires licensees to notify the Commission promptly when a decision is made to permanently cease principal activities or whenever principal activities have ceased for 24 months. Further, it requires licensees to complete decommissioning within 24 months. The Commission may approve an alternate schedule to complete decommissioning provided sufficient justification is provided by the licensee.

Although this rule includes options for license termination or transfer to another entity, licensees will still be expected to initiate and complete decommissioning in a timely manner. If a licensee intends to use the restricted release option, the licensee is expected to promptly assess its site characteristics, submit a decommissioning plan if required, provide financial assurance, and include appropriate public participation in its decisionmaking. Because the requirements allow licensees 12 months to submit this information to the Commission, sufficient time should be available. The Commission may grant additional time if the licensee demonstrates that the relief is not detrimental to the public health and safety and is in the public interest. If a licensee is unable to demonstrate that release of a site would not prevent a member of the public from receiving a dose in excess of the public dose limit, the site would not be released but would be transferred to a Government entity or maintained under license. These cases are expected to be rare and will be handled on a case-by-case basis.

G.5 Comments From Power Reactor Decommissioning Rulemaking

G.5.1 Comments. Comments were received on the power reactor decommissioning rule that was recently finalized and published on July 29, 1996 (61 FR 39278), requesting that the Commission consider the elimination of the environmental review requirement at the license termination stage (§ 50.82(a)(9)(ii)(G) and § 51.53(b)) for decommissioning to unrestricted release conditions. In response, the Commission indicated that it would consider these comments in the rulemaking on radiological criteria for decommissioning.

G.5.2 Response. The Commission has considered the elimination of the

supplemental environmental review requirement for a licensee that intends to decommission to unrestricted release conditions as required in this final rule and has decided to continue to retain this requirement. The Commission considers this necessary for any particular site to determine if the generic analysis encompasses the range of environmental impacts at that particular site. The rationale for retaining this requirement was explained in the preamble to the proposed rule and has not changed.

G.6 Mixed Waste, Hazardous Waste, and Naturally Occurring and Accelerator-Produced Radioactive Material

G.6.1 Comments. Some commenters stated that the rule should address the cleanup of sites with mixed wastes. Other commenters recommended that NRC should not regulate any nonradioactive hazardous material beyond its authority. There was disagreement over whether NRC's approval of a licensee's decommissioning activities should be dependent on the licensee fulfilling other agencies' obligations, especially where accelerator produced materials may exist. Some commenters stated that the rule criteria are incompatible with naturally occurring and accelerator-produced radioactive material (NARM).

G.6.2 Response. The final rule on radiological criteria for decommissioning applies to residual radioactivity from all licensed and unlicensed sources used by the licensee but excludes background radiation. As such, the NRC or Agreement State, whether acting as the lead or cooperating agency in working with the licensee to ensure appropriate remediation of a contaminated site, would not release a site from its license unless the rule's radiological criteria were met.

NRC responsibility for license termination at a site with hazardous or mixed waste onsite is principally to determine that the radiological component of the mixed waste (e.g., contaminated soil) complies with the rule's radiological criteria. Other regulatory agencies are responsible for control of the hazardous constituents and must be notified and accept responsibility for appropriate management of the released site. The same approach would be followed in potentially releasing a site with groundwater contamination exceeding applicable maximum contaminant levels of nonradiological substances. Note that under the Uranium and Mill Tailings Recovery and Control Act

(UMTRCA), NRC is responsible for the regulation of certain nonradioactive hazardous materials.

With regard to NARM, NRC's legislative and regulatory authority extends to those materials and facilities under the Atomic Energy Act of 1954, as amended, and not to accelerator produced materials or naturally occurring radioactive material, except as it is defined as source material in 10 CFR part 40.4. Section IV.A, notes that, although some commenters questioned the relationship of this rule to NARM, the criteria of this rule apply to residual radioactivity from activities under a licensee's control and not to background radiation (that includes radiation from naturally occurring radioactive material (NORM)). There are a wide variety of sites containing NORM subject to EPA jurisdiction and not licensed by the NRC. The extent to which the criteria in this rule would apply to these sites would be based on a separate evaluation. However, the considerations and analyses done for this rulemaking in the Final GEIS and regulatory analysis regarding large fuel cycle and non-fuel-cycle facilities containing large quantities of naturally occurring nuclides such as uranium and thorium are appropriate for certain NORM sites, and the broad provisions of the rule (such as control of sites with restrictions imposed, use of alternate cap values, use of alternate criteria, and public participation aspects) may be useful in considerations regarding NORM sites.

G.7 Recycle

G.7.1 Comments. Commenters recommended that recycling of equipment or materials be addressed in more depth in the final rule. Several commenters stated that recycling of contaminated materials that results in increased exposures to members of the public is unacceptable. Other commenters favored establishment of criteria for recycled materials.

G.7.2 Response. The proposed rule did not specifically address the recycle of material or equipment decontaminated as a result of the decommissioning process. The Commission has a separate consideration underway of the issues related to cases when the licensee proposes to intentionally release material containing residual radioactivity that could become available for reuse or recycle.

Because current NRC regulations do not contain explicit radiological criteria for release of equipment and materials, release from licensed facilities is currently determined by NRC on a case-by-case basis using existing guidance

and practices. Current practices include radiation surveys to document the absence of licensed radioactive material, general guidance for reactors contained in Regulatory Guide 1.86 or similar guidance issued for materials facilities, and site-specific technical specifications and license conditions. Although these criteria were not originally derived for the case of recycle, they have been applied for many years in a wide variety of contexts.

Continuation of the case-by-case procedure in the future may not be practical because of increased quantities of material expected from larger facility decommissionings. Also, interest in recycling slightly contaminated material is growing both in the United States and in other countries as a means of conserving resources by limiting the amount of new raw materials that are necessary to produce new products and equipment and by reducing the costs of disposing of large volumes of slightly contaminated material that may pose very small risks to the general public. Codifying criteria would allow NRC to more effectively deal with these issues. Regulatory action separate from this decommissioning action by NRC, that would provide clear, consistent criteria in this area, is being considered. Specifically, the NRC is cooperating with the EPA in developing the technical basis for a recycle rulemaking. At present, the EPA is developing its plans for such a rulemaking. The NRC will determine what course of action it will take regarding rulemaking related to recycle after consideration of EPA plans. Full opportunity for early public involvement and comment regarding that regulatory action is anticipated. Because of this background, no revision to this decommissioning rule to consider recycling is being made.

G.8 The Rulemaking Process

G.8.1 Comments. Several commenters expressed satisfaction with the enhanced rulemaking process undertaken by the NRC for the decommissioning rule. Of those commenters who opposed the proposed decommissioning standards for not being sufficiently restrictive, some were critical of the rulemaking process and suggested that the NRC had ignored their earlier participation. Other commenters expressed dissatisfaction with the proposed standards because they are overly restrictive. The DOE stated that it supported the NRC effort to issue the rule and the joint efforts of the EPA and the NRC to coordinate their respective rulemaking proceedings.

G.8.2 Response. The NRC has conducted what it considers to be an

extensive effort at enhancing participation in the early stages of this rulemaking process through a series of workshops and environmental impact statement scoping meetings for affected interests that solicited public comment with regard to radiological criteria for decommissioning. The extent of these meetings was discussed in the preamble to the proposed rule.

The workshops and the scoping meetings were not designed to seek "consensus" in the sense that there is agreement on how each issue should be resolved, but rather to ensure that, with informed discussion, relevant issues have been identified and information exchanged on these issues.

Subsequent to the workshops and scoping meetings, the Commission developed the policies and requirements that were deemed appropriate for a rule on radiological criteria for decommissioning. Information and concepts developed in the workshops were factored into this process. For example, a number of themes from the workshops, such as consideration of restricted use options, increased public participation in the site decommissioning process, and a desire to return sites to levels indistinguishable from background, were considered during the rulemaking. The Commission also considered the approaches of scientific bodies such as the ICRP and NCRP, precedents of its other rulemakings with regard to radiation protection such as 10 CFR part 20, input from EPA regarding appropriate risk levels, technical input from NRC contractors regarding capability to measure at low radiation levels, and the costs and impacts of achieving alternate levels.

Preliminary conclusions regarding this effort were contained in the NRC staff's draft rule (59 FR 4868, February 2, 1994) that was sent to Agreement States, workshop participants, and other interested parties. The intent of this informal comment period in advance of a proposed rule was to provide an opportunity for interested parties to comment on the adequacy of the draft criteria.

Resolution of comments from the workshops and from circulation of the NRC staff draft was discussed in the preamble of the proposed rule published on August 22, 1994 (59 FR 43200). The preamble indicates the evolution of the NRC's approach to this rulemaking as a result of the workshops and the other activities noted above.

Clearly, there are a number of specific areas which remain difficult to resolve or on which to reach a "consensus." These areas include the precise level of

permissible radiological criteria for decommissioning, restricted use as a means for terminating a license, and the extent of public participation. It is the NRC's consideration that the rulemaking process has allowed an airing of differing opinions with regard to these as well as other issues.

V. Agreement State Compatibility

The Commission has determined that this rule will be a Division 2 matter of compatibility. For the discussion on the basis for this determination, see Section IV.F.1.

VI. Relationship Between the Generic Environmental Impact Statement and Site-Specific Decommissioning Actions

The Generic Environmental Impact Statement (GEIS) prepared by the Commission on this rulemaking evaluates the environmental impacts associated with the remediation of several types of NRC-licensed facilities to a range of residual radioactivity levels. The Commission believes that the generic analysis will encompass the impacts that will occur in most Commission decisions to decommission an individual site where the licensee proposes to release the site for unrestricted use. Therefore, the Commission plans to rely on the GEIS to satisfy its obligations under the National Environmental Policy Act regarding individual decommissioning decisions that meet the 0.25 mSv/y (25 mrem/y) criterion for unrestricted use. However, the Commission will still initiate an environmental assessment regarding any particular site, for which a categorical exclusion is not applicable, to determine if the generic analysis encompasses the range of environmental impacts at that particular site.

The rule also provides for the termination of the license and the release of a site under restricted use conditions if the licensee can demonstrate that land use restrictions or other types of institutional controls will provide reasonable assurance that the 0.25 mSv/y (25 mrem/y) limit can be met. The types of controls and their contribution to providing reasonable assurance that the 0.25 mSv/y (25 mrem/y) limit can be met for a particular site will differ for each site in this category. Similarly, the rule also provides that termination of the license under alternate criteria will be considered by the Commission in certain site-specific situations that would also differ for each site in this category. Therefore, the environmental impacts for these cases cannot be analyzed on a generic basis and the Commission will conduct an

independent environmental review for each site-specific decommissioning decision where land use restrictions or institutional controls are relied on by the licensee or where alternate criteria are proposed.

The GEIS indicates that the decommissioning for certain classes of licensees (e.g., licensees using only sealed sources) will not individually or cumulatively have a significant effect on the human environment. Therefore, the Commission is amending § 51.22 of the Commission's regulations to specify that the decommissioning of these types of licensees are actions eligible for categorical exclusion from the Commission's environmental review process.

VII. Final Generic Environmental Impact Statement: Availability

As required by the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR part 51, the NRC has prepared a final generic environmental impact statement (NUREG-1496) on this proposed rule.

The final generic environmental impact statement is available for inspection in the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC. Single copies of the final generic environmental impact statement (NUREG-1496) may be obtained by written request or telefax (301-415-2260) from: Office of Administration, Attention: Distribution and Services Section, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Background documents on the rulemaking, including the text of the final rule, the final GEIS, and the regulatory analysis, are also available for downloading and viewing on the NRC Enhanced Participatory Rulemaking on Radiological Criteria for Decommissioning Electronic Bulletin Board, 1-800-880-6091 (see 58 FR 37760 (July 13, 1993)). The bulletin board may be accessed using a personal computer, a modem, and most commonly available communications software packages. The communications software should have parity set to none, data bits to 8, and stop bits to 1 (N,8,1) and use ANSI or VT-100 terminal emulation. For more information call Ms. Christine Daily, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Phone (301) 415-6026; FAX (301) 415-5385.

VIII. Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject

to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). These requirements were approved by the Office of Management and Budget, approval number 3150-0014.

The public reporting burden for this collection of information is estimated to average 31.6 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments on any aspect of this collection of information, including suggestions for reducing the burden, to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to BJSI@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0011 and 3150-0093), Office of Management and Budget, Washington, DC 20503.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

IX. Regulatory Analysis

The Commission has prepared a regulatory analysis on this final regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The analysis is available for inspection in the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC. Single copies of the analysis may be obtained by written request from the Radiation Protection and Health Effects Branch (RPHEB) Secretary, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Background documents on the rulemaking, including the text of the final rule, the final GEIS, and the regulatory analysis are also available for downloading and viewing on the NRC Enhanced Participatory Rulemaking on Radiological Criteria for Decommissioning Electronic Bulletin Board (see Section VII, above).

X. Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this rule, if adopted, will not have a significant economic impact upon a substantial number of small entities. Although the final rule would cover all 22,000

licensees regulated by the NRC and Agreement States, small entities covered by this rule are primarily licensees that possess and use only materials with short half-lives or materials only in sealed sources. Decommissioning efforts for these licensees are simple and require only that sealed sources are properly disposed of or that short-lived materials are allowed to decay. Complete details of the cost analysis are contained in the regulatory analysis.

XI. Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to this final rule and therefore, a backfit analysis is not required for this final rule because these amendments do not involve reactor operations and therefore do not involve any provisions that would impose backfits as defined in 10 CFR 50.109(a)(1).

XII. Small Business Regulatory Enforcement Fairness Act

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this action is not a "major" rule and has verified this determination with the Office of Information and Regulatory Affairs, Office of Management and Budget.

List of Subjects

10 CFR Part 20

Byproduct material, Criminal penalties, Licensed material, Nuclear materials, Nuclear power plants and reactors, Occupational and public dose limits, Occupational safety and health, Packaging and containers, Permissible doses, Radiation protection, Reporting and recordkeeping requirements, Respiratory protection, Special nuclear material, Source material, Surveys and monitoring, Waste treatment and disposal.

10 CFR Part 30

Byproduct material, Criminal penalties, Government contracts, Intergovernmental relations, Isotopes, Nuclear materials, Radiation protection, Reporting and recordkeeping requirements.

10 CFR Part 40

Criminal penalties, Government contracts, Hazardous materials transportation, Nuclear materials, Reporting and recordkeeping requirements, Source material, Uranium.

10 CFR Part 50

Antitrust, Classified information, Criminal penalties, Fire protection,

Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

10 CFR Part 51

Administrative practice and procedure, Environmental impact statements, Environmental regulations, assessments and reports, NEPA procedures, Nuclear materials, Nuclear power plants and reactors, Reporting and recordkeeping requirements.

10 CFR Part 70

Criminal penalties, Hazardous materials transportation, Material control and accounting, Nuclear materials, Packaging and containers, Radiation protection, Reporting and recordkeeping requirements, Scientific equipment, Security measures, Special nuclear material.

10 CFR Part 72

Manpower training programs, Nuclear materials, Occupational safety and health, Reporting and recordkeeping requirements, Security measures, Spent fuel.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR parts 20, 30, 40, 50, 51, 70, and 72.

PART 20—STANDARDS FOR PROTECTION AGAINST RADIATION

1. The authority citation for part 20 continues to read as follows:

Authority: Secs. 53, 63, 65, 81, 103, 104, 161, 182, 186, 68 stat. 930, 933, 935, 936, 937, 948, 953, 955, as amended (2 U.S.C. 2073, 2093, 2095, 2111, 2133, 2134, 2201, 2232, 2236), secs. 201, as amended, 202, 206, 88 stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

2. In § 20.1003, the definition of *Background radiation* is revised and new definitions *Critical Group*, *Decommission*, *Distinguishable from background*, and *Residual radioactivity* are added in alphabetical order to read as follows:

§ 20.1003 Definitions.

* * * * *

Background radiation means radiation from cosmic sources; naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material); and global fallout as it exists in the environment from the testing of

nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "*Background radiation*" does not include radiation from source, byproduct, or special nuclear materials regulated by the Commission.

* * * * *

Critical Group means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

* * * * *

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

- (1) Release of the property for unrestricted use and termination of the license; or
- (2) Release of the property under restricted conditions and termination of the license.

* * * * *

Distinguishable from background means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

* * * * *

Residual radioactivity means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of 10 CFR part 20.

* * * * *

3. In § 20.1009, paragraph (b) is revised to read as follows:

§ 20.1009 Information collection requirements: OMB approval.

* * * * *

(b) The approved information collection requirements contained in this part appear in §§ 20.1003, 20.1101, 20.1202, 20.1203, 20.1204, 20.1206, 20.1208, 20.1301, 20.1302, 20.1403, 20.1404, 20.1406, 20.1501, 20.1601, 20.1703, 20.1901, 20.1902, 20.1904, 20.1905, 20.1906, 20.2002, 20.2004, 20.2006, 20.2102, 20.2103, 20.2104, 20.2105, 20.2106, 20.2107, 20.2108,

20.2110, 20.2201, 20.2202, 20.2203, 20.2204, 20.2205, 20.2206, 20.2301, and Appendices F and G to 10 CFR Part 20.

* * * * *

4. A new subpart E entitled "Radiological Criteria for License Termination," is added to 10 CFR part 20 to read as follows:

Subpart E—Radiological Criteria for License Termination

Sec.

20.1401 General provisions and scope.

20.1402 Radiological criteria for unrestricted use.

20.1403 Criteria for license termination under restricted conditions.

20.1404 Alternate criteria for license termination.

20.1405 Public notification and public participation.

20.1406 Minimization of contamination.

§ 20.1401 General provisions and scope.

(a) The criteria in this subpart apply to the decommissioning of facilities licensed under parts 30, 40, 50, 60, 61, 70, and 72 of this chapter, as well as other facilities subject to the Commission's jurisdiction under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended. For high-level and low-level waste disposal facilities (10 CFR parts 60 and 61), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities. The criteria do not apply to uranium and thorium recovery facilities already subject to appendix A to 10 CFR part 40 or to uranium solution extraction facilities.

(b) The criteria in this subpart do not apply to sites which:

(1) Have been decommissioned prior to the effective date of the rule in accordance with criteria identified in the Site Decommissioning Management Plan (SDMP) Action Plan of April 16, 1992 (57 FR 13389);

(2) Have previously submitted and received Commission approval on a license termination plan (LTP) or decommissioning plan that is compatible with the SDMP Action Plan criteria; or

(3) Submit a sufficient LTP or decommissioning plan before August 20, 1998 and such LTP or decommissioning plan is approved by the Commission before August 20, 1999 and in accordance with the criteria identified in the SDMP Action Plan, except that if an EIS is required in the submittal, there will be a provision for day-for-day extension.

(c) After a site has been decommissioned and the license terminated in accordance with the

criteria in this subpart, the Commission will require additional cleanup only if, based on new information, it determines that the criteria of this subpart were not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

(d) When calculating TEDE to the average member of the critical group the licensee shall determine the peak annual TEDE dose expected within the first 1000 years after decommissioning.

§ 20.1402 Radiological criteria for unrestricted use.

A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

§ 20.1403 Criteria for license termination under restricted conditions.

A site will be considered acceptable for license termination under restricted conditions if:

(a) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA. Determination of the levels which are ALARA must take into account consideration of any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal;

(b) The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) per year;

(c) The licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site. Acceptable financial assurance mechanisms are—

(1) Funds placed into an account segregated from the licensee's assets and outside the licensee's administrative control as described in § 30.35(f)(1) of this chapter;

(2) Surety method, insurance, or other guarantee method as described in § 30.35(f)(2) of this chapter;

(3) A statement of intent in the case of Federal, State, or local Government licensees, as described in § 30.35(f)(4) of this chapter; or

(4) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

(d) The licensee has submitted a decommissioning plan or License Termination Plan (LTP) to the Commission indicating the licensee's intent to decommission in accordance with §§ 30.36(d), 40.42(d), 50.82 (a) and (b), 70.38(d), or 72.54 of this chapter, and specifying that the licensee intends to decommission by restricting use of the site. The licensee shall document in the LTP or decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice.

(1) Licensees proposing to decommission by restricting use of the site shall seek advice from such affected parties regarding the following matters concerning the proposed decommissioning—

(i) Whether provisions for institutional controls proposed by the licensee;

(A) Will provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) TEDE per year;

(B) Will be enforceable; and

(C) Will not impose undue burdens on the local community or other affected parties.

(ii) Whether the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site;

(2) In seeking advice on the issues identified in § 20.1403(d)(1), the licensee shall provide for:

(i) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) An opportunity for a comprehensive, collective discussion on

the issues by the participants represented; and

(iii) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues; and

(e) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either—

(1) 100 mrem (1 mSv) per year; or

(2) 500 mrem (5 mSv) per year

provided the licensee—

(i) Demonstrates that further reductions in residual radioactivity necessary to comply with the 100 mrem/y (1 mSv/y) value of paragraph (e)(1) of this section are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;

(ii) Makes provisions for durable institutional controls;

(iii) Provides sufficient financial assurance to enable a responsible government entity or independent third party, including a governmental custodian of a site, both to carry out periodic rechecks of the site no less frequently than every 5 years to assure that the institutional controls remain in place as necessary to meet the criteria of § 20.1403(b) and to assume and carry out responsibilities for any necessary control and maintenance of those controls. Acceptable financial assurance mechanisms are those in paragraph (c) of this section.

§ 20.1404 Alternate criteria for license termination.

(a) The Commission may terminate a license using alternate criteria greater than the dose criterion of §§ 20.1402, 20.1403(b), and 20.1403(d)(1)(i)(A), if the licensee—

(1) Provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the 1 mSv/y (100 mrem/y) limit of subpart D, by submitting an analysis of possible sources of exposure;

(2) Has employed to the extent practical restrictions on site use according to the provisions of § 20.1403 in minimizing exposures at the site; and

(3) Reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to

potentially result from decontamination and waste disposal.

(4) Has submitted a decommissioning plan or License Termination Plan (LTP) to the Commission indicating the licensee's intent to decommission in accordance with §§ 30.36(d), 40.42(d), 50.82 (a) and (b), 70.38(d), or 72.54 of this chapter, and specifying that the licensee proposes to decommission by use of alternate criteria. The licensee shall document in the decommissioning plan or LTP how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(i) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

(b) The use of alternate criteria to terminate a license requires the approval of the Commission after consideration of the NRC staff's recommendations that will address any comments provided by the Environmental Protection Agency and any public comments submitted pursuant to § 20.1405.

§ 20.1405 Public notification and public participation.

Upon the receipt of an LTP or decommissioning plan from the licensee, or a proposal by the licensee for release of a site pursuant to §§ 20.1403 or 20.1404, or whenever the Commission deems such notice to be in the public interest, the Commission shall:

(a) Notify and solicit comments from: (1) local and State governments in the vicinity of the site and any Indian Nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning; and

(2) the Environmental Protection Agency for cases where the licensee proposes to release a site pursuant to § 20.1404.

(b) Publish a notice in the Federal Register and in a forum, such as local newspapers, letters to State or local organizations, or other appropriate

forum, that is readily accessible to individuals in the vicinity of the site, and solicit comments from affected parties.

§ 20.1406 Minimization of contamination.

Applicants for licenses, other than renewals, after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

5. In § 20.2402, paragraph (b) is revised to read as follows:

§ 20.2402 Criminal penalties.

* * * * *

(b) The regulations in §§ 20.1001 through 20.2402 that are not issued under Sections 161b, 161i, or 161o for the purposes of Section 223 are as follows: §§ 20.1001, 20.1002, 20.1003, 20.1004, 20.1005, 20.1006, 20.1007, 20.1008, 20.1009, 20.1405, 20.1704, 20.1903, 20.1905, 20.2002, 20.2007, 20.2301, 20.2302, 20.2401, and 20.2402.

PART 30—RULES OF GENERAL APPLICABILITY TO DOMESTIC LICENSING OF BYPRODUCT MATERIAL

6. The authority citation for part 30 continues to read as follows:

Authority: Secs. 81, 82, 161, 182, 183, 186, 68 Stat. 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2111, 2112, 2201, 2232, 2233, 2236, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 30.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123 (2 U.S.C. 5851). Section 30.34(b) also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 30.61 also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

7. In § 30.4, the definition of *Decommission* is revised to read as follows:

§ 30.4 Definitions.

* * * * *

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

* * * * *

8. In § 30.35, paragraph (f)(5) is added and paragraph (g)(3)(iv) is revised to read as follows:

§ 30.35 Financial assurance and recordkeeping for decommissioning.

(f) (5) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

(g) (3) (iv) All areas outside of restricted areas that contain material such that, if the license expired, the licensee would be required to either decontaminate the area to meet the criteria for decommissioning in 10 CFR part 20, subpart E, or apply for approval for disposal under 10 CFR 20.2002.

9. In § 30.36, the introductory text of paragraph (j)(2) and paragraph (k)(3) are revised to read as follows:

§ 30.36 Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.

(j) (2) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E. The licensee shall, as appropriate—

(k) (3) (i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E.

PART 40—DOMESTIC LICENSING OF SOURCE MATERIAL

10. The authority citation for part 40 continues to read as follows:

Authority: Secs. 62, 63, 64, 65, 81, 161, 182, 183, 186, 68 Stat. 932, 933, 935, 948, 953, 954, 955, as amended, secs. 11e(2), 83, 84, Pub. L. 95-604, 92 Stat. 3033, as amended, 3039, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2014(e)(2), 2092, 2093, 2094, 2095, 2111, 2113, 2114, 2201, 2232,

2233, 2236, 2282); sec. 274, Pub. L. 86-373, 73 Stat. 688 (42 U.S.C. 2021); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); sec. 275, 92 Stat. 3021, as amended by Pub. L. 97-415, 96 Stat. 2067 (42 U.S.C. 2022).

Section 40.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123, (42 U.S.C. 5851). Section 40.31(g) also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Section 40.46 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 40.71 also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

11. In § 40.4, the definition of Decommission is revised to read as follows:

§ 40.4 Definitions.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

12. In § 40.36, paragraph (e)(5) is added and paragraph (f)(3)(iv) is revised to read as follows:

§ 40.36 Financial assurance and recordkeeping for decommissioning.

(e) (5) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

(f) (3) (iv) All areas outside of restricted areas that contain material such that, if the license expired, the licensee would be required to either decontaminate the area to meet the criteria for decommissioning in 10 CFR part 20, subpart E, or apply for approval for disposal under 10 CFR 20.2002.

13. In § 40.42, the introductory text of paragraph (j)(2) and paragraph (k)(3) are revised to read as follows:

§ 40.42 Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.

(j) (2) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates in some other

manner that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E. The licensee shall, as appropriate—

(k) (3) (i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E.

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

14. The authority citation for part 50 continues to read as follows:

Authority: Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 1244, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 50.7 is also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123 (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 936, 955, as amended (42 U.S.C. 2131, 2235); sec. 102, Pub. L. 91-190, 82 Stat. 853 (42 U.S.C. 4332). Sections 50.13, 50.54(dd), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138).

Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a and Appendix Q also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80-50-81 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

15. In § 50.2, the definition of Decommission is revised to read as follows:

§ 50.2 Definitions.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses. Since the Commission has made a final determination that the amendment involves no significant hazards consideration, if a hearing is requested, it will not stay the effectiveness of the amendment. Any hearing held would take place while the amendment is in effect.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for a hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

Northern States Power Company, Docket Nos. 50-282 and 50-306, Prairie Island Nuclear Generating Plant, Units 1 and 2, Goodhue County, Minnesota

Date of application for amendments: October 23, 1998, as supplemented October 26, 1998.

Brief description of amendments: The amendments clarify the conditions that constitute operable Individual Rod Position Indication (IRPI) system channels, provide for an allowed out of service time for inoperable IRPI indicator channels, and provide compensatory measures to be taken when any channel is determined to be inoperable.

Date of issuance: October 30, 1998.

Effective date: October 30, 1998.

Amendment Nos.: 139 and 130.

Facility Operating License Nos. DPR-42 and DPR-60. Amendments revised the Technical Specifications.

Public comments requested as to proposed no significant hazards consideration: No.

The Commission's related evaluation of the amendments, finding of emergency circumstances, and final determination of no significant hazards consideration are contained in a Safety Evaluation dated October 30, 1998.

Attorney for licensee: J.E. Silberg, Esquire, Shaw, Pittman, Potts, and Trowbridge, 2300 N Street, NW, Washington, DC 20037.

Local Public Document Room location: Minneapolis Public Library, Technology and Science Department, 300 Nicollet Mall, Minneapolis, Minnesota 55401.

NRC Project Director: Cynthia A. Carpenter.

Dated at Rockville, Maryland, this 10th day of November 1998.

For the Nuclear Regulatory Commission.
William H. Bateman,
Acting Director, Division of Reactor Projects—III/IV, Office of Nuclear Reactor Regulation.

[FR Doc. 98-30691 Filed 11-17-98; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Supplemental Information on the Implementation of the Final Rule on Radiological Criteria for License Termination

SUMMARY: This notice provides supplemental information regarding implementation of the Nuclear Regulatory Commission's (NRC's) Final Rule on Radiological Criteria for License Termination (License Termination Rule, LTR) which was issued on July 21, 1997 (62 FR 39058). The information provided in this notice pertains to: (1) The end of the "grandfathering period" on August 20, 1998; (2) issuance of the draft regulatory guide on the LTR for interim use; (3) availability of the NRC's screening computer code (DandD, Version 1) for calculating screening values to demonstrate compliance with the dose limits in the LTR; (4) screening values for building surface contamination for beta/gamma radiation emitters; (5) NRC plans to hold public workshops to discuss issues related to the draft guidance and implementation of the LTR; (6) staff plans to develop a standard review plan (SRP) for decommissioning; and (7) status of NRC decommissioning guidance documents.

SUPPLEMENTARY INFORMATION:

1. End of the Grandfathering Period

Subpart E to 10 CFR Part 20 contains a provision, 20.1401(b)(3), that the

criteria in the LTR do not apply to sites that submit a sufficient decommissioning plan (DP) or license termination plan (LTP) before August 20, 1998, provided the NRC approves the DP or the LTP before August 20, 1999, and the plan is in accordance with the criteria identified in the Site Decommissioning Management Plan (SDMP) Action Plan (57 FR 13389; April 16, 1992). The period from the effective date of the LTR, August 20, 1997 through August 20, 1998, is referred to as the "grandfathering period," during which the criteria in the SDMP Action Plan could continue to be proposed. This notice reminds licensees that the grandfathering period has ended, and that all future requests to terminate a license must be in accordance with the provisions in Part 20, Subpart E. Note that the NRC review of the licensee plans submitted in accordance with 10 CFR 20.1401(b)(3), incorporating the SDMP Action Plan criteria, will continue through August 20, 1999.

2. Draft Regulatory Guide

The NRC has issued Draft Regulatory Guide DG-4006, "Demonstrating Compliance with the Radiological Criteria For License Termination," for a two-year interim use period (i.e., July 8, 1998 through July 7, 2000). NRC has also issued draft NUREG reports in support of DG-4006 (the applicable draft NUREG reports are referenced in DG-4006). A notice of availability of the Draft Regulatory Guide was published in the Federal Register on August 4, 1998 (63 FR 41604).

3. Availability of NRC DandD Screening Code

On August 20, 1998, NRC issued a screening computer code DandD, Version 1. The DandD code, when used with default parameters, is an acceptable method for licensees to calculate screening values to demonstrate compliance with the unrestricted use dose limit in the LTR. The DandD code can be installed by downloading the self-extracting program file, setup.exe, accessed through the web site: "<http://techconf.llnl.gov/radcri/java.html>," clicking on "dose assessment," and then on "decontamination and decommissioning software." The installation instruction file "readme.txt" can also be downloaded, using the above web site, to help users installing the code. Important support documents (e.g., NUREG-1549, "Decision Methods for Dose Assessment to Comply With Radiological Criteria for License Termination" and NUREG/CR-5512, Vol. #3, "Residual Radioactive

Contamination From Decommissioning, Parameter Analysis) can also be accessed through the above web site. As discussed in DG-4006, use of DandD with the default parameters is intended for screening calculations only. If screening results indicate that remediation might be needed, a site-specific dose assessment is recommended before deciding on remedial actions. NRC expects pathway analysis/dose assessment codes other than DandD to be more appropriate for some conditions. Regulatory Guide DG-4006 contains guidance regarding the information required to support the use of other codes and models. In the interim period, NRC will review all dose assessment results on a case-by-case basis.

The DandD code, when used with the default parameter set, provides a method for calculating screening concentrations for radionuclides in soil, and screening levels for surface contamination on building surfaces. It should be noted that the screening values, based on DandD, differ from the criteria listed in the SDMP Action Plan. In most cases, the screening values for beta/gamma emitters are higher than the SDMP Action Plan criteria, while the values for alpha emitters are much lower.

During the two-year interim use period for the draft guidance (DG-4006), NRC plans to continue to refine the screening approach and to evaluate the extent of conservatism of the results of the DandD code. It may be more appropriate to develop a different screening method or approach for alpha emitters. NRC will assess the results of the DandD screening method, particularly the low screening values for alpha emitters, during the workshops to be held on the LTR guidance development. Note that DG-4006 clearly encourages the use of site-specific dose assessments, whenever needed, and recognizes that the screening values will not be appropriate in all cases.

4. Screening Values for Building Surface Contamination

The staff has developed, as a tool to facilitate the efficient implementation of the LTR, a screening table (Table 1) of unrestricted release values for building surface contamination of common beta/gamma emitting radionuclides. The screening table was derived using the DandD screening code, Version 1, and its default input parameters. Table 1 provides criteria which permit licensees to demonstrate compliance with the unrestricted release dose criterion in the LTR. The values in Table 1 correspond to surface concentrations of

radionuclides contamination that would be deemed in compliance with the unrestricted use dose limit in 10 CFR 20.1402 (i.e., 0.25 mSv/yr, (25 mrem/yr)). The values correspond to screening "derived concentration guidelines" (DCGL) for each specific radionuclide based on the methodology described in DG-4006. Sites with building surface contamination levels below those listed in Table 1 would be deemed acceptable for release for unrestricted use in accordance with the dose criteria in 10 CFR 20.1402, provided that residual radioactivity has been reduced to "as low as reasonably achievable" (ALARA) levels. The table is intended for use as criteria to facilitate license termination for many simple routine decommissioning cases without a site-specific dose assessment. For facilities with contamination levels above those in Table 1, additional site-specific dose assessments may be necessary, and licensees should refer to DG-4006 regarding acceptable methods for conducting the appropriate dose assessment.

Table 1 does not include screening values for radionuclides that emit alpha particles, or for soil contamination. The NRC staff is assessing current screening approaches for sites with alpha emitters and for soil contamination. For such sites, licensees are encouraged to use, in the interim period, site-specific dose assessments based on actual site conditions.

5. Future Public Workshops

NRC will hold a series of public workshops over the two-year interim period to describe the status of the ongoing development of both DG-4006 and the SRP, to provide industry and other interested parties an opportunity to provide comments, and to discuss users' experiences with implementing the guidance. The future dates for the workshops are: December 1-2, 1998; January 21-22, 1999; March 18-19, 1999; June 16-17, 1999; August 18-19, 1999; and October 20-21, 1999. All workshops will be conducted in the Auditorium located at NRC's Headquarters (Two White Flint North Building, 11545 Rockville Pike, Rockville, MD 20852-2738). For further details on workshops, see the Federal Register notice published on October 21, 1998 (63 FR 56237).

6. Standard Review Plan

The NRC staff is developing an SRP for the evaluation of licensee submittals related to compliance with the radiological criteria in the LTR. The goal of the SRP is to enable NRC staff to evaluate information submitted by

licensees in a timely, efficient, and consistent manner, and to determine if the decommissioning will be conducted such that the public health and safety is protected and the facility can be released in accordance with NRC's requirements. The development of the SRP will be coordinated with the effort to revise and finalize DG-4006. The web site "<http://techconf.llnl.gov/cgi-bin/topics>" provides updated information on the status of the guidance and the SRP, and a mechanism for the public to provide comments on the draft guidance.

7. Status of Decommissioning Guidance Documents

Guidance material in DG-4006 and the SRP will incorporate or supersede most existing NRC decommissioning guidance documents. Guidance documents will be revised to be consistent with the LTR, or they will be phased out. Table 2 lists the status of existing NRC guidance documents affected by the LTR and associated new guidance.

Under the SDMP Action Plan criteria, the tables of surface contamination values contained in Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors," and Policy and Guidance Directive FC 83-23, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, or Special Nuclear Material Licenses," were used as the decommissioning criteria for building surfaces. The values in Table 1 are intended to replace the tables in the above two documents for license termination purposes.

The surface contamination criteria in Regulatory Guide 1.86 have been applied by reactor licensees for license termination only. However, for materials licenses (under 10 CFR Parts 30, 40, and 70), the guidelines in Policy and Guidance Directive FC 83-23 have been used by licensees for two purposes: (a) As criteria for license termination, and (b) as criteria for unrestricted release of equipment and other materials during operations. On June 30, 1998, the Commission directed the NRC staff to develop a dose-based regulation for clearance of equipment and materials having residual radioactivity. The criteria that eventually emerge from this rulemaking effort are intended to replace the surface contamination values in Policy and Guidance Directive FC 83-23. Until that time, licensees may continue to use the criteria in Policy and Guidance Directive FC 83-23 for unrestricted

release of equipment and material, to the extent authorized by their licenses.

FOR FURTHER INFORMATION CONTACT: Mr. David N. Fauver, Low-Level Waste and Decommissioning Projects Branch, at (301) 415-6625, or Dr. Rateb (Boby) Abu Eid, Performance Assessment and High-Level Waste Integration Branch, at (301) 415-5811, both of the Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Dated at Rockville, Maryland, this 12th day of November 1998.

For the Nuclear Regulatory Commission.
John W.N. Hickey,
Chief, Low-Level Waste and Decommissioning Projects Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.

TABLE 1—ACCEPTABLE LICENSE TERMINATION SCREENING VALUES OF COMMON RADIONUCLIDES FOR BUILDING SURFACE CONTAMINATION

Radionuclide	Sym- bol	Acceptable screening levels ¹ for unrestricted release (dpm/100 cm ²) ²
Hydrogen-3 (Tritium).	³ H	1.2E+08
Carbon-14	¹⁴ C	3.7E+06
Sodium-22	²² Na	9.5E+03
Sulfur-35	³⁵ S	1.3E+07
Chlorine-36	³⁶ Cl	5.0E+05
Manganese-54 ..	⁵⁴ Mn	3.2E+04
Iron-55	⁵⁵ Fe	4.5E+06
Cobalt-60	⁶⁰ Co	7.1E+03
Nickel-63	⁶³ Ni	1.8E+06
Strontium-90	⁹⁰ Sr	8.7E+03
Technetium-99 ..	⁹⁹ Tc	1.3E+06
Iodine-129	¹²⁹ I	3.5E+04
Cesium-137	¹³⁷ Cs	2.8E+04

TABLE 1—ACCEPTABLE LICENSE TERMINATION SCREENING VALUES OF COMMON RADIONUCLIDES FOR BUILDING SURFACE CONTAMINATION—Continued

Radionuclide	Sym- bol	Acceptable screening levels ¹ for unrestricted release (dpm/100 cm ²) ²
Iridium-192	¹⁹² Ir	7.4E+04

¹ Screening levels are based on the assumption that the fraction of removable surface contamination is equal to 0.1. For cases when the fraction of removable contamination is undetermined or higher than 0.1, users may assume, for screening purposes, that 100% of surface contamination is removable, and therefore the screening levels should be decreased by a factor of 10. Alternatively, users having site-specific data on the fraction of removable contamination (e.g., within the 10% to 100% range) may calculate site-specific screening levels using DandD Version 1.

² Units are disintegrations per minute per 100 square centimeters (dpm/100 cm²). 1 dpm is equivalent to 0.0167 becquerel (Bq). The screening values represent surface concentrations of individual radionuclides that would be deemed in compliance with the 0.25 mSv/yr (25 mrem/yr) unrestricted release dose limit in 10 CFR 20.1402. For radionuclides in a mixture, the "sum of fractions" rule applies; see 10 CFR Part 20, Appendix B, Note 4. Refer to NRC Draft Guidance DG-4006 for further information on application of the values in this table.

TABLE 2—EXISTING GUIDANCE DOCUMENTS APPLICABLE TO DECOMMISSIONING THAT WILL REQUIRE REVISION OR DISCONTINUATION IN ORDER TO IMPLEMENT THE LICENSE TERMINATION RULE (LTR)

Decommissioning guidance document	Status with respect to LTR
Decommissioning Criteria in Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites (SDMP Action Plan) (57 FR 13389).	Superseded by LTR and DG-4006 (Note: Still applicable to sites "grandfathered" in accordance with 10 CFR 20.1401(b)).
Policy and Guidance Directive FC 83-23, "Guidelines for the Decommissioning of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, or Special Nuclear Material Licenses".	Superseded by DG-4006 for License Termination (Note: This document may continue to be used as criteria for unrestricted release of equipment and material from licensed material facilities during operational activities prior to license termination, to the extent authorized by the licensees).
Draft Branch Technical Position on "Screening Methodology for Assessing Prior Land Burials of Radioactive Wastes Authorized Under Former 10 CFR 20.304 and 20.302" (96 FR 28223).	Superseded by LTR and DG-4006.
"Preliminary Hazards Analysis for Contaminated Buildings at Formerly Licensed Sites".	Superseded by DG-4006.
NUREG/BR-0241, "NMSS Handbook for Decommissioning Fuel Cycle and Materials Licensees".	References to decommissioning criteria are superseded by the LTR and DG-4006. The Handbook will be updated as appropriate to be consistent with the LTR and current guidelines.
Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors".	Superseded by DG-4006
Draft NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination".	Superseded by DG-4006.

[FR Doc. 98-30867 Filed 11-17-98; 8:45 am]
 BILLING CODE 7590-01-P

**RAILROAD RETIREMENT BOARD
 Sunshine Act Meeting**

The meeting of the Railroad Retirement Board which was to be held on November 18, 1998, 9:00 a.m., at the Board's meeting room on the 8th floor of its headquarters building, 844 North

Rush Street, Chicago, Illinois 60611, has been canceled.

The person to contact for more information is Beatrice Ezerski, Secretary to the Board. Phone No. 312-751-4920.

Week of December 6

Wednesday, December 8

- 9:25 a.m. Affirmation Session (Public Meeting)
- a. Final Amendments to 10 CFR Parts 21, 50 & 54 & Availability for Public Comment of Draft Reg Guide DG-1081 & Draft Standard Review Plan of Section 15.0.1 Regarding Use of Alternative Source Terms at Operating Reactors (Tentative) (Contact: Ken Hart, 301-415-1659).

Week of December 13—Tentative

Wednesday, December 15

- 9:25 a.m. Affirmation Session (Public Meeting) (if needed)
- 9:30 a.m. Meeting with Advisory Committee on Nuclear Waste (ACNW) (Public Meeting) (Contact: Dr. John Larkins, 301-415-7360)

Thursday, December 16

- 9:00 a.m. Meeting on NRC Response to Stakeholders' Concerns Location: (NRC Auditorium, Two White Flint North)

Friday, December 17

- 9:30 a.m. Briefing on Status of RES Programs, Performance, and Plans (Including Status of Thermo-Hydraulics) (Public Meeting) (Contact: Jocelyn Mitchell, 301-415-5289)

Week of December 20—Tentative

Wednesday, December 22

- 11:30 a.m. Affirmation Session (Public Meeting) (if needed)

Week of December 27—Tentative

There are no meetings scheduled for the Week of December 27.

*The schedule for Commission meetings is subject to change on short notice. To verify the status of meetings call (recording)—(301) 415-1292. Contact person for more information: Bill Hill (301) 415-1661.

The NRC Commission Meeting Schedule can be found on the Internet at: <http://www.nrc.gov/SECY/smj/schedule.htm>

This notice is distributed by mail to several hundred subscribers; if you no longer wish to receive it, or would like to be added to it, please contact the Office of the Secretary, Attn: Operations Branch, Washington, D.C. 20555 (301-415-1661). In addition, distribution of this meeting notice over the Internet system is available. If you are interested in receiving this Commission meeting schedule electronically, please send an

electronic message to wmh@nrc.gov or dkw@nrc.gov.

William M. Hill, Jr.,

Secy, Tracking Officer, Office of the Secretary.
[FR Doc. 99-31798 Filed 12-3-99; 2:21 pm]
BILLING CODE 7590-01-M

NUCLEAR REGULATORY COMMISSION**Supplemental Information on the Implementation of the Final Rule on Radiological Criteria for License Termination**

Summary: This notice provides supplemental information regarding implementation of the Nuclear Regulatory Commission's (NRC) Final Rule on Radiological Criteria for License Termination (License Termination Rule (LTR)) which was issued on July 21, 1997, (62 FR 39058). This notice provides: (1) screening values for surface soil contamination release levels; and (2) information on additional NRC efforts in dose modeling. Supplemental information was also published in the Federal Register on November 18, 1998 (63 FR 64132). That notice provided information on: (1) The end of the "grandfathering period;" (2) issuance of draft Regulatory Guide "Demonstrating Compliance with the Radiological Criteria for License Termination" (DG-4006); (3) availability of DandD, version 1; (4) screening values for building surface contamination for beta/gamma radiation emitters (Table 1, Acceptable License Termination Screening Values of Common Radionuclides for Building Surface Contamination); (5) public workshops; (6) development of a decommissioning standard review plan (SRP); and (7) status of the NRC decommissioning guidance documents (Table 2, Existing Guidance Documents Applicable to Decommissioning That Will Require Revision or Discontinuation in Order to Implement the License Termination Rule).

Supplemental Information: As discussed in the November 18, 1998, Federal Register notice, the DandD code provides a method for calculating screening concentrations for radionuclides in soil, and screening levels for contamination on building surfaces. NRC staff also stated that, during the two-year interim use period for DG-4006, it planned to continue to refine the screening approach and to evaluate the extent of conservatism in the DandD code.

Several areas where DandD, version 1, may be overly conservative have been identified. One such conservatism is the

methodology used for selection of default parameters. Selection of highly conservative default parameters is essentially caused by the current screening design of establishing a single default parameter set for all radionuclides listed in the DandD code. That is, if the default parameter set was tailored for each radionuclide, rather than using a common default parameter set for all radionuclides, the dose calculated using DandD model would, in most cases, be lower. A detailed discussion of the way the default parameters were selected is contained in "Residual Contamination from Decommissioning—Parameter Analysis—Draft Report for Comment" (NUREG/CR-5512, Volume 3).

This artifact in the way the default parameters were selected has been discussed in several presentations at the NRC's public workshops (e.g., Public Workshops on Guidance for Implementing Title 10 Code of Federal Regulations (CFR), Subpart E, Radiological Criteria for License Termination) conducted in December 1998, and January, March, and June 1999. Currently, NRC staff is developing version 2.0 of the DandD code. This version of the code will calculate the default parameter values based on the specific radionuclides that are identified by the analyst. In the interim, NRC staff has calculated surface soil concentrations for a number of common radionuclides that correspond to an annual dose of 0.25 mSv (25 mrem) using the default parameters that are generated by the approach to be used in the new version of DandD. These values are presented in Table 3. For mixtures of radionuclides, a screening dose should be calculated using the sum-of-the fractions' rule.

The values in Table 3 (Interim Screening Values (pCi/g) of Common Radionuclides for Soil Surface Contamination Levels) correspond to surface soil (e.g., top 15-30 cm) concentrations of radionuclide contamination that would be deemed in compliance with the unrestricted use dose limit in 10 CFR 20.1402 (i.e., 0.25 mSv/yr, (25 mrem/yr)). The values correspond to screening "derived concentration guidelines" (DCGLs) for each specific radionuclide based on the methodology described in DG-4006. Sites with surface soil contamination levels below those listed in Table 3 would be deemed acceptable for release for unrestricted use provided that residual radioactivity has been reduced to levels that are "as low as is reasonably achievable" (ALARA). This table is not applicable to sites with subsurface and/or with groundwater

contamination and a more comprehensive dose impact analysis would be required. The table is intended for use as screening criteria to facilitate license termination for many simple routine decommissioning cases that do not require a site-specific dose assessment. For facilities with contamination levels above those in Table 3, additional site-specific dose assessments may be necessary, and licensees should refer to DG-4006 regarding acceptable methods for conducting the appropriate dose assessment.

NRC staff has also prepared "Preliminary Guidelines for Evaluating Dose Assessments in Support of Decommissioning." The purpose of these guidelines is to provide a consistent approach for NRC staff to evaluate dose assessments conducted to demonstrate compliance with the LTR. This interim guidance was developed by NRC staff for reviewing dose assessments and may be useful to licensees preparing dose assessment during both screening and site-specific analyses. A copy of the guidance is available on the web site "http://techconf.llnl.gov/."

During our analysis of the basis for selecting the default parameter set for the DandD code, we discovered a transcription error in the soil-to-plant transfer factor for S-35. This error substantially overestimates the allowable DCGL for this radionuclide. The soil-to-plant transfer factor has been revised in DandD version 1 and posted on the above referenced web site. In addition, a "patch" to correct this problem for users that already have the code installed is also available from this web site.

The staff intends to consider placing Tables 1 and 3, revised as necessary, to reflect improvement in the DandD code in the Standard Review Plan for decommissioning, and/or in the next revision of the Regulatory Guide DG-4006. Comments on these Tables may be submitted within 30 days from the date of this notice to the Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

For Further Information Contact: For more information, contact Dr. Bobby Abu-Eid, High-Level Waste and Performance Assessment Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Telephone: (301) 415-5811; fax: (301) 415-5398; or email: bae@nrc.gov.

Dated at Rockville, Maryland, this 29th day of November 1999.

For the Nuclear Regulatory Commission.

Larry W. Camper,
Chief, Decommissioning Branch Division of
Waste Management, Office of Nuclear
Material Safety and Safeguards.

TABLE 3.1—INTERIM SCREENING VALUES² (PCI/G) OF COMMON RADIONUCLIDES FOR SOIL SURFACE CONTAMINATION LEVELS

Radionuclide	Surface soil screening values ³
H-3	1.1 E+02
C-14	1.2 E+01
Na-22	4.3 E+00
S-35	2.7 E+02
Cl-36	3.6 E-01
Ca-45	5.7 E+01
Sc-46	1.5 E+01
Mn-54	1.5 E+01
Fe-55	1.0 E+04
Co-57	1.5 E+02
Co-60	3.8 E+00
Ni-59	5.5 E+03
Ni-63	2.1 E+03
Sr-90	1.7 E+00
Nb-94	5.8 E+00
Tc-99	1.9 E+01
I-129	5.0 E-01
Cs-134	5.7 E+00
Cs-137	1.1 E+01
Eu-152	8.7 E+00
Eu-154	8.0 E+00
Ir-192	4.1 E+01
Pb-210	9.0 E-01
Ra-226	7.0 E-01
Ra-226+C ⁴	6.0 E-01
Ac-227	5.0 E-01
Ac-227+C	5.0 E-01
Th-228	4.7 E+00
Th-228+C	4.7 E+00
Th-230	1.8 E+00
Th-230+C	6.0 E-01
Th-232	1.1 E+00
Th-232+C	1.1 E+00
Pa-231	3.0 E-01
Pa-231+C	3.0 E-01
U-234	1.3 E+01
U-235	8.0 E+00
U-235+C	2.9 E-01
U-238	1.4 E+01
U-238+C	5.0 E-01
Pu-238	2.5 E+00
Pu-239	2.3 E+00
Pu-241	7.2 E+01
Am-241	2.1 E+00
Cm-242	1.6 E+02
Cm-243	3.2 E+00

¹ Tables 1 and 2 were published in the Federal Register on November 18, 1998, (63 FR 64132)

² These values represent superficial surface soil concentrations of individual radionuclides that would be deemed in compliance with the 25 mrem/y (0.25 mSv) unrestricted release dose limit in 10 CFR 20.1402. For radionuclides in a mixture, the "sum of fractions" rule applies; see Part 20, Appendix B, Note 4. Refer to NRC Draft Guidance DG-4006 for further information on application of the values in this table.

³ Screening values (pCi/g) equivalent to 25 mrem/y derived using DandD screening methodology (SNL Letter Report for NRC Project JCN W6227, January 30, 1998). These values were derived based on selection of the 90th Percentile of the output dose distribution for each specific radionuclide (or radionuclide with the specific decay chain). Behavioral parameters are set at the mean of the distribution of the assumed critical group. The Metabolic parameters are set at Standard Man or at the mean of the distribution for an average man.

⁴ "+C" indicates a value for a radionuclide with its decay progeny present in equilibrium. The values are concentrations of the parent radionuclide, but account for contributions from the complete chain of progeny in equilibrium with the parent radionuclide.

[FR Doc. 99-31508 Filed 12-6-99; 8:45 am]

BILLING CODE 7590-01-P

RAILROAD RETIREMENT BOARD

Agency Forms Submitted for OMB Review

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), the Railroad Retirement Board (RRB) has submitted the following proposal(s) for the collection of information to the Office of Management and Budget for review and approval.

SUMMARY OF PROPOSAL(S):

- (1) *Collection title:* Application for Survivor Death Benefits.
- (2) *Form(s) submitted:* AA-21, G-273a, AA-11a, G-131, and AA-21cert.
- (3) *OMB Number:* 3220-0031.
- (4) *Expiration date of current OMB clearance:* 2/28/2000.
- (5) *Type of request:* Revision of a currently approved collection.
- (6) *Respondents:* Individuals or Households, Business or other for-profit.
- (7) *Estimated annual number of respondents:* 20,600.
- (8) *Total annual responses:* 20,600.
- (9) *Total annual reporting hours:* 5,150.

(10) *Collection description:* The collection obtains the information needed to pay death benefits and annuities due but unpaid at death under the Railroad Retirement Act. Benefits are paid to designated beneficiaries or to survivors in a priority designated by law.

ADDITIONAL INFORMATION OR COMMENTS: Copies of the forms and supporting documents can be obtained from Chuck Mierzwa, the agency clearance officer (312-751-3363). Comments regarding the information collection should be addressed to Ronald J. Hodapp, Railroad Retirement Board, 844 North Rush Street, Chicago, Illinois 60611-2092 and the OMB reviewer, Lori Schack (202-395-7316), Office of Management and

authorized retail food stores found to be ineligible will be withdrawn from program participation. Ineligible firms under this paragraph (b)(1)(iv) include, but are not limited to, stores selling only accessory foods, including spices, candy, soft drinks, tea, or coffee; ice cream vendors selling solely ice cream; and specialty doughnut shops or bakeries not selling bread. In addition, firms that are considered to be restaurants, that is, firms that have more than 50 percent of their total gross retail sales in hot and/or cold prepared foods not intended for home preparation and consumption, shall not qualify for participation as retail food stores under Criterion A or B. This includes firms that primarily sell prepared foods that are consumed on the premises or sold for carryout. This does not, however, change the eligibility requirements for the special restaurant programs that serve the elderly, disabled, and homeless populations, as set forth in paragraph (d) of this section.

(v) *Wholesale food concerns.* Wholesale food concerns, the primary business of which is the sale of eligible food at wholesale, and which meet the staple food requirements in paragraph (b) of this section, shall normally be considered to have adequate food business for the purposes of the program, provided such concerns meet the criteria specified in paragraph (c) of this section.

(vi) *Co-located wholesale food concerns.* * * *

(q) *Use and disclosure of information provided by firms.* With the exception of EINs and SSNs, any information collected from retail food stores and wholesale food concern, such as ownership information and sales and redemption data, may be disclosed for purposes directly connected with the administration and enforcement of the Food Stamp Act and these regulations, and can be disclosed to and used by State agencies that administer the Special Supplemental Food Program for Women, Infants and Children (WIC). Such information may also be disclosed to and used by Federal and State law enforcement and investigative agencies for the purpose of administering or enforcing other Federal or State law, and the regulations issued under such other law. * * *

(t) *Periodic notification.* The FNS will issue periodic notification to participating retail stores and wholesale food concerns to clarify program eligibility criteria, including the definitions of "retail food store", "staple

foods", "eligible foods", and "perishable foods". At a minimum, such information will be provided to stores at the time of authorization, reauthorization and upon request.

Dated: June 18, 1999.
Shirley R. Watkins,
Under Secretary, Food, Nutrition and
Consumer Services.
[FR Doc. 99-16501 Filed 6-29-99; 8:45 am]
BILLING CODE 3410-30-U

NUCLEAR REGULATORY COMMISSION

10 CFR Part 20

Release of Solid Materials at Licensed Facilities: Issues Paper, Scoping Process for Environmental Issues, and Notice of Public Meetings

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for comment on issues paper and scoping process, and notice of plans for public meetings.

SUMMARY: The Nuclear Regulatory Commission (NRC) is considering a rulemaking that would set specific requirements on releases of solid materials in order to establish a regulatory framework more consistent with existing NRC requirements on air and liquid releases. The NRC is seeking early public input on the major issues associated with such a rulemaking, including conducting a scoping process related to the scope of environmental impacts. To aid in that process, the NRC is requesting comments on the issues discussed in this notice. NRC also intends to conduct four public meetings beginning in August of this year. This document provides background and topics of discussion for those meetings. **DATES:** Submit comments by November 15, 1999. Comments received after this date will be considered if it is practicable to do so, but the Commission is able to assure consideration only for comments received on or before this date.

In addition to providing opportunity for written (and electronic) comments, public meetings on the issues paper and scoping process will be held as follows: August 4-5, 1999—Chicago, Illinois, 8:30 am-5 pm, Hyatt Regency McCormick Place, 2233 South Martin Luther King Dr, Chicago, Illinois
September 15-16, 1999—San Francisco, California, 8:30 am-5 pm Radisson Miyako Hotel, 1625 Post Street, San Francisco, California
October 5-6, 1999—Atlanta, Georgia, 8:30 am-5 pm, Crown Plaza Atlanta

Powers Ferry, 6345 Power Ferry Road NW, Atlanta, Georgia
November 1-2, 1999—Rockville, Maryland, 8:30 am-5 pm NRC Auditorium, 15545 Rockville Pike, Rockville, Maryland

ADDRESSES: Submit comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Attention: Rulemaking and Adjudications staff.

Deliver comments to 11555 Rockville Pike, Rockville, Maryland, between 7:30 am and 4:15 pm on Federal workdays.

You may also provide comments via the NRC's interactive rulemaking website through the NRC home page (<http://www.nrc.gov>). This site provides the capability to upload comments as files (any format), if your web browser supports that function. For information about the interactive rulemaking website, contact Ms. Carol Gallagher, (301) 415-5905 (e-mail: CAG@nrc.gov).

Copies of any comments received may be examined at the NRC Public Document Room, 2120 L Street NW (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Frank Cardile, telephone: (301) 415-6185; e-mail: fpc@nrc.gov, Office of Nuclear Material Safety and Safeguards, USNRC, Washington DC 20555-0001. Specific comments on the public meeting process should be directed to Chip Cameron; e-mail fxc@nrc.gov, telephone: (301) 415-1642; Office of the General Counsel, US NRC, Washington DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Background

Unlike for air and liquid releases, the Commission currently has no specific regulatory requirements regarding release of solid materials. Even though the NRC does not have requirements in this area, it still receives requests from licensees for release of solid materials which it must evaluate on a case-by-case basis using existing guidance or case-specific criteria. Solid materials include metals, concrete, soils, equipment, furniture, etc., present at licensed nuclear facilities. To provide consistency in its regulatory framework for releases of all materials, the Commission is considering a rulemaking that would set specific requirements for release of solid materials.

The NRC is supplementing its standard rulemaking process by conducting enhanced public participatory activities including facilitated public meetings, before the start of any formal rulemaking process, to solicit early and active public input

on major issues associated with release of solid materials. The NRC will also utilize its website to disseminate information and solicit input.

As a first step, the NRC has prepared an issues paper that describes issues and alternatives related to release of solid materials. The intent of this paper is to foster discussion about these issues and alternatives before a rulemaking to set standards would begin. The content of the issues paper is contained in Section III. It is noted in Section III that NRC would evaluate environmental impacts of alternative courses of action in an EIS in any rulemaking conducted. To assist in that process, this notice is also announcing a process for developing the scope of an EIS, i.e., a "scoping process." Specific discussion of the scoping process is contained in Section IV of this notice. The principal issues discussed in the issues paper and in regard to the scoping process are the same and the Commission believes that it is beneficial to seek comment and hold discussions on both at the same time to best utilize and coordinate available expertise and input. The discussions presented in Sections III and IV provide background and topics of discussion that will be the subject of the public meetings.

II. Request for Written and Electronic Comments and Plans for Public Meetings

The NRC is soliciting comments on the items presented in the issues paper in Section III and the scoping process in Section IV. Comments may be submitted either in writing or electronically as indicated under the ADDRESSES heading. In addition to providing an opportunity for written comments, the NRC is holding facilitated public meetings at four different geographical locations on the issues discussed in Sections III and IV between August and November 1999 (see the DATES heading of this notice for the dates and locations of these meetings). The written public comment period will extend until after the last public meeting is held.

Based on the comments received both in written and electronic form, and at the public meetings, the Commission will decide whether to proceed with development of a proposed rule or take some other regulatory action. If the Commission decides to proceed further with a proposed rulemaking, any proposed rules will be published in the Federal Register for public review and comment.

III. Issues Paper on Release of Solid Materials at Licensed Facilities

Introduction

To provide consistency in its regulatory framework for releases of materials, the Commission is considering a rulemaking that would set specific requirements for release of solid materials. This section describes issues and alternatives related to the release of solid materials and is intended to foster discussion about these issues and alternatives before a rulemaking would begin.

Section A of this section describes some general considerations related to rulemaking, potential Commission actions, and the enhanced participatory process. Section B of this section discusses the major issues that would be associated with a rulemaking and also discusses various alternatives for proceeding.

A. Background

A.1 Current NRC Policies

A.1.1 Inconsistency of NRC regulations covering releases from licensed facilities

The NRC has the statutory responsibility for the protection of health and safety related to the use of source, byproduct, and special nuclear material under the Atomic Energy Act. A principal method of meeting this responsibility is through the body of regulations codified in Title 10, Chapter I, of the Code of Federal Regulations (10 CFR, Chapter I). The regulations in 10 CFR, Chapter I, have been developed using a rulemaking process that provides the opportunity for public review and comment under the Administrative Procedure Act and includes the analysis of costs and benefits and environmental impacts, and considers factors related to paperwork reduction. Agreement States administer equivalent programs applying equivalent regulations.

The Commission's regulations that set standards for protection of the public against radiation appear in 10 CFR Part 20. These regulations limit the radiation exposure (or "dose") that a member of the public can receive from the operation and decommissioning of an NRC-licensed activity, and also require that doses received are "as low as is reasonably achievable (ALARA)". The NRC has used the criteria on public dose limits and ALARA requirements in Part 20 (Sections 20.1301 and 20.1101, respectively) to establish limits in Table 2 of Appendix B of Part 20 on the amount of radioactivity in gaseous and liquid releases that may be released

from a nuclear facility to the environment.

However, unlike the regulations applicable to gaseous and liquid releases from a licensed nuclear facility, there are no current specific criteria in Part 20 governing releases of solid materials by licensees, although there are some regulations¹ that cover the release of certain materials. Therefore, if a licensee requests approval of release of solid material, the NRC must consider the request on a case-by-case basis using existing regulatory guidance, license conditions, NRC Branch Technical Positions, etc.

The Commission recently amended its regulations in Part 20 (Subpart E) to establish criteria for unrestricted use of facility structures and lands at a decommissioned site (July 21, 1997; 62 FR 39058). Subpart E of Part 20 is focused on protection of persons entering and using decommissioned structures and lands at a site after a nuclear facility terminates its NRC license, but does not otherwise address release of solid material.

A.1.2 Solid materials potentially available for release

Solid materials include metals, building concrete, onsite soils, equipment, furniture, etc., that are present at, and/or used in, licensed nuclear facilities during routine operations. Most of this material will have no radioactive contamination, although some materials can have radioactive contamination either on their surfaces or distributed within their volumes. Contamination can be distributed in the volume of materials because: (1) they are relatively porous (e.g., soil) allowing contamination to spread into the material; (2) they become radioactive through activation; or (3) a recycling process (e.g., metal melting) can cause contamination that was previously on the surface of a piece of equipment to become distributed throughout its volume. The amount of contamination that a material has, if any, depends largely on the type of licensee involved and its location in the facility:

(a) For most NRC licensees, solid materials have no contamination because these licensees use sealed sources in which the radioactive material is encapsulated. These include small research and development facilities and industrial use of various

¹ For example, 10 CFR 20.2005, 35.92, and 36.57(e). In addition, 10 CFR 40.51 and 40.13 contain transfer or unimportant quantities provisions, respectively, which are the subject of a separate Commission-directed initiative on Part 40 and are outside the scope of this effort.

devices including gauges, measuring devices, and radiography.

(b) For other licensees (which includes nuclear reactors, manufacturing facilities, larger educational or health care facilities including laboratories, etc.), material generally falls into one of three groups based on its location or use in the facility:

(1) *Clean or unaffected areas of a facility*—The solid material in these areas would likely have no radioactive contamination resulting from licensed activities. These areas could include hospital waiting rooms, university office space in a laboratory, or metal ventilation ducts in the control room of a reactor facility.

(2) *Areas where licensed radioactive material is used or stored*—The material in these areas can become contaminated although the levels may likely be very low, or it may have none, because of contamination control procedures required at facilities licensed by the NRC. This could include material in certain laboratory areas in a university or hospital, or in certain buildings of a reactor facility.

(3) *Material used for radioactive service in the facility, or located in contaminated areas or in areas where activation can occur*—These materials generally have levels of contamination that would not allow them to be candidates for release unless they are decontaminated.

A.1.3 Current NRC case-by case review of licensee requests for release of solid material

Even though the NRC does not currently have specific criteria in Part 20 covering release of solid materials, licensees have made, and will likely continue to make, requests for release of solid material when it becomes obsolete or defective or when their facility is decommissioned. For material from clean or unaffected areas, knowledge of site radiological history is an important factor in determining whether the material is contaminated. The NRC evaluates requests for release on a case-by-case basis using either the table of surface contamination criteria in Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors," or other case-specific criteria for compliance with Part 20 requirements.

(a) *Regulatory Guide 1.86*. This guide, which was developed by the Atomic Energy Commission in 1974, provides a table of *Acceptable Surface Contamination Levels* for various radionuclides, including natural and enriched uranium, transuranics, and

fission products. These surface contamination levels are stated in terms of measurable radioactivity levels (observed disintegrations per minute per 100 square centimeters of surface area), the values of which were based principally on the detection capabilities of readily available instrumentation at the time the guide was developed. The surface contamination levels were not based on the potential dose to an individual that may result from coming in contact with the released materials although such exposure is estimated to be low. Regulatory Guide 1.86 does not contain dose criteria. For some situations, the NRC will incorporate the values in the table in Regulatory Guide 1.86 into the license conditions of a facility.

(b) *Allowance of release if there are no detectable levels of radioactive contamination from licensed activities above background in the material*. Regulatory Guide 1.86 only addresses materials having surface contamination; it does not cover volumetric contamination. For some situations, the NRC allows release of volumetrically contaminated solid material if survey instrumentation does not detect radioactivity levels above background. This does not mean that the material is released without any radioactive contamination present on or in it; instead, it means that the material may be released with very low amounts of contamination that is not detectable with appropriate survey instruments. This method provides inconsistent and generally unsatisfactory licensing guidance because different survey instruments have different levels of detection. This can lead to disagreements and confusion over permissible levels of release and nonuniform levels of protection.

(c) *Use of 10 CFR 20.2002*. Licensees may request specific approval to dispose of materials containing low levels of licensed material in other than a licensed low-level waste disposal site in accordance with requirements in 10 CFR 20.2002. Section 20.2002 requires licensees to describe the material to be released and evaluate the doses that would result. Use of this approach requires case-specific NRC review and evaluation of the situation, which in the past has been used to authorize various releases of contaminated material.

A.2 NRC Actions To Address Inconsistency in Release Standards by Considering Rulemaking on Release of Solid Materials

A.2.1 Commission direction to consider rulemaking

Based on the issues and concerns described in Section A.1, the Commission, on June 30, 1998, directed the staff to consider rulemaking to establish a dose-based standard for release of solid materials so that licensee considerations and NRC review of the disposition of slightly contaminated solid materials are conducted in a consistent manner that protects public health and safety. The Commission also directed the NRC staff to include an opportunity for enhanced public participation, including use of NRC's Internet home page to solicit comments. This issues paper is the first step in soliciting views on major issues in this area.

A.2.2 Potential Alternative Courses of Action

Before conducting a rulemaking, the NRC generally considers alternative courses of action. Two broad alternatives that the NRC could consider are not doing a rulemaking (i.e., continue with the current practice of case-by case reviews) or developing a rulemaking for release of solid materials. If the NRC decided to proceed with rulemaking, it could:

(1) Permit release of solid materials for unrestricted use if the potential doses to the public from unrestricted use of the material were less than a specified level determined during the rulemaking process. Unrestricted use could result in recycle or reuse of the material in consumer products or industrial products, or disposal of the material as waste in landfills. Release of solid materials for unrestricted use is also referred to as "clearance", but for the purposes of this issues paper, the term "release for unrestricted use" is generally used.

(2) Restrict release of solid materials to only certain authorized uses. For example, future use of the material could be restricted to only certain industrial uses where the potential for public exposure is small.

(3) Do not permit either unrestricted or restricted release of solid material that has been in an area where radioactive material has been used or stored, and instead require all such materials to go to a licensed low-level waste (LLW) disposal facility.

In evaluating these alternatives, the NRC would consider potential human health and environmental impacts and

economic aspects associated with each alternative.

A.3 Current Policies of International Agencies, Other Federal Agencies, State Governments and Other Standards Setting Bodies Regarding Releases of Solid Materials

In considering rulemaking alternatives, the NRC would consider policies and precedents set by other nations and international agencies, by other Federal agencies, by States, and by other standards setting bodies.

International Efforts. There is considerable effort by other nations and by international agencies, such as the International Atomic Energy Agency (IAEA), to set standards in this area. Consistency with standards set by other nations and international agencies is important because materials can be both imported and exported between the U.S. and other countries and differing standards could create confusion and economic disparities in commerce. The generally accepted term in the international community for release of materials for unrestricted use is "clearance."

Individual countries, including Germany, France, Finland, Sweden, Taiwan, and the United Kingdom, have developed national guidance for clearance of materials. The standards in these guidance documents correspond fairly well. Two major international radiation protection organizations, the IAEA and the Commission of European Communities (CEC) have developed draft standards containing clearance levels for individual radionuclides. The NRC, the Environmental Protection Agency (EPA), and the Department of Energy (DOE) generally provide input and review on behalf of the U.S. in development of IAEA and CEC standards. Both sets of standards are based on a 0.01 millisievert (mSv) per year (1 millirem (mrem) per year) annual dose which is broadly accepted as a trivial dose. Documents published by IAEA that document the development of their draft standards include Safety Series 89, "Principles for the Exemption of Radiation Sources and Practices from Regulatory Control," (1998), and IAEA-TECDOC-855, "Clearance Levels for Radionuclides in Solid Materials (Interim Report)."

One intended application of IAEA's proposed clearance levels is related to international trade, for example the import and export of scrap metals.

U.S. Environmental Protection Agency. The EPA, although not a regulator of licensees, is responsible for setting generally applicable environmental standards for radioactive

materials under the Atomic Energy Act. The NRC, in regulating its licensees, implements environmental standards that EPA promulgates in the area of radiation protection. In the absence of EPA standards in a particular area, for example in the area of release of solid materials, the NRC has the authority to set radiation protection standards for its licensees. This can cause potential problems with the finality of NRC licensing decisions if EPA later issues standards in a particular area that are different from regulations that NRC has previously issued. Thus, it is important for the NRC to involve EPA closely in developing its standards.

In addition, as noted later in Section B (Issue No.2, under "Factors in decisionmaking"), the EPA has completed studies on environmental impacts of clearance of materials. The NRC and EPA have, and plan to continue to have, coordinated efforts in this area to ensure that effective and consistent release standards are established, while minimizing duplication of effort. In particular, the NRC and EPA, along with other Federal agencies, work together on the Interagency Steering Committee on Radiation Standards to coordinate their efforts on issues associated with establishing criteria for radiation protection. Accordingly, the EPA will not only be an important participant in the NRC rulemaking public meetings, but the NRC also plans to consult extensively with EPA throughout the rulemaking process and has invited EPA to be a member of the NRC working group.

In setting generally applicable environmental standards, EPA sets standards for a wide range of materials, including some which contain naturally occurring radioactive materials that have been enhanced as a result of man-made processes. A material that has been made exempt from regulation (see 40 CFR 261.4(b)(4)) is the ash from burning coal in power plants that has concentrated levels of radioactive materials (e.g., uranium, radium, thorium). Under this exemption, coal ash is allowed to be used in building materials; the radioactive material in the coal ash can result in small radiation doses to the general public as a result of its use. The dose level from use of exempted coal ash could be viewed as a precedent or benchmark for possible NRC release levels.

EPA is currently active in the development of screening guidelines for import into the U.S. of materials cleared in other countries. EPA has been working with the NRC and other Federal and international agencies. The

importing of contaminated materials cleared by other countries into the U.S., which does not have in place generally applicable standards for this purpose, raises questions about the regulatory status of these materials after they enter the U.S.

U.S. Department of Energy. The DOE operates a number of nuclear facilities. Although generally not licensed by the NRC, the DOE faces issues concerning the disposition of materials from its facilities similar to those faced by NRC licensees.

In response to these needs, DOE has developed criteria for release of solid materials. These criteria generally endorse the numerical criteria of Regulatory Guide 1.86. The DOE criteria are contained in DOE Order 5400.5, Radiation Protection of the Public and the Environment, dated February 8, 1990 (and revised in 1993) and in the *Draft Handbook for Controlling Release for Reuse or Recycle of Non-Real Property Containing Residual Radioactive Material* (June 1997).

If the NRC issues a regulation containing criteria for release of solid materials, decisions would have to be made by DOE as to whether DOE would in the interest of consistency adopt the standards in the NRC regulation, or if DOE decides to release solid materials would NRC be required to authorize distribution of that material.

State governments. States face the same issues and needs that the NRC does and must also consider issues associated with release of naturally-occurring and accelerator produced materials (NARM). The Conference of Radiation Control Program Directors (CRCPD), an organization of state radiation agencies that develops suggested regulations, has established a committee to look into issues associated with release of solid materials.

Thirty States have entered into agreements with the NRC to assume regulatory authority over byproduct, source, and small quantities of special nuclear material. These "Agreement States" generally use NRC guidance such as that contained in Regulatory Guide 1.86 or similar guidance, in their regulatory programs.

In a related matter, Section 2901(a) of the Energy Policy Act of 1992 (Section 276(a) of the Atomic Energy Act) grants State governments (Agreement and non-Agreement States alike) the authority to regulate the disposal of low-level radioactive waste if the NRC exempts such waste after the enactment of Act. Several States and locales have, both prior to and subsequent to, passage of the Act established prohibitions against the disposal of radioactive material in

landfills. The implications of Sec. 276(a) on NRC's potential alternative courses of action noted in Section A.2 above are unclear and may depend on the ultimate nature of any rulemaking that NRC undertakes.

Other standards setting bodies.

Various other organizations are involved in setting standards which can impact decisions related to alternative courses of action for release of solid materials.

One of those organizations is the National Council on Radiation Protection and Measurements (NCRP). The NCRP is a nonprofit corporation chartered by the U.S. Congress to review current significant studies made by other health research bodies, to develop and disseminate information and recommendations about protection against radiation, and to cooperate with national and international organizations with regard to these recommendations. The NCRP has made recommendations in its report NCRP No. 116 regarding acceptable levels of radiation exposure to the public, including levels considered to present trivial health risk.

In addition, various industry groups (e.g., the American National Standards Institute (ANSI)) set standards regarding a variety of areas including equipment design and operation, facility maintenance, and contamination levels in radioactive effluents. NRC must be cognizant of activities in these areas because Public Law 104-113 (passed by Congress in 1995) requires Federal agencies to use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical.

A.4 Previous Commission Efforts to Address Release of Solid Materials

The Commission previously sought to address considerations related to release of solid materials as a part of its issuance of a Below Regulatory Concern (BRC) Policy Statement on July 3, 1990 (55 FR 27522). BRC was an approach proposed by NRC to address a Congressional directive in the Low-Level Radioactive Waste Policy Amendments Act of 1985. The BRC Policy was a general statement of Commission policy and was intended to provide a broad decision framework for formulating rules or making licensing decisions to exempt from regulatory control certain practices involving small quantities of radioactive material. The BRC Policy was envisioned to have applicability in NRC rulemaking and guidance in four principal areas, one of which was setting a standard for release of solid materials for recycle. The

Commission decided that a more extensive public involvement process in establishing these areas would be beneficial and hence instituted a moratorium on the BRC Policy in July 1991. Subsequently, in October 1992, the U.S. Congress enacted the Energy Policy Act of 1992 which revoked the BRC Policy Statement.

The NRC's current efforts differ from those associated with the BRC Policy in several ways. Unlike the broad policy-setting approach of the BRC policy, the NRC's current effort is focused on considering establishment of specific requirements for release of solid materials, which protect public health and safety, consistent with the existing framework of requirements in Part 20 for gaseous and liquid releases. As discussed in Section A.2, this would include a full assessment of potential scenarios and pathways for radiation exposure and an evaluation of the environmental impacts and cost-benefit basis of alternative approaches. In addition, the NRC would enhance participation in the rulemaking process through public meetings for interested parties. Any decisions made regarding release of solid materials at this time would be made through rulemaking and not through a policy statement.

A.5 Potential NRC Actions, Enhanced Public Participation and Public Meetings, and Preparation of Issues Paper

Generally, NRC's procedure in rulemaking is the NRC staff development of a proposed rule, Commission consideration, publication of the proposed rule for public comment, consideration of the comments by the NRC staff, preparation of a final rule, Commission review and approval, and publication of the final rule. As directed by the Commission, the NRC staff plans to enhance public participation in this process by conducting public meetings before any rulemaking would begin. The public meetings are planned to elicit informed discussions of options and approaches and the rationale for them. Although these public meetings are not designed to seek "consensus" in the sense that there is agreement on the issues, the public meetings are to be conducted at a very early stage of rulemaking to involve interested parties and the public with the following objectives: (a) to ensure that the relevant issues have been identified; (b) to exchange information on these issues; (c) to identify underlying concerns and areas of disagreement, and (d) where possible, approaches for resolution. The NRC staff also plans to enhance participation by

providing website access to this issues paper and the ability to submit comments on the issues paper by e-mail.

If, following this early exchange of ideas (including comments from the public meetings and comments filed by other means such as Internet responses and written comments), the Commission decides to proceed with rulemaking, other rulemaking documents will be prepared. Specifically, the NRC will evaluate the implications of a rule with regard to the National Environmental Policy Act (NEPA). NRC will conduct these evaluations as specified in 10 CFR Part 51, which contains requirements on preparing environmental analyses, including the content of an environmental statement and the public process involved in developing the scope of an environmental statement. In addition, the NRC will prepare a Regulatory Analysis to evaluate costs versus benefits of a rule consistent with Executive Order 12291 and the Commission's regulatory analysis guidelines in NUREG/BR-0058. The NRC will also publish guidance to provide licensees with information on how to demonstrate compliance with the regulation. These documents would be made available on NRC's website.

B. Issues for Discussion

The Commission believes that the issues and alternatives discussed below provide a broad look at matters related to the consistency of its regulations on standards for release of solid materials from nuclear facilities. Therefore, the Commission is soliciting comments and information on these issues before proceeding. These issues, and other relevant and substantial issues identified by interested parties, will serve as the basis of discussion at the public meetings. The discussions at the public meetings will be used by the NRC staff in deciding upon an appropriate course of action.

Issue No. 1—Should the NRC Address Inconsistency in its Release Standards by Considering Rulemaking on Release of Solid Materials?

As discussed in Section A.1.1, NRC generally uses the public dose limits and ALARA requirements in Part 20 to establish limits on releases from nuclear facilities during routine operations and decommissioning. Currently, Part 20 contains specific criteria on the amount of radioactivity in gaseous and liquid releases that may be released from a nuclear facility to the environment. NRC also has requirements in Subpart E of Part 20 on unrestricted use of decommissioned lands and structures. However, NRC currently has no specific

requirement in its regulations on limits for release of solid materials.

Alternatives

The NRC has the following two broad options related to the issue of inconsistency of its regulations on release standards and licensee requests for release of solid materials: (1) continue the current practice of handling of licensee requests for release of solid materials on a case-by-case basis; or (2) include requirements in Part 20, as part of a consistent regulatory framework for evaluating releases of all materials, that would allow it to make decisions on licensee requests for release of solid materials that are protective of public health and safety.

(1) No NRC Rulemaking: Continue Current Practice of Handling Licensee Requests for Release on a Case-by-Case Basis

Under this option, no NRC rule would be prepared. Licensees will still continue to make requests for release of solid materials. As discussed in Section A.1.3, in order to comply with the requirements of Part 20, NRC evaluates licensee requests on a case-by-case basis using regulatory guidance, branch positions, license conditions, etc. One basis for review has been NRC staff guidance in Regulatory Guide 1.86, which was originally published in June 1974 by the Atomic Energy Commission (AEC). Regulatory Guide 1.86 contains a table of acceptable total and removable surface levels for various radionuclides, including natural and enriched uranium, transuranics, and fission products, which are stated in terms of measurable radioactivity levels, but does not contain specific dose criteria. Regulatory Guide 1.86 has been used to evaluate unrestricted release of solid materials whose surfaces are slightly radioactive; it does not cover material with volumetric contamination. In addition to Regulatory Guide 1.86, Section A.1.3 notes that NRC also uses other case-specific criteria, such as the detection capability of instrumentation, and certain specific rule sections, in its evaluation of requests for release of solid materials.

(2) Develop a Proposed Rule

In this option, the NRC would proceed with rulemaking to supplement its gaseous and liquid release standards in Part 20 by developing dose-based regulations limiting releases of solid material to provide a consistent regulatory framework protective of public health and safety. This would involve conducting a rulemaking under the Administrative Procedure Act, and

developing, as regulatory bases, an environmental analysis under NEPA and an analysis of costs and benefits in a Regulatory Analysis. Based on Commission direction discussed in Section A.2.3, a rulemaking would use an enhanced participatory process involving early public input and website access to rulemaking documents.

Specific Items for Discussion

Should the NRC continue with the current practice of making decisions on a case-by-case basis, or should it proceed to develop a proposed rule that would establish generic criteria for release of solid materials? What are the considerations that should go into making this a decision?

(1) Does the current system of NRC case-by-case decisions on release of solid materials, using existing guidance, provide an adequate regulatory framework? Can volumetric contamination in small amounts be released in a manner similar to that done for small amounts of surface contamination on materials that have been released to unrestricted areas under the criteria in Regulatory Guide 1.86? If a rule is not issued, should Regulatory Guide 1.86 be updated with a set of dose-based values?

(2) Should the NRC develop dose-based regulations on release of solid material? Would a rule allow the NRC to better address volumetric contamination in solid materials in an explicit and consistent regulatory manner that meets both licensee needs and public concerns? Would a rule also meet additional specific regulatory needs such as the specific types of material to be covered, restricted vs. unrestricted use, etc?

(3) To what extent would such a rule contribute to maintaining public safety, enhancing the effectiveness and efficiency of the NRC, building public confidence, and reducing unnecessary regulatory burden?

(4) Would issuance of an NRC rule on release of solid material definitively resolve licensee questions regarding finality of NRC release decisions if EPA, which has authority to set generally applicable environmental standards in this area, promulgates a rule at a later date?

(5) Substantial NRC resources would be needed to conduct the complex safety, environmental, and regulatory analyses required to support a rulemaking. Without a regulation, the NRC will have to review the anticipated increase in requests for release of solid materials on a case-by-case basis which could mean less efficient and less

consistent reviews. Would potential savings in resources by having a regulation in place offset the resources spent on rulemaking?

Issue No. 2—If NRC Decides to Develop a Proposed Rule, What are the Principal Alternatives for Rulemaking that Should be Considered, and What Factors Should be Used in Making Decisions Between Alternatives?

If the answer to Issue No. 1 is to conduct a rulemaking to include requirements in Part 20 on release of solid material, a rulemaking (including the development of technical basis information, evaluation of environmental impacts and cost-benefit analyses, and the public review and comment process) would be conducted to evaluate potential rulemaking alternatives.

Rulemaking Alternatives

Potential alternatives for rulemaking in this area are:

(1) *Permit release of materials for unrestricted use if the potential dose to the public from the material are less than a specified level determined during the rulemaking process*—In this alternative, a licensee could release for unrestricted use ("clearance") material that meets the permissible level in the standards. Potential alternative dose levels resulting from unrestricted use of the material could include doses of 0.1 mSv/yr (10 mrem/yr), 0.01 mSv/yr (1 mrem/yr), 0.001 mSv/yr (0.1 mrem/yr) above background, as well as no dose above background. To provide some perspective on these levels: (a) the dose from natural background to people in the U.S. can vary widely based on the area of the country where people live, lifestyle, and other factors, and averages about 3 mSv/yr (300 mrem/yr) but may vary from 1 to 10 mSv/yr (100 to 1000 mrem/yr); (b) NRC's public dose limit is 1 mSv/yr (100 mrem/yr), (c) the dose from use of recycled coal ash in concrete block as permitted by EPA can be about 3 percent of natural background (about 0.1 mSv/yr (10 mrem/yr)), (d) a person receives 0.1 mSv (10 mrem) on a round-trip coast-to-coast flight, and (e) 0.01 mSv/yr (1 mrem/yr) is a level which the National Council of Radiation Protection and Measurements (NCRP) considers a trivial risk. In addition, a 0.01 mSv/yr (1 mrem/yr) value is also the level being considered for release for unrestricted use (or "clearance") in the European community.

(2) *Restrict release of solid materials to only certain authorized uses* (see more detail in Issue No. 3).

(3) *Do not permit either unrestricted or restricted release of solid material that has been in an area where radioactive material has been used or stored*—In this alternative, all such materials in the facility would be required to go to a licensed LLW disposal facility.

(4) *Other alternative(s)*—Other appropriate alternatives may be determined during the rulemaking process.

(5) *Other decisionmaking factors*, (i.e., non-dose based criteria).

Factors in Decisionmaking

Principal factors in making decisions regarding the alternatives include human health and environmental impacts, cost-benefit considerations, impacts on other industries, resource conservation, the capability to survey the material to assure that it meets permissible levels, existing international, national, and State standards, and other factors raised during the rulemaking process.

Human health and environmental impacts: In assessing potential rulemaking alternatives, NRC would consider a broad range of possible impacts, both radiological and non-radiological. These could include evaluation of radiation dose to individuals from release of solid materials, assessment of collective doses to different population groups from the release, transportation, processing and disposal impacts, impacts on biota, land use impacts, impacts on radiation sensitive industries, and societal impacts. Some of these impacts may be competing. For example, a lower dose criterion would result in less material available for release (and instead sent to a LLW disposal site) which, in turn, would lower the radiation dose impact to the public from exposure to that material. However, the lower dose criterion could cause an increase in other impacts, for example those impacts associated with mining, fabrication, and transport of fresh metal to replace that sent to a LLW disposal site. Because these impacts would take place over different time periods and expose different populations, a precise comparison is difficult. Nevertheless, the decisionmaking process could consider these impacts separately and also consider the net collective impact for these disparate factors.

NRC recently published a draft report for comment on radiological assessments for clearance of equipment and materials from nuclear facilities, NUREG-1640 (2 volumes). The report provides dose factors for both surficial and volumetric radioactivity and

compares them with results from Regulatory Guide 1.86 and from EPA values, European Community recommended clearance levels and IAEA draft clearance levels.

Most of the aforementioned policies, guidelines, recommendations and standards are dose based and thus are intended to be protective of public health and safety. In addition to protection of public health and safety, the U.S. Atomic Energy Act, as amended, also charges the NRC with protection of property. Some industries may be adversely affected by materials that are cleared based upon dose based standards because of sensitivity to radiation effects from the cleared material e.g., the film and electronic industries and the metal recycling industry which performs radiation monitoring of metal scrap to detect and protect itself from radioactive sources accidentally mixed with scrap.

As a first step in assessment of impacts, the NRC has issued a draft report for comment that provides a technical basis for determining potential doses to individuals from a wide range of potential scenarios by which members of the public could come in contact with material that had been released for unrestricted use (or "cleared") from licensees ("Radiological Assessment for Clearance of Equipment and Material from Nuclear Facilities", NUREG-1640, February 1999). The report contains an analysis of material flow models based on an evaluation of the recycle/reuse industry in the U.S. and of potential scenarios by which a member of the public could reasonably expect to be exposed. Solid materials that are candidates for release that are evaluated in the report include iron/steel, copper, aluminum, and concrete. The EPA has issued a report similar to NUREG-1640 which is accessible on EPA's website at <http://www.epa.gov/radiation/cleanmetals/publications.htm>. While some of the analysis and approaches in the EPA report are different from NRC's report, the overall results from the EPA and the NRC reports are similar.

Cost-benefit considerations: Executive Order 12291 contains provisions that require Federal agencies, in their rulemakings, to consider cost-benefit evaluations of alternative courses of action. Consistent with Executive Order 12291, NRC has established guidelines for preparing regulatory analyses of alternative courses of action in support of its rulemaking decisions (NUREG/BR-0058). Benefits would generally derive from the net reduction in environmental impacts discussed above. Costs which could be included in a

regulatory analysis could include: (1) the costs of alternative courses of action including surveys at licensed facilities, as well as surveys at non-licensed facilities that may use or receive released solid materials, to verify that permissible release levels have been met; (2) the potential for having to respond to contamination alarms at facilities handling released material; (3) economic impact on recycle/scrap/manufacturing processes; (4) replacement metal production; and (5) alternative options for disposing of the material.

Implementation considerations: A potential concern with implementation of a proposed rule is the capability to measure radioactive contamination corresponding to the very low alternative dose levels discussed above. The ability to measure radioactivity depends on both the amount and type of radioactive material. In particular, a rulemaking alternative that would require survey instrumentation to verify that there is no dose above natural background could be extremely difficult, if not impossible, to implement because of the variation in natural background and the limited capability of field survey instruments to detect such low levels.

Other international, national, and State standards: In considering rulemaking alternatives, the NRC would also consider requirements, guidelines, policies and precedents set by international agencies, other Federal agencies, or States. Consistency with standards set by other countries and international agencies is important because materials can be both imported and exported between the U.S. and other countries and differing standards could create confusion and economic disparities in commerce.

Items for Discussion

(A) Human Health and Environmental Impacts

(1) What individual dose level is acceptable regarding release of solid materials from licensed facilities for unrestricted use? Should release of solid materials for unrestricted use be permitted at a dose level (for example, 0.1, 0.01, or 0.001 mSv/yr [10, 1.0, or 0.1 mrem/yr], or no dose, above background (or other dose)) which is established in rulemaking based on a balancing of risks from various alternatives? Or, should release of solid materials not be permitted if they are potentially contaminated from the use of licensed radioactive material?

(2) How should environmental impacts be balanced and what types of

impacts should be considered in decisionmaking?

(i) In considering radiological impacts from materials released for unrestricted use in the public sector, what pathways of exposure to people, such as those already considered in NUREG-1640, should be considered? As noted above, NUREG-1640 contains a technical basis for determining potential doses to individuals from a wide range of potential scenarios by which members of the public could come in contact with material that had been released for unrestricted use. The report contains an analysis of material flow models based on an evaluation of the recycle/reuse industry in the U.S. and of potential scenarios by which a member of the public could reasonably be exposed.

(ii) In considering other environmental impacts, what impacts, both radiological and non-radiological, should be considered? Such impacts could include mining of new metals to replace metals that could be potentially released but which are sent to a LLW disposal site, production of metal products, transportation of materials, etc.

(iii) How should net environmental impacts from all the radiological and non-radiological impacts be balanced?

(3) What is the potential for exposures to multiple sources of material released for unrestricted use, and what are ways in which persons could be exposed to multiple sources? How should potential for exposure to multiple sources be considered in setting an acceptable dose level? To what extent is there a potential that a single scrap facility would handle inputs of released solid materials from several different licensed facilities?

(4) What societal impacts should be considered and how should they be factored into the environmental evaluation? For example, material released for unrestricted use from nuclear facilities could result in concern, confusion, or fear if the public either does not clearly understand that the risk is small or does not accept the risk.

(5) How should the impacts upon industries that have special concerns about the presence of radioactivity in materials, e.g., film, electronic, and metal recycling, be considered and factored into decisionmaking?

(B) Cost-benefit Considerations

(1) As noted above, Executive Order 12291 requires Federal Agencies to consider cost-benefit in its consideration of rulemaking alternatives. NRC uses NUREG/BR-0058 as its guideline in analysis of the cost-

benefit of regulatory alternatives. In using NUREG/BR-0058:

(i) How should economic factors be incorporated into rulemaking decisions, including costs of survey methods and appropriate instruments to measure very low levels of volumetrically contaminated material, economic risks associated with release of solid materials, costs of decontamination, ALARA issues, etc.

(ii) How should economic impacts be balanced against net environmental impacts?

(2) What are the major economic costs associated with release of solid materials into commerce?

(3) What are the major economic costs associated with landfill disposal of material released for unrestricted use? Would problems be encountered in this material going to a landfill?

(4) What economic risks are associated with release of solid materials for unrestricted use? For example, what are the risks (and associated costs) that materials released from a nuclear facility could be rejected at a melter or scrap yard based on a radiation survey at that point? What means could minimize such economic risks?

(5) What is the potential for buildup of radioactivity in commerce as a result of continued release of solid material for unrestricted use over time? How should such a buildup be estimated? What is the potential that this buildup could contribute significantly to either the net environmental impact, to economic impacts on general commerce, or to public concern?

(C) Implementation Considerations

(1) What is the capability of surveying materials (both for surface and volumetric contamination) at the different alternative dose levels being considered, and what effect would that have on setting a standard? Are these survey capabilities readily available to licensees? Should there also be provisions for survey capability at receiving facilities and what should be the nature of those provisions? What economic impact would the use of different or advanced survey techniques have on the facilities releasing the material and the facilities accepting the material for reuse or recycle? How can surveys be designed to prevent releasing material in excess of permissible levels? Over what volume or mass of material should surveys be performed in assessing compliance with release levels? Should materials of varying concentration levels be combined, and, if so, how?

(2) What different survey methods should be used for assuring that materials from different areas of a facility, and having different potential for contamination, meet the criteria of a dose-based standard? For example, should the survey of solid materials from areas known to be free of contamination rely upon knowledge of facility radiological history and knowledge of plant processes, and, if so, how?

(3) How should criteria for release of solid material be incorporated into NRC's regulations, i.e., should they be expressed as a dose criteria and/or be expressed as concentration values in different media based on specified dose objectives and standard models for exposure?

(D) Other considerations including international, national, and State guidelines

(1) With regard to international, national, and State standards:

(a) How should guidelines on unrestricted release, or "clearance," set by international standards-setting bodies such as the IAEA and International Commission on Radiological Protection (ICRP), as well as those set by other countries, be considered in setting a level for release of material from NRC-licensed facilities in the U.S.? How should efforts by the EPA to set import screening guidelines be considered?

(b) How should guidelines of other U.S. agencies, e.g., DOE and EPA, be considered? To what degree should standards set by NRC be consistent with other EPA standards, such as those for recycled coal ash (see Section A.2.2.3)? With regard to issues of finality of NRC licensing decisions, what potential problems could occur if EPA later issues standards for release of solid materials different from an NRC regulation?

(c) How should recommendations made by U.S. standards setting bodies, such as the National Council on Radiation Protection and Measurements (NCRP), be considered?

(d) How should standards set by U.S. industry groups, such as the American National Standards Institute (ANSI), be considered? Are industry standards currently available, or anticipated during the time frame for this rulemaking, that could be adopted in lieu of or in addition to NRC requirements on release of solid materials?

(e) Should NRC simply adopt the standards in 1(a), 1(b), or 1(c), and their associated health risk level, rather than conduct analyses of its own?

(f) What are the economic and other impacts of having NRC standards different from standards that may be set by international agencies, EPA, or other national bodies?

(g) What compatibility categories, as described in NRC's "Policy Statement on Adequacy and Compatibility of Agreement State Programs," published September 3, 1997 (62 FR 46517), and in NRC's Management Directive 5.9, "Adequacy and Compatibility of Agreement State Programs," should be assigned to any rule on release of solid materials? Compatibility refers to the extent to which Agreement State radiation control programs are consistent with NRC's program for the regulation of Atomic Energy Act radioactive materials to ensure that an adequate and coherent nationwide effort is collectively established for regulation of such materials.

(2) Should existing NRC standards, including the public dose limit of 1 mSv/yr (100 mrem/yr) in 10 CFR 20.1301, and Subpart E of Part 20 which contains a dose criterion of 0.25 mSv/yr (25 mrem/yr) for release of decommissioned structures and lands, be considered in setting allowable doses for release of solid material for unrestricted use? A consideration in this question is that there are different circumstances between Subpart E and the issues being discussed in this paper. For example, Subpart E limits the dose from the single release of structures and land at a site to 0.25 mSv/yr (25 mrem/yr). In contrast, unrestricted release of the materials considered in this issues paper could involve periodic releases over the facility lifetime at a dose level to be set in the rulemaking.

Issue No. 3—If NRC Decides to Develop a Proposed Rule Containing Criteria for Release of Solid Materials, Could Some Form of Restrictions on Future Use of Solid Materials be Considered as an Alternative?

As discussed in Section A.2.2, release of solid materials for unrestricted use would allow them to be recycled or reused in consumer products or industrial products, or be disposed of in solid waste landfills. A potential alternative could involve limiting release of solid materials by restricting their future use to some authorized use.

Alternatives

Potential alternatives for restricted use of solid materials could include:

(1) Restrict the first use of solid material to certain authorized uses

In this alternative, the release of radioactive material would be restricted

to certain authorized uses to ensure that it is processed into one or more specific products. For example, material could be recycled for use in an industrial product such as steel beams that would be designated for use in a foundation or structural support for a bridge or monument. Because of uncertainties related to controlling potential uses of the material after it leaves a licensee's facility, it may be necessary to require that processing of the material for the first use be done under a specific license issued by the NRC. This alternative might be beneficial for materials contaminated by nuclides having short to moderate half-lives, allowing substantial reduction in contamination due to radioactive decay within the lifetime of the structure in which it is placed. This alternative would probably not be applicable for all materials (e.g., wood products and some metals such as copper). End user certification could be difficult to enforce.

(2) Restrict release of solid material to permitted disposal

This alternative would restrict the release of slightly contaminated solid material from nuclear facilities to disposal at municipal solid waste landfills. Solid material with higher levels of radioactive contamination would continue to be handled as radioactive waste and be disposed of at licensed facilities. Municipal solid waste landfills are issued permits by State regulatory authorities in accordance with 40 CFR 258, "Criteria for Municipal Solid Waste Landfills" as well as other State and local regulations. The rationale for this alternative is that exposure pathways at landfills can be fairly well defined and quantified, and that many of the pathways of potential exposure associated with the recycling of metal into consumer products or industrial products would not be present. Additional restrictions could involve disposal at industrial solid waste facilities rather than at sanitary waste landfills.

Issues associated with this alternative include the fact that additional NRC and/or EPA rulemaking may be required to implement this alternative. For example, the definitions of solid waste and/or byproduct material (or associated regulations) might need to be revisited to allow disposal at solid waste landfills of material having residual radioactivity. Several State and local governments currently have prohibitions against the disposal of radioactive material in landfills which would make this alternative less feasible. An additional issue is the possibility that material could be sent to

a landfill under a use restriction, but it could be removed from the landfill and sold as scrap or reused.

Items for Discussion

(1) Should the NRC consider restrictions on future use of solid materials as an alternative to unrestricted use (similar to the license termination rule)?

(2) If so, what types of restricted uses should be considered?

(3) What types of controls could restrict use to assure that the material would not be released for unrestricted use? Would these controls be reasonable? Would it be necessary to license processing of the material for the first use in order to assure protection of public health and safety? For example, if iron/steel were to be restricted to use in bridge support, should the company processing the steel into bridge supports be licensed by the NRC? Or could sufficient restrictions be placed on the processing company to assure that the steel went where it was supposed to without the company having an NRC license?

(4) How long would the use be restricted? What radionuclides, and associated time periods for radioactive decay, would be reasonable to consider as candidates for restricted use? What would happen to the material when it reached the end of its useful restricted life?

(5) If restrictions were placed on future use of materials, would the NRC need to be involved in continued regulation or tracking of the material? Would States need to be involved? Or could a mechanism for institutional control, similar to that used in the license termination rule be used to assure the continued restricted use of materials? Note that Subpart E of 10 CFR Part 20 (Section 20.1403) contains requirements regarding acceptable dose levels for restricted use, allowable institutional controls and financial arrangements, etc.

(6) What type of public involvement should there be in decisions concerning restricted use of materials? Should it be similar to the method used in the license termination rule where licensees are required to seek advice from affected parties when proposing a site for restricted use? Note that Subpart E of 10 CFR Part 20 (Section 20.1403) also contains requirements for licensees to seek advice on from affected parties and also the methods to be used in obtaining that advice. A potential problem in establishing a public involvement process for restricted use of materials is that (unlike license termination of buildings or a site where affected parties

in a community can be fairly readily identified for a restricted site in a community) material leaving the site could be sent for restricted use in different areas and uses. Can a meaningful public involvement process be developed for setting restrictions on future material use in specific licensing cases?

(7) How should considerations and predictions of future public uses of materials and the restrictions on those materials be developed to provide credible approaches for restricted use?

(8) What dose should be permitted for material released for restricted use? Should the same alternative dose levels as for unrestricted use (see Issue No.2) also be considered for restricted use, or should some other value, either higher or lower, be considered? By way of comparison, the allowable dose in Subpart E of Part 20 for restricted use of released lands and structures is the same as for unrestricted use, provided the controls remain effective.

(9) What specific problems are associated with restricting materials to landfill disposal?

Issue No. 4—If NRC Decides to Develop a Proposed Rule, What Materials Should be Covered?

A rule developed by the NRC could cover selected materials (for example, certain metals such as iron and steel) or could be a broad rule encompassing all materials. Any alternatives chosen for consideration would be dependent on information available on the various materials. Currently, the NRC has developed the following technical background information:

(1) An analysis of individual doses resulting from unrestricted release of steel, aluminum, copper, and concrete (draft NUREG-1640, February 1999) has recently been completed. These materials were analyzed because they were considered to represent those most likely to become available and also to represent most of the volume of slightly contaminated material available for release from NRC-licensed facilities into the public sector, other than soil.

(2) Discussions with licensees have indicated that there are large quantities of soil with very low amounts of radioactive contamination that are available for release. Although NUREG-1640 does not include specific analyses for soil, work done previously for the license termination rule provides baseline technical information on individual dose factors and environmental analysis for soil which could be adapted for use for this application. This previous work includes NUREG-1496, "Generic

Environmental Impact Statement on Radiological Criteria for License Termination," NUREG/CR-5512, "Residual Radioactive Contamination from Decommissioning," and NUREG-1549, "Decision Methods for Dose Assessment to Comply with Radiological Criteria for License Termination."

(3) The NRC does not have similar analyses completed for other slightly contaminated materials potentially available for release.

Alternatives

Alternative rule approaches could be that the rule would apply to—

(1) only a select group of solid materials, including certain metals (steel, aluminum, copper) as well as concrete and soil.

(2) a wider group of materials to also include other materials under license including sludge, sewage, wood, glass, and others.

(3) a select group of materials (Alternative 1) and conduct rulemaking on other materials in Alternative 2 at a later time.

Specific Items for Discussion

(1) Should the NRC proceed with a rulemaking covering all materials, with the option of conducting further rulemaking at a later time for certain materials if the impact to all affected parties, including the regulators, is too great or the analysis too complicated or time consuming?

(i) Is it appropriate to proceed with certain materials, including steel, aluminum, copper, concrete, and soil, so that rulemaking can be done in a timely manner using the information developed for these materials in NUREG-1640, and associated analyses as described above, as input to the environmental analyses and regulatory analyses? Would experience gained with the rule on steel, aluminum, copper, concrete, and soil be useful in evaluating requirements for release of other materials later?

(ii) Would issuing a rule now for only certain materials noted in Alternative No.1 limit NRC's capability to deal effectively with requests for release that could be made in the future for other materials? Other similar materials, such as sludges, slag, asbestos, etc., could also potentially be the subject of requests for release. To help answer that question, how many and what types of materials are licensees actually requesting release for today or are anticipated over the next decade?

(iii) Should the NRC perform additional analyses at this time of individual doses resulting from other

materials potentially available for release to support rulemaking decisions for these materials even if it impacts the schedule for rulemaking for release of steel, aluminum, copper, and concrete?

(2) What other materials would be the candidates for rulemaking? Do analyses for these materials currently exist or are they under development?

(3) If the NRC proceeds with rulemaking limited to certain materials indicated in Alternative 1, how should it handle requests for release of other materials, i.e., should it proceed with a subsequent rulemaking for other materials, and, if so, how and when should it proceed with this later rulemaking? Should the additional materials be released under existing guidelines until the subsequent rule is developed, or should the release of these materials be postponed until a rulemaking is conducted? If the rulemaking establishes dose objectives for release and implements those objectives through tables of values for specific materials, should the dose objective also be used to guide case-specific release of other materials through licensing actions or exemptions?

(4) What would be the associated costs, effective survey methods, and dose impacts of the alternatives?

(5) Should the NRC rulemaking be extended to cover materials that may be released from nuclear facilities operated by the DOE?

IV. Scoping Process for Environmental Impact Statement

As discussed in Section III.A.5 and III.B of this notice, if the Commission decides to proceed with a rulemaking, it will have to consider the effect of its actions on the environment in accordance with the National Environmental Policy Act (NEPA). Section 102(1) of NEPA requires that the policies, regulations, and public laws of the United States be interpreted and administered in accordance with the policies set forth in NEPA. It is the intent of NEPA to have Federal agencies incorporate consideration of environmental issues into their decisionmaking processes.

NRC regulations implementing NEPA are contained in 10 CFR Part 51. To fulfill its responsibilities under NEPA, the NRC would prepare an environmental impact statement (EIS) by analyzing alternative courses of action and the impacts and costs associated with those alternatives. In keeping with the requirements of 10 CFR Part 51, an EIS would analyze alternatives for establishing requirements for release of solid

materials. All reasonable alternatives associated with the proposed action would be analyzed to determine their impacts and costs.

The Commission's regulations in 10 CFR 51.26 contain requirements for conducting a scoping process before preparing an EIS, including preparation of a notice of intent in the Federal Register regarding the EIS and indication that the scoping process may include holding a scoping meeting. Requirements are contained in 10 CFR 51.27 regarding the content of the notice of intent, in particular that it should describe the proposed action and describe possible alternatives to the extent that information is available. In addition, the notice of intent is to describe the proposed scoping process, including the role of participants, whether written comments will be accepted, and whether a public scoping meeting will be held.

Participants in this scoping process on the environmental impacts of release of solid materials from licensed facilities may attend any of the four public meetings indicated under the DATES heading of this notice and provide oral comments on the proposed action and possible alternatives. The Commission will also accept written (and electronic) comments on the proposed action and alternatives from the public, as well as from meeting participants, as indicated under the DATES and ADDRESSES heading of this notice.

According to 10 CFR 51.29, the scoping process is to address the following topics:

(1) *Define the proposed action.* The NRC is considering codifying radiological criteria for release of solid materials from licensed facilities. Detailed information on the proposed action is described in Section III.A.2 and III.A.5 of this notice.

(2) *Determine EIS scope and significant issues to be analyzed in depth.* The NRC is considering analyzing the impacts and costs associated with alternative regulatory approaches to establish radiological criteria for release of solid materials from licensed facilities. Information regarding: (a) types, and contamination levels, of solid materials present in licensed facilities potentially available for release is contained in Section III.A.1.2 and Section III.B (Issue No. 4) of this notice; (b) pathways of exposure to solid materials released from licensed facilities is contained in Section III.B (Issue No. 2) of this notice and discussed in detail in the draft NUREG-1640 and in NUREG-1496 as referenced in Section III.B; (c) regulatory

alternatives and method of approach for analysis of the alternatives is contained in Section III.A.2.2 and III.B (Issue No. 2) of this notice. Principal factors in making decisions regarding the alternatives are indicated in Section III.B (Issues No. 2, 3, and 4) of this notice.

(3) *Identify and eliminate from detailed study issues which are not significant or which are peripheral or which have been covered by prior environmental review.* The NRC has not yet eliminated any non-significant issues. However, the NRC is considering elimination of the following issues from the scope because they have been analyzed in previous EIS's (NUREG-0586 and NUREG-1496) and included in earlier rulemakings (53 FR 24018, June 28, 1988, and 63 FR 84088, July 21, 1997): (i) planning necessary to conduct decommissioning operations in a safe manner; (ii) assurance that sufficient funds are available to pay for decommissioning; (iii) the time period in which decommissioning should be completed; (iv) radiological criteria for decommissioning of lands and structures; and (v) the fact that consideration is not given to an alternative in which a licensee would abandon material or equipment without some treatment or licensed disposal.

Analysis of the scope of environmental impacts for this effort would be principally intended to provide input to decisionmaking for establishing overall criteria for release of solid materials, and would not involve analysis of site-specific issues which may arise in the licensing process at specific facilities. The extent to which the environmental analysis may be applicable to a site specific NEPA process would be described in a draft EIS and draft rulemaking.

(4) *Identify any environmental assessments or environmental impact statements which are being or which will be prepared that are related but are not part of the scope of the EIS under consideration.*

None are being prepared.

(5) *Identify other environmental review or consultation requirements related to the proposed action.* The NRC has contracted with ICF to provide technical assistance in the environmental analyses. The NRC is also placing contracts to obtain specific technical assistance regarding exposure pathways, collective doses, costs, and the capability of radiation survey instruments to practically and accurately detect radioactive contamination at levels near background.

(6) *Indicate the relationship between the timing of the preparation of environmental analysis and the Commission's tentative planning and decisionmaking schedule.* The schedule for issuance of an EIS has not been developed. The NRC staff will provide to the Commission, early in the year 2000, a report on the results of the public meetings and other public comments on the issues paper and the scoping process and include a schedule for any further rulemaking in this area, including the schedule for preparation of an associated draft EIS.

(7) *Describe the means by which an EIS would be prepared.* If the NRC proceeds with rulemaking in this area, it would prepare a draft EIS in accordance with its regulations in 10 CFR Part 51. Specifically, in accord with 10 CFR Part 51.71, a draft EIS would be prepared using the considerations of the scoping process and would include a preliminary analysis that considers and balances the environmental and other effects of the proposed action and the alternatives available for reducing or avoiding adverse environmental and other effects, as well as the environmental, economic, technical and other benefits of the proposed action.

In accordance with 10 CFR 51.29, at the conclusion of the scoping process, a concise summary of the determinations and conclusions reached, including the significant issues identified, will be prepared and a copy sent to each participant in the scoping process.

Dated at Rockville, Maryland, this 22nd day of June 1999.

For the Nuclear Regulatory Commission.

William D. Travers,

Executive Director for Operations.

[FR Doc. 99-16598 Filed 6-29-99; 8:45 am]

BILLING CODE 7590-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 99-ASO-9]

Proposed Amendment of Class E Airspace; Roosevelt Roads NS (Ofstie Field), PR

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to amend Class E airspace at Roosevelt Roads NS (Ofstie Field), PR. A Global Positioning System (GPS) Runway (RWY) 9 Standard Instrument Approach

QUESTION 6(d)

ATTACHMENTS

active material or the on-off mechanism or indicator, shall immediately suspend operation of the device until it has been repaired by the supplier or other person holding a specific license from the Commission or an agreement State to manufacture, install or service such devices, or disposed of by transfer to a person authorized to receive the byproduct material contained in the device; and

(vii) Shall be exempt from the requirements of Part 20 of this chapter, except that such persons shall comply with the provisions of §§ 20.402 and 20.403 of this chapter.

(5) The general license provided in subparagraph (1) of this paragraph (c) is subject to the provisions of §§ 30.32 to 30.72, inclusive: *Provided*, That persons who possess byproduct material pursuant to this general license shall not export such byproduct material without a specific license from the Commission authorizing such export.

(6) Any person who holds a specific license issued by an agreement State authorizing the holder to manufacture, install or service a device described in subparagraph (1) of this paragraph (c) within such agreement State is hereby granted a general license to install and service such device in any nonagreement State: *Provided*, That:

(i) Such person shall file a report with the Director, Division of Licensing and Regulation, Atomic Energy Commission, Washington 25, D.C., within 30 days after the end of each calendar quarter in which any device is transferred or installed. Each such report shall identify each general licensee by name and address, the type of device transferred, and the quantity and type of byproduct material contained in the device.

(ii) The device has been manufactured, labeled, installed, and serviced in accordance with applicable provisions of the specific license issued to such person by the agreement State;

(iii) Such person assures that any labels required to be affixed to the device under regulations of the agreement State which licensed manufacture of the device bear a statement that "Removal of this label is prohibited by the regulations of the Atomic Energy Commission".

(iv) Shall furnish to each general licensee to whom he transfers such device or on whose premises he installs such device a copy of the general license contained in § 30.21(c).

(Secs. 81, 161, 274, 68 Stat. 935, 948, 73 Stat. 688; 42 U.S.C. 2111, 2201, 2021)

Dated at Germantown, Md., this 7th day of February 1962.

For the Atomic Energy Commission,
Woodford B. McCool,
Secretary.

[P.R. Doc. 62-1498; Filed, Feb. 13, 1962; 8:50 a.m.]

PART 150—EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES UNDER SECTION 274

Public Law 86-373, dated September 23, 1959, amended the Atomic Energy Act

of 1954 by the addition of a new section 274, "Cooperation With States." One purpose of that legislation was to recognize the interests of the States in the peaceful uses of atomic energy and to clarify the respective responsibilities under the Atomic Energy Act of the Commission and the States with respect to the regulation of byproduct, source, and special nuclear materials.

Under section 274b. of the Atomic Energy Act, the Commission is authorized to enter into an agreement with the Governor of any State providing for discontinuance of the regulatory authority of the Commission under Chapters 6, 7, and 8, and section 161 of the Act with respect to the following materials within the State: Byproduct materials, source materials, and special nuclear materials in quantities not sufficient to form a critical mass.

Subsection (c) of section 274 of the Atomic Energy Act specifically excludes from such agreements the discontinuance of any Commission authority with respect to:

1. The construction and operation of any production or utilization facility;

2. The export from or import into the United States of any byproduct, source, or special nuclear material or of any production or utilization facility;

3. The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission;

4. The disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission.

In addition to the foregoing the Commission, notwithstanding any agreement between the Commission and any State pursuant to subsection 274b. of the Act, is authorized by rule, regulation, or order to require that the manufacturer, processor or producer of any equipment, device, commodity or other product containing source, byproduct or special nuclear material shall not transfer possession or control of such product except pursuant to a license issued by the Commission.

On September 29, 1961, the Commission published for public comment a draft of a proposed 10 CFR Part 150, which would relinquish certain licensing authority to agreement States and exempt persons in those States from Commission licensing requirements. The Statement of Considerations published with the proposed Part 150 stated that the Commission had not taken a position as to whether it should retain or relinquish to the States its authority to regulate the commercial disposal by burial of atomic wastes, or its authority to license the distribution by producers of products containing atomic energy materials; and specifically invited public comment on those questions and on possible alternatives.

Following publication, comments were received from some fifty organizations and individuals. The proposed Part 150 was discussed with a number of committees representing national organiza-

tions, as well as with the Commission's Advisory Committee of State Officials. The majority of all comments received were concerned in the main with the question of whether the Commission should continue control in agreement States of the commercial land burial of byproduct, source, or special nuclear wastes and the question of whether the Commission should continue control of transfer by manufacturers, processors or producers of equipment, devices, commodities, or other products containing agreement materials.

The Commission has taken into consideration the comments and advice it has received in adopting the regulation set out herein. The Commission has decided against blanket reservations of control over land burial of waste and over the transfer of manufactured products.

However, as to land burial, the Commission finds, pursuant to section 274 c.(4) of the Act that because of the hazards or potential hazards thereof, high level atomic energy wastes from the chemical processing of irradiated fuel elements should not be disposed of without a license from the Commission. This finding is reflected in § 150.15(a)(4). Control over the handling and storage of waste at the site of a reactor, including effluent discharge, will be retained by the Commission as a part of the control of reactor operation. The States will have control over land burial of low level wastes.

With respect to whether the Commission should retain or relinquish authority to license the transfer by manufacturers, processors or producers of equipment, devices, commodities or other products containing atomic energy materials, Part 150 provides for State regulatory control in this area except those items intended for use by the general public (§ 150.15(a)(6)). Thus, control over the manufacture and transfer of industrial type devices, such as thickness gauges, would be exercised by the agreement States.

Control over consumer type devices, such as luminous watches, would be retained by the Commission. The uncontrolled distribution of atomic materials in products designed for distribution to the general public, such as consumer type devices, and the ultimate uncontrolled release of these materials into the environment, involve questions of national policy which have not yet been resolved. It is for this reason that the Commission is retaining control over such products. The Commission recognizes that the phrase "products designed for distribution to the general public" is not precise. The purpose of the provision, however, will be discussed with each agreement State; serious difficulties in interpretation of the phrase are not anticipated.

In order to achieve the maximum degree of uniformity of design and labeling requirements for those products and devices which will be under State control, the agreement to be executed between the Commission and an agreement State will provide for cooperative arrangements under which the State will keep the Commission informed of

proposed requirements for the design and distribution of such products. In addition, the State will agree to use its best efforts to maintain its total control program compatible with the control program of the Commission on a continuing basis.

The agreement will also provide that the Commission and the agreement State will use their best efforts to develop rules, regulations and procedures by which reciprocal recognition of licenses covering agreement materials will be accorded.

In the implementation of the reciprocal recognition provision in the agreement, § 150.20 grants a general license to any person who holds a valid specific license from an agreement State to conduct the same activity in a non-agreement State, provided that the specific license does not limit the activity authorized by the license to specific installations or locations. The general license so provided in § 150.20 requires the licensee to comply with the appropriate provisions of Parts 20, 30, 31, 40, and 70 of Title 10. In addition, such licensee must register in advance with the Commission; must not in any non-agreement State, transfer or dispose of the radioactive material possessed or used under the general license except by transfer to a person specifically licensed by the Commission to receive such material; must not in any non-agreement State, possess or use radioactive material, or engage in the activity authorized in § 150.20 for more than 20 days in any period of 12 consecutive months, without obtaining a specific license from the Commission, and must comply with all terms and conditions of the specific State license except those terms and conditions as are contrary to the requirements of § 150.20.

There are certain classes of devices containing byproduct material which may be used under general licensing provisions contained in Part 30, § 30.21(c). If the device is manufactured in accordance with a specific license issued to the manufacturer by the Commission, Part 30 is being amended to provide that such products, if manufactured in an agreement State pursuant to a specific license from the agreement State, may be transferred to users in non-agreement States and used by the users under the general licensing provisions of Part 30.

The Commission's decision not to exercise its authority to license the transfer of products containing atomic energy materials (other than products designed for distribution to the general public) is based on the assumption that agreement States will maintain continuing compatibility between their programs and Commission programs; and that procedures will be devised assuring reasonable, reciprocal recognition of licenses and licensing requirements among such States and the Commission. If attainment of these objectives should prove to be unfeasible, the Commission will reconsider the need for the exercise of its authority to prescribe the specifications for products containing atomic energy materials.

It will be desirable for the Commission and agreement States to develop programs for the collection and exchange of data concerning the effectiveness of standards and procedures observed in their respective programs for licensing and regulating the possession and use of atomic energy materials. For this purpose, the Commission plans, in cooperation with the agreement States, to develop procedures under which the agreement States will furnish to the Commission such information as may be agreed upon from time to time; and the Commission will make available to each agreement State, summaries of the information received from other agreement States and from Commission licensees.

As has previously been announced, the Commission is conducting studies of activities involving the processing and use of very substantial quantities of byproduct material (in the order of hundreds of thousands of curies). These studies have been undertaken in part to provide information on which the Commission may make a determination as to whether provisions of the Price-Anderson Indemnity Act (section 170 of the Atomic Energy Act of 1954) should be extended to such activities. They have also been undertaken for the purpose of providing information as to whether the Commission should determine that facilities which process such quantities of byproduct material are production or utilization facilities within the meaning of Section 11 of the Act. If the Commission finds that such facilities should be classified as utilization facilities, the Commission's licensing and regulatory requirements would be applicable. The provisions of the Price-Anderson Indemnity Act cannot be made applicable except to activities licensed by the Commission.

The exemptions herein granted are issued in order to carry out agreements between the Commission and the Governor of any State under section 274b of the Atomic Energy Act of 1954, as amended.

Pursuant to the Atomic Energy Act of 1954, as amended, and the Administrative Procedure Act of 1946, the following regulation is published as a document subject to codification, to be effective on publication in the FEDERAL REGISTER.

GENERAL PROVISIONS

Sec.	Purpose.
150.1	Scope.
150.2	Definitions.
150.3	Communications.
150.4	Interpretations.
150.5	

EXEMPTIONS IN AGREEMENT STATES

150.10	Persons exempt.
150.11	Critical mass.

CONTINUED COMMISSION REGULATORY AUTHORITY IN AGREEMENT STATES

150.15	Persons not exempt.
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RECIPROCITY

150.20	Recognition of State licenses.
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ENFORCEMENT

150.30	Violations.
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AUTHORITY: §§ 150.1 to 150.30 issued under secs. 161 and 274, 68 Stat. 948; and 73 Stat. 628, 42 U.S.C. 2201 and 42 U.S.C. 2021.

GENERAL PROVISIONS

§ 150.1 Purpose.

The regulations in this part provide certain exemptions to persons in agreement States from the licensing requirements contained in Chapters 6, 7, and 8 of the Act and from the regulations of the Commission imposing requirements upon persons who receive, possess, use or transfer byproduct material, source, or special nuclear material in quantities not sufficient to form a critical mass; and to define activities in agreement States over which the regulatory authority of the Commission continues. The provisions of the Act, and regulations of the Commission apply to all persons in agreement States engaging in activities over which the regulatory authority of the Commission continues.

§ 150.2 Scope.

The regulations in this part apply to all States that have entered into agreements with the Commission pursuant to subsection 274b of the Act.

§ 150.3 Definitions.

As used in this part:

(a) "Act" means the Atomic Energy Act of 1954 (68 Stat. 919) including any amendments thereto;

(b) "Agreement State" means any State with which the Commission has entered into an effective agreement under subsection 274b of the Act;

(c) "Byproduct material" means any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material;

(d) "Commission" means the Atomic Energy Commission or its duly authorized representatives;

(e) "Government agency" means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

(f) "Person" means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, any State or any political subdivision of any political entity within a State, and any legal successor, representative, agent, or agency of the foregoing other than Government agencies;

(g) "Production facility" means (1) any equipment or device determined by rule of the Commission to be capable of the production of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or (2) any important component part especially designed for such equipment or device as determined by the Commission;

(h) "Source material" means (1) uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of section 61 of the Act to be source mate-

rial; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time;

(i) "Special nuclear material" means (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material;

(j) "State" means any State, Territory, or possession of the United States, the Canal Zone, Puerto Rico, and the District of Columbia;

(k) "Utilization facility" means (1) any equipment or device, except an atomic weapon, determined by rule of the Commission to be capable of making use of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public, or peculiarly adapted for making use of atomic energy in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or (2) any important component part especially designed for such equipment or device as determined by the Commission.

§ 150.4 Communications.

All communications concerning the regulations of this part should be addressed to the United States Atomic Energy Commission, Washington 25, D.C., Attention: Division of Licensing and Regulation. Communications and reports may be delivered in person at the Commission's office at 1717 H Street NW., Washington, D.C., or its offices at Germantown, Maryland.

§ 150.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by an officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

EXEMPTIONS IN AGREEMENT STATES

§ 150.10 Persons exempt.

Except as provided in § 150.15, any person in an agreement State who manufactures, produces, receives, possesses, uses or transfers byproduct material, source material, or special nuclear material in quantities not sufficient to form a critical mass is exempt from the requirements for a license contained in Chapters 6, 7, and 8 of the Act, regulations of the Commission imposing licensing requirements upon persons who manufacture, produce, receive, possess, use or transfer such materials, and from regulations of the Commission applicable to licensees. The exemptions in this section do not apply to agencies of the Federal government as defined in § 150.3.

§ 150.11 Critical mass.

(a) For the purposes of this part, special nuclear material in quantities not sufficient to form a critical mass means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of them in accordance with the following for-

175 (grams contained U-235)	50 (grams U-233)	50 (grams Pu)
350	200	200

(b) To determine whether the exemption granted in § 150.10 of this part applies, a person shall include in the quantity computed according to paragraph (a) of this section the total quantity of special nuclear material which he is authorized to receive, possess or use in a particular agreement State at any one time.

CONTINUED COMMISSION REGULATORY AUTHORITY IN AGREEMENT STATES

§ 150.15 Persons not exempt.

(a) Persons in agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to the following activities:

(1) The construction and operation of any production or utilization facility. As used in this subparagraph (1), "operation" of a facility includes, but is not limited to (i) the storage and handling of radioactive wastes at the facility site by the person licensed to operate the facility, and (ii) the discharge of radioactive effluents from the facility site.

(2) The export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility.

(3) The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials, as defined in regulations or orders of the Commission. For purposes of this part, ocean or sea means any part of the territorial waters of the United States and any part of the international waters.

(4) The transfer, storage or disposal of radioactive waste material resulting from the separation in a production facility of special nuclear material from irradiated nuclear reactor fuel. This subparagraph (4) does not apply to the transfer, storage or disposal of contaminated equipment.

(5) The disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission.

(6) The transfer of possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material, intended for use by the general public.

mula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all kinds of special nuclear materials in combination shall not exceed unity. For example, the following quantities in combination would not exceed the limitation and are within the formula, as follows:

(b) Notwithstanding any exemptions provided in this part, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material shall not transfer possession or control of such product except pursuant to a license or an exemption from licensing issued by the Commission.

RECIPROCITY

§ 150.20 Recognition of State licenses.

(a) Subject to the provisions of paragraph (b) of this section, any person who possesses a specific license from an agreement State is hereby granted a general license to conduct the same activity in non-agreement States: *Provided*, That the specific license does not limit the activity authorized by the license to specified installations or locations.

(b) Notwithstanding any provision to the contrary in any specific license issued by an agreement State to a person who engages in activities in a non-agreement State under a general license provided in this section, the general license provided in this section is subject to the provisions of §§ 30.32, 30.41, 30.43, 30.44, 30.51, 30.52, and 30.61 of Part 30 of this chapter; §§ 40.41, 40.61 to 40.63, inclusive, 40.71 and 40.81 of Part 40 of this chapter; and §§ 70.32, 70.51 to 70.56 inclusive, 70.61, 70.62, and 70.71 of Part 70 of this chapter; and to the provisions of Part 20 and Part 31 of this chapter. In addition, any person who engages in activities in non-agreement States under a general license provided in this section:

(1) Shall file AEC Form No. 241 ("Report of Proposed Activities in Non-agreement States") in quadruplicate with the U.S. Atomic Energy Commission, Washington 25, D.C., Attention: Director, Division of Licensing and Regulation, prior to engaging in any such activity;

(2) Shall not in any non-agreement State transfer or dispose of radioactive material possessed or used under the

¹ Part 30 of this chapter is being amended to generally license the use and possession by persons in non-agreement States of certain devices containing byproduct material manufactured in an agreement State in accordance with the specifications in the specific license issued to the manufacturer by the agreement State.

RULES AND REGULATIONS

general license provided in this section except by transfer to a person specifically licensed by the Commission to receive such material;

(3) Shall not possess or use radioactive material, or engage in the activities authorized in paragraph (a) of this section for more than 20 days in any period of 12 consecutive months;

(4) Shall comply with all terms and conditions of the specific license issued by an agreement State except such terms or conditions as are contrary to the requirements of this section.

ENFORCEMENT

§ 150.30 Violations.

An injunction or other court order may be obtained prohibiting any violation of any provision of the Act or any regulation or order issued thereunder. Any person who willfully violates any provisions of the Act or any regulation or order issued thereunder may be guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both, as provided by law.

Dated at Germantown, Md., this 7th day of February 1962.

For the Atomic Energy Commission.

WOODFORD B. MCCOOL,
Secretary.

[P.R. Doc. 62-1497; Filed, Feb. 13, 1962;
8:50 a.m.]

Title 14—AERONAUTICS AND SPACE

Chapter III—Federal Aviation Agency

SUBCHAPTER E—AIR NAVIGATION REGULATIONS

[Airspace Docket No. 61-LA-4]

PART 600—DESIGNATION OF FEDERAL AIRWAYS

PART 601—DESIGNATION OF CONTROLLED AIRSPACE, REPORTING POINTS, POSITIVE CONTROL ROUTE SEGMENTS, AND POSITIVE CONTROL AREAS

PART 608—SPECIAL USE AIRSPACE

Alteration of Federal Airways, Control Area Extension, Alteration and Designation of Restricted Areas and Designation of Transition Area

On December 5, 1961, a notice of proposed rule making was published in the FEDERAL REGISTER (26 F.R. 11494) stating the Federal Aviation Agency was considering amendments to Part 601 and §§ 600.6006, 600.6105, 600.6494, 600.1545, 601.1357 and 608.48 of the regulations of the Administrator, which would:

1. Revoke the Fallon, Nev., Restricted Area R-4803 and replace it with two restricted areas of lesser dimensions identified as R-4803 and R-4810.

2. Alter the Fallon, Nev., Restricted Area R-4804 by designating the area

with a circular configuration and change its name to Twin Peaks, Nev.

3. Designate the Federal Aviation Agency, Oakland, Calif., ARTC Center as the controlling agency for R-4803, R-4804 and R-4810.

4. Alter the description of low altitude VOR Federal airways Nos. 494 and 6 south alternate to exclude the portions within R-4803.

5. Delete the reference to R-268 in the description of low altitude VOR Federal airway No. 105 and expand intermediate altitude VOR Federal airway No. 1545 to its normal width between the Coal-dale, Nev., VOR and the Reno, Nev., VOR.

6. Expand the Fallon, Nev., control area extension by including additional airspace southeast and northwest of Fallon.

7. Designate a transition area near Yerington, Nev.

No adverse comments were received regarding the proposed amendments.

Subsequent to the publication of the notice, it has been determined that the centerline of the extension of R-4803, as proposed, should be 349.5° in lieu of 349° as stated in the notice. This change, being minor in nature, is reflected in the action taken herein.

Interested persons have been afforded an opportunity to participate in the making of the rules herein adopted and due consideration has been given to all relevant matter presented.

The substance of the proposed amendments having been published, therefore pursuant to the authority delegated to me by the Administrator (25 F.R. 12582) and for the reasons stated in the notice, the following actions are taken:

1. In § 608.48 Nevada (26 F.R. 7197) the following changes are made:

a. R-4803 Fallon, Nev., is amended to read:

R-4803 Fallon, Nev.

Boundaries. A 3-nautical mile radius circle centered at latitude 39°20'40" N., longitude 118°52'15" W.; and within 3 nautical miles W and 2 nautical miles E of a line extending 349.5° True from the center to 15 nautical miles NNW.

Designated altitudes. Surface to 8,000 feet MSL N. and surface to 18,000 feet MSL S of a line extending from latitude 39°27'40" N., longitude 118°57'55" W. to latitude 39°30'20" N., longitude 118°51'55" W.

Time of designation. Continuous, Monday through Saturday.

Controlling agency. Federal Aviation Agency, Oakland ARTC Center.

Using agency. Commander, Naval Air Bases, 12th Naval District, Alameda, Calif.

b. R-4804 Fallon, Nev., is amended to read:

R-4804 Twin Peaks, Nev.

Boundaries. A 5-nautical mile radius circle centered at latitude 39°13'00" N., longitude 118°12'42" W.; and a 3-nautical mile radius circle centered at latitude 39°14'15" N., longitude 118°17'30" W.

Designated altitudes. Surface to 20,000 feet MSL.

Time of designation. Continuous, Monday through Saturday.

Controlling agency. Federal Aviation Agency, Oakland ARTC Center.

Using agency. Commander, Naval Air Bases, 12th Naval District, Alameda, Calif.

c. R-4810 Desert Mountains, Nev., is added to read:

R-4810 Desert Mountains, Nev.

Boundaries. A 5-nautical mile radius circle centered at latitude 39°10'00" N., longitude 118°37'30" W.; and a 3-nautical mile radius circle centered at latitude 39°09'15" N., longitude 118°42'20" W.

Designated altitudes. Surface to flight level 300.

Time of designation. One hour prior to sunrise to one hour after sunset, Monday through Friday.

Controlling agency. Federal Aviation Agency, Oakland ARTC Center.

Using agency. Commander, Naval Air Bases, 12th Naval District, Alameda, Calif.

2. In the text of § 600.6006 (14 CFR 600.6006, 26 F.R. 11823) "to the Idlewild, N.Y., VORTAC." is deleted and "to the Idlewild, N.Y., VORTAC, excluding the airspace within R-4803." is substituted therefor.

3. In the text of § 600.6105 (14 CFR 600.6105) "The portion of this airway which lies within the geographic limits of, and between the designated altitudes of, the Fallon, Nev., Restricted Area (R-268) is excluded during this restricted area's time of designation." is deleted.

4. In the text of § 600.6494 (26 F.R. 11824) "excluding the airspace within R-4802." is deleted and "excluding the airspace within R-4802 and R-4803." is substituted therefor.

5. In the text of § 600.1545 (26 F.R. 1086) "INT of the Reno, Nev., VOR 135° and the Lovelock, Nev., VOR 195° radials; thence 8 mile wide airway to the INT of the Reno VOR 135° and the Lovelock VOR 210° radials; thence to the Reno VOR." is deleted and "to the Reno, Nev., VOR." is substituted therefor.

6. Section 601.1357 (14 CFR 601.1357) is amended to read:

§ 601.1357 Control area extension (Fallon, Nev.).

That airspace within 12 miles NE and 8 miles SW of the NAAS Fallon TACAN 146° radial, extending from the TACAN to 54 miles SE; within 5 miles either side of the NAAS Fallon TACAN 037° radial, extending from the TACAN to 29 miles NE; and within 16 miles N and 7 miles S of the NAAS Fallon TACAN 089° and 269° radials, extending from 8 miles E of the TACAN to a line extending from latitude 39°06'00" N, longitude 119°10'00" W. to latitude 40°00'00" N., longitude 118°57'00" W. The portions of this control area extension within R-4803, R-4804 and R-4810 shall be used only after obtaining prior approval from appropriate authority.

7. In Part 601 (14 CFR Part 601), the following section is added:

§ 601.10953 Yerington, Nev., transition area.

That airspace extending upward from 1200 feet above the surface within 12 miles SW and 8 miles NE of the Reno, Nev., VOR 135° radial extending from 10 miles NW to 22 miles SE of the INT of the Reno VOR 135° and the Lovelock, Nev., VOR 197° radials.

Chapter X—Consumer and Marketing Service (Marketing Agreements and Orders; Milk), Department of Agriculture

[Milk Order 138]

PART 1138—MILK IN RIO GRANDE VALLEY MARKETING AREA

Order Amending Order

§ 1138.0 Findings and determinations.

The findings and determinations hereinafter set forth are supplementary and in addition to the findings and determinations previously made in connection with the issuance of the aforesaid order and of the previously issued amendments thereto; and all of the said previous findings and determinations are hereby ratified and affirmed, except insofar as such findings and determinations may be in conflict with the findings and determinations set forth herein.

(a) *Findings upon the basis of the hearing record.* Pursuant to the provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601 et seq.), and the applicable rules of practice and procedure governing the formulation of marketing agreements and marketing orders (7 CFR Part 900), a public hearing was held upon certain proposed amendments to the tentative marketing agreement and to the order regulating the handling of milk in the Rio Grande Valley marketing area. Upon the basis of the evidence introduced at such hearing and the record thereof, it is found that:

(1) The said order as hereby amended, and all of the terms and conditions thereof, will tend to effectuate the declared policy of the Act;

(2) The parity prices of milk, as determined pursuant to section 2 of the Act, are not reasonable in view of the price of feeds, available supplies of feeds, and other economic conditions which affect market supply and demand for milk in the said marketing area, and the minimum prices specified in the order as hereby amended, are such prices as will reflect the aforesaid factors, insure a sufficient quantity of pure and wholesome milk, and be in the public interest; and

(3) The said order as hereby amended, regulates the handling of milk in the same manner as, and is applicable only to persons in the respective classes of industrial or commercial activity specified in, a marketing agreement upon which a hearing has been held.

(b) *Additional findings.* It is necessary in the public interest to make this order amending the order effective not later than April 1, 1966. Any delay beyond that date would tend to disrupt the orderly marketing of milk in the marketing area.

The provisions of the said order are known to handlers. The recommended decision of the Deputy Administrator, Regulatory Programs, was issued February 17, 1966, and the decision of the Assistant Secretary containing all

amendment provisions of this order was issued March 16, 1966. The changes effected by this order will not require extensive preparation or substantial alteration in method of operation for handlers. In view of the foregoing, it is hereby found and determined that good cause exists for making this order amending the order effective April 1, 1966, and that it would be contrary to the public interest to delay the effective date of this amendment for 30 days after its publication in the FEDERAL REGISTER. (Sec. 4(c), Administrative Procedure Act, 5 U.S.C. 1001-1011)

(c) *Determinations.* It is hereby determined that:

(1) The refusal or failure of handlers (excluding cooperative associations specified in sec. 8c(9) of the Act) of more than 50 percent of the milk, which is marketed within the marketing area, to sign a proposed marketing agreement, tends to prevent the effectuation of the declared policy of the Act;

(2) The issuance of this order, amending the order, is the only practical means pursuant to the declared policy of the Act of advancing the interests of producers as defined in the order as hereby amended; and

(3) The issuance of the order amending the order is approved or favored by at least two-thirds of the producers who during the determined representative period were engaged in the production of milk for sale in the marketing area.

Order relative to handling. It is therefore ordered, that on and after the effective date hereof, the handling of milk in the Rio Grande Valley marketing area shall be in conformity to and in compliance with the terms and conditions of the aforesaid order, as amended, and as hereby further amended, as follows:

1. A new § 1138.55 is added to read as follows:

§ 1138.55 Credit for specified Class II uses.

From the effective date hereof through February 1967, producer milk classified as Class II milk in the following utilizations shall be subject to a credit at the respective rates specified:

(a) For skim milk in producer milk classified as Class II milk pursuant to § 1138.41(b) (2) and (3), at a rate per hundredweight equal to the amount by which the Class II price pursuant to § 1138.51(b) exceeds 35 times the butterfat differential specified in § 1138.53(b).

(b) For skim milk in producer milk used to produce condensed skim milk, and for milk or skim milk transferred or diverted as Class II milk to a nonpool plant located outside the marketing area from a pool plant or from farms located within the marketing area, at the rate specified in paragraph (a) of this section, less 15 cents.

(c) The total quantity upon which credits pursuant to this section are computed may not exceed the quantity of producer milk classified as Class II milk for the handler, less the quantity of fluid milk products in Class II uses not speci-

fied in paragraphs (a) and (b) of this section for such handler.

2. In § 1138.70, the period at the end thereof is deleted, a semicolon is substituted, the word "and" is inserted immediately thereafter, and a new paragraph (f) is added to read as follows:

§ 1138.70 Computation of the net pool obligation of each pool handler.

(f) Deduct the amount of any credits computed pursuant to § 1138.55.

(Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601-674)

Effective date. April 1, 1966.

Signed at Washington, D.C., on March 30, 1966.

GEORGE L. MEHREN,
Assistant Secretary.

[F.R. Doc. 66-3566; Filed, Apr. 1, 1966; 8:48 a.m.]

Title 10—ATOMIC ENERGY

Chapter I—Atomic Energy Commission

PART 30—RULES OF GENERAL APPLICABILITY TO LICENSING OF BY-PRODUCT MATERIAL

PART 32—SPECIFIC LICENSES TO MANUFACTURE, DISTRIBUTE, OR IMPORT EXEMPTED AND GENERALLY LICENSED ITEMS CONTAINING BYPRODUCT MATERIAL

Exemption of Tritium Contained in Certain Items

On September 17, 1965, the Atomic Energy Commission published in the FEDERAL REGISTER (30 F.R. 11923) proposed amendments to its regulations which would have extended the current exemptions from Commission licensing requirements for tritium contained in certain specified items, to include tritium contained in thermostat dials and pointers, radio dials and pointers, automobile shift quadrants and marine compasses.

Interested persons were invited to submit written comments and suggestions for consideration in connection with the proposed amendments within 60 days after publication of the notice of proposed rule making in the FEDERAL REGISTER. Comment opposing the use of tritium on radio dials and pointers questioned whether the usefulness of tritium on radio dials and pointers would justify increased exposure of the general public from widespread use of tritium for this purpose.

Following consideration of the comments and other factors involved, the Commission approved amendments to 10 CFR Part 30, Rules of General Applicability to Licensing of Byproduct Material which exempt from the licensing requirements of section 81 of the Atomic Energy Act of 1954, as amended, and from the requirements of Parts 20 and 30-36 of the Commission's regulations,

the receipt, possession, use, transfer, export, ownership or acquisition of thermostat dials and pointers, automobile shift quadrants and marine compasses containing tritium. The Commission deferred action on an amendment which would exempt radio dials and pointers containing tritium.

The exemptions provided in these amendments do not apply to the manufacture or to the import for sale or distribution of these items. The amendments to 10 CFR Part 32, Specific Licenses to Manufacture, Distribute, or Import Exempted and Generally Licensed Items Containing Byproduct Material, set forth criteria for the issuance of specific licenses to manufacture or import such items and certain reporting and quality control requirements applicable to holders of such specific licenses. With respect to reporting of material transfers (§ 32.16), the amendment set forth below requires licensees who import to report the total quantity of licensed material imported, rather than the total quantity of material transferred, as specified in the proposed amendment. In addition, the requirement of proposed § 32.16, that licensees identify by name and address all persons to whom a total of more than 5 curies of tritium or promethium 147 was distributed during the reporting period, has been omitted.

The Commission has found that, under the conditions specified in the amendments, the exemptions will not constitute an unreasonable risk to the common defense and security and to the health and safety of the public.

The Commission has determined that these items are intended for use by the general public. Accordingly, pursuant to § 150.15(a)(6) of 10 CFR Part 150, Exemptions and Continued Regulatory Authority in Agreement States under section 274, the transfer of their possession or control by the manufacturer, processor, or producer is subject to the Commission's licensing and regulatory requirements even if the product is manufactured pursuant to an agreement State license. A manufacturer, processor, or producer of such items when located in an agreement State should file an application with the Commission for a specific license authorizing the transfer of such items. The application should meet the criteria of § 32.14 (b), (c), and (d).

Pursuant to the Atomic Energy Act of 1954, as amended, and the Administrative Procedure Act of 1946, the following amendments to Title 10, Chapter I, Code of Federal Regulations, Parts 30 and 32, are published as a document subject to codification, to be effective thirty (30) days after publication in the FEDERAL REGISTER.

1. Sections 30.15, 30.16, and 30.17 of 10 CFR Part 30 are deleted and a new § 30.15 is added to read as follows:

¹ A State to which the Commission has transferred certain regulatory authority over radioactive material by formal agreement, pursuant to sec. 274 of the Atomic Energy Act of 1954, as amended.

§ 30.15 Certain items containing tritium or promethium 147.

(a) Except for persons who apply tritium or promethium 147 to, or persons who incorporate tritium or promethium 147 into, the following products, or persons who import for sale or distribution the following products containing tritium or promethium 147, any person is exempt from the requirements for a license set forth in section 81 of the Act and from the regulations in Parts 20 and 30-36 of this chapter to the extent that such person receives, possesses, uses, transfers, exports, owns, or acquires the following products:

(1) Timepieces or hands or dials containing not more than (i) 25 millicuries of tritium per timepiece, (ii) 5 millicuries per hand, or (iii) 15 millicuries per dial (bezels when used shall be considered as part of the dial).

(2) Lock illuminators containing not more than 15 millicuries of tritium or not more than 2 millicuries of promethium 147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium 147 will not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter of absorber.

(3) Balances of precision containing not more than 1 millicurie of tritium per balance or not more than 0.5 millicurie of tritium per balance part.²

(4) Automobile shift quadrants containing not more than 25 millicuries of tritium.

(5) Marine compasses containing not more than 750 millicuries of tritium.

(6) Thermostat dials and pointers containing not more than 25 millicuries of tritium per thermostat.

(b) Any person who desires to apply tritium or promethium 147 to, or to incorporate tritium or promethium 147 into, the products exempted in paragraph (a) of this section, or who desires to import for sale or distribution such products containing tritium or promethium 147, should apply for a specific license, pursuant to § 32.14 of this chapter, which license states that the product may be distributed by the licensee to persons exempt from the regulations pursuant to paragraph (a) of this section.

2. Sections 32.14, 32.15, and 32.18 of 10 CFR Part 32 are deleted and a new § 32.14 is added to read as follows:

§ 32.14 Certain items containing tritium or promethium 147; requirements for license to apply or import.

An application for a specific license to apply tritium or promethium 147 to the products specified in § 30.15 of this chapter or to import such products containing tritium or promethium 147 for use

² Export shipment of precision balances is subject to the licensing authority and regulations of the Department of Commerce. Issuance of an exemption by the Atomic Energy Commission for export of tritium contained in balances of precision or the parts thereof does not relieve any person from complying with the licensing requirements and regulations of the Department of Commerce.

pursuant to § 30.15 of this chapter will be approved if:

(a) The applicant satisfies the general requirements specified in § 30.33 of this chapter;

(b) The applicant submits sufficient information regarding the product pertinent to evaluation of the potential radiation exposure, including:

(1) Chemical and physical form and maximum quantity of tritium or promethium 147 in each product;

(2) Details of construction and design of each product;

(3) Details of the method of incorporation and binding of the tritium or promethium 147 in the product;

(4) Procedures for and results of prototype testing to demonstrate that the material will not become detached from the product and that the tritium or promethium 147 will not be released to the environment under the most severe conditions likely to be encountered in normal use of the product;

(5) Quality control procedures to be followed in the fabrication of production lots of the product to demonstrate that the product will meet the specifications established by the Commission for such product;

(6) Any additional information, including experimental studies and tests, required by the Commission to facilitate determination of the safety of the product.

(c) Each product will contain no more than the quantity of tritium or promethium 147 specified for that product in § 30.15 of this chapter. The levels of radiation from each product containing promethium 147 will not exceed the limits specified for that product in § 30.15 of this chapter.

(d) The Commission determines that:

(1) The method of incorporation and binding of the tritium or promethium 147 in the product is such that the radioactive material will not be released or be removed from the product under the most severe conditions which are likely to be encountered in normal use and handling. Tritium will be considered to be properly bound to dials, hands, and pointers if there is no visible flaking or chipping and the total loss of tritium does not exceed 5 percent of the total tritium when prototype dials, hands, and pointers are subjected to the following tests in the order specified below.

(i) Attachment of dials to a vibrating fixture and vibration at a rate of not less than 26 cycles per second and a vibration acceleration of not less than 2G for a period of not less than one hour; and

(ii) Attachment of the hub ends of the hands or pointers to a clamp and bending of hands or pointers over a 1-inch diameter cylinder; and

(iii) Total immersion of the dials, hands and pointers used in the tests described in subdivisions (i) and (ii) of this subparagraph in 100 milliliters of water at room temperature for a period of 24 consecutive hours and analysis of the test water for its radioactive material content by liquid scintillation counting or other equally sensitive method.

(2) The product has been subjected to and meets the requirements of the prototype tests. Prototype tests for automobile lock illuminators are prescribed by § 32.40, Schedule A.

3. Section 32.16 is deleted and a new § 32.15 is added to read as follows:

§ 32.15 Same; quality control.

Each person licensed under § 32.14 shall:

(a) Maintain quality control in the manufacture of the part or product, or the installation of the part into the product;

(b) Subject production lots to such quality control tests as may be required as a condition of the license issued under § 32.14 sampled in accordance with § 32.110 and accept or reject production lots in accordance with the directions of § 32.110; and

(c) Visually inspect each device in production lots and reject any device which has an observable physical defect that could affect containment of the tritium or promethium 147.

4. Sections 32.17 and 32.19 are deleted and a new § 32.16 is added to read as follows:

§ 32.16 Same; material transfer reports.

Each person licensed under § 32.14 shall file an annual report with the Director, Division of Materials Licensing, U.S. Atomic Energy Commission, Washington, D.C., 20545, which shall state the total quantity of tritium or promethium 147 imported for sale or distribution, or transferred to other persons under § 30.15 of this chapter during the reporting period. Each report shall cover the year ending June 30 and shall be filed within 30 days thereafter.

5. The introductory paragraph of § 32.40 is amended to read as follows:

§ 32.40 Schedule A—Prototype tests for automobile lock illuminators.

An applicant for a license pursuant to § 32.14 to install lock illuminators into automobile locks, or to import lock illuminators in automobile locks for use pursuant to § 30.15 of this chapter shall conduct the following prototype tests on each of five prototype devices, consisting of the automobile lock with the installed illuminator in the following order:

6. Paragraph (a) of § 32.110 is amended to read as follows:

§ 32.110 Quality control sampling procedures under certain specific licenses.

(a) Each production lot of devices licensed under § 32.14 or § 32.53, for which quality control tests are required pursuant to § 32.15 or § 32.55, shall be sampled in accordance with Sampling Table A in this section. If the permissible number of rejects specified in Sampling Table A for a lot of that size is exceeded, all devices in that lot shall be sampled or the entire lot rejected. If ten (10) or more successive lots have been tested and none of them includes a larger number of rejects than specified in Sampling Table

A, the succeeding lots may be sampled in accordance with Sampling Table B in this section.

(Sec. 81, 68 Stat. 935; 42 U.S.C. 2111; sec. 161, 68 Stat. 948; 42 U.S.C. 2201)

Dated at Washington, D.C., this 24th day of March 1966.

For the Atomic Energy Commission.

W. B. McCool,
Secretary.

[F.R. Doc. 66-3553; Filed, Apr. 1, 1966; 8:47 a.m.]

Title 49—TRANSPORTATION

Chapter I—Interstate Commerce Commission

SUBCHAPTER A—GENERAL RULES AND REGULATIONS

[Rev. S.O. 975]

PART 95—CAR SERVICE

Railroad Operating Regulations for Freight Car Movement

At a session of the Interstate Commerce Commission held in Washington, D.C., on the 29th day of March A.D., 1966.

It appearing, that the unprecedented level of the economy is placing tremendous pressures on railroad transportation facilities, causing such acute shortages of freight cars in all sections of the country as to close industrial plants, impede the movements of agricultural products and other goods to market; that delays in transportation threaten to cause unwarranted increases in the prices of certain commodities; that car owners and shippers in all sections of the country are being deprived of the use of the cars acquired to handle their traffic; that present rules, regulations, and practices with respect to the use, supply, control, movement, distribution, exchange, interchange, and return of freight cars are not promoting the most efficient utilization of cars. It is the opinion of the Commission that an emergency exists requiring immediate action to promote car service in the interest of the public and the commerce of the people. Accordingly, the Commission finds that notice and public procedure are impracticable and contrary to the public interest, and that good cause exists for making this order effective upon less than 30 days' notice.

It is ordered, That:

§ 95.975 Service Order 975.

(a) Railroad operating regulations for freight car movement. Each common carrier by railroad subject to the Interstate Commerce Act shall observe, enforce, and obey the following rules, regulations, and practices with respect to its car service:

(1) *Placing of cars.* (i) Loaded cars, which after placement will be subject to demurrage rules applicable to detention of cars awaiting unloading, shall be actually or constructively placed within 24

hours, exclusive of Sundays and holidays, following arrival at destination.

(ii) Actual placement means placing of a car on industrial interchange tracks or other-than-public-delivery tracks serving the consignee, or on public delivery tracks preceded or accompanied by proper notice.

(iii) When delivery of a car, either empty or loaded, consigned or ordered to an industrial interchange track or to other than a public delivery track cannot be made because of any condition attributable to the consignee, such car will be held at destination or, if it cannot reasonably be accommodated there, at an available hold point, and constructive placement notice shall be sent or given the consignor or consignee within 24 hours, exclusive of Saturdays, Sundays, and holidays, after arrival of car at destination or other hold point.

(iv) Loaded cars held at destination for accessorial terminal services described in the applicable tariffs, such as holding for orders or inspection, shall be placed on unloading, hold or inspection tracks, and proper notice given within 24 hours, exclusive of Saturdays, Sundays and holidays, after arrival at destination. On cars set off and held short of billed destination, or on cars held at destination and short of inspection tracks, a written notice shall be sent or given to consignee or other party entitled to receive such notice, within 24 hours of arrival, exclusive of Saturdays, Sundays and holidays, at the hold point. Time and charges shall be computed from the first 7 a.m., following such notice and demurrage and detention charges assessed as provided in governing tariffs.

(2) *Removal of cars.* (i) Empty cars must be removed from point of unloading or interchange tracks of industrial plants within 24 hours, exclusive of Sundays and holidays, following unloading or release by consignee or shipper, unless such empty cars are ordered or appropriated by the shipper with approval of carrier for reloading within such 24-hour period. Empty cars not ordered for loading at point where made empty must be forwarded in line-haul service within 24 hours, following removal of empty cars.

(ii) Outbound loaded freight cars must be removed from point of loading or interchange tracks of industrial plants within 24 hours, exclusive of Sundays and holidays, following acceptance by carrier of the shipping instructions covering the cars. Such cars must be forwarded in line-haul service within 24 hours, following release and removal.

(iii) Cars subject to subparagraphs (2) (i) and (2) (ii) of this paragraph not made accessible to the carrier shall be subject to demurrage until such time as they become, and remain, accessible to the carrier.

(3) *Forwarding of cars.* (i) Loaded and empty cars of foreign or private ownership, and empty system freight cars when the holding line is the beneficiary of Car Distribution Directions or Orders issued by this Commission applicable to the kind of car held, shall not be held in excess of 24 hours for any purpose, except as follows:

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through February 28, 1978, will amount to \$911,000.

It is further found that good cause exists for not postponing the effective date until 30 days after publication in the FEDERAL REGISTER (5 U.S.C. 553) as (1) notice of these proposed rules were published in the FEDERAL REGISTER and no comments were received; (2) the committees need to promptly meet certain financial obligations incurred under the provisions of these marketing orders which are in excess of currently authorized expenditures; and (3) no increase in the assessment rate is necessary as income will be adequate to cover the increased expenditures.

(Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601-674.)

Dated: January 11, 1978.

CHARLES R. BRADER,
Acting Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[FR Doc. 78-1238 Filed 1-16-78; 8:45 am]

[3410-02]

CHAPTER IX—AGRICULTURAL MARKETING SERVICE (MARKETING AGREEMENTS AND ORDERS; FRUITS, VEGETABLES, NUTS), DEPARTMENT OF AGRICULTURE

[Amdt. 1]

PART 971—LETTUCE GROWN IN LOWER RIO GRANDE VALLEY IN SOUTH TEXAS

Handling Regulation

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Final rule.

SUMMARY: This amendment relieves on January 15 and 22, 1978, the Sunday packaging prohibition. Recent rains in California production areas have reduced winter lettuce harvests. This will promote orderly marketing by allowing the south Texas industry additional operating time to satisfy larger lettuce orders.

EFFECTIVE DATE: January 15, 1978.

FOR FURTHER INFORMATION CONTACT:

Charles R. Brader, Deputy Director, Fruit and Vegetable Division, AMS, U.S. Department of Agriculture, Washington, D.C. 20250, telephone 202-447-6393.

SUPPLEMENTARY INFORMATION: Marketing Agreement No. 144 and Marketing Order No. 971 regulate the handling of lettuce grown in the Lower Rio Grande Valley in South Texas. This program is effective under the Agricultural Marketing Agreement

Act of 1937, as amended (7 U.S.C. 601-674).

The amendment is based upon recommendations made January 11, 1978, by the South Texas Lettuce Committee, which was established under the order and is responsible for its local administration. It is hereby found that the amendment which follows will tend to effectuate the declared policy of the act.

It is further found that it is impractical and contrary to the public interest to give preliminary notice, or to engage in public rulemaking procedure, and that good cause exists for not postponing the effective date of this amendment until 30 days after publication in the FEDERAL REGISTER (5 U.S.C. 553) in that: (1) This amendment must become effective immediately if producers are to derive any benefits from it, (2) compliance with this amendment will not require any special preparation on the part of handlers, and (3) this amendment relieves restrictions on the handling of lettuce grown in the production area.

Regulation, as amended.

In §971.318 (42 FR 59373) the introductory paragraph is hereby amended by adding the following to it:

§971.318 Handling regulation.

... except that the prohibition against the packing of lettuce on Sundays shall not apply on January 15 and 22, 1978.

(Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601-674.)

Effective date: Dated January 12, 1978, to become effective January 15, 1978.

CHARLES R. BRADER,
Acting Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[FR Doc. 78-1290 Filed 1-16-78; 8:45 am]

[7590-01]

Title 10—Energy

CHAPTER I—NUCLEAR REGULATORY COMMISSION

PART 30—RULES OF GENERAL APPLICABILITY - TO LICENSING OF BYPRODUCT MATERIAL

Exemption of Persons Using Spark Gap Irradiators Containing Cobalt-60

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission is exempting from licensing and regulatory requirements persons using nuclear material near the spark gap of oil furnaces to prevent ignition problems. The exemption, re-

quested by Ray Burner Co., does not apply to the manufacture or import of the spark gap irradiators. The exemption covers the use of the spark gap irradiators in electrically ignited fuel oil burners having a firing rate of at least 3 gallons per hour (11.4 liters per hour).

EFFECTIVE DATE: February 16, 1978.

FOR FURTHER INFORMATION CONTACT:

Mr. Jim Henry, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, 301-443-6910.

SUPPLEMENTARY INFORMATION: By letter dated May 18, 1973, the Ray Burner Co. of San Francisco, Calif., filed a petition for rule making (PRM 30-54) with the Atomic Energy Commission requesting an exemption from licensing requirements for spark gap irradiators containing not more than 1 microcurie of cobalt-60 in plated or alloy form. This notice of rule making responds to the request of Ray Burner Co.

BACKGROUND

On October 24, 1975, the Nuclear Regulatory Commission published in the FEDERAL REGISTER (40 FR 49801) a proposed amendment of its regulation 10 CFR Part 30 which would exempt from licensing and regulatory requirements the receipt, possession, use, transfer, export, ownership, and acquisition of spark gap irradiators containing not more than 1 microcurie of cobalt-60 per spark gap irradiator for use in electrically ignited fuel oil burners.

All interested persons were invited to submit written comments and suggestions for consideration in connection with the proposed amendment and a draft environmental impact statement by December 8, 1975. After consideration of the comments and other factors involved, the Commission has adopted the amendment. The text of the amendment set out below differs from the text of the proposed amendment published October 24, 1975, by excluding from the exemption the use of spark gap irradiators in oil burners having a firing rate of not more than 3 gallons per hour (11.4 liters per hour).

DISCUSSION OF COMMENTS

Two commentators observed that the exemption as proposed did not specifically prohibit use of the spark gap irradiators in domestic oil burners and therefore the potential market is quite large. In the notice published October 24, 1975, the Commission stated (40 FR 49801) that in typical applications, the spark gap irradiators are used in boilers, power plants, and

other heavy duty equipment, but not in private home furnaces or internal combustion engines.

The Commission's statement was based on the engineering characteristics of small oil burners (3 gallons per hour maximum main flame input) and their associated safety control timing (90 seconds maximum flame establishing period). A spark delay of more than 90 seconds would be indicative of permanent arc failure (or other malfunction) rather than temporary arc failure attributable to the statistical time lag between impressment of voltage and formation of a spark in an igniter. Because the time lag is statistical, there is a possibility that the delay may be several seconds, but the probability of the delay being 90 seconds or longer is extremely remote.

Based on these factors, there is neither a need nor a market for spark gap irradiators in small automatically fired warm-air furnaces, small floor mounted unit heaters, and similar appliances used in private homes and commercial and industrial establishments. This conclusion is recognized by changing the text of § 30.15(a)(10) to exclude from the exemption the use of spark gap irradiators in oil burners having a firing rate of not more than 3 gallons per hour (11.4 liters per hour). The exemption does not preclude the use of spark gap irradiators in private home oil burners if they have a firing rate greater than 3 gallons per hour (11.4 liters per hour).

DISCUSSION OF FINAL RULE

The Commission has found that exemption from licensing requirements for the receipt, possession, use, transfer, export, ownership, and acquisition of spark gap irradiators containing not more than 1 microcurie of cobalt-60 under the conditions set forth below will not constitute an unreasonable risk to the common defense and security and to the health and safety of the public.

The exemption does not apply to the manufacture or import for sale or distribution of the spark gap irradiators. Criteria for the issuance of a specific license to conduct such activities and quality control and reporting requirements are set forth in §§ 32.14, 32.15, 32.16, and 32.110 of 10 CFR Part 32, "Specific Licenses to Manufacture, Distribute, or Import Certain Items Containing Byproduct Material." Prototype tests for spark gap irradiators containing cobalt-60 are not specified in the regulation. Applicants for specific licenses are required by § 32.14(b)(4) to submit procedures for and results of prototype tests. The Nuclear Regulatory Commission will either approve the tests or require submission of acceptable tests to demonstrate that the material will not become detached from the product

and that the byproduct material will not be released to the environment under the most severe conditions likely to be encountered in normal use of the product. The testing requirements will be incorporated into the specific license.

The amendment, in effect, makes the manufacturer or importer responsible for providing an approved product for use in electrically ignited fuel oil burners. The requirement for use in electrically ignited fuel oil burners will be met prior to the transfer of the product for use under § 30.15 by conditioning each specific license issued to the manufacturer or importer with the requirement of incorporating a spark gap irradiator containing not more than 1 microcurie of cobalt-60 in either an electrically ignited fuel oil burner or a container labeled with instructions for installation in such a burner. In addition, the manufacturer or importer will be authorized to transfer these spark gap irradiators to a person holding a specific license provided such specific license contains similar transfer conditions to meet the end use requirements of the exemption. The subsequent possession, use, and disposal by all other persons will be exempt from licensing and regulatory requirements of the Commission.

Under the provisions of § 150.15(a)(6) of 10 CFR Part 150, "Exemptions and Continued Regulatory Authority in Agreement States Under Section 274," the transfer of possession or control by persons in Agreement States who manufacture, process, or produce spark gap irradiators containing cobalt-60 for use by exempt persons are subject to the Commission's licensing and regulatory requirements, even though the spark gap irradiators are manufactured under an Agreement State license. Such manufacturers, processors, or producers wishing to transfer possession or control of spark gap irradiators containing cobalt-60 for use by exempt persons will be required to obtain a specific license issued by the Commission under § 32.14 of 10 CFR Part 32.

AVAILABILITY OF FINAL ENVIRONMENTAL STATEMENT

Pursuant to the National Environmental Policy Act of 1969, and the Commission's regulations in 10 CFR Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection," the Commission's Office of Standards Development has prepared a final environmental impact statement in connection with this action to amend Part 30 of the Commission's regulations. The statement is available for inspection by the public in the Commission's Public Document Room at 1717 H Street NW, Washington, D.C. In about two weeks after publication of this notice in the *FEDER-*

AL REGISTER, copies of the statement will be available as NUREG-0319 from the National Technical Information Service, Springfield, Va. 22161. The price will be \$6.00 for paper copy and \$3.00 for microfiche.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and sections 552 and 553 of title 5 of the United States Code, the following amendment to Title 10, Chapter I, Code of Federal Regulations, Part 30 is published as a document subject to codification.

Section 30.15 of 10 CFR Part 30 is amended by adding a new paragraph (a)(10) to read as follows:

§ 30.15 Certain items containing byproduct material.

(a) Except for persons who apply byproduct material to, or persons who incorporate byproduct material into, the following products, or persons who import for sale or distribution the following products containing byproduct material, any person is exempt from the requirements for a license set forth in section 81 of the Act and from the regulations in Parts 20 and 30-36 of this chapter to the extent that such person receives, possesses, uses, transfers, exports, owns, or acquires the following products:

(10) Spark gap irradiators containing not more than 1 microcurie of cobalt-60 per spark gap irradiator for use in electrically ignited fuel oil burners having a firing rate of at least 3 gallons per hour (11.4 liters per hour).

(Secs. 81, 161, Pub. L. 83-703, 65 Stat. 935, 948 (42 U.S.C. 2111, 2201); Sec. 201, Pub. L. 93-433, 88 Stat. 1242 (42 U.S.C. 5841).)

Dated at Washington, D.C., this 11th day of January 1978.

For the Nuclear Regulatory Commission.

SAMUEL J. CHILK,
Secretary of the Commission.

(FR Doc. 78-1173 Filed 1-16-78; 8:45 am)

[6320-01]

Title 14—Aeronautics and Space

- CHAPTER II—CIVIL AERONAUTICS BOARD
- PART 371—ADVANCE BOOKING CHARTERS
- PART 372a—TRAVEL GROUP CHARTERS
- PART 373—INCLUSIVE TOUR CHARTERS
- PART 373a—ONE-STOP-INCLUSIVE TOUR CHARTER

Interpretations

AGENCY: Civil Aeronautics Board.

ACTION: Interpretation of existing rules: 14 CFR 371.27, 371.28, 372a.22, 372a.24, 373.12, 373.13, 373a.27, 373a.28.

QUESTION 7

ATTACHMENT 1