[7590-01-P]

NUCLEAR REGULATORY COMMISSION

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

RIN: 3150-AH45

[NRC-2008-0030]

Decommissioning Planning

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Final rule.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to improve decommissioning planning, and thereby reduce the likelihood that any current operating facility will become a legacy site. The amended regulations require licensees to conduct their operations to minimize the introduction of residual radioactivity into the site, which includes the site's subsurface soil and ground water. Licensees also may be required to perform site surveys, to determine whether residual radioactivity is present in subsurface areas, and to keep records of such surveys with records important for decommissioning. The amended regulations require licensees to report additional details in their decommissioning cost estimate (DCE), eliminate the escrow account and line of credit as approved financial assurance mechanisms, and modify other financial assurance requirements. The amended regulations require decommissioning power reactor licensees to report additional information on the costs of decommissioning and spent fuel management.

**DATES:** *Effective Date:* This final rule is effective on **[INSERT DATE 365 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].** Compliance with the reporting provisions in 10 CFR 50.82(a)(8)(v) and (vii) is required by March 31, 2010.

**ADDRESSES:** You can access publicly available documents related to this document using the following methods:

**Federal e-Rulemaking Portal:** Go to http://www.regulations.gov and search for documents filed under Docket ID [NRC-2008-0030]. Address questions about NRC dockets to Carol Gallagher at 301-415-5905; e-mail Carol.Gallagher@nrc.gov.

**NRC's Public Document Room (PDR):** The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Public File Area O F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

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## I. Background

The NRC issued comprehensive and risk informed decommissioning regulations in 1997 as Subpart E of 10 CFR Part 20 (62 FR 39058; July 21, 1997). This set of requirements is known as the License Termination Rule (LTR). The LTR is based on calculated doses, and it established specific radiological criteria for remediation of lands and structures to complete site decommissioning and successfully terminate the license. The LTR provides an overall approach for license termination for two different site conditions: unrestricted use and restricted conditions for use after license termination. The LTR applies to the decommissioning of facilities licensed under 10 CFR Parts 30, 40, 50, 60, 61, 63, 70 and 72. In the 1997 LTR final rule, in response to a public comment that the requirements of then-proposed 10 CFR 20.1406 should apply to all licensees, rather than only to applicants for new licenses, the Commission stated:

> "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, Sec. 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 [as low as reasonably achievable] 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." (62 FR 39082; July 21, 1997).

Current 10 CFR 20.1101(a) requires each licensee to implement a radiation protection program to ensure compliance with the regulations in 10 CFR Part 20. Current § 20.1101(b) requires each licensee to use, to the extent practical, procedures and engineering controls

based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are ALARA. Licensees are thus already required to apply operating procedures and controls to evaluate potential radiological hazards and methods to minimize and control waste generation during facility operations, to achieve doses that are ALARA.

In a Staff Requirements Memorandum (SRM) for SECY-01-0194, dated June 18, 2002, the Commission directed the staff to conduct an analysis of LTR issues. The staff conducted the analysis and presented results and recommendations to the Commission in SECY-03-0069 (http://www.nrc.gov/reading-rm/doc-collections/commission/srm/2003/2003-0069srm.pdf), (dated May 2, 2003, and known as the LTR Analysis). One of the recommendations was a set of "measures to prevent future legacy sites." A legacy site is a facility that is in decommissioning status with complex issues and an owner who cannot complete the decommissioning work for technical or financial reasons (as discussed further in Section II.E of this rule). The set of measures to prevent future legacy sites had two distinct parts: (1) The need for timely reporting during facility operations of subsurface contamination that has a potential to complicate future decommissioning efforts and (2) The need for more detailed reporting of licensee financial assurance mechanisms to fund site decommissioning activities and protection of the committed funds in cases of financial distress. The need for timely reporting of subsurface contamination during facility operations was explained in Attachment 8 to SECY-03-0069. Attachment 8, under the heading "chronic releases," recommended revising 10 CFR 20.1406 to extend its minimization of contamination requirements to cover licensees in addition to license applicants. Recommendations for more detailed decommissioning financial assurance requirements are set forth in Attachment 7 to SECY-03-0069.

In SRM-SECY-03-0069 the Commission approved the staff's recommendations and authorized development of a technical basis to support a proposed rule. As pertinent to the

then-proposed 10 CFR 20.1406 and 10 CFR 20.1501 revisions, the Commission's SRM states as follows:

> "The Commission has approved the staff's recommendation related to changes in licensee operations as described in attachment 8. However, in addition to incorporating risk-informed approaches, the staff should ensure that they are performance-based. The staff will have to be very careful when crafting the guidance documents so that it is clear to the licensees and to the staff how much characterization information is enough. The staff should only ask for limited information. Licensees should not be required to submit the equivalent of a full scale MARSSIM [Multi-Agency Radiation Survey and Site Investigation Manual] survey every year."

During 2003 and 2004, the NRC staff evaluated the decommissioning program and assessed the effectiveness of other improvements to protect public health and safety beyond those identified in the LTR Analysis. To integrate and track regulatory improvements resulting from the LTR Analysis and the further evaluation of the decommissioning program, the NRC adopted an Integrated Decommissioning Improvement Plan (IDIP) for activities during FY 2004 through 2007. Among other actions, the IDIP called for publication of the Decommissioning Planning proposed rule and written guidance describing changes in the regulations to prevent future legacy sites.

In 2005 and 2006, the operators of several nuclear power plants reported that inadvertent and unmonitored radioactive liquid releases, primarily tritium contained in water, had occurred. In some instances, the release of radioactive liquid was not recognized by the licensee until years after the release apparently started. The NRC Executive Director for Operations chartered a Task Force to conduct a lessons-learned review of these incidents. The Task Force final report dated September 1, 2006, concluded that the levels of tritium and other radionuclides measured thus far do not present a health hazard to the public, and presented a list of findings and recommendations that the Task Force believed would improve plant operations and public confidence in nuclear plant operations. The findings and recommendations in the Task Force report identified the need to clarify existing licensee

requirements to demonstrate that they have achieved public and occupational exposures that are ALARA during the life cycle of the facility which includes the decommissioning phase.

In April 2005, the NRC conducted a two-day public workshop to solicit public comments on the technical basis for the proposed rule, covering changes in licensee operations and financial assurance. A one-day public roundtable meeting was held in January 2007 to solicit public comments on specific topics in the technical basis for the proposed rule.

SECY-07-0177, dated October 3, 2007, requested Commission approval to publish a proposed rule consistent with the recommendations approved in SRM-SECY-03-0069 and the public comments from the workshop and roundtable meeting noted above. The Commission approved staff's request in SRM-SECY-07-0177, dated December 10, 2007, and the proposed rule was accordingly published for comment in the *Federal Register* on January 22, 2008 (73 FR 3812).

## II. Discussion

### *A. What Action is the NRC Taking?*

The NRC is amending its regulations to improve decommissioning planning, and thereby reduce the likelihood that facilities under its jurisdiction will become legacy sites. To help achieve this goal, one set of complementary amendments revise 10 CFR 20.1406 to make it applicable to licensees with operating facilities as well as to license applicants, and revise 10 CFR 20.1501(a) by replacing its undefined term "radioactive material" with "residual radioactivity," a term already defined in 10 CFR Part 20. This defined term includes subsurface contamination within its scope. Both new 10 CFR 20.1406(c) and amended 20.1501(a) are worded to include subsurface contamination within their scope by using the term "residual radioactivity." These changes serve to reinforce the intended linkage between these provisions,

and are consistent with NRC policy that licensees conduct operations to minimize the generation of waste to facilitate later facility decommissioning. A second set of amendments improve decommissioning planning by requiring more detailed reporting of DCEs and tighter control of financial instruments used to provide decommissioning financial assurance.

The new 10 CFR 20.1406(c) states as follows:

> (c) Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in Subpart B of this part and radiological criteria for license termination in Subpart E of this part.

The amended 10 CFR 20.1501(a) and (b) state as follows:

> (a) Each licensee shall make or cause to be made, surveys of areas, including the subsurface, that --
> (1) May be necessary for the licensee to comply with the regulations in this part; and
> (2) Are reasonable under the circumstances to evaluate --
> (i) The magnitude and extent of radiation levels; and
> (ii) Concentrations or quantities of residual radioactivity; and
> (iii) The potential radiological hazards of the radiation levels and residual radioactivity detected.
> (b) Records from surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning.

As indicated, use of the term "residual radioactivity" is a key component of the amendments, and this term is discussed below. It is also discussed in the response to comment F.24 in section III of this rule.

1. Residual Radioactivity.

As set forth in 10 CFR 20.1003:

> "*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."

Certain operational events (e.g., slow, long-term leaks), particularly those that cause subsurface soil and ground-water contamination, can significantly increase the cost of decommissioning. To adequately assure that a decommissioning fund will cover the costs of decommissioning, the owner of a facility must have a reasonably accurate estimate of the extent to which residual radioactivity is present at the facility, particularly in the subsurface soil and ground water. As reflected previously, the new 10 CFR 20.1406(c) requires that licensees conduct their operations in a manner that will minimize the introduction of residual radioactivity into the site.

Section 20.1501(a) has been revised by replacing its undefined term "radioactive material" with "residual radioactivity." To some people, the phrase "residual radioactivity" may have a connotation implying radioactive material that is "left over" after operations. This is not the meaning. As reflected in its definition stated previously, this term includes everything that the term "radioactive material" implies in this section of the regulations before this final rule as well as other radioactive material resulting from activities under the licensee's control, such as contamination in the subsurface. The use of the term "residual radioactivity" in § 20.1501(a) also is intended to provide a link with new § 20.1406(c). The amended § 20.1501(a) retains previous survey requirements, with the addition that such requirements include consideration of waste in the form of residual radioactivity. Together, the amended § 20.1501(a) and new § 20.1406(c) specify that compliance with 10 CFR Part 20 requirements is a necessary part of effectively planning for decommissioning. The new § 20.1406(c) and § 20.1501(a) provisions are discussed further in Sections II.I and J of this rule. These activities, undertaken during facility operations, will provide a technical basis for licensees and NRC to understand the effects of significant residual radioactivity on decommissioning costs, and will help to determine whether existing financial assurance provided for site-specific decommissioning is adequate. By using the term "residual radioactivity," the new § 20.1406(c) and amended § 20.1501(a)

cover any licensed and unlicensed radioactive material that have been introduced to the site by licensee activities.

New paragraph 10 CFR 20.1501(b) requires licensees to keep records of surveys of subsurface residual radioactivity identified at the site with records important for decommissioning.

During operations, residual radioactivity that would be significant for decommissioning planning would be a quantity of radioactive material that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. As stated in the proposed rule, significant residual radioactivity in subsurface media, such as soil, is a component of waste because it must be removed and disposed of to meet unrestricted use criteria in 10 CFR 20.1402 [73 FR 3815 c. 1].

During decommissioning, the licensee must evaluate dose from all residual radioactivity surveyed at its site using the radiological criteria in Subpart E to 10 CFR Part 20. For contamination migrating offsite from previous leaks and spills into the subsurface, a licensee must comply with the applicable license conditions for its facility. Such offsite contamination, released as an effluent in quantities below annual regulatory limits, has been a factor in the decommissioning of a few NRC and Agreement State sites. However, the scope of this rulemaking does not include offsite contamination discovered during decommissioning.

NRC's technical basis for the effect that significant residual radioactivity in the subsurface has on decommissioning costs is based on a 2005 NRC staff study, "General Guidance for Inspections and Enforcement to Prevent Future Legacy Sites and Indicators of Higher Risk of Subsurface Contamination" [NRC ADAMS Accession Number ML052630421]. The purpose of this study was to evaluate experience at sites that have undergone, or were undergoing decommissioning to identify the types of events that have caused subsurface contamination. Associating these events with knowledge of currently operating sites provided a

means for NRC staff to evaluate the potential for future subsurface contamination at currently operating facilities. This risk-informed approach concluded that the sites with a higher likelihood of becoming legacy sites shared the following characteristics: relatively large volumes of low specific activity radioactively contaminated liquids; large volumes of long-lived radionuclides; large throughput; liquid processes; or processes that involve large quantities of solid radioactive material stored outdoors. The study identified a number of events that could increase decommissioning costs by increasing the possibility of soil or ground-water contamination, and concluded that these events should cause the licensee to reevaluate its DCE. Additional discussion on this topic is in Sections II.G and II.H of this rule.

The changes to 10 CFR 20.1406 and 20.1501 are consistent with existing NRC policy for operating facilities. Under 10 CFR 20.1101(b), licensees must use procedures and engineering controls to achieve occupational doses and doses to members of the public that are ALARA, during operations and during decommissioning. To accomplish this, licensees must be able to demonstrate their knowledge of residual radioactivity in the subsurface, including soil and ground-water contamination, particularly if the subsurface contamination is a significant amount that would require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. This is an extension of the requirements promulgated in the 1997 LTR that were applicable only to license applicants. This action is needed because significant subsurface residual radioactivity at current operating facilities may be a potential radiological hazard, which, if left undetected, risks a failure to fully fund decommissioning while the facility is still operating. The revised requirements implement existing NRC policy by helping licensees to continue achieving doses that are ALARA and within dose limits, and helping them to more effectively plan for decommissioning.

2. Financial Assurance.

This final rule (amending § 30.35, § 40.36, § 70.25, and § 72.30, and Criterion 9 of appendix A to Part 40) codifies certain aspects of existing regulatory guidance to improve the quality of DFP, and applies NRC experience to increase the likelihood that adequate funds will be available when needed to complete the decommissioning process. This final rule allows materials licensees to base their financial assurance for decommissioning on a "certification amount" only if the licensee's site surveys do not indicate the presence of residual radioactivity in amounts that would prevent the site from meeting the unrestricted use criteria in § 20.1402. This final rule addresses the potential vulnerability of the parent company guarantee and the self-guarantee as the financial mechanism for providing decommissioning funding assurance, in cases where the guarantor falls into financial distress. This final rule requires all reactor and materials licensees who use these guarantee mechanisms to establish a standby trust fund to receive the guaranteed financial assurance amount should that amount become immediately due and payable.

For licensees with reactors in a decommissioning status, this final rule institutes additional reporting requirements for decommissioning fund status, spent fuel management costs, and estimated decommissioning costs. These new reporting requirements, in part, modify the existing Post Shutdown Decommissioning Activities Report requirements set forth in 10 CFR 50.82(a)(4)(i). Additional reporting requirements specify that each power reactor licensee undergoing decommissioning must submit an annual financial assurance status report, as set forth in new paragraphs 10 CFR 50.82(a)(8)(v) through (a)(8)(vii).

Under this final rule, all licensees decommissioning their facilities pursuant to 10 CFR 20.1403 restricted release criteria are required to use a trust fund to meet the financial assurance requirements. A trust fund is the only financial assurance mechanism allowed for the long term maintenance and surveillance of restricted release sites unless a government

organization either provides a guarantee of funds or assumes custody and ownership of the site. This topic is discussed further in Section II.N of this final rule.

*B. Who Does This Action Affect?*

By the effective date of this final rule, the NRC believes that the changes to 10 CFR Part 20 will affect a small number of licensees, and that the changes to financial assurance regulations will affect several hundred NRC licensees.

Based on the regulatory analysis for the final rule, NRC believes a small number of materials licensees (a total of about 5 NRC and Agreement State licensees) will need to perform additional site surveys due to the presence of significant residual radioactivity. The licensees who will need to perform additional surveys were modeled in the regulatory analysis as rare metal (i.e., rare earth) extraction facilities with uranium as a soil contaminant. Although the number of licensees affected by rule changes to 10 CFR Part 20 is small, the cost to States or the Federal Government to enforce and then fully decommission a single legacy site is much higher than the cost to prevent the occurrence of a legacy site through amended regulations.

Uranium recovery licensees and applicants will not be subject to the new 10 CFR 20.1406(c) requirements, just as they are not subject to the existing 10 CFR 20.1406 requirements. As stated in existing 10 CFR 20.1401(a), uranium and thorium recovery facilities, and uranium solution extraction facilities, are not subject to the regulations in 10 CFR Part 20 Subpart E. Such facilities are and will continue to be subject to the regulations in the other 10 CFR Part 20 subparts, and the revised survey and monitoring requirements in 10 CFR 20.1501(a) and new 20.1501(b) will thus be applicable to them. Uranium recovery licensees are additionally subject to existing monitoring requirements pertaining to soil and ground water contamination in appendix A to 10 CFR Part 40. The above issues are discussed further below in response to comments on the proposed rule submitted by uranium recovery licensees.

For NRC licensees who have subsurface soil contamination but no ground water contamination, a minimal, routine monitoring plan may remain in effect through license termination. The routine monitoring plan is described in draft Regulatory Guide DG-4014, "Radiological Surveys and Monitoring During Operations," issued for public comment to support this final rule. Application of a minimal, routine monitoring plan at sites with no ground water contamination is meant to improve licensee decommissioning planning and the basis used for DCEs.

The large majority of NRC and Agreement State licensees are not expected to have residual radioactivity in soil or groundwater because they possess small amounts of short-lived byproduct material or byproduct material that is encased in a capsule designed to prevent leakage or escape of the byproduct material (i.e., a sealed source). This set of licensees is expected to include the non-fuel-cycle nuclear facilities, which either have no significant residual radioactive contamination to be cleaned up, or, if there is contamination, it is localized or will be quickly reduced to low levels by radioactive decay. Licensees who do not have residual radioactivity in soil or groundwater, and who do not have an obligation to set aside funds for decommissioning financial assurance, are not affected by this final rule.

Approximately 300 NRC materials licensees and over 1,000 Agreement State licensees have an obligation to set aside funds for decommissioning financial assurance. Of the NRC licensees, approximately 50 percent use a certified amount, specified in regulations, with the remaining 50 percent using a site-specific DFP or License Termination Plan to meet the decommissioning financial assurance requirements. If there is significant residual radioactivity at the site, the final rule changes in § 30.35, § 40.36, § 70.25, and § 72.30 require a licensee to switch out of its certified funding amount, and replace the certified amount with a DFP. At this time, the NRC staff is not aware of any licensees using certified amounts for decommissioning that need to switch to a DFP because of significant residual radioactivity.

Licensees using a site-specific DFP or License Termination Plan to meet decommissioning financial assurance requirements will have additional reporting requirements based on final rule changes in § 30.35, § 40.36, § 50.82, § 70.25, and § 72.30. The materials licensees under 10 CFR Parts 30, 40, 70, and 72 will need to provide more details to support their DCE, such as the assumed cost of an independent contractor to perform all decommissioning activities.

Final rule changes to 10 CFR 50.82(a) affect the 12 power reactor licensees undergoing decommissioning. Such licensees will need to provide more details regarding their DCEs, and will need to provide cost estimates for managing irradiated fuel. More specifically, licensees who have submitted a certification of permanent cessation of operations under 10 CFR 50.82(a) are subject to annual financial assurance reporting requirements similar to those imposed on operating reactors under existing 10 CFR 50.75(f). The annual reports must identify yearly decommissioning expenditures, the remaining balance of decommissioning funds, and a cost estimate to complete decommissioning. Similar to the one-time reports required by 10 CFR 50.54(bb), the annual reports required under 10 CFR 50.82(a)(8) must identify the amount of funds accumulated to manage irradiated fuel, and the projected cost of managing the irradiated fuel until title and possession is transferred to the Secretary of Energy.

Approximately 20 NRC licensees use an escrow account as a prepayment financial mechanism and will be affected by final rule changes in § 30.35, § 40.36, § 70.25, and § 72.30 (which eliminate the escrow account as a prepayment financial assurance method). No NRC licensees are using a line of credit (which is being eliminated as an acceptable financial assurance instrument) to provide financial assurance.

Approximately 45 NRC licensees use a parent company guarantee or self-guarantee as a financial assurance mechanism. These licensees will be affected by final rule changes in 10 CFR Part 30, appendices A, C, D, and E, which require establishment of a standby trust fund

before the guarantee becomes effective, and which contain other new requirements. The standby trust fund is to be set up for receipt of funds in the case of financial distress by the guarantor. In the regulatory analysis and Paperwork Reduction Act burden estimate, NRC assumed that a total of 25 of these 45 licensees will need to establish a trust fund to comply with the amended regulations, while the other 20 already have an established trust fund.

The regulatory analysis for this final rule, referenced in Section X of this rule, has detailed cost-benefit estimates regarding the licensees who will be affected by amended regulations.

*C. What Steps Did NRC Take to Prepare for this Rulemaking?*

The NRC took several initiatives to enhance stakeholder involvement and to improve efficiency during the rulemaking process. On May 28, 2004, the NRC staff issued Regulatory Information Summary (RIS) 2004-08, "Results of the License Termination Rule Analysis." This RIS was the first follow-up action taken in response to SRM-SECY-03-0069. The purpose of the RIS was to inform licensees and stakeholders of NRC's analysis of the issues associated with implementing the LTR, the Commission's direction to resolve these issues, the schedule for future actions, and opportunities for stakeholder comment. The RIS noted that stakeholder involvement would be an important part of developing the planned rulemaking and guidance.

In April 2005, the NRC conducted a 2-day decommissioning workshop examining a number of LTR topics, including potential changes in facility operating requirements and changes to financial assurance to prevent legacy sites. Stakeholders addressed the issues and potential resolutions that could be accomplished through rulemaking. Since then, NRC has maintained a web page (http://www.nrc.gov/about-nrc/regulatory/decommissioning.html) with information including draft guidance documents, Commission papers, and a variety of decommissioning program documents. NRC presented papers on the technical basis scope of

the rulemaking at American Nuclear Society conferences in 2004, 2005, and 2006, and other stakeholder forums.

In June 2006, the NRC formed a proposed rule Working Group of NRC staff and one Agreement State representative from the Organization of Agreement States (OAS). The NRC has held discussions with State and Federal agencies on their experience with trust funds for long-term financial assurance, including a discussion with the U.S. Environmental Protection Agency (EPA) on October 6, 2006.

In January 2007, the NRC held a public roundtable meeting that was attended by about 40 stakeholders. The meeting was held to solicit input from stakeholders and interested members of the public regarding the issues of licensee control and identification of subsurface residual radioactivity, and changes that were being considered in decommissioning financial assurance requirements. The Summary Notes and transcript of this public meeting are posted on: http://www.nrc.gov/about-nrc/regulatory/decommissioning/public-involve.html.

*D. What Alternatives Did NRC Consider?*

The proposed rule Working Group considered three different alternatives for the rule. Each was evaluated in the environmental assessment (see Section VIII of this final rule) and the regulatory analysis (see Section X of this final rule). Alternative 2, comprised of the amendments in this final rule, was assessed to be superior compared to the other alternatives.

*E. What is a Legacy Site?*

A legacy site is a facility that is decommissioning and has an owner who cannot complete the decommissioning work for technical or financial reasons. These sites have been materials facilities, not reactor facilities.

The purpose of this final rule is to improve decommissioning planning and thereby reduce the likelihood that a site will become a legacy site, thus avoiding unnecessary expense and promoting more timely return of licensed sites to other productive uses.

NRC terminates several hundred materials licenses each year. Most of these are routine actions, and the sites require little, if any, remediation to meet NRC's unrestricted use criteria. There are other sites where more complex decommissioning actions are needed. These complex decommissioning sites are described, along with the objectives of NRC decommissioning activities, in the "Status of Decommissioning Program 2006 Annual Report" available at: http://www.nrc.gov/about-nrc/regulatory/decommissioning/program-docs.html. This report identifies and describes the status of 32 complex materials sites undergoing decommissioning. Of the total 32 complex sites, NRC considers 8 of these to be legacy sites as of December 31, 2006. At the end of 2007, there were 6 legacy sites among the complex materials sites undergoing decommissioning.

*F. What are Financial Assurances?*

Financial assurances are financial arrangements provided by a licensee, whereby funds for decommissioning will be available when needed. Each NRC licensee has a regulatory obligation to properly decommission its facility. However, only licensees whose decommissioning cost is likely to exceed a threshold amount must provide financial assurance. All nuclear power reactors and about 7 percent of NRC materials licensees must provide decommissioning financial assurance. This financial assurance may be funds set aside by the licensee or a guarantee that funds will be available when needed. The guarantee may be provided by a qualified third party or upon passage of a financial test by the licensee. The third party may be the parent company of the licensee, which is the case for about 10 percent of the NRC materials licensees who are obligated to have decommissioning financial assurance.

Nuclear power reactors have financial assurance obligations that are different from materials licensees. The minimum amount of financial assurance for reactors is defined in 10 CFR 50.75, and this rulemaking does not change this required minimum amount. Acceptable financial assurance mechanisms for power reactors are defined in § 50.75(e)(1). An external sinking fund is used to provide financial assurance for about 90 percent of the reactors. The remaining 10 percent of reactors have assurance through prepaid funds and/or guarantees.

As of December 31, 2006, there were about 300 NRC materials licensees that have a regulatory obligation to provide approved financial assurance mechanisms. An acceptable financial assurance mechanism for unrestricted use decommissioning is any of the following four types of financial instruments:

- A prepayment of the applicable decommissioning costs;
- A guarantee to pay the decommissioning costs issued by a qualified third party or the licensee;
- A statement of intent from a Federal, state or local government licensee; or
- An external sinking fund.

The prepayment method is full payment in advance of decommissioning using an account segregated from licensee assets and outside the licensee's administrative control. About 11 percent of current financial assurance mechanisms for materials licensees are prepayment methods, with most of these being escrow accounts. Currently accepted prepayment mechanisms include escrow accounts (8 percent), trust funds (2 percent), certificates of deposit (1 percent), government funds (0 percent), and deposits of government securities (0 percent). This final rule eliminates all prepayment mechanisms except the trust fund, for reasons discussed under Section II.N.2 of this rule.

The guarantee method can be used by licensees that demonstrate adequate financial strength through their annual completion of financial tests contained in appendices A, C, D, and

E of 10 CFR Part 30. About 51 percent of current financial assurance mechanisms for materials licensees are guarantee methods. Currently accepted guarantee mechanisms include letters of credit (28 percent), parent company guarantees (8 percent), licensee self-guarantees (7 percent), surety bonds (8 percent), lines of credit (0 percent), and insurance policies (0 percent). This final rule eliminates the line of credit as an acceptable mechanism, for reasons discussed under Section II.N.10 of this rule.

The statement of intent is a commitment from a Federal, state or local government licensee that it will request and obtain decommissioning funds from its funding body, when necessary for decommissioning an NRC licensed site. It is available for use only by governmental entities. Approximately 38 percent of the NRC materials licensees who are required to provide financial assurance use the statement of intent as a means to provide financial assurance.

The external sinking fund is an approved financial assurance method that allows an NRC licensee to gradually prepay the DCE, but no NRC materials licensees who have an obligation to provide decommissioning financial assurance use this option. Before this rulemaking, materials licensees choosing this option would have to cover amounts that are not prepaid by a surety mechanism or insurance. The same requirements apply to power reactor licensees, except that the amounts that are not prepaid can be covered by a guarantee method as well as by surety or insurance. This rulemaking provides materials licensees opting to use the external sinking fund with the same degree of flexibility that power reactor licensees have had since 1998 (in a final rulemaking for power reactor financial assurance, the NRC allowed use of a parent company guarantee or self-guarantee with an external sinking fund (63 FR 50465; September 22, 1998)). This final rule makes conforming changes in the financial assurance requirements for materials licensees (10 CFR 30.35, 40.36, 70.25, and 72.30) to provide greater consistency with the 10 CFR Part 50 regulations.

This discussion of financial assurance to decommission a site pertains only to unrestricted use under 10 CFR 20.1402. If a licensee can demonstrate its ability to meet the provisions of 10 CFR 20.1403 for restricted use, financial assurance for long-term surveillance and control may be provided by a trust fund or by a government entity assuming ownership and custody of the site.

*G. Why Might Some Materials Licensees Not Have Funds to Decommission Their Facility?*

In SECY-03-0069, NRC evaluated licensee decommissioning experience and identified the following five reasons why some licensees may not have enough funds to complete their decommissioning activities.

1. Licensees at complex sites may underestimate decommissioning costs, if the assumption that the site will qualify for a restricted release proves incorrect. The cost for a restricted release is usually significantly lower than unrestricted release given the high offsite disposal costs of licensed material when compared to the cost of onsite controls. If it turns out that the licensee cannot meet the 10 CFR 20.1403 criteria for restricted conditions, the licensee may then not be able to meet its decommissioning financial obligations. To address this problem, this final rule amends 10 CFR 30.35, 40.36, 70.25, and 72.30 to require licensees to obtain NRC approval of their DFP based on a DCE for unrestricted release, unless the ability to meet the restricted release criteria can be adequately shown.

2. Certain operational events, particularly those that cause soil or ground-water contamination, can increase decommissioning costs if not addressed during the life of the facility. If the licensee does not identify these events, assess the problem in a timely manner, and update its DCE based on new conditions, the licensee may find it difficult to later meet its decommissioning obligations. To address this problem, this final rule amends 10 CFR 20.1406 as discussed previously in Section II.A of this rule. Licensees also are required, in amendments

to 10 CFR 30.35, 40.36, 70.25, and 72.30, to factor in residual radioactivity information in arriving at DCEs.

3. Certain financial assurance methods may not be effective in bankruptcy situations, given that funds held in them may be accessible to creditors. For example, title to property held in escrow remains with the licensee, making the property potentially vulnerable to claims by creditors. Another example is the parent and self-guarantees. The guarantees promise performance rather than payment. In the past, two companies used corporate reorganization to isolate the decommissioning obligations with the subsidiary company, but with insufficient funds to perform the work. In one case, the parent company reorganized without NRC approval and transferred to the subsidiary few assets and low levels of operating profits, so that the subsidiary was able to fund only a small portion of its decommissioning costs. In the second case, the parent company purchased the licensee before the time the financial assurance regulations were in effect. The licensee was permanently shut down after the purchase and was unable to provide full financial assurance. To address this problem, this final rule amends 10 CFR 30.35, 40.36, 70.25, 72.30, and 10 CFR Part 30 appendices A, C, D, and E by eliminating the use of an escrow account as a financial assurance option, and requiring a guarantor, as a condition of using the parent company guarantee and self-guarantee financial assurance options, to establish a standby trust fund and to submit to a Commission order, if the guarantor is in financial distress, to immediately pay the guaranteed funds into the standby trust.

4. The funds set aside by licensees to carry out decommissioning may decline in value over time. To address this problem, this final rule amends 10 CFR 30.35(h), 40.36(f), 70.25(h), and 72.30(g) to require that a licensee monitor the status of its decommissioning funds and, if necessary, add funds if the balance falls below the estimated cost of decommissioning.

5. The initial funding of a trust fund to cover the recurring costs of long-term surveillance and control for license termination under restricted release criteria may be inadequate if it is

based on a high assumed rate of return for the trust fund. To address this problem, this final rule amends 10 CFR 20.1403 to require that licensees assume only a 1 percent real rate of return in establishing the initial funding amount.

*H. Why Is 10 CFR 50.82 Being Amended?*

Several power reactor licensees have successfully decommissioned their reactor sites consistent with 10 CFR Part 20 requirements. In some cases, reactor decommissioning costs have exceeded the initial DCE. For example, the Connecticut Yankee Nuclear Plant experienced higher decommissioning costs than planned, due in part to a larger volume of contaminated soil than was identified in the initial site characterization.

In the past, NRC has not required licensees to submit details of decommissioning costs on grounds that the typical reactor licensee was part of a public utility with access to substantial assets and revenues and that the minimum required amount for decommissioning financial assurance was adequate. A licensee's status as a regulated public utility provided access to cost of service rate recovery to help provide additional funds. A public utility had access to sales revenues to fund its obligations, even if rate recovery was limited.

Deregulation of the electric industry now permits a reactor licensee to operate as a merchant plant not subject to rate regulation or rate recovery of costs of service. When it ceases operation, it may have no sales revenues. The licensee may be organized as a separate company or a subsidiary of a holding company to isolate the risks and rewards of selling electricity on the open market. Without access to rate relief, no sales revenues, and with the licensee's owner protected by limited liability, shortfalls in decommissioning funding may jeopardize timely completion of decommissioning. This final rule provides NRC regulatory authority to perform oversight to assure that the licensee anticipates potential shortfalls and takes steps to control costs to stay within its budget or obtain additional funds.

*I. What Changes Are Being Made to 10 CFR 20.1406?*

New 10 CFR 20.1406(c) states as follows:

> (c) Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in Subpart B of this part and radiological criteria for license termination in Subpart E of this part.

The term "to the extent practical" is intended to limit the scope of this provision to actions that are already manifested in practice or action. The same phrase is used in existing 10 CFR 20.1101(b), which requires that licensees keep occupational and public radiological doses to ALARA levels. This final rule requires licensees to conduct their operations to minimize the introduction of residual radioactivity into the site, including the subsurface, to achieve effective decommissioning planning. For operating facilities, significant residual radioactivity is a quantity that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402.

The current 10 CFR 20.1101 requirements are related to those in new 10 CFR 20.1406(c). Section 20.1101(a) requires each licensee to implement a radiation protection program to ensure compliance with the regulations in 10 CFR Part 20. The current 10 CFR 20.1101(b) requires each licensee to use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are ALARA. To achieve doses that are ALARA during facility operations and decommissioning, the § 20.1101(b) operating procedures and controls must apply to potential radiological hazards and to methods used by the licensee to minimize and control waste generation.

In furtherance of these existing requirements, new 10 CFR 20.1406(c) includes the term "residual radioactivity," as discussed previously in Section II.A of this rule. This new section applies to current licensee operations, in contrast to the § 20.1406(a) and (b) requirements

which are imposed on license applicants. Residual radioactivity excludes background radiation. The licensees of large nuclear facilities will have performed an assessment of background radioactivity at their site as part of an Environmental Impact Statement required during the license application process. As a matter of standard operating practice, licensees will document the background level of radioactivity when a survey is performed at the site. Residual radioactivity, as defined in 10 CFR 20.1003, is not "residual radioactive material" as defined in 10 CFR 40.4 which is used only with respect to materials at sites subject to remediation under title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended.

The final rule's use of the term "subsurface" designates the area below the surface by at least 15 centimeters, as defined in NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual." Under this final rule, licensees must conduct their operations to minimize residual radioactivity that enters the subsurface at the site and if there are pathways that would allow the contamination to migrate, the licensee may need to monitor the ground water onsite for contamination based on site specific conditions. Based on past NRC experience, significant concentrations or quantities of undetected and unmonitored contamination, caused primarily by subsurface migration or ground water, has been a major contributor to a site becoming a legacy site and a potential radiological hazard.

Several hundred NRC materials licensees possess radioactive material and have liquid processes that could cause subsurface contamination. These licensees generally are compliant with regulations that limit effluent release to the environment over a specified time. Some of these licensees may not have documented onsite residual radioactivity, such as spills, leaks and onsite burials that may be costly to remediate during decommissioning and should be considered in arriving at an accurate DCE. There have been instances of previously unidentified soil and ground-water contamination at uranium recovery and rare earth sites undergoing decommissioning in several states, notably Colorado and Pennsylvania. Two

contributing factors to the accumulation of unidentified subsurface contamination is reluctance among some licensees to spend funds during operations to perform surveys and document spills and leaks that may affect site characterization, and to implement procedures for waste minimization.

The vast majority of NRC materials licensees do not have processes that would cause subsurface contamination. NRC's expectation is that these licensees, including those that release and monitor effluents of short-lived radionuclides to municipal sewer systems, will not be impacted by new 10 CFR 20.1406(c). The accumulation of radionuclides at municipal waste treatment facilities was the subject of an Interagency Steering Committee on Radiation Standards (ISCORS) study (NUREG-1775, November 2003, ADAMS accession number ML033140171), which concluded that these facilities do not have significant concentrations of long-lived radionuclides. Other classes of licensees that are, in general, not expected to introduce significant residual radioactivity into the subsurface include broad scope academic, broad scope medical, and small research and test reactors. Draft Regulatory Guide DG-4014, issued for public comment to support this final rule, describes an acceptable method for these licensees to evaluate the subsurface residual radioactivity.

Power reactor licensees have exhibited a high level of ALARA discipline with respect to effluent release and known spills and leaks. Current NRC regulations in § 20.1301, § 20.1302, and § 50.36a ensure that power reactor licensees maintain adequate monitoring and surveys of radioactive effluent discharges, with annual reporting requirements outlined in § 50.36a(2) that are made available to the public on the NRC web site. Several nuclear power plants have reported abnormal releases of liquid tritium, which resulted in ground-water contamination. To address this issue, the Nuclear Energy Institute (NEI) developed voluntary guidance for licensees in the Industry Ground Water Protection Initiative (GPI). The voluntary GPI, implemented by all licensed power reactors as of September 2008, is a site-specific ground

water protection program to manage situations involving inadvertent releases of licensed material to ground water and to provide informal communication to appropriate State/Local officials, with follow-up notification to the NRC as appropriate. On May 5, 2006, the NRC staff issued a revised baseline inspection module (Procedure 71122.01) used to inspect leaks and spills at power reactor sites.

*J. What Surveys are Required Under Amended 10 CFR 20.1501(a)?*

Before this final rule, § 20.1501(a) required licensees to perform surveys necessary to comply with Part 20 requirements, including surveys reasonable under the circumstances to evaluate potential radiological hazards. Slow and long-lasting leaks of radioactive material into the onsite subsurface may eventually produce radiological hazards and pose a risk for creation of a legacy site if contaminant characteristics are not identified when the facility is operating. The staff views radiological hazards as including those resulting from subsurface contaminating events, when these events produce subsurface residual radioactivity that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. An effective approach to understand the extent of subsurface residual radioactivity is through the use of radiological surveys.

Appropriate surveys are essential for determining the adequacy of financial assurance for materials licensees, and need to be done periodically on a limited basis during operations when the DFP and financial assurance can be adjusted while the licensee is still generating revenue. This is far superior to the current practice at some facilities to delay even limited survey work of the site until after the facility has been shut down.

Facilities that process large quantities of licensed material, especially in fluid form, have the potential for causing significant environmental contamination. Leaks from these facilities can lead to large amounts of radioactive contamination entering the subsurface environment

over an extended time. The estimated doses from this contamination are below the limits in 10 CFR Part 20 that would initiate immediate regulatory action. Another factor the staff considered in preparing this final rule is the high cost to dispose of radioactive materials offsite. These costs are a concern even when the material contains relatively low concentrations of radioactivity. A continued trend of high disposal costs could increase the number of environmental contamination incidents at operating facilities, resulting in higher decommissioning costs. A third factor that may contribute to future legacy sites is the delayed identification of contamination on the site. Over a long time, contamination that migrates in subsurface soil or ground water does not cause immediate exposure to either workers or the public that approach the limits specified in 10 CFR Part 20. It is only after operations have ceased when the possible results of unlimited access to the site, and associated exposure pathways (i.e., ingestion and inhalation) are being evaluated, that the volume of contamination has become apparent.

As discussed previously in Section II.A of this rule, amended 10 CFR 20.1501(a) requires licensees to perform contamination surveys to comply with current 10 CFR Part 20 requirements, and the new § 20.1406(c) if there is a history of leaks or spills to the subsurface at the site. The magnitude and extent of radiation levels are typically defined in units of radioactivity measurement, such as in micro-rem per hour (μrem/hr). The concentrations or quantities of residual radioactivity are typically defined in units of radioactivity associated with a specific radionuclide, for example picocurie per liter of tritium (pCi/L of H-3).

The amended § 20.1501(a) retains previous survey requirements and specifies that such requirements include consideration of subsurface residual radioactivity. Survey requirements may include ground-water monitoring if reasonable under the site specific conditions. Soil sampling also may be warranted based on site specific conditions, for example if there is no ground-water monitoring at the site or if known subsurface contamination has not migrated to

the ground water. Draft Regulatory Guide DG-4014, issued for public comment to support this final rule, describes a variety of acceptable methods to evaluate subsurface characteristics. The NRC recognizes that ground-water monitoring may be a surrogate for subsurface monitoring at some sites, that soil sampling may be appropriate at other sites, and that there are sites with no subsurface residual radioactivity where the existing monitoring method is appropriate. Also, the NRC recognizes that an area within the footprint of a building, during licensed operations, may not be a suitable area for subsurface residual radioactivity surveys if the process of sampling would have an adverse impact on facility operations. The decision to perform subsurface residual radioactivity sampling in a particular area should be balanced against the potential to jeopardize the safe operation of the facility. The purpose of amended 10 CFR 20.1501(a) and new 20.1406(c) is to specify that compliance with 10 CFR Part 20 survey and recordkeeping requirements is necessary to demonstrate compliance with existing regulations and to plan effectively for decommissioning, including effects from subsurface contamination.

Final rule amendments to 10 CFR 30.35(e)(2), 40.36(d)(2), 70.25(e)(2), and 72.30(c) require licensees who have a DFP or a License Termination Plan to factor in the results of surveys, performed under § 20.1501(a), in estimating decommissioning costs. This requirement applies only to materials licensees who are required to have a DFP, and assures that these licensees properly consider the extent of subsurface residual radioactivity in their DCE, thus improving decommissioning planning and helping to reduce the likelihood of future legacy sites.

For the materials licensees with a certified amount as decommissioning financial assurance, NRC assumes their current monitoring methods are adequate. If these licensees detect onsite contamination that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402, the licensees are required to submit for approval by the NRC a DFP with a DCE.

For the materials licensees who are not required to have financial assurance for decommissioning based on a license possession limit that is below the financial assurance threshold values in appendix B of 10 CFR Part 30, NRC's expectation is that the monitoring performed under amended § 20.1501(a) would be of a simple form, as discussed in draft Regulatory Guide DG-4014. Simple form monitoring is a method that confirms the absence of leaks or spills to the subsurface. The risk is low that any of these sites would cause contamination to create a potential radiological hazard or a future legacy site.

On the effective date of this final rule, NRC's expectation is that no additional surveys will be required of power reactor licensees and fuel cycle facilities. For power reactors, NRC staff concludes that the monitoring and survey processes and related reports prepared at power reactor sites will likely contain sufficient information to satisfy new § 20.1406(c) and amended § 20.1501 requirements. NRC is not requiring licensees to submit reports, but the information must be kept onsite in records that are available for review. It is not expected that power reactor licensees will need to immediately install additional monitoring equipment or modify existing operating procedures to satisfy the amended § 20.1501(a) requirements. But, it may be necessary for such licensees to take these actions if, for example, significant residual radioactivity is identified at a power reactor site at a level higher than had been previously identified. In any such situations, the need for additional monitoring will be determined on a case-by-case basis.

Fuel cycle facilities, such as uranium fuel fabrication plants, the gaseous diffusion enrichment plants, and the dry process natural uranium conversion/de-conversion facility, also perform surveys to detect radioactive release to the ground water. NRC staff concludes that the monitoring and survey processes and related reports prepared at these facilities likely would contain sufficient information to satisfy § 20.1406(c) and § 20.1501 requirements. A high level of ALARA discipline for onsite spills and leaks is expected of the centrifuge enrichment plants

and mixed oxide fabrication plant based on the information in their license applications (these facilities have not begun operations).

*K. What Information Must the Licensee Collect under Amended 10 CFR 20.1501?*

For facilities having significant subsurface contamination, NRC is requiring licensee documentation of contaminating events and survey results, including ground-water monitoring surveys, and the retention of survey records until license termination, to facilitate later decommissioning of the facility.

Licensees must be able to demonstrate compliance with the regulations in Part 20 through surveys that evaluate the magnitude and extent of site radiation levels, including significant concentrations or quantities of residual radioactivity in the subsurface. Such surveys would evaluate any potential radiation hazards of the radiation levels and residual radioactivity detected. The sampling results should include the date, time, location, contaminants of interest and contamination levels, and the concentrations at which action is required to comply with regulations. The contaminants of interest are those used within the facility with half-lives long enough that they would require remediation during decommissioning to meet the unrestricted use criteria under 10 CFR 20.1402. Contaminants may include both chemicals and radionuclides in the ground water from sources upstream of the NRC-licensed site because of the potential for interaction with releases from other sites. When ground water is being monitored, the surveys conducted by the licensee should include hydro-geologic evaluations that lead to a determination of effective sampling and analysis, including accurate placement and installation of the wells, and well locations to determine the nominal ground water flow direction and preferential flow paths for each "aquifer" underlying the site. Licensees may need to perform surveys to demonstrate compliance with the new 10 CFR 20.1406(c).

Under the requirements of § 30.35(g), § 40.36(f), § 50.75(g), § 70.25(g), and § 72.30(d), licensees must designate the records from 10 CFR 20.1501(b) surveys of subsurface residual radioactivity at the site as records important for decommissioning. Significant residual radioactivity that must be documented in these records would include onsite subsurface residual radioactivity that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402 [73 FR 3815 c. 1]. These records can be as simple as a description of the contaminating event, to include date, time, location, and the estimated quantities and activity levels of radioactive materials that were spilled or leaked. The documentation may describe the activation of a moisture alarm system used to indicate the presence of liquid in an area that is supposed to be dry. Contamination survey results must be included in these records if the surveys are considered important for decommissioning planning.

*L. How Will Licensees Report Required Information to the NRC?*

There are no reporting requirements for licensees under amendments to 10 CFR 20.1406(c) and 20.1501.

Instead, NRC requires licensees to collect information and to have that information available for review. The information must be retained by licensees in records important for decommissioning under § 30.35(g), § 40.36(f), § 50.75(g), § 70.25(g), and § 72.30(d).

Under amendments to financial assurance regulations, under § 30.35(e), § 40.36(d), Part 40 appendix A Criterion 9(b), § 70.25(e), and § 72.30, reporting requirements would increase for materials licensees who must prepare a detailed cost estimate for decommissioning. Reporting requirements also increase based on amended § 50.82(a) for power reactor licensees who prepare a post-shutdown decommissioning activities report (PSDAR) or an annual financial assurance status report.

Under amendments to 10 CFR Part 30, appendix A, licensees who use the parent company guarantee as financial assurance for decommissioning will have increased reporting requirements, including reporting of off-balance sheet transactions and verification of bond ratings, and in annual documentation of continuing eligibility to use the parent company guarantee. Licensees who use the self-guarantee as financial assurance for decommissioning under 10 CFR Part 30, appendices C, D, and E, have similarly increased reporting requirements.

Licensees will continue to submit information to the NRC by certified mail or through approved Electronic Information Exchange (EIE) methods.

*M. What Financial Assurance Information Must Licensees Report to the NRC?*

Materials licensees with a license possession limit that is below the financial assurance threshold in 10 CFR Part 30, appendix B, are not required to have financial assurance for decommissioning. For licensees under 10 CFR Parts 30, 40, and 70 with a license possession limit above the financial assurance threshold in 10 CFR Part 30, appendix B, but below the threshold requiring a DFP, these licensees have an option of providing financial assurance based on an amount specified by regulation or based on a DFP with a site-specific cost estimate. Materials licensees with a license possession limit above the financial assurance threshold, and all 10 CFR Part 72 licenses, must submit at intervals not exceeding 3 years, a DFP which includes a site-specific cost estimate, a description of the methods used to assure the funds, and a description of the means of adjusting the cost estimate. The required contents of the DFP are changing as a result of this final rule, as discussed in Section II.P of this rule.

Except for 10 CFR Part 72 licensees, materials licensees must also provide a signed original of the financial instrument obtained to satisfy the financial assurance requirement.

For materials licensees, Chapter 4 in NUREG-1757, Volume 3, revision 1, "Consolidated NMSS Decommissioning Guidance," provides details on information necessary to satisfy their financial assurance requirements. This document is available on the NRC website at: http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757/. This document has been updated to include new requirements resulting from this final rule.

Power reactor licensees are already required by existing 10 CFR 50.75(f)(1) to report on the status of their decommissioning funds at 2-year intervals. A power reactor licensee that is within 5 years of the end of its projected life, or will close within 5 years (before the end of its licensed life), or has already closed, must submit the report of funds status on an annual basis. These requirements are not being changed.

Applicants for power reactor and non-power reactor licenses, and reactor license holders, must submit a decommissioning report as required by existing 10 CFR 50.33(k), and this provision is not being changed. The 10 CFR 50.33(k) report is submitted once, and contains information indicating how reasonable assurance will be provided that funds will be available to decommission the facility, the method used to provide funds for decommissioning, and the means for adjusting periodically the amount to be provided. The reporting requirements for reactors being decommissioned are changing as a result of amendments to 10 CFR 50.82, as discussed in Section II.R below.

For nuclear power reactor licensees, Chapter 2 in Regulatory Guide 1.159, “Assuring the Availability of Funds for Decommissioning Nuclear Reactors,” provides details on the information necessary to satisfy their financial assurance requirements. This document is available on the NRC website at: http://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/active/.

*N. What Changes Are Being Made to Financial Assurance Regulations?*

Most of the final rule amendments are changes to financial assurance regulations for materials licensees. A few changes apply to decommissioning financial assurance for power reactor licensees. The changes to financial assurance regulations are discussed in this section, under the following headings:

N.1 Require a trust fund for decommissioning under restricted release.

N.2 Require a trust fund for the prepayment option.

N.3 Require an upfront standby trust fund for the parent guarantee and self-guarantee options.

N.4 Require parent company to inform NRC of financial distress and submit to an Order.

N.5 Require guarantor payment immediately due to standby trust.

N.6 Allow intangible assets, with an investment grade bond, to meet some financial tests.

N.7 Increase the minimum tangible net worth for the guarantees' financial tests.

N.8 Clarify guarantees' bond ratings and annual demonstration submittals.

N.9 Invalidate the use of certification for financial assurance if there is contamination.

N.10 Other changes to financial assurance regulations.

Many of the financial assurance amendments had been in NRC guidance and are being codified in this final rule. The amendments strengthen and clarify the financial assurance requirements. The NRC seeks to improve decommissioning planning and reduce the number of funding shortfalls caused in the past by (1) Overly optimistic decommissioning assumptions; (2) Lack of adequate updating of cost estimates during operation; and (3) Licensees falling into financial distress with financial assurance funds unavailable for decommissioning. The changes increase licensee reporting requirements. The added reporting burden is estimated as part of the Paperwork Reduction Act Statement, discussed in Section IX of this rule. The costs and benefits of this final rule are evaluated in the regulatory analysis, discussed in Section X of this rule.

**N.1 Require a trust fund for decommissioning under restricted release.**

NRC is amending the regulations related to decommissioning financial assurance applied to planned restricted release sites.

This final rule requires, under § 20.1403(c), that the funds for financial assurance of long-term care and maintenance of a restricted release site must be placed into a trust segregated from the licensee's assets and outside the licensee's administrative control.

This amendment eliminates, as prepayment options, the escrow account, sureties and insurance, and the parent company and self-guarantee methods at restricted release sites. To date, no licensee has chosen to use these financial assurance mechanisms at a restricted release site. These mechanisms were eliminated because they possess characteristics that make their use inadvisable in the types of long-term care and maintenance situations involved in restricted release sites. The final rule continues to permit government entities to use a statement of intent or to assume custody and ownership of a site.

Escrow accounts are not well suited to the protection of funds over a long term. The purpose normally served by an escrow is to collect or hold funds for an expense to be paid in the relatively near future (e.g., property tax escrows). The EPA concluded that a trust was more protective of funds because, under trust law, the title to property in a trust is transferred to the trustee (46 FR 2802, 2827; January 12, 1981). In an escrow account, title to the property remains with the grantor. Thus, escrow property is more likely to be subject to a creditor's claim than property held in trust. In addition, the law of trusts places obligations on the trustee to act in the interest of the beneficiary. In contrast, an escrow agent is responsible only for what is specified in the escrow agreement. The EPA concluded that it would be extremely difficult to draft an escrow agreement that adequately specifies all the actions that an escrow agent would need to take in all situations to assure the instrument served its intended purpose.

The surety methods and insurance also are not well suited to protect funds over the long term because these depend on contracts made by the former licensee. There are no actual

funds set aside for future costs; rather, the methods are promises made by the issuer to pay at a future time. These methods require renewal to remain effective. They depend on the former licensee continuing to exist to make renewal payments for the surety or insurance instruments. The instrument lapses if the payments are not made. Under the existing rule, NRC may require the issuer to pay the face amount before the lapse occurs. However, issuers may resist making the payment, which could delay obtaining (and possibly reduce) the amount of funds for long-term care and maintenance. Whether making the payment is resisted or not, when the funds are paid for the face amount, the funds will be placed in a trust account. That is, the response to the non-renewal of a surety is to create a trust to hold funds. The long-term nature of the obligation increases the possibility that circumstances may arise that would require a demand for payment. In view of the potential difficulties and delays, and recognizing that a trust fund is the preferred long-term instrument for holding funds, the surety and insurance methods of financial assurance for long-term maintenance and control have been eliminated.

Likewise, the parent company and self-guarantee mechanisms are not well suited for providing financial assurance at restricted release sites because these were designed to assure funding for the relatively limited time needed to complete most decommissioning projects under 10 CFR 20.1402. The former licensee, or its parent, must continue to exist to pay for long-term control and maintenance costs. If the former licensee, or its parent, ceases to exist, the self-guarantee or parent company guarantee have no source of funds to pay the costs. In addition, these guarantees presume the existence of a licensee subject to NRC authority. However, when the license is terminated, the NRC has no regulatory authority over the former licensee. Therefore, the self-guarantee and parent company guarantee have been eliminated as financial assurance options at restricted release sites.

In contrast, the trust fund is best suited as a financial mechanism to assure the necessary long-term care and maintenance at restricted release sites. The trust fund can exist

for long periods without need for renewal. It exists independently of the former licensee, and can continue to serve the purposes of control and maintenance even if the former licensee ceases to exist. The trustee has a fiduciary duty to serve the beneficiaries of the trust. The funds placed in the trust become property of the trust, and generally cannot be reached by creditors of the former licensee. Trust funds have traditionally been used to provide for the long-term care and maintenance of parks and other public facilities, to care for cemeteries, and for similar purposes. This final rule requires the use of trust funds for the financial assurance for long-term care and maintenance at restricted release sites, unless a government entity provides long-term funding or assumes custody and ownership of the site.

A further change to 10 CFR 20.1403(c)(1) requires that the initial amount of the trust fund established for long-term care and maintenance be based on a 1 percent annual real rate of return on investment. A similar provision is currently contained in 10 CFR Part 40, appendix A, Criterion 10, which provides that if a site-specific evaluation shows that a sum greater than the minimum amount specified in the rule is necessary for long-term surveillance following decontamination and decommissioning of a uranium mill site, the total amount to cover the cost of long-term surveillance must be that amount that would yield interest in an amount sufficient to cover the annual costs of site surveillance, assuming a 1 percent annual real rate of interest.

The NRC concluded that a conservative estimate of the annual real rate of return is justified in the case of financial assurance for long-term care and maintenance under § 20.1403(c)(1). Although the NRC in 10 CFR 50.75(e)(1)(ii) allows a licensee of a nuclear power reactor that is using an external sinking fund to take credit for projected earnings on the external sinking funds (using up to a 2 percent annual real rate of return from the time of the future fund's collection through the decommissioning period), the reactor situation is distinguished by the continuing presence of the reactor licensee, who is obligated to provide

additional funds if necessary. Long-term trust funds for surveillance and control are created when license termination relieves the licensee of any further obligation regarding the site. Therefore, no licensee is available to make up shortfalls in the fund, which reduces the likelihood that funds will be available when needed. A long period of low returns could deplete a trust fund so that later higher returns would be insufficient to return the fund to the value needed to permit earnings to cover the recurring long-term costs. Consequently, a conservative rate of return is necessary to assure that funds will be available when needed. Over 1975-2005, the annual real rate of return was 1.58 for U.S. Treasury Bills and 4.87 for government bonds. Thus, a 1 percent real rate of return is conservative and appropriate for assuring funds under the amended § 20.1403(c)(1). The actual rate of return may exceed the 1 percent real rate. The trust agreement may contain provisions to return excess funds to the trust grantor if the fund balance significantly exceeds the amount needed to cover the recurring costs at the 1 percent rate.

This final rule adds a new § 20.1404(a)(5) specifying that one of the factors that the Commission must consider in determining whether to terminate a license under alternate criteria is whether the licensee has provided sufficient financial assurance to enable an independent third party (including a government custodian of a site) to assume and carry out responsibilities for any necessary control and maintenance of the site. This new section also explicitly states that the financial assurance be in the form of a trust fund, as in §20.1403(c).

**N.2 Require a trust fund for the prepayment option.**

The final rule amends the list of prepayment financial methods that may be used to provide financial assurance for decommissioning to provide that prepayment shall only be in the form of a trust established for decommissioning costs (§ 30.35(f)(1), § 40.36(e)(1), § 70.25(f)(1), and § 72.30(c)(1)). The final rule eliminates the four other prepayment options that had been listed in those sections of the regulations (i.e., the escrow account, government fund, certificate

of deposit, and deposit of government securities). Three of these options (the government fund, certificate of deposit, and deposit of government securities) initially were authorized for use to provide alternatives to licensees that elected not to use a trust fund as their prepayment mechanism, even though the NRC recognized that in the event of the licensee's bankruptcy, they provided somewhat less assurance that the funds would remain available to pay for decommissioning. However, no NRC licensees have elected to use the government fund and deposit of government securities options, and only two have used a certificate of deposit. Because of their relative risk in bankruptcy and their non-use by licensees, the NRC has eliminated them as alternatives for providing financial assurance for decommissioning.

The NRC recognizes that elimination of the escrow account option will affect some materials licensees who currently use escrows. Approximately 25 escrows are in use as a prepayment option for decommissioning financial assurance. Because some materials licensees use more than one escrow, the number of materials licensees using escrows is slightly less than the number of escrows.

The staff reviewed several studies of the situation of escrows in bankruptcy, and concluded that the most accurate summary of the various assessments is as follows. The funds contained in escrows that are set up correctly before a licensee's entry into bankruptcy will likely be secure from transfer into the bankruptcy estate as assets of the debtor and they will not be reachable by the bankruptcy trustee using doctrines of fraudulent conveyance or voidable preference. However, correctly setting up an escrow is difficult, as noted in Section II.N.1 of this rule. The NRC also is concerned that a determination of the legal status of an escrow may be subject to considerable delay. In addition to the time necessary to carry out a legal standing analysis, a bankruptcy trustee could attempt to use the automatic stay provisions of the bankruptcy code to stop payment by an escrow agent under the escrow, if that payment is occurring following the commencement of the bankruptcy action. While this attempt may fail, it

could postpone the NRC's access to the funds held in the escrow and thereby preclude the prompt commencement of decommissioning. Finally, the administrative costs of a trust fund are comparable to an escrow, so there is little economic benefit to using the escrow.

Elimination of the use of escrow accounts by materials facilities was discussed at the public stakeholder meeting held January 10, 2007. No stakeholders objected to the elimination of the escrow as a financial assurance method. Two comments on this topic were received during the proposed rule public comment period. Both comments disagreed with NRC elimination of the escrow account used for financial assurance. For reasons discussed previously, NRC disagrees with these comments and has eliminated the escrow as an approved method for materials licensees to provide financial assurance. The escrow account may continue to be used by power reactor licensees, pursuant to 10 CFR 50.75. The technical basis for the Decommissioning Planning proposed rule did not include removal of the escrow account from 10 CFR 50.75 and so this change was not made during this rulemaking.

**N.3 Require an upfront standby trust fund for parent guarantee and self-guarantee options.**

The final rule amends appendices A, C, D, and E to 10 CFR Part 30 (amend Section III.D of appendix A; amend Section III.F and add a new Section III.G to appendix C; amend Section III.D and add a new Section III.E to appendix D; and add a new Section III.F to appendix E). The amendments require a parent company providing a parent company guarantee and a licensee providing a self-guarantee to set up a standby trust before they may rely on the guarantee for financial assurance, and specify criteria for selecting an acceptable trustee.

Before this final rule, the regulations did not require the guarantor to set up a standby trust before providing a parent company or self-guarantee. Instead, a standby trust would need to be set up and used to hold funds for decommissioning only in the event that the NRC

required the guarantor to provide such funding for decommissioning. Setting up a standby trust at the time the guarantee is drawn upon could lead to a significant delay, and therefore creation of a standby trust at the commencement of the guarantee was recommended in regulatory guidance. A standby trust is necessary because the NRC cannot accept decommissioning funds directly. Under the "miscellaneous receipts" statute, 31 U.S.C. 3302(b), the NRC must turn over all payments received to the U.S. Treasury. Therefore, a standby trust is necessary to receive funds in the event the NRC requires the guarantor to put the funds into a segregated account. Creating a standby trust before the guarantee is provided avoids potential delays in initiating decommissioning that may be caused by delays in setting up the trust at a later date. In addition, the use of a trust protects the funds from creditors' claims, which may be necessary in the event the guarantor faces financial distress. Therefore, the final rule requires that the guarantor set up a standby trust. In addition, the final rule provides that the Commission has the right to change the trustee. That power is necessary to assure that the trustee will faithfully execute its duties. Finally, to assure the trust agreement is adequate, the final rule specifies that an acceptable trust is one that meets the regulatory requirements of the Commission.

**N.4 Require parent company to inform NRC of financial distress and submit to an Order.**

Because a parent company is not usually an NRC licensee subject to the NRC's authority, 10 CFR Part 30, appendix A, Section III.E (published as 10 CFR Part 30, appendix A, Section III.F in the proposed rule) is added to specify that the parent company guarantee option must include a contractual agreement by the parent company to submit to NRC payment orders.

Before this final rule, the parent company had no requirement to inform the NRC of financial distress that may adversely affect its ability to meet its guarantee obligations. Because the NRC needs to know if the parent guarantor is in financial distress to take steps to protect the funds guaranteed for decommissioning, the final rule requires the parent guarantor to notify the NRC in case of its financial distress, and its plan to transfer the guaranteed amount to the

standby trust. In these situations, payments from the parent company are immediately due and payable to the standby trust pursuant to an acceleration clause, discussed in Section II.N.5 of this rule. A similar notification requirement is not necessary for a licensee guarantor because NRC regulations under 10 CFR 30.34(h), 40.41(f), 70.32(a)(9), and 72.44(a)(6) already require licensees to notify NRC of bankruptcy proceedings.

**N.5 Require guarantor payment immediately due to standby trust.**

Before this final rule, the regulations did not address the possibility that the guarantor of the parent guarantee or self-guarantee may be in financial distress when it is required to provide alternate financial assurance. In cases where decommissioning is not being conducted at the time of an insolvency proceeding, creditors could argue that the debtor owes performance of decommissioning in the future, not money at the present time. That argument could potentially support a finding that no payment is owed to the standby trust. In that event, a division of assets to satisfy creditors' claims may not adequately protect resources needed to fund decommissioning. To provide a money claim on the assets of the guarantor that would cover the cost of decommissioning at the time of a division of assets, the final rule authorizes the Commission to make the amount guaranteed immediately due and payable to the standby trust (i.e., an acceleration clause).

**N.6 Allow intangible assets, with an investment grade bond, to meet some financial tests.**

NRC regulations allow guarantees to be used as financial assurance for decommissioning by companies whose financial statements demonstrate a low risk of default for corporate obligations. A set of financial tests are prescribed in 10 CFR Part 30, appendices A, C, D, and E for companies who may qualify to use the guarantee methods. A requirement to use the parent company guarantee or self-guarantee as a financial assurance option is passing the tests on an annual basis. Some of the financial tests in 10 CFR Part 30, appendices A, C,

and E are done using bond valuations. In the past, only tangible assets were considered within the calculations performed under the financial tests. In response to an inquiry during the public stakeholder meeting on January 10, 2007, NRC staff considered whether allowing the use of intangible assets would materially increase the risk of a shortfall in decommissioning funds. Staff concluded the risk of a shortfall in funding would not materially increase by allowing the use of intangible assets in conjunction with certain bond valuations of the guarantor.

Financial accounting standards issued since the original decommissioning regulations were issued in 1988 now provide objective methods to value intangible assets. The change in accounting standards provides assurance that intangible asset valuation is reasonable. In addition, bond rating agencies include intangible assets in their evaluation of the financial stability of a company's bonds. This provides an independent check of the reasonableness of the company's valuation of its assets. The default rate remains low for bonds rated investment grade. To further assure a current bond rating adequately reflects the company's financial stability, amendments in the final rule specify that the bond must be uninsured, uncollateralized, and unencumbered to be used in the financial test. Finally, the value of the nuclear facilities, both as tangible and intangible assets, are excluded from the calculation of net worth on grounds that those assets would not be available to produce funds for decommissioning after the facility is shut down. The staff concluded that permitting the use of intangible assets in conjunction with an investment grade bond rating would not materially increase the risk of a shortfall in decommissioning funding.

In addition, the guarantee methods require annual repassage of the test. Historical trends in bond ratings show that the time between receiving a rating that is below investment grade to the time of default is 5 years, on the average. The annual repassage requirement will normally provide adequate time for the guarantor to obtain alternative financial assurance. For the few cases where a default may occur in a short time, the acceleration clause discussed in

paragraphs N.4 and N.5 of this section, will provide a method to obtain funds in situations of financial distress.

Therefore, this final rule will allow the use of intangible assets, used in conjunction with an investment grade bond rating, to meet specified criteria in the financial tests for parent company and self-guarantees.

**N.7 Increase the minimum tangible net worth for the guarantees' financial tests.**

Before this final rule, the financial tests in appendices A and D to 10 CFR Part 30 each required the entity seeking to pass the relevant financial test to have tangible net worth of at least $10 million, and the financial test in appendix C to 10 CFR Part 30 required the applicant or licensee to have tangible net worth at least 10 times the current DCE or certification amount for decommissioning. The final rule amendments require tangible net worth of at least $21 million in each of the financial tests in appendices A, C, and D to 10 CFR Part 30.

The $10 million in tangible net worth requirement was first adopted by the EPA in 1981, and the financial test adopted by the NRC in 1988 used the same criterion. The NRC believes that the criterion should be adjusted to represent the value in current dollars of $10 million in 1981. For the proposed rule, the NRC calculated a new tangible net worth amount using the 2005 Implicit Price Deflator for Gross Domestic Product published by the U.S. Department of Commerce in its Survey of Current business, and the equivalent Implicit Price Deflator for 1981, to arrive at a value of $19 million to represent the $10 million value (1981 dollars) in 2005 dollars. NRC agrees with a comment submitted on the proposed rule to escalate the 1981 dollars to 2007 dollars. This calculation, rounded up in units of one million dollars, equals $21 million.

The final rule adds a requirement in Section II.A.(1) of appendix C to 10 CFR Part 30 for tangible net worth of at least $21 million. Before this final rule, that component of the financial test for self-guarantee specifies only that the applicant or licensee must have tangible net worth

at least 10 times the current DCE or certification amount. The amendment specifies tangible net worth of $21 million and 10 times the amount required. This amendment makes the self-guarantee financial test in appendix C to 10 CFR Part 30 consistent with the tests in appendices A and D to 10 CFR Part 30.

**N.8 Clarify guarantees' bond ratings and annual demonstration submittals.**

The final rule amendments specify that the current rating of the most recent bond issuance of AAA, AA, or A by Standard and Poor's could include adjustments of + or - (i.e., AAA+, AA+, or A+ and AAA-, AA-, and A- would meet the criterion) and the current rating of Aaa, Aa, or A by Moody's could include adjustments of 1, 2, or 3.

Standard and Poor's and Moody's have introduced the plus or minus and numerical adjustments to refine the precision of their ratings. As a result, licensees have been uncertain whether a rating that includes these adjustments, and in particular ratings that might be considered below the unadjusted ratings specified in the appendices (e.g., A-) could be used. Based on the minimal difference in default rate associated with the qualifiers, the final rule states that all the bonds within a specified rating level meet the regulatory standard.

In addition, the final rule amends Section II.A.2.(i) of appendix A to 10 CFR Part 30 and Section II.A.(3) of appendix C to 10 CFR Part 30 to require the bond to be the most recent "uninsured, uncollateralized, and unencumbered" bond issuance. This amendment makes the bond criterion in appendix A to 10 CFR Part 30 and appendix C to 10 CFR Part 30 consistent with the bond criterion in appendix E to 10 CFR Part 30. As explained in NUREG/CR-6514, where a rated bond has insurance or pledged assets to provide additional security, the bond rating may not directly reflect the creditworthiness of the bond issuer. Therefore, the final rule adds the requirement that the bond rating used to pass the financial test must be uninsured, uncollateralized, and unencumbered.

The final rule makes a conforming change in Section III.E. of appendix E to 10 CFR Part 30 to provide that if, at any time, the licensee's most recent bond issuance ceases to be rated in any category of "A-" and above by Standard and Poor's or in any category of "A3" and above by Moody's, the licensee no longer meets the requirements of the financial test.

The final rule amendments to the bond rating criterion in appendices A and C to 10 CFR Part 30 are intended to clarify the intent of the rule, eliminate an unintended apparent inconsistency among the different financial tests that may be used, and to make administration of the financial assurance requirements more efficient by eliminating recurring questions.

The final rule requires a certified public accountant to verify that a bond rating, if used to demonstrate passage of the financial test, meets the requirements. Some financial tests received by the NRC did not apply the requirement correctly. Requiring an audit of the bond rating will minimize the potential that an error is made in verification of the bond rating.

Before this final rule, the regulations required the licensee to repeat passage of the financial test each year, but the regulations did not explicitly state that the licensee must annually submit documentation to the NRC to verify its passage of the test. However, the parent company and self-guarantee agreements illustrated in regulatory guidance include a provision that the licensee will annually submit to NRC revised financial statements, financial test data, and an auditor's special report. Submittal of the documents permits NRC to verify the licensee's continuing eligibility to use the parent company guarantee without incurring the expense of an onsite inspection. Therefore, the final rule codifies the regulatory guidance to require annual submittal of documentation that the guarantor passed the financial test.

Before this final rule, the regulations were unclear in stating that the parent company guarantee and financial test remain in effect until the license is terminated. The final rule clarifies that the NRC's written acceptance of an alternate financial assurance by the parent company or licensee allows the guarantee and financial test to lapse.

**N.9 Invalidate the use of certification for financial assurance if there is contamination.**

This final rule amends regulations to add new requirements related to decommissioning financial assurance as applied to certifications. The changes affect § 30.35(c)(6), § 40.36(c)(5), and § 70.25(c)(5).

Before this final rule, the regulations prescribed specific amounts of financial assurance for licensees that are authorized to possess relatively small amounts of radioactive material. Licensees authorized to possess radioactive materials in higher amounts must submit a DFP, which includes a site-specific cost estimate for decommissioning. The site-specific cost estimate is almost always higher than the prescribed certification amounts.

This final rule requires licensees who qualify to use the certification amounts to submit a DFP in the event that survey results detect significant residual radioactivity within the site boundary, including the subsurface. A significant amount would be residual radioactivity that would, if left uncorrected, prevent the site from meeting the criteria for unrestricted use. Remediating subsurface contamination can be very expensive. However, licensees that qualify to use the certification amounts have no regulatory requirement to increase the amount of financial assurance to cover subsurface remediation costs. In the event subsurface contamination occurs at such a site, this final rule provides the regulatory basis to require these licensees to cover the full cost, not just the certification amount.

**N.10 Other changes to financial assurance regulations.**

This final rule eliminates the line of credit option from 10 CFR 30.35(f), 40.36(e), 50.75(e)(1)(iii)(A), 70.25(f), and 72.30(e) from the list of surety, insurance, or other guarantee methods that may be used to provide financial assurance for decommissioning. Although the line of credit was initially authorized for use to provide an alternative to licensees that elected not to use a surety or letter of credit, the NRC recognized that it posed a greater risk than the other two surety methods, because it might be subject to underlying loan covenants that could

make it more vulnerable to cancellation if the licensee experienced financial difficulties. However, since 1988, no NRC licensees have elected to use a line of credit to provide financial assurance for decommissioning. Because of its greater risk of cancellation and its non-use by licensees, the NRC has decided to eliminate the line of credit as an alternative for providing financial assurance for decommissioning.

The final rule excludes, in the financial tests for the parent guarantee and self-guarantee, the net book value of the nuclear facility and site from the calculation of tangible net worth. Before this final rule, the regulations required that the calculation of tangible net worth must exclude the book value of the "nuclear units." That requirement lead to confusion because some interpreted it to apply to nuclear reactor units, and not other kinds of nuclear facilities. However, other kinds of nuclear facilities should be excluded from the tangible net worth calculation because they are unlikely to provide funds for decommissioning. The existing rule does not specify whether the nuclear site, as distinguished from the facility, may be included in the calculation of tangible net worth. The value of the site is likely to depend on the probability that the decommissioning will be completed, and is subject to some degree of uncertainty. Therefore, the calculation of tangible net worth has been changed to exclude the net book value of the nuclear facility and site.

The final rule requires a certified public accountant to include an evaluation of off-balance sheet transactions, for the parent guarantee and self-guarantee. Generally accepted accounting principles (GAAP) permit certain kinds of transactions to be accounted for off the company's balance sheet. Many companies, as a means of managing risk and/or taking advantage of legitimate tax minimization opportunities, create off-balance-sheet transactions. It is important to understand the nature and the reason for each off-balance-sheet item, and ensure that any such relationships are adequately disclosed. (*Management's Summary of Off-Balance Sheet Transactions*, American Institute of Certified Public Accountants,

http://www.aicpa.org, last visited February 8, 2007). The volume and risk of the off-balance-sheet activities need to be considered (*Risk Management Manual of Examination Policies*, Federal Deposit Insurance Corporation, http://www.fdic.gov, last visited February 8, 2007). Before this final rule, the regulations did not require the independent certified public accountant's special report to examine off-balance sheet transactions. However, these transactions have the potential to materially affect the guarantor's ability to fund decommissioning obligations. Therefore, the final rule requires the auditor to include an evaluation of off-balance sheet transactions.

*O. Will Some Licensees Who Currently Do Not Have Financial Assurance Need To Get Financial Assurance?*

No. Licensees who are not required to provide financial assurance for decommissioning will not have to obtain financial assurance as a result of amendments in this final rule.

The decommissioning planning and financial assurance amendments in this final rule only apply to licensees who are or will be subject to the decommissioning financial assurance requirements under 10 CFR 30.35, 40.36, 50.75, 70.25, and 72.30.

All operating power reactor licensees are required to have financial assurance, consistent with 10 CFR 50.75(c), and all licensees with an independent spent fuel storage installation regulated under 10 CFR Part 72 must have financial assurance for decommissioning in accordance with 10 CFR 72.30(c).

*P. What Changes Are Being Made with Respect to Materials Facilities' Decommissioning Funding Plan (DFP) and Decommissioning Cost Estimate (DCE)?*

This final rule requires certain licensees under 10 CFR Part 72 to adjust their DCE within 3 years of the previous DCE. This was done by final rule on October 3, 2003 (68 FR 57327) for licensees under 10 CFR Parts 30, 40, and 70. This provision in the final rule makes the timing basis for DCE adjustments consistent among all materials facilities.

Regarding DFPs, § 30.35(e), § 40.36(d), § 70.25(e), and § 72.30(b) are amended to require additional information from licensees. NRC's experience indicates that underestimation of decommissioning costs can occur when the licensee assumes it will qualify for a restricted site release by meeting all of the 10 CFR 20.1403 requirements. If it turns out that these requirements cannot be met, and that an unrestricted site release under 10 CFR 20.1402 will be required, the licensee may not have the ability to fund a potentially more expensive cleanup. For example, if instead of leaving large volumes of slightly contaminated soil onsite in a restricted release decommissioning, the licensee must ship this material offsite for disposal to support an unrestricted site release, the decommissioning will typically be much more expensive due to high offsite disposal costs. Therefore, the final rule requires the licensee to estimate and cover the costs to decommission the facility to meet unrestricted use criteria. The option of meeting the 10 CFR 20.1403 restricted release requirements will be available, but the licensee would have to demonstrate that it can meet those criteria before a cost estimate based on that assumption would be acceptable.

In addition, certain operational events can increase decommissioning costs above the original estimate. These events include spills, increases in onsite waste inventory, increases in waste disposal costs, facility modifications, changes in authorized possession limits, actual remediation costs that exceed the initial cost estimate, onsite disposal, and use of settling ponds. The final rule amends 10 CFR 30.35(e)(2), 40.36(d)(2), 70.25(e)(2), and 72.30(b) to require the 3 year update of the DFP to consider these events for the effect, if any, they may have on the estimated cost of decommissioning. Subsurface contamination can be very

expensive to remediate. The new regulations require the licensee to estimate the volume of contaminated subsurface material that would require remediation, and provide financial assurance for the estimated cost of remediation. Early consideration and funding arrangements to cover increased costs will improve decommissioning planning and increase the likelihood that funds will be available when needed for site decommissioning.

Existing regulatory guidance identifies recommended methods for arriving at DCEs. The NRC is codifying some of these recommended methods in this final rule. To assure that funds will be adequate to complete decommissioning in the event the licensee is unable to do so, cost estimates are required to include contractor overhead and profit. An adequate contingency factor is necessary to cover unanticipated costs that can arise after the decommissioning project begins. The key assumptions underlying the cost estimate would have to be identified to aid the staff in evaluating the adequacy of the estimate. Codification of these recommendations will improve the quality of DFP submittals, facilitate the staff's review of these submittals, and result in regulatory efficiencies.

NRC is aware of the records important for decommissioning reporting requirements licensees have under § 30.36(g)(1), § 40.36(f)(1), § 50.75(g)(1), § 70.25(g)(1), and § 72.30(d)(1). The additional reporting requirements in this final rule are designed to foster a better understanding of the impact the spill or contaminating event has on the DCE.

*Q. What Changes Are Being Made with Respect to License Transfer Regulations for Materials Licensees?*

This final rule makes a set of parallel changes to § 30.34(b)(2), § 40.46(a)(2), and § 70.36(a)(2). These changes codify NRC regulatory guidance to require the licensee to provide information on the proposed transferee's technical and financial qualifications, and to provide decommissioning financial assurance as a condition for approval of the transfer if the

licensee is required to have financial assurance. The information and financial assurance are necessary to evaluate the adequacy of the proposed transferee. Placing these provisions in the regulation, rather than keeping them in regulatory guidance, will improve regulatory efficiency by improving the quality of license transfer requests. It also will ensure that a prospective license transferee provides to the NRC the information necessary to determine that public health and safety are not compromised by the transfer and that the radiation safety aspects of the program are not degraded.

*R. What Changes Are Being Made with Respect to Permanently Shutdown Reactor Decommissioning Fund Status and Spent Fuel Management Plan Reporting?*

The final rule amends § 50.82(a)(4)(i), and adds three new provisions to § 50.82(a)(8) in paragraphs (a)(8)(v) through (a)(8)(vii). The revised § 50.82(a)(4)(i) requires that the PSDAR include, if applicable, a cost estimate for managing irradiated fuel, pursuant to § 50.54(bb). Before this final rule, the PSDAR was required to include a description of the planned decommissioning activities, a schedule for their accomplishment, and an estimate of expected costs.

The amendments to § 50.82(a)(8) require each power reactor licensee undergoing decommissioning to submit, in the form of an annual financial assurance status report, information (specified further in this section) regarding its decommissioning funds. Currently, under § 50.75(f)(1), the information reported to NRC by power reactor licensees is focused on collection of funds before permanent shutdown, and does not require information on the actual funds spent. To assess the adequacy of power reactor decommissioning funding after permanent shutdown, NRC needs to know the actual costs being incurred at decommissioned facilities. To obtain this information, the annual report is now required to include, among other things, the amount spent on decommissioning over the previous calendar year; the remaining

balance of any decommissioning funds; and an estimate of the costs to complete decommissioning. If the annual report reveals a projected funding shortfall, additional financial assurance to cover the cost to complete decommissioning must be provided. These changes will improve NRC oversight of decommissioning planning and increase the likelihood that funds for decommissioning will be available when needed.

Under new § 50.82(a)(8)(vii), the annual financial assurance status report must also include the status of funds to manage irradiated fuel. Due to the cessation of operating revenues, spent fuel management and related funding are a concern after the reactor is permanently shut down. Therefore, the final rule requires that the amount of funds accumulated to cover the cost of managing the spent fuel be specified; that an estimate of the projected costs of spent fuel management, until the Department of Energy takes title to the spent fuel, be provided; and that a plan to obtain additional funds if the accumulated funds do not cover the projected cost be identified. These changes will increase the likelihood that funds for spent fuel management will be available when needed.

*S. When Do These Actions Become Effective?*

The effective date of the Decommissioning Planning final rule is one-year after publication of the final rule in the *Federal Register*. The NRC considers this an adequate amount of time for licensees to implement the requirements in the final rule. The 1 year period will provide licensees sufficient time if there is a need on their part to review their current methods for radiological surveys and monitoring in relation to new 10 CFR 20.1406(c) and modified 10 CFR 20.1501(a) and (b). Also, the 1-year implementation period will accommodate the time needed to prepare and publish a final version of draft Regulatory Guide DG-4014, "Radiological Surveys and Monitoring During Operations," which is planned for release for public comment around the date when the Decommissioning Planning final rule is published. DG-4014 contains changes

made as a result of public comments received on the draft guidance released with the Decommissioning Planning proposed rule. The NRC considered revising Regulatory Guide 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning," dated June 2008, but considered this inappropriate because Regulatory Guide 4.21 applies only to certain licensees who submitted their initial license application after August 20, 1997. DG-4014 applies to licensees who submitted their initial license application on or before August 20, 1997, and who were not required to consider in the early planning stages of the facility specific design features for contaminant management. Additionally, the 1-year implementation period will provide sufficient time to licensees who need to (a) switch out of their escrow account into a different financial assurance mechanism; (b) examine their continued use of a parent guarantee or self-guarantee as decommissioning financial assurance; or (c) prepare more detailed information in their DCE or surety supporting their DFP. Power reactor licensees who are in a shutdown status will need to submit a report on the status of funding for managing irradiated fuel by March 31, 2010.

*T. Has NRC Prepared a Cost-Benefit Analysis of the Final Rule?*

Yes, the NRC staff prepared a draft regulatory analysis for the proposed rule. Public comments were received on the draft regulatory analysis and are discussed in Section III.D below. The regulatory analysis was revised for this final rule. Single copies of the regulatory analysis are available as discussed in Section X below.

The implementation of the final rule by industry, NRC and Agreement States was analyzed to cost about $43 million (2007$) over a 15 year analysis period at 3 percent discount rate. NRC licensee costs are about $6 million, and NRC costs are about $3 million. Agreement State licensee costs are about $22 million, and Agreement State costs are about $12 million. Two alternatives were considered, each with estimated total costs that were higher than

implementation of this final rule. The primary benefits of the final rule are due to reduction in the number of legacy sites and higher reliability of obtaining sufficient funds pledged for decommissioning financial assurance to complete the decommissioning work through license termination.

*U. Has NRC Evaluated the Additional Paperwork Burden to Licensees?*

This final rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq). NRC staff has estimated the impact this final rule will have on reporting and recordkeeping requirements of NRC and Agreement State licensees. More information on this subject is in sections III.J and IX below.

## III. Summary and Analysis of Public Comments on the Proposed Rule

The proposed rule on Decommissioning Planning was published on January 22, 2008 [73 FR 3812], for a 75-day public comment period. The NEI and several other stakeholders requested an extension of 90 days to provide review of issues raised in the proposed rule. The NRC extended the comment period by 30 days, until May 8, 2008 [73 FR 14946]. The NRC received 35 comment letters on the proposed rule. The overall commenter mix on the proposed rule included states, licensees, industry organizations, environmental advocacy organizations, and one individual.

The comments and responses have been grouped into 11 areas. NRC specifically sought comments on the first five areas: (1) the use of fee incentives to induce licensees to characterize subsurface residual radioactivity while their facility is operating; (2) licensees' use of a secure website to submit and update decommissioning reporting and financial assurance

requirements; (3) the extent of proprietary data in the details submitted under new requirements in 10 CFR 50.82(a)(4)(i) and 50.82(a)(8)(v); (4) the accuracy of input assumptions and methodology in the regulatory analysis and environmental assessment; and (5) information regarding significant amounts of radium-226 at sites that could be considered legacy sites in the regulatory analysis. The other comment areas are (6) backfit considerations; (7) need for 10 CFR 20.1403, 20.1406 and 20.1501 amendments; (8) financial assurance mechanisms and reporting; (9) draft regulatory guidance, (10) OMB Supporting Statement; and (11) Agreement State compatibility table. To the extent possible, all of the comments on a particular subject are grouped together. A discussion of the comments and the NRC staff's responses follow.

A. Fee incentives

In the proposed rule, NRC specifically invited comment on whether fee incentives, as permitted in 10 CFR 171.11(b), would be effective as a means to induce licensees to perform site characterization work during operations instead of waiting until the facility is shut down.

Six commenters responded to this topic and all argued against the adoption of fee incentives. Some said the concept had not been clearly explained. Several commenters argued that any incentive should not reduce financial assurance amounts. Some thought that incentives would have the effect of transferring the financial burden of meeting the proposed requirements from licensees who have subsurface residual radioactivity to those who do not. Monitoring of environmental impacts during operations, one said, is an essential part of doing business that should not require incentives. Three commenters thought the exemption of annual fees as a "fee incentive" to conduct monitoring during facility operations would be contrary to Congress' requirement that NRC collect user fees and would not fit into the narrow range of exemptions contemplated in 10 CFR §171.11. One commenter said that the NRC should not give a blanket exemption to all power reactor licensees under Part 171 by

characterizing it as a "fee incentive" for complying with a proposed regulation or a volunteer monitoring program.

*Response:* The Commission agrees with the commenters that no fee incentives should be provided as part of this final rule. For any subsurface monitoring and modeling activities that may be required as a result of this final rule, licensees should fund such activities as an operating and maintenance expense to help achieve occupational and public doses that are ALARA.

B. Secure website

The NRC specifically invited comment on the use of a secure website for use by licensees to submit and update decommissioning reporting requirements, and information submitted to support passing the financial tests in the parent guarantee and self-guarantee. NRC received input on this issue from two states and the Conference of Radiation Control Program Directors, Inc. (CRCPD). The commenters were not clear on the implementation of the website because this topic was not discussed in the proposed rule. One commenter supported the concept of using a website, but questioned whether states would have access to the information, whether notifications would be sent electronically when information was updated, and whether the website would be a data transfer tool or would also contain algorithms for decision logic. One of the state commenters supported the concept only if the information would be publicly available.

*Response:* Public comments were solicited on this topic to provide initial information regarding the scope of functions for a website to allow materials licensees to submit, revise and update information in their DFP, DCEs, information in the financial tests for the parent company guarantee and self-guarantees, and decommissioning power reactor annual financial assurance status reports. For the licensees whose companies are publicly traded, there appears to be no

sensitive or proprietary data in the financial information reported to support use of the parent guarantee and the self-guarantee, as much of this information can be obtained in the public domain. Licensees may request that information submitted to the NRC be withheld from public disclosure in accordance with 10 CFR 2.390(b). The NRC thanks commenters for responding to this question and will factor their comments into any plans to modernize the processing of this information. Currently, there are no plans to develop such a website.

C. Proprietary data

NRC specifically invited comment on whether additional details in new reporting requirements of licensees with a power reactor in a shut down status would be considered proprietary to the licensees reporting the information. These new reporting requirements are in 10 CFR 50.82(a)(4)(i) and 50.82(a)(8)(v). One commenter responded to this question, stating that the more information available for public review the better will be the analysis for decommissioning planning with respect to work scope and cost.

*Response:* The NRC staff agrees with this comment. The information required by the new reporting requirements can be conveyed by licensees in their PSDAR and in their annual financial assurance status report, at little additional burden. The PSDAR information is publicly available. The annual financial assurance status report information submitted to the NRC under revised 10 CFR 50.82(a)(8)(v) and (8)(vii) will be publicly available unless the licensee submitting the information shows that the information should be withheld from public disclosure in accordance with the regulations in 10 CFR 2.390(b).

D. Regulatory analysis and the environmental assessment

The NRC specifically invited comment on the input assumptions, methodology and results in the draft regulatory analysis, including the Backfit Analysis, and the environmental

assessment. Comments were received and are discussed below. Comments on the Backfit Analysis are discussed in Section III.F below.

*Comment D.1: The need to install new capital or modify procedures is not expected.*

Several commenters objected to the statement made by NRC, in the Executive Summary and again in Section 2 of the regulatory analysis, that "It is not expected that (power reactor and uranium fuel fabrication) licensees will need to install new capital or modify existing operating procedures to satisfy the proposed amendments to 10 CFR 20.1406(c) and 20.1501." The commenters interpreted the statement to mean those licensees would never need to install new equipment or modify procedures to comply with the new requirements.

*Response:* The previous statement was made in the context of anticipated changes that licensees would need to make by the effective date of the final rule, given information about onsite leaks and spills known to the NRC at the time the proposed rule was published. Licensees must be allowed time to perform scoping surveys and preliminary characterization of site contamination to determine if their site contains significant residual radioactivity. Based on the evaluation of these surveys, additional monitoring and modeling may be required based on site specific conditions. Page 41 of the draft regulatory analysis released with the proposed rule states this position by NRC, where it says that "It may be necessary for licensees at a time after the effective date of the final rule to install additional monitoring equipment under some circumstances…The need for additional monitoring equipment would be determined on a case-by-case basis by either licensee activities or after NRC inspection activities."

*Comment D.2: Costs to uranium recovery licensees.*

Several commenters stated that the regulatory analysis did not properly analyze the costs to retrofit and upgrade uranium recovery facilities.

*Response:* As discussed in the response to Comment G.14 below, the NRC has concluded that a uranium recovery licensee's program that complies with the 10 CFR Part 40,

Appendix A site remediation criteria would not be impacted by § 20.1501(a)'s revised survey requirements, and such programs would not become more complex or expensive as a result of this rulemaking. Thus, survey and monitoring costs at uranium recovery facilities are not expected to change, and there is no need to revise the regulatory analysis in this regard.

*Comment D.3: Part 20 changes could affect hundreds and costs are underestimated.*

Several commenters argued that the proposed changes to 10 CFR Part 20 and draft guidance for survey and monitoring could affect hundreds of licensees, and that the costs of the regulation were underestimated both for materials licensees and for power reactor licensees. One commenter stated that the NRC has grossly underestimated the cost to licensees of achieving compliance. One commenter believes the proposed regulations and draft guidance documents appear to leave no options other than installation of a complicated subsurface monitoring system to prove that a subsurface monitoring system is not needed. The commenter stated that industry experience shows that these monitoring systems can cost from $500,000 to well over $1,000,000. Another commenter argued that the scope of the proposed rule and guidance is far more extensive than warranted by the circumstances and is inconsistent with the NRC's own finding that none of the instances of inadvertent releases to the environment presented a threat to public health and safety.

*Response:* Section II.B of this preamble discusses why very few licensees will be affected by the changes being made to new 10 CFR 20.1406(c) and amended 20.1501. For those licensees who are affected by the change in Part 20 regulations, the revisions made to their existing monitoring methods will be site-specific and may not require the installation of a subsurface monitoring system. For example, if a site contains significant residual radioactivity in the soil, the monitoring plan likely will require only the specification of sampling locations and sampling methodology. If the significant residual radioactivity in the soil has migrated to a ground water pathway, then a ground water monitoring plan will be required that is appropriate

for the affected site. As stated in the preamble to the proposed rule [73 FR 3821 c. 2], the licensees of power reactors and fuel cycle facilities already perform surveys to detect radioactive release to the ground water, or will be performing ground water surveys by the effective date of this final rule. It is likely that these surveys will contain sufficient information to satisfy the final rule requirements in new 10 CFR 20.1406(c) and amended 20.1501.

The NRC revised the regulatory analysis for this final rule to include a one-time cost for 500 NRC licensees and 1000 Agreement State licensees to read the final rule changes in new 10 CFR 20.1406(c) and amended 20.1501 and draft Regulatory Guide DG-4014, and to determine if the licensees are affected by the final rule. NRC assumed these licensees would need 90 minutes each to read the changes to 10 CFR Part 20 and DG-4014. This increased the cost estimate in the regulatory analysis by $270,000 for the preferred alternative but did not affect the decision rationale that implementation of the final rule is preferred compared to the other two alternatives.

*Comment D.4: Impact of requirements on existing facilities.*

One commenter stated that the proposed rule could significantly affect the existing design of systems, monitoring, surveys, site characterization, and recordkeeping that are performed to meet existing regulations. The proposed rules also could ultimately affect the site release alternatives available at decommissioning. A commenter argued that for some licensees, such as research and test reactors, the consequence would be to severely limit or entirely eliminate the ability of these facilities to perform their mission of research and education. Another commenter disagreed with the NRC staff's conclusion that currently operating power reactor licensees' voluntary adherence to the NEI GPI is sufficient to comply with the proposed amendments to 10 CFR 20.1406 and 20.1501. One commenter representing several States disagreed with the NRC's statement that survey and monitoring activities are already taking place, finding it unlikely that ground water or subsurface surveys have been an integral part of

the past radiation monitoring programs at facilities. The commenter also disagreed that adequate current information exists on the spatial bounds and concentrations of residual radioactivity at sites to enable decisions to be made about which sites will require remediation.

*Response:* For the reasons discussed in the response to comment D.3, and in this preamble's Section II.B, the NRC believes that very few licensees will be affected by changes to new 10 CFR 20.1406(c) and amended 20.1501 by the effective date of the final rule. After the effective date, as modeled in the regulatory analysis, the NRC believes licensees of a small number of materials facilities will need to perform additional monitoring compared to their current practices because of significant residual radioactivity at the site. With respect to information collected by power reactor licensees as part of the NEI GPI, the NRC will begin to inspect the activities performed by power reactor licensees compared to their public commitments in the GPI. NRC Temporary Instruction 2515/173 (ADAMS ML072950622) will be used by inspectors to assess if licensees have completed the voluntary industry GPI. The Temporary Instruction includes inspection of licensees' Annual Reporting whereby the power reactor licensees will have documented onsite ground water sample results for each calendar year in the Annual Radiological Environmental Operating Report (AREOR) or the Annual Radiological Effluent Release Report (ARERR), as part of their annual environmental and effluent reports. This information is publicly available in ADAMS. The NRC agrees with the commenter representing several States that ground water or subsurface surveys are not expected to be performed at materials licensees as an integral part of their current radiation monitoring programs if there is no evidence at the site of significant subsurface residual radioactivity. The 10 CFR Part 20 changes in this final rule are aimed to improve licensee understanding of spatial bounds and concentrations of significant residual radioactivity at sites during active facility operations.

*Comment D.5: Analysis of Voluntary Industry Actions*

One commenter, supported by two other commenters, stated that the NRC did not properly assess the impact of the rule against current regulatory requirements. In an apparent reference to the GPI, the commenter stated that the proposed rule was being improperly analyzed against a more stringent set of voluntary licensee actions. This approach is said to have policy implications in that it could have a chilling effect on licensees' willingness in the future to undertake voluntary initiatives.

*Response:* The NRC disagrees with this comment. The NRC staff evaluated the GPI consistent with the 2004 guidance in NUREG/BR-0058, Revision 4 ("Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission"). Section 4.3.1 of NUREG/BR-0058 describes an acceptable method to analyze voluntary industry initiatives in estimating values and impacts. Values are benefits, and impacts are costs. A 1999 staff requirements memorandum (approving SECY-99-178, "Treatment of Voluntary Initiatives in Regulatory Analyses") had directed the NRC staff to ensure that NUREG/BR-0058 was revised to facilitate consistent and predictable treatment of voluntary initiatives in regulatory analyses. In accordance with NUREG/BR-0058, the Regulatory Analysis, in estimating values and impacts of the GPI, considered two cases: giving "no credit" for the voluntary GPI, and giving "full credit" for the voluntary GPI.

In the Regulatory Analysis, a "Baseline" of No-Action was modeled as Alternative 1. Alternative 2 was modeled as the preferred Alternative, consistent with the amendments in this rulemaking. Alternative 3 was the same as Alternative 2, but added a security interest in collateral for licensees who use a parent guarantee or a self guarantee. Table 5-1 in the Regulatory Analysis itemized the net impacts of Alternatives 1, 2, and 3. The net impact over a 15-year analysis period of Alternative 2 was $70 million less than Alternative 1, and the net impact of Alternative 2 was $260 million less than Alternative 3. These results provided "no credit" for the voluntary activities performed by power reactor licensees under the GPI.

Section 6 of the Regulatory Analysis provided a description of the GPI, with Section 6.1 on page 42 identifying the incremental impact of the voluntary GPI based on cost assumptions in Appendix D of the Regulatory Analysis. No comments were received during the proposed rule public comment period regarding NRC's cost estimates of the GPI. The NRC estimated the costs of Part 50 licensees to implement the GPI over the 15-year analysis period to be about $105 million (2007$) at 3 percent discount rate. "No credit" was given for these activities because these costs are incurred regardless of the eventual promulgation of this final rule. The GPI has different objectives than the amendments in this final rule, and the voluntary activities by power reactor licensees were undertaken before development of this rulemaking.

If instead "full credit" was given for the expected costs under the GPI, the results for Alternative 2 would not change because no additional survey and monitoring activities were modeled in any of the Alternatives for power reactors who are implementing the voluntary GPI. Based upon the NRC's review of power reactor licensee reports and information known to the NRC about current conditions at power reactor sites, the NRC does not believe that any current power reactor licensee has contamination at its site which exceeds the threshold in the final rule that would require additional monitoring. Therefore, the Regulatory Analysis did not identify any additional costs or benefits associated with the final rule's survey and monitoring requirements as applied to current power reactor licensees. Following promulgation of this final rule, there may be an increase in survey and monitoring activities at some power reactors, and a decrease in activities at other power reactors. The results for Alternative 2 in the Regulatory Analysis show that early detection of significant subsurface contamination through surveys and monitoring, and appropriate response by the licensee, is the preferred approach when the regulatory objective is to ensure the licensee and the NRC are aware of contamination that may create conditions that would complicate decommissioning, and possibly create a legacy site.

The NRC does not agree with the commenter that a "chilling effect" on future voluntary industry initiatives will occur if the NRC adopts the final survey requirements by rule. As discussed in the Regulatory Analysis, the GPI was initiated by power reactor licensees independent of this rulemaking. The industry operates in an environment where there are many factors other than the possibility of NRC rulemaking that may influence the industry's decision to voluntarily undertake action. The NRC does not believe it is reasonable to assume that a rulemaking which overlaps an area of voluntary industry action will inhibit future voluntary industry initiatives. Moreover, the NRC believes that any possible disincentive to industry to undertake such voluntary actions is removed by NRC performing a Regulatory Analysis using two different baselines to account for the industry's voluntary actions, consistent with the guidance in NUREG/BR-0058.

*Comment D.6: Cost of characterization.*

Several commenters stated that the cost would be large to perform site characterization, if required under the proposed rule in 10 CFR 20.1501(a). According to one cost estimate prepared for a Part 40 facility, setting up the initial near-surface soil characterization and installing the necessary monitoring equipment would cost between $30,000 and $50,000 for a site with a relatively small footprint. This cost would include obtaining the necessary samples and conducting the associated laboratory work. Additionally, requiring maintenance and ongoing monitoring would result in annual expenditures of approximately $10,000/year. One commenter believed NRC's estimate of the cost was too low, and therefore that its cost-benefit analysis was flawed.

*Response:* The NRC's estimates of one-time monitoring equipment and annual maintenance costs were almost identical to those cited previously by the commenter. On page 54 of the regulatory analysis released with the proposed rule, the one time capital cost for a ground-water monitoring system was estimated at $46,000, and the annual cost for inspection,

leak detection and ground-water monitoring was estimated at $9,500/year, for the few facilities that were analyzed to need such monitoring. The actual scope of work that will be performed by licensees as a result of amended 10 CFR 20.1501(a) in this final rule covers a broad range of activities, with a broad range of expected costs.

*Comment D.7: Regulatory analysis examples cannot be generalized to broad classes of licensees.*

One commenter believes that the examples in the regulatory analysis relate to unusual factual and financial circumstances which cannot be generalized to broad classes of NRC licensees.

*Response:* The Commission disagrees with this statement. The legacy sites modeled in the regulatory analysis were assumed to be rare earth extraction facilities holding contaminated material in areas of 200 square meters at 0.6 meters depth. This is viewed as being an acceptably conservative representation of a legacy site for purposes of performing the regulatory analysis. Without effective regulation, the technical and financial conditions that contributed to the creation of legacy sites in the past could occur in the future at sites that are licensed under 10 CFR Parts 30, 40, 50, 70, and 72, especially those with radioactive material possession limits high enough to require decommissioning financial assurance.

*Comment D.8 Environmental assessment.*

One comment received on the environmental assessment agreed that monitoring wells, if required at licensed sites, will result in small environmental impacts. Another commenter, a state, disagreed strongly with the finding in the proposed rule of no significant environmental impact and stated that such a finding violates the National Environmental Policy Act (NEPA). The commenter believes the NRC must perform additional environmental analyses because the final rule does not go far enough in requiring prompt remediation of spills and leaks during

facility operations, and that during any cleanup delays contamination could spread, resulting in larger impacts on environmental resources, nearby properties, and public health.

*Response:* The NRC agrees that the procedures necessary to detect and monitor subsurface contamination will not have a significant environmental impact. The initial licensee investigation may involve only the review of records of past leaks and spills (if any) and facility inspections to identify potential release points. Physical sampling, if any, will take place within the boundaries of the site and will involve small amounts of drilling and analysis. The wastes generated from sampling and from laboratory analysis of the samples will be managed according to existing environmental requirements that have been designed to avoid impacts on the environment. The environmental impacts of remediation, if it occurs, have already been reviewed in connection with the LTR [62 FR 39057; July 21, 1997]. In that final rule, a generic Environmental Impact Statement evaluated "the environmental impacts associated with the remediation of several types of NRC-licensed facilities to a range of residual radioactivity levels" [62 FR 39086].

The NRC does not agree that absent immediate remediation of all subsurface contamination there will be a significant impact on the environment; nor does NRC agree that the environmental assessment's finding of no significant impact is incorrect. This final rule allows a licensee who detects subsurface contamination either to conduct immediate remediation or to plan for and provide funds in the form of financial assurance to conduct remediation at a later time, including at the time of decommissioning. Thus, this final rule creates a potential incentive for immediate remediation instead of an increased financial assurance obligation. Whenever the remediation occurs, however, the licensee is required to ensure that at the time of decommissioning the annual 25 millirem license termination standard will be met. This final rule does not change or weaken that requirement.

E. Radium-226

The NRC invited comments regarding the description of sites that are known to have significant amounts of radium-226 contamination from past practices or operations, and whether the information of these sites could be included as legacy sites in the regulatory analysis. Two comments were received on this topic. One comment, from a state, provided limited information on the remediation of radium contamination at two structures in the state. This commenter also noted the difference between discrete radium sources that are considered byproduct material and diffuse radium sources which are not regulated by the NRC. A second comment, from an organization representing states, noted that legacy sites exist where discrete radium was manufactured and that these types of sites should be included in the regulatory analysis, but no specific information was provided for use in the regulatory analysis.

*Response:* The NRC appreciates the comments from states with qualitative information about radium-226 contaminated sites. No changes were made in the quantitative results of the regulatory analysis to include costs and benefits from radium sites, but the analysis was revised with the qualitative descriptions from these commenters.

F. Backfit considerations

*Comment F.1: Proposed rule and guidance will have substantial impacts on facilities and procedures.*

*Comment F.1:* One commenter (NEI) stated that the proposed rule, coupled with the survey and monitoring draft guidance, will have substantial impacts on licensees' facilities and procedures (e.g., new confinement measures; leak detection equipment; three-dimensional modeling of ground water contamination) and would require the preparation of a Backfit Analysis. The commenter stated the proposed rule would codify in the regulations for power reactor licensees the actions which such licensees have voluntarily agreed to perform under the

GPI. The commenter further stated that the new 10 CFR 20.1406(c) and amended 10 CFR 20.1501(a) and (b) are not a “clarification” of existing requirements, but rather an effort to impose an expansive regulatory scheme of “ongoing decommissioning,” where activities that would normally take place at the time of decommissioning would have to occur instead during plant or facility operation. The commenter also stated that NRC has made no demonstration that there is a substantial increase in the protection of the public health and safety, or that the proposed rule is justified to achieve compliance or ensure adequate protection of the public health and safety, or that a redefinition of the level of protection is necessary.

*Response*: While the commenter is correct that the findings referenced were not made, these findings are not required here because the preparation of a backfit analysis of this rulemaking is not required, as discussed further in this section.

The NRC disagrees that the new 10 CFR 20.1406(c) and amended 10 CFR 20.1501(a) and (b) will have substantial impacts on facilities and procedures. As stated in the preamble of the proposed rule, these proposed requirements "specify that compliance with 10 CFR Part 20 requirements is a necessary part of effectively planning for decommissioning,” and that any actions undertaken by licensees during facility operations to comply with these new requirements would only "provide a technical basis for licensees and the NRC to understand the effects of significant residual radioactivity on decommissioning costs, and to determine whether existing financial assurance provided for site specific decommissioning is adequate” [73FR 3814 c. 3]. The term “residual radioactivity” includes radioactivity in soils and ground water, which should already be the focus of licensee survey and monitoring efforts, and minimization efforts, to prevent the subsurface accumulation of radioactive material that could be a potential radiological hazard.

Whether significant residual radioactivity exists at a given site is a complex site-specific issue, and the NRC received no information during the proposed rule public comment period

that any site now has residual radioactivity at levels that would exceed the 10 CFR 20.1402 dose criteria at the time of facility decommissioning. For operating facilities, significant residual radioactivity is a quantity of radioactive material that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402 [73 FR 3835 c. 1]. For example, the sample data from isopleths of subsurface contamination at Indian Point Energy Center (submitted by the State of New York, in Exhibit A of its comment) does not show that significant levels of residual radioactivity are present there [2008 Indian Point Government to Government Meeting, May 9, 2008].

The commenter is correct that NRC will expect licensees to apply radiological screening values, or other methods recommended in guidance, to determine if residual radioactivity at the site has accumulated or is in ground water at levels that are considered significant. But to the extent that the commenter is relying on the survey and monitoring draft guidance to support its backfit argument, such reliance is misplaced. Guidance documents do not impose regulatory requirements.

Moreover, it has never been a policy of the NRC that significant subsurface contamination may go unmonitored, or that appropriate survey information not be obtained regarding such contamination, just because the contamination does not pose an immediate safety or health hazard. The licensee must have such information to achieve doses that are ALARA during the life cycle of the facility, including during decommissioning. Licensee procedures to comply with the ALARA requirement in 10 CFR 20.1101(b) should be in place at facilities where there is a reasonable risk that such contamination may occur.

Regarding the issue of "ongoing decommissioning," the NRC disagrees that the regulations for this final rule contain such a requirement. Licensees are not required through this final rule to perform any new type of extensive characterization or timely remediation during facility operations. Instead, in draft Regulatory Guide DG-4014, the NRC has specified for

licensees (1) an acceptable method to determine if any changes are needed to existing site monitoring practices, and (2) acceptable approaches to determine the cost-effectiveness of prompt, compared to deferred, cleanup of contamination based on sample analysis. The scope of cleanup activities during facility operations is dependent on site specific conditions. This final rule does not require that any new remediation action be undertaken by a licensee during operations. Remediation of residual radioactivity at the site may occur during decommissioning, or it may occur during facility operations if the licensee deems it beneficial to perform sooner rather than later. If the decision is to remediate later, then a materials licensee must consider the extent of contamination in its updated DFP.

The final rule does not codify the actions that power reactor licensees are performing voluntarily under the GPI. New 10 CFR 20.1406(c) requires power reactor licensees to conduct their operations, to the extent practical, to minimize the introduction of residual radioactivity into the site, including the subsurface. The GPI does not specify licensee activities to minimize contamination at the site. Revised 10 CFR 20.1501(a) specifies that survey and monitoring requirements must be performed of residual radioactivity in areas, including the subsurface, that are potential radiological hazards. This final rule identifies significant residual radioactivity at the site as a potential radiological hazard. This specification of survey and monitoring requirements is not part of the GPI.

*Comment F.2: Immediate remediation.*

Three commenters argued that immediate remediation should be required after contamination is discovered. One commenter stated that requiring licensees to immediately remediate the contamination resulting from any unplanned or unauthorized release would protect the environment and the public and reduce the likelihood that the NRC and the federal taxpayers would be saddled with the responsibility of decontaminating a spreading plume of radionuclides at legacy sites several years down the road. Another commenter urged the NRC

to include rules related to the establishment of reclamation milestones. The commenter stated that the NRC in the past has allowed at least one licensee to defer the cleanup of off site tailings until the final reclamation, even though it was perfectly feasible for the off-site contamination to be cleaned up and placed on the tailings impoundment. The result was that the cost from extensive off site tailings cleanup was not born by the licensee.

*Response:* The issue of whether immediate remediation should be required after contamination is discovered is outside the scope of this rulemaking. The focus of this rulemaking is on improving the decommissioning planning process. This rule does not suggest that immediate remediation is being imposed as a new requirement.

Slow, long-term leaks, particularly those that cause subsurface soil and ground-water contamination, can significantly increase the cost of decommissioning [73 FR 3814 c. 3]. Such leaks may eventually produce radiological hazards [73 FR 3820 c. 2]. To adequately assure that a decommissioning fund will cover the costs of decommissioning, one must have a reasonably accurate estimate of the extent to which residual radioactivity is present in the subsurface soil and ground water. Together, the proposed requirements in 10 CFR 20.1406(c) and 20.1501(a) specify that compliance with 10 CFR part 20 requirements is a necessary part of effectively planning for decommissioning [73 FR 3814 c. 3]. These regulatory changes are consistent with existing requirements for operating facilities contained in 10 CFR 20.1101(b), requiring licensees to use procedures and engineering controls to achieve doses to members of the public that are ALARA, both during operations and during decommissioning. To accomplish this, licensees must be able to demonstrate their knowledge of residual radioactivity in the subsurface, including soil and ground-water contamination, particularly if the subsurface contamination is a significant amount that would require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. [73 FR 3815 c. 2] While leaks from facilities can lead to a large volume of radioactive contamination entering the subsurface

environment over an extended time, this does not necessarily mean that estimated doses from this contamination are above the limits in 10 CFR part 20 that would initiate immediate regulatory action [73 FR 3820 col. 3].

Moreover, even if the comment pertained to issues within the scope of this rulemaking, this final rule does not impose immediate remediation as a regulatory requirement. NRC's performance-based regulatory framework provides licensees a measure of flexibility to determine for themselves the appropriate response to a contaminating radiological event that does not exceed a regulatory threshold and does not result in a health or safety concern. By providing this discretion to licensees instead of a prescriptive approach, the NRC is encouraging licensees to focus on results and to implement methods that are effective for them and will result in improved outcomes. The types of contaminating events that are the focus of this final rule are not an immediate radiological hazard, but over time these can accumulate in an inaccessible area or migrate to ground water pathways to form significant residual radioactivity at the time of decommissioning. Licensees are not now required to perform immediate remediation of low-level contaminating events that do not exceed regulatory thresholds, and licensees are not required through this final rule to perform any new type of immediate remediation. If the licensee is aware of significant subsurface contamination through surveys and decides to defer cleanup of that contamination to some future date, then the NRC must ensure that adequate funds are available at time of decommissioning to complete the work. During facility operations, it is the responsibility of NRC staff to ensure that licensees have adequate decommissioning financial assurance based on specific regulatory requirements, including in many cases site specific DCEs. At the start of and during facility decommissioning, the NRC staff is responsible for ensuring that the DCE is based on reasonable project milestones to complete the activities within a timely schedule, to monitor the progress of the

licensee against the milestones, and to require additional decommissioning financial assurance if the schedule is extended.

*Comment F.3: The expanded scope of new 10 CFR 20.1406(c).*

Regarding the expanded scope of 10 CFR 20.1406 to include existing licensees, several commenters argued that this expansion: (1) had not been adequately analyzed for its impact; (2) was inconsistent with the NRC's own finding in the Liquid Radioactive Release Lessons Learned Task Force Final Report (ADAMS ML062650312) that the releases were not a threat to public health and safety; and (3) should be evaluated as a backfit.

*Response:* The expanded scope of 10 CFR 20.1406 was evaluated in the regulatory analysis for the proposed rule. Based on the technical basis in section 2 of the regulatory analysis, five operating sites with licensed rare earth extraction activities were modeled to have residual radioactivity at a level that would exceed the unrestricted release criteria of 10 CFR 20.1402, at the time of their decommissioning. The one-time costs and annual costs for these licensees were modeled over a 15 year analysis period, including ground water monitoring, and licensee inspection and leak detection activities at each facility (regulatory analysis, December 2007, p. 34). The comments offer no specific criticisms of this analysis, and thus do not call into question the validity of its findings.

The regulatory analysis for the proposed rule and final rule included discussion of the findings of the Liquid Radioactive Release Lessons Learned Task Force Final Report. The regulatory analysis summarizes the report as having "identified a large volume of subsurface and ground-water tritium contamination from power reactors due to undetected leaks in spent fuel pools, component cooling water tanks, condensate holding tanks, refueling water storage tanks, borated water storage tanks, buried piping, and ventilation systems," as well as having "identified other radionuclides, including mixed fission products, cobalt-60, cesium-137, and strontium-90, that were inadvertently released into the onsite environment at two power plants"

[regulatory analysis, page 7]. The NRC agrees that one of the conclusions of the Liquid Releases Lessons Learned Task Force Final Report was that the report did not identify any instances of liquid radioactive release where the health of the public was impacted. However, none of the sites examined in the report are legacy sites. Based on NRC experience, chronic radioactive release to the subsurface is a primary contributing cause to the creation of a legacy site, and a legacy site is a potential radiological hazard that may be a threat to public health and safety. The final rule does not require evaluation of a backfit analysis because the new or amended regulations in the rule either clarify existing requirements or require the collection and reporting of information using existing equipment and procedures. As such, the new or amended regulations are not regulatory actions that require the performance of a backfit analysis.

*Comment F.4: Agreement that a backfit analysis is not required.*

One commenter agreed with the position taken by the NRC that a backfit analysis is not required for this proposed rule because the requirement already exists for licensees to perform waste characterization and minimization during operations.

*Response:* The NRC agrees that a backfit analysis is not required for this proposed rule. But the NRC cannot respond further to the comment, as it provides no citations to regulatory requirements referenced in the comment.

## G. Need for 10 CFR 20.1403, 20.1406, and 20.1501 Amendments

*Comment G.1: Support for amended 10 CFR 20.1403.*

Commenters from several States expressed support for the proposed criteria in §20.1403 for license termination under restricted conditions eliminating certain financial assurance methods. They noted that since September 11, 2001, it has become more difficult for materials licensees to get any form of surety, and that the NRC should be sensitive to this

situation, but also agreed that certain financial assurance methods may not be effective in bankruptcy situations.

*Response.* The NRC agrees that a trust fund is the financial assurance mechanism most suitable for use over the relatively long period required for license termination under restricted conditions. The trust fund should be a less complicated financial instrument to establish and fund decommissioning financial assurance compared to other forms of surety which can be difficult for materials facilities to maintain over long periods.

*Comment G.2: Support for amended 10 CFR 20.1406 and 20.1501.*

Several commenters supported the new Part 20 regulations, arguing that residual radioactivity is a problem that should be addressed promptly. One commenter stated that as time passes, residual radioactivity can spread vertically and laterally driven by downward percolating rainfall and snow melt increasing the volume of materials requiring excavation. This commenter concluded that licensees should be compelled to conduct thorough subsurface investigations of their sites that include drilling and should residual radioactivity be found should be compelled to remediate or otherwise address it promptly. Commenters from several States also support the proposed requirements. One commenter stated that a lack of characterization of subsurface residual radioactivity could lead to a need for additional unforeseen decommissioning activities, and that the cost of removing and disposing of residual radioactivity could overwhelm existing decommissioning funds and lead to the site becoming a legacy site. Subsurface investigations should take place where it is known that residual radioactivity exists so that mitigating efforts can be put in place before the situation worsens and revisions to the decommissioning funding calculations, if necessary, can be made. The cost to enforce and fully decommission a single legacy site is much higher than the cost to prevent the occurrence of a legacy site through amended regulations. A commenter representing several States generally supported the proposed §20.1501 requirements, noting that slow and long-lasting leaks, and

leaks from the processing of large quantities of licensed material, especially in liquid form, did pose particular risks. Another commenter asserted that events in the last decade have shown that the key assumptions behind the 1988 and 1998 decommissioning regulations are no longer accurate, and that the NRC has become aware of several unpermitted releases at sites across the country.

*Response*: The Commission agrees that licensees must have, at a minimum, adequate information about the type and extent of significant residual radioactivity that is present in the subsurface at their facility. The licensees can then make informed decisions about whether to undertake remediation immediately or to plan for remediation at the time of decommissioning, while revising their DCE and decommissioning financial assurance to ensure that they will be able to address effectively the cleanup of the subsurface contamination.

*Comment G.3: Support for monitoring and recordkeeping requirements*.

One commenter stated that when any subsurface contamination above background is identified, it should be noted in decommissioning records, even if it is not otherwise reportable. This is because such information can be very useful for conducting site characterization for purposes of license termination and to support decisions on the extent of site remediation necessary to meet unrestricted use criteria. It is also useful when planning modifications to a facility. This stems from the logic that if subsurface contamination exists, it came from some plant system that handles that material, so any physical activity on or near those systems should include provisions for dealing with the source of contamination. One state commenter provided a detailed description of a situation it had encountered that supported the need for increased monitoring. It stated further that recording recurring leaks or spills in decommissioning records or operational logs is neither onerous nor financially burdensome. Geographic Information Systems (GIS) make documentation of tracking of spills a relatively

easy task, and do not pose a paperwork burden. Tracking of these data are critical for an effective Historical Site Assessment under MARSSIM.

*Response:* The NRC agrees with these comments as they apply to contamination that may be significant for site specific decommissioning planning.

*Comment G.4: Cost of required activities compared to potential benefits.*

Commenters argued that the final rule survey and monitoring requirements, particularly as they were interpreted in the draft survey and monitoring guidance released with the proposed rule, would be a tremendous potential financial burden to licensees with no health and safety benefit to the public. Commenters said that sites already have sufficient existing survey, monitoring and detection programs in place to assure compliance with current licenses. In addition, the extent of modeling of the hydrology that would be required to meet the draft regulatory guidance does not appear to be warranted at sites that do not have extensive subsurface contamination.

One commenter argued that the scope of the proposed rule and guidance are far more extensive than warranted by the circumstances and both are inconsistent with the NRC's own finding that none of the instances of inadvertent releases to the environment presented a threat to public health and safety.

*Response:* The commenter is correct that the NRC's conclusion in its Liquid Radioactive Release Lessons Learned Task Force final report dated September 1, 2006, which was focused on inadvertent and unmonitored radioactive liquid releases from power reactors, was that the measured levels of tritium and other radionuclides do not present a health hazard to the public, and this finding was noted in the preamble to the proposed rule [73 FR 3814 c. 1]. However, as also noted in the preamble to the proposed rule [73 FR 3820 c. 1], based on past NRC experience, significant concentrations or quantities of undetected and unmonitored contamination, caused primarily by subsurface migration of ground water, has been a major

contributor to a site becoming a legacy site. A legacy site is a potential radiological hazard and a threat to public health and safety.

As discussed in section II.B above, all power reactor licensees, and about 300 NRC and 1,000 Agreement State licensees have an obligation to set aside funds for decommissioning financial assurance. These licensees are subject to the amended regulations in 10 CFR Part 20, and are already required to have radiation protection programs aimed toward reducing exposure and minimizing waste at their site [73 FR 3813 c. 2]. The NRC received no information during the proposed rule public comment period that any operating facility now has subsurface residual radioactivity at levels that would exceed the 10 CFR 20.1402 dose criteria at the time of facility decommissioning. Thus, the NRC believes there is no incremental burden for these licensees as a result of final rule amendments to 10 CFR Part 20, except to read and understand the final rule and the survey and monitoring guidance.

If there is a history of subsurface spills at a site, to the extent that a recurrence could result in significant residual radioactivity, then NRC expects appropriate licensee action to comply with the new survey and monitoring requirements as appropriate for site specific conditions. The survey and monitoring requirements in 10 CFR Part 20 are broad scope requirements that apply to many types of facilities, and thus cannot be specific to any one type of facility. Therefore, the extent of compliance with new survey and monitoring requirements and the level of licensee burden is very much a site-specific issue.

*Comment G.5: Indian Point Nuclear Power Plant and Breazeale Research Reactor.*

The State of New York and Riverkeeper cited in their comments on the proposed rule information about radioactive leaks from the Indian Point Nuclear Power Plant.

*Response:* The NRC takes this opportunity to discuss survey and monitoring requirements in this final rule by using public information of recent leaks at two nuclear facilities, one the Indian Point Nuclear Power Plant and the other a research and test reactor.

A public meeting was held on May 20, 2008, in Cortlandt, New York, to discuss the results of NRC's inspection of the licensee's performance and the agency's independent assessment of contaminated ground water conditions that were first detected by the licensee at the Indian Point Energy Center in September 2005. NRC Inspection Reports Nos. 05000003/2007010 and 05000247/2007010, dated May 13, 2008, were referenced in this report (ADAMS Accession No. ML081340425). The ground water samples contained tritium and strontium-90 that were not previously monitored or detected in ground water before late 2005. As determined by the licensee's hydro-geological analysis, and independently confirmed by the NRC, the contaminated ground water does not migrate off site except directly to the Hudson River. Because there is no current drinking water pathway derived from ground water or the Hudson River in the vicinity influenced by the Indian Point Energy Center, the primary radiological liquid effluent exposure pathway is through the consumption of aquatic foods such as fish and invertebrates. The licensee's radiological assessment of this pathway that was performed in accordance with NRC regulatory requirements, and confirmed by NRC inspection, determined that the radiological consequence of ground water migration to the Hudson River was, and continues to be, negligible with respect to NRC regulatory limits, i.e., the dose consequence to a hypothetical maximally exposed individual is no more than 0.1 percent of the NRC regulatory specification for liquid radiological effluent release.

In view of the potential radiological implications of contaminated ground water, NRC initiated enhanced regulatory oversight at Indian Point following the licensee's initial reporting of onsite sample data of ground water contamination. Subsequently, the licensee initiated a comprehensive investigation of the extent of onsite ground water contamination which included an extensive hydro-geological site characterization, the installation of several ground water monitoring wells, comprehensive radiological assessment, and the establishment of a long term monitoring program. As the NRC reported at the May 20, 2008, public meeting, NRC

independently confirmed adequacy and acceptability of the licensee's investigation, radiological assessment, and plans for long term monitoring of the contaminant ground water conditions. The licensee's remediation approach (i.e., monitored natural attenuation) is considered reasonable by the NRC. Notwithstanding, the licensee's long term monitoring program will continue to be inspected by the NRC.

The State of New York, in Exhibit A of its comment to the Commission on the proposed rule, cited sample data taken of the contamination concentration levels. Based on the sample data, this level of residual radioactivity is likely to be below the 10 CFR 20.1402 unrestricted release dose criteria at time of Indian Point decommissioning. On the effective date of the final rule, the licensee must demonstrate that it is conducting operations, to the extent practical, to minimize the introduction of residual radioactivity at the site, including the subsurface [10 CFR 20.1406(c)]. The amended 10 CFR 20.1501(a), and the existence of previously undetected ground water contamination due to leakage from the Units 1 and 2 spent fuel pools, requires the licensee to continue monitoring the condition, and evaluate the need for additional monitoring and modeling at the plant in the event of new or additional leaks, spills, data from existing monitoring wells, or other information pertaining to residual radioactivity at the site. The licensee may modify or revise the scope of its monitoring effort at Indian Point based on demonstrated results, supported by analysis of sample and survey data, which indicate that operations and activities are conducted sufficient to minimize the introduction of residual radioactivity at the site. The sample and survey data is planned to be publicly available in ADAMS with the annual effluent and environmental reports.

In October 2007, the Pennsylvania State University Breazeale Research Reactor facility experienced a minor leak of slightly radioactive water from the reactor pool lining. In the following six weeks, the NRC performed several inspections at the facility [ADAMS ML073480163] and determined that the existing environmental monitoring satisfied licensee and

regulatory requirements. The licensee reviewed its monitoring and decided to take samples from a nearby water well for overall area well quality. Contamination surveys were performed at the site to understand the migration of the residual radioactivity. The NRC inspection concluded the number and location of survey points were adequate to characterize the radiological conditions. The NRC inspection report noted that the licensee always investigates readings above background levels and ensures that contaminated areas are decontaminated.

Following the effective date of this final rule, this licensee must demonstrate it is conducting operations, to the extent practical, to minimize the introduction of residual radioactivity at the site, including the subsurface. Also, the licensee must perform surveys sufficient to evaluate the need for additional monitoring and modeling at the reactor based on future leaks or spills or other information the licensee has relevant to residual radioactivity at the site.

There have been leaks at other research and test reactors with outcomes that affected decommissioning planning. For example, Cintichem, Inc., of Tuxedo, New York, held two NRC licenses, one for the operation of a 5-megawatt research reactor and another for special nuclear material. In February 1990, the licensee reported an unmonitored release of radioactively contaminated water from the reactor building to an onsite retention pond, and a second leak in an onsite concrete vessel (56 FR 23601; May 22, 1991). In May 1990, Cintichem informed the NRC that it had decided to decommission the reactor and related facilities. Over the next several years, Cintichem conducted cleanup activities and dismantled the reactor. The Cintichem licenses were terminated in 1998 with the site having been remediated to levels suitable for unrestricted use [63 FR 45268; August 25, 1998].

*Comment G.6: The proposed rule is unnecessary.*

One commenter, supported by several additional commenters, stated that existing decommissioning regulations contain appropriate requirements to provide reasonable

assurance that legacy sites will be prevented. The programs that NRC licensees already have in place address all aspects of decommissioning planning, including conduct of operations to minimize contamination, monitoring and surveillance, recordkeeping, and financing. These programs are subject to NRC inspection and oversight. Another commenter argued that the reduction of radiological risk associated with the proposed rule is extremely small, yet compliance will be very resource intensive and costly. One commenter agreed with NRC's statement that the vast majority of NRC materials licensees do not have processes that would cause subsurface contamination, but drew from that the conclusion that additional surveys should be required only at those limited sites where subsurface contamination may be a concern rather than requiring monitoring by all licensees. This commenter also asserted that the requirements in §20.1406(c) were unnecessary, because ALARA requirements covered the requirement to conduct operations to minimize subsurface and other residual radioactivity. Current regulations included consideration of subsurface contamination in the DCE, or could be addressed on a case-by-case basis through license conditions, and required materials licensees to minimize contamination, survey contamination, and keep records. This commenter believed the vast majority of licensees would be unlikely to have a reason for, or a means of determining, the volume of onsite subsurface material containing residual radioactivity.

Commenters opposing the rule as unnecessary stated that, at a minimum, the proposed rule and accompanying draft regulatory guidance should be held in abeyance until the issues identified by the commenter have been addressed. The commenter stated that the proposed rule and regulatory guides should be substantially rewritten, and this would require reissuance for public comment. In addition, the commenter encouraged the NRC to hold workshops with the affected stakeholders. Although the commenter believed the rulemaking is unnecessary, issues of importance to the staff might be pursued in these workshops.

*Response:* The NRC disagrees with these comments concerning the need for rulemaking. ALARA requirements in existing regulations do not explicitly address subsurface contamination and do not provide adequate assurance that additional legacy sites will be prevented. Before this final rule, NRC regulations did not explicitly specify licensees' obligations to survey subsurface contamination, nor did the regulations explicitly specify the requirement of licensees to conduct operations to minimize residual radioactivity at the site, including the subsurface. This rulemaking will augment NRC inspection and oversight activities by defining the regulatory basis to mandate particular licensee actions on a timely basis to prevent the creation of more legacy sites. The radiological risk of a legacy site with ground water contamination may be significant. The NRC will issue draft Regulatory Guide DG-4014 to support the survey and monitoring requirements in this final rule, and will hold at least one public workshop to refine that guidance for issues of importance to stakeholders.

*Comment G.7: The proposed rules are unnecessary because NRC could accomplish its objectives through inspection, oversight, and licensing activities.*

Several commenters argued that the decommissioning issues raised in the proposed rule could be better addressed on a case-by-case basis through the licensing, inspection, and enforcement process for the unusual licensee that may have those concerns. This would be much more effective and efficient than attempting to adjust regulations that 23,000 licensees are obliged to read. One commenter stated that the rule seems to be an overly broad response to a narrow problem. If the NRC has concerns regarding the potential for "legacy sites" for only five to six licensees, then the more efficient path would be to impose site-specific and license-specific conditions on the limited set of facilities rather than impose regulations on all licensees with uncertain costs and even more uncertain benefits. Given the limited scope of the problem, as defined by the NRC, it does not make sense to introduce a new layer of NRC review and approval of survey and monitoring programs outside of licensing reviews.

Several commenters also recommended that statements should be added that certain categories of licensees currently satisfy the proposed requirements. According to one commenter, this statement should be made without qualification that NRC inspection and oversight programs provide the necessary guidance and license conditions/requirements to regulate activities for uranium mills undergoing decommissioning and remediation. One commenter noted that the issue of controlling or limiting the release of radioactivity in licensed operations is different from the issue of intervention to address residual radioactivity that was previously permitted. In the latter case, no general solutions are available and a case-by-case analysis will be necessary. This is exactly what has taken place at the existing legacy sites. To the extent that the proposed rule seeks to require intervention to address residual radioactivity resulting from past, permissible activities, the rule is unlikely to have any impact on reducing the cost or complexity of decommissioning. Ultimately, the NRC's licensing and oversight programs are adequate to reduce introduction of residual radioactivity from current practices. Finally, two commenters argued that the proposed rulemaking contradicts the NRC's policy of risk based regulation. Each affected licensee will be required to spend an enormous amount of resources on monitoring programs to address an issue that by the NRC's own evaluation has no impact on the health and safety of the public. A more reasonable approach would be to address subsurface contamination concerns on a risk informed basis for individual licensees by means of the existing inspection and licensing process.

*Response:* NRC believes rulemaking is much more effective than relying on existing licensing, inspection, the Reactor Oversight Process and/or enforcement processes to accomplish regulatory objectives that were stated in the technical basis for the proposed rule. A legacy site can occur among a broad range of currently operating licensees. Section II.B above identifies the licensees that are affected by this final rule. NRC agrees with the commenter that case-by-case intervention is not an effective regulatory approach to reduce the cost or

complexity of decommissioning. As discussed in the response to comment G-9 and G-13 below, NRC considers this final rule to be risk-informed.

*Comment G.8: The proposed rules are not stringent enough*.

Several commenters generally opposed the proposed rules because they believe the rules are not stringent enough to protect the environment or promote safety, and will not make NRC actions more effective, efficient, and realistic. One commenter believes the proposed regulations will encourage licensees to postpone the cleanup of radionuclide leaks until some future date, by which time a plume may be more difficult and expensive to decontaminate. This commenter argued that aside from a few modest improvements in limited aspects of the decommissioning process, the proposed rule does not address, in a meaningful way, the deficiencies in facility operations that lead to subsurface contamination, the threats posed by delayed remediation, or the risks of unfunded subsurface decontamination at nuclear power plants. This commenter stated that the final rule should require nuclear power plant owners and other licensees to: (1) actively prevent subsurface radionuclide leaks; (2) look for contamination under their sites; (3) publicly report what they find; (4) immediately clean up subsurface radionuclide contamination; and (5) increase their decommissioning funds to cover the costs of historical contamination at their plants. The commenter also called for the NRC to create an additional funding requirement when contamination is discovered by requiring licensees to update decommissioning estimates to keep pace with the actual subsurface and surface contamination conditions at their facilities; that is, require licensees to set aside ample funds to cover decontamination and decommissioning as if decommissioning were occurring now. Monitoring should be required at least every 2 years.

*Response:* The NRC agrees that this final rule provides regulatory flexibility to provide licensees discretion in determining the appropriate response to a contaminating event that does not pose an immediate heath or safety concern, and licensees may in fact decide to postpone

cleanup activities. The NRC disagrees with the commenter that the rule does not address events at operating facilities that lead to subsurface contamination and additional risks later, resulting from unfunded decommissioning activities. As stated in the proposed rule [73 FR 3814 c. 3], the activities that will be undertaken by licensees as a result of this final rule will provide a technical basis for licensees and the NRC to understand the effects of significant residual radioactivity on decommissioning costs, and to determine whether existing financial assurance provided for site-specific decommissioning is adequate. By using the term "residual radioactivity," the new § 20.1406(c) and § 20.1501(a) cover any licensed and unlicensed radioactive material that have been introduced into the site by licensee activities. If operating events are causing significant amounts of residual radioactivity to accumulate onsite, those events will need to be mitigated to comply with the new § 20.1406(c).

This final rule contains provisions in § 30.35(e)(2), § 40.36(d)(2), § 70.25(e)(2), and § 72.30(c) to require licensees to update their DFP at least every 3 years to account for changes in costs and the extent of subsurface contamination. A separate set of similar funding update requirements is already applicable to power reactors.

*Comment G.9: The proposed rules are not sufficiently precise*.

Several commenters opposed the use of the phrase "to the extent practical" in proposed 10 CFR 20.1406(c), and the phrase "reasonable under the circumstances" in proposed § 20.1501 because the terms were too broad. One commenter stated that these phrases created a loophole that was compounded by use of the term "minimize," as opposed to "prevent." The commenter stated that these words will hamper, if not preclude, effective enforcement actions by the NRC or the U.S. Department of Justice against facilities and operators who release radionuclides to the subsurface area. A commenter representing several States also stated that use of the term "to the extent practicable" in the proposed rule could provide licensees with the leeway to perform very limited sampling or surveys to verify the

extent of any subsurface plume, leading to erroneous conclusions regarding no significant hazards. Another commenter said the survey requirement must be clearly spelled out in the language of the regulation, to make it binding upon licensees. The current language is unacceptably vague.

*Response:* The NRC disagrees that the rule language is vague. The phrases "to the extent practical" and "reasonable under the circumstances" are already used in 10 CFR Part 20 requirements to provide flexibility in support of a risk-informed regulatory approach. The risk-informed approach is more effective to achieve acceptable results and compliance by licensees compared to a prescriptive approach which is cumbersome for licensees and regulators considering the broad range of licensees using radioactive material. The regulatory analysis in the proposed rule (page 45) addressed this specific topic as it relates to survey requirements, where it was noted that the Commission established a broad regulatory framework when § 20.1501 was added to the regulations in 1991. This final rule adds precision to survey requirements by amending § 20.1501(a) to explicitly include the subsurface at a site as an area that needs to be surveyed if concentrations or quantities of residual radioactivity in the subsurface present a radiological hazard. The proposed rule stated, "The staff views radiological hazards as including those resulting from subsurface contaminating events, when these events produce subsurface residual radioactivity that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402" [73 FR 3820 c. 2].

*Comment G.10: The proposed rules are based on historical AEC legacy sites, rather than modern sites.*

Several commenters stated that the NRC was basing the proposed rule on past, rather than current, problems. One commenter asserted that the very limited "examples" cited by the NRC of licensees for which some concern has existed do not support the broad brush approach

proposed by the NRC in this rulemaking. The cited examples generally relate to licensees which had been operating long before the current regulations, comprehensive guidance, and discipline in reviewing license applications, contemporary licensee practices and awareness, and current decommissioning funding requirements were in place. The commenter pointed to the example of burial in soil of radiological waste onsite, even if exceeding "exempt" regulatory limits at the time of burial, which was permitted for over 20 years without prior agency review. The commenter argued that it was likely that significant changes to the historical regulatory scheme with respect to onsite radiological waste disposal were at least factors in some of the site-specific examples of legacy sites of concern to the NRC, but these examples have been addressed within the current regulatory framework.

*Response:* The NRC agrees that previous changes to regulations on subsurface burials have reduced the likelihood of legacy sites. NRC disagrees that the current regulatory framework is sufficient to provide effective oversight of operating facilities to ensure the prevention of more legacy sites.

*Comment G.11: The proposed rulemaking is a new regulatory scheme for "ongoing decommissioning".*

One commenter, supported by several others, argued that the requirements for extensive subsurface soil characterization (or remediation) during an operating facility's lifetime is largely unrealistic. It is not feasible to perform subsurface characterization without risking the breach of barriers that contain radioactivity, disrupting the operationally essential equipment, or exacerbating the migration of contaminants already in the environment. Based on industry decommissioning experience, the majority of subsurface contamination (by volume and concentration) would likely be located directly under structures, systems and components (SSCs) that have leaked, where it cannot be safely or adequately accessed for characterization purposes. Even in the case of a reactor undergoing decommissioning, these areas usually

cannot be accessed until late in the decommissioning process, when many of the SSCs and higher levels of contaminants sources have been removed. Another commenter stated that the dust and other materials stirred up during decommissioning could lead to greater exposures for site personnel, thus obviating much of the already small benefit of requiring site cleanup while operations are ongoing. The prospect of "continual decommissioning" may also be contrary to the principles of ALARA embodied elsewhere in 10 CFR Part 20. One commenter requested that licensees be permitted to evaluate normal construction related risks associated with any proposed excavation of residual radioactivity, and that should these risks exceed the risks posed by the residual contamination itself, the licensee should not be required to excavate the material.

*Response:* As indicated in the response to comment F.2, conducting remediation actions while a facility continues to operate is not required by the proposed rule, even if significant amounts of residual radioactivity are present at a site. Based on the history of radioactive leaks at power reactors, the leaks can generally be attributed to the following SSCs: fuel transfer systems and spent fuel pools, buried piping, and storage tanks. Existing regulatory requirements may apply to SSCs that have leaked radioactive liquids, but determining which requirements apply to a specific facility requires review of the plant's licensing basis. SSCs that are not safety-related and are not covered by the licensee's quality assurance program generally are subject to less maintenance, testing and inspection than safety-related SSCs. The non-safety related SSCs are more likely to have a radioactive leak without detection, and a significant level of contamination from SSCs can migrate through the subsurface far from the source. One of the findings in the Liquid Radioactive Release Lessons Learned Task Force [73 FR 3814 c. 1] final report was that a majority of leaks at power reactors are from non-safety related SSCs that contain radioactive material.

*Comment G.12: Variability in licensee practices in documenting spills and leaks important for decommissioning does not justify new requirements.*

Several commenters stated that the proposed rule applies the same requirements to all types of licensees despite the inherent differences in how each type of licensee safely manages radioactive material and/or the financial assurance instruments for decommissioning. Throughout the preamble to the proposed rule, NRC acknowledges that only a few sites have identified contamination and been faced with hurdles to releasing the site for unrestricted use. Nuclear generating facilities have all been successful to date in their decommissioning for unrestricted use.

*Response:* The NRC agrees that the 10 CFR Part 20 changes in this final rule apply equally to all NRC and Agreement State licensees despite the differences in facility operations and the extent of their radiation safety programs. However, only licensees that have an obligation to provide decommissioning financial assurance, and have liquid processes that would contribute to significant subsurface contamination, are likely to be affected by this rulemaking. The commenters are correct that no power reactor sites have become legacy sites.

*Comment G.13: The proposed rules are based on unusual factual and economic circumstances that cannot be generalized to broad classes of licensees.*

Several commenters noted that throughout the January 22, 2008, proposed rule NRC acknowledged that only a few facilities have identified contamination that has resulted in unexpected difficulty in decommissioning the site, and that the regulatory analysis represented these facilities as a certain type of licensee (i.e., rare earth extraction facility). Rather than targeting the proposed rule accordingly, the scope of the proposed rule includes all types of licensees, despite the inherent differences in how each type of licensee controls radioactive material. Another commenter stated that the proposed rule and draft guidance are attempting to apply a "one size fits all" approach at all NRC-licensed facilities without regard to the varying

processes, radionuclides, and risks at different categories of licensees. For example, uranium mills, conversion facilities, and solution mining facilities have unique attributes making a "one size fits all" approach inappropriate.

*Response:* The NRC used a risk-informed approach in developing the language for the amendments to 10 CF Part 20 in the proposed rule. This final rule is not prescriptive, but instead applies a broad and flexible regulatory framework as discussed in the response to comment G.9. NRC agrees in part with the comment regarding the unique attributes for uranium mills and solution mining facilities, as discussed further in response to the next comment.

*Comment G.14: Applicability to uranium recovery facilities.*

Several commenters urged the NRC not to make uranium recovery facilities subject to the new Part 20 requirements, because such facilities do not process enriched source material. One commenter stated that the proposed rule should not apply to decommissioning uranium recovery (UR) facilities. Another commenter requested that UR facilities (conventional mills, in-situ uranium recovery facilities and heap leach facilities) be categorically excluded from coverage under the proposed amendments to 10 CFR 20.1406 and 20.1501 in the final rule. A commenter stated that NRC inspection and oversight programs together with license conditions and existing regulations, adequately regulate uranium mills undergoing decommissioning and remediation, and are protective of the public health and safety and the environment. A commenter stated that the requirements in the proposed rule to address residual radioactivity during UR operations would result in new operational restrictions well beyond those imposed by existing licenses, and that the extreme variability of natural background radionuclide concentrations, and the presence of Technologically Enhanced radioactive Material (TENORM) and unprocessed ore at a site would introduce new requirements in survey and monitoring methods. Commenters also stated that the "routine" monitoring program described in the

guidance would require a more complex and expensive program than is presently necessary to adequately characterize contamination or support decommissioning.

*Response:* The NRC agrees in part with the above comments. In finalizing the license termination rule, which established 10 CFR Part 20 Subpart E in 1997, the NRC recognized there are unique soil contamination issues associated with the decommissioning of UR facilities. For this reason, 10 CFR 20.1401(a) was worded to exclude UR facilities from the scope of 10 CFR Part 20 Subpart E, and the NRC requested comments on what radiological criteria should be used in terminating UR facility licenses (62 FR 39093; July 21, 1997). The 10 CFR 20.1401(a) exclusion is not changed by the present rulemaking, and UR licensees and applicants will thus not be subject to the new requirements in 10 CFR 20.1406(c), just as they were not subject to the existing 20.1406 requirements.

As a result of the 1997 request for comments referenced above, Criterion 6(6) of Appendix A to Part 40 was amended in 1999 by adding its second paragraph, which established TEDE requirements to address the radionuclides of concern (chiefly uranium and thorium) present in the soils of UR facilities. See 64 FR 17506 et seq. (April 12, 1999). If UR facilities undergoing decommissioning have radioactive contamination in their soils associated with their operations at levels exceeding background by 5 pCi/g of radium-226 (the benchmark dose), Criterion 6(6) requires that such contamination be remediated. The present rulemaking does not change Criterion 6(6). The NRC thus does not agree with the commenter's concern regarding TENORM and unprocessed ore.

Because the 10 CFR 20.1501 survey and monitoring requirements are part of 10 CFR Part 20 Subpart F rather than Subpart E, they do not fall within the 10 CFR 20.1401(a) exclusion discussed above. For UR facilities, these survey and monitoring requirements must be read in conjunction with the 10 CFR Part 40 Appendix A Criterion 7 and 7A requirements. Together, these part 20 and part 40 requirements help ensure that issues of soil and

groundwater contamination—both at operating UR facilities and those undergoing decommissioning—are properly addressed. For example, the operational monitoring and survey requirements in 10 CFR 20.1501 help ensure that the worker and public dose limits set forth in Subparts C and D of 10 CFR Part 20 are met, and UR facilities have been subject to these dose limits since 1991, when Subparts C, D, and F were first established. In that 1991 rulemaking, in response to a comment on then-proposed 10 CFR 20.1501's lack of specific monitoring requirements, the NRC explained that because part 20 contains the general radiation protection requirements that apply to all classes of NRC licensees, the wording of many of its provisions is necessarily general. See 56 Fed. Reg. 23360, at 23376 col.3 (May 21, 1991). With the limited exception discussed above regarding 10 CFR Part 20 Subpart E requirements, part 20 is still the set of general radiation protection requirements that is applicable to all classes of NRC licensees, including UR facilities. Accordingly, UR facilities are and will remain subject to the 10 CFR 20.1501 survey and monitoring requirements.

However, as indicated in the above discussion, the revisions to § 20.1501 made by the present rulemaking do not establish any new remediation criteria for UR facilities. Standards for decommissioning UR facilities, and the various related requirements for conducting soil and groundwater monitoring at UR facilities, are found in 10 CFR Part 40, Appendix A. The present rulemaking does not change any of these requirements. A UR licensee's program that complies with the 10 CFR Part 40, Appendix A site remediation criteria would thus not be impacted by § 20.1501(a)'s revised survey requirements, and such programs would not become more complex or expensive as a result of this rulemaking. The Part 20 worker and public dose requirements are combined with the remediation criteria for UR facilities in Part 40, Appendix A, as has been the case previous to this rulemaking.

The change in terminology from "radioactive material" to "residual radioactivity" in 10 CFR 20.1501(a) will not result in any new operational restrictions at UR facilities. Residual

radioactivity, as defined in 10 CFR 20.1003, is not "residual radioactive material" as defined in 10 CFR 40.4. The latter term is used only with respect to materials at sites subject to remediation under title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended. The challenge to determine background levels of radiation at specific UR sites has not changed as a result of this final rule. Surveys must be performed, that are reasonable under the circumstances, if there is a potential radiological hazard at a site. Commenters expressing concern about the unlicensed sources that are included in residual radioactivity, such as TENORM and unprocessed ores at a UR facility, have read more into the rule change in § 20.1501 than is intended. For example, UR facilities must currently manage ore because Criterion 5H requires that licensees protect underlying soils and groundwater from ore stockpile contamination. Furthermore, ore remaining at a UR site during decommissioning is considered 11e.(2) byproduct material and may be placed into the tailings impoundment, so long as it is not removed from the site for processing at another facility. As previously stated, radioactive soil contamination at UR sites undergoing decommissioning is addressed by Criterion 6(6). None of this is changed by the present rulemaking.

*Comment G.15: Applicability to byproduct manufacturing licensees.*

One commenter argued that radionuclide and radiopharmaceutical manufacturing licensees are within the scope of currently operating sites that NRC would not expect to become "legacy sites." The regulations should therefore categorically exempt them from the additional residual radioactivity monitoring requirements.

*Response:* Radionuclide and radiopharmaceutical manufacturing licensees are byproduct material licensees regulated under the requirements of 10 CFR Part 30. If such a facility has no credible release scenario that could contribute to significant subsurface residual radioactivity at the site, then it is likely that the licensee will not be affected by the final rule changes to 10 CFR Part 20.

*Comment G.16: Applicability to research and test reactors.*

Several commenters argued that research and test reactor licensees should be exempt from the final rule changes to new 10 CFR 20.1406(c) and amended 20.1501.

*Response:* Research and test reactors are licensed under the requirements of 10 CFR Part 50. If a research and test reactor has no credible release scenario that could contribute to significant subsurface residual radioactivity at the site, then it is likely that the licensee of such a reactor will not be affected by the final rule changes to 10 CFR Part 20.

*Comment G.17: Applicability to water treatment facilities.*

One commenter asked NRC to address the potential applicability to licensed water treatment facilities and to make it clear that such survey and monitoring requirements likely will not be necessary at such facilities because: (1) their licensed operations involve the production of uranium-laden ion exchange (IX) resins that are substantially similar, if not identical, to those generated at *in situ* uranium recovery (ISR) facilities; (2) all equipment that generates such resins is, by license condition, contained within structures/buildings that provide primary and secondary containment to minimize, if not eliminate, potential releases of licensed material; (3) the resins do not present credible release scenarios where potential subsurface contamination would be implicated; and (4) the licenses contain strict monitoring and survey requirements.

*Response*: Licensees who possess uranium-laden resins at water treatment plants are source material licensees regulated under 10 CFR Part 40. Licensees possessing uranium-laden resins at water treatment plants are not subject to the 10 CFR Part 40 appendix A criteria, and are thus subject to the new Part 20 requirements. However, if a water treatment facility has no credible release scenario that could contribute to significant subsurface residual radioactivity at the site, then it is likely that the facility will not be affected by the final rule changes to 10 CFR Part 20.

*Comment G.18: Residual radioactivity at publicly owned sewage treatment works.*

A commenter noted that NRC's conclusion that municipal waste treatment facilities were unlikely to have significant concentrations of long-lived radionuclides fails to account for the potential impacts to such facilities if (1) the new uranium and radium Maximum Contaminant Levels (MCLs) are enforced effectively by EPA and their delegated States; and (2) uranium and/or radium water treatment residuals are released in an uncontrolled manner into sanitary sewers or other discharge points from which such residuals could migrate.

*Response:* Regardless of whether the drinking water treatment plant is: (1) not removing radium from the drinking water (such as prior to the new EPA drinking water standards for radionuclides), or (2) removing radium from drinking water and discharging the radium-laden residuals to the sanitary sewage system, the amount of radium (or other radionuclide found in the source water) that reaches the publicly owned sewage treatment works (POTW) is unchanged. The NRC assumes, for purposes of this rulemaking, that EPA drinking water standards will be enforced effectively at municipal water treatment plants, and that any release of uranium and/or radium residuals will be done in a controlled manner consistent with license conditions and regulations. Recommendations are available from the ISCORS regarding actions that a POTW operator may take to determine if there is radioactive contamination at its facility and how to interpret the detection results. The recommendations are contained in ISCORS Technical Report 2004-04.

*Comment G.19: Definition of residual radioactivity.*

One commenter, supported by several others, argued that licensees should not be required to control unlicensed material in a manner that is substantively different from that required by a non-licensee, and stated that the definition of "residual radioactivity" in 10 CFR 20.1003 is inconsistent with a risk-informed approach to regulation and with the recently issued RIS 2008-03 "Return/Re-Use of Previously Discharged Radioactive Effluents." In further

support of this argument, the commenter cited the proposed rule's preamble (page 3815, column 1) as excluding from the rule's scope off-site contamination attributable to previously released effluents, thus demonstrating the inconsistency of requiring the licensee to control onsite unlicensed material. This commenter accordingly requested that the NRC revise the definition of "residual radioactivity" by deleting its reference to unlicensed sources, and its reference to routine releases of radioactive material.

*Response:* "Residual radioactivity" is a term already defined in 10 CFR 20.1003. Because no changes to this term were proposed when this rulemaking action was published for public comment, the request to now change the definition is outside the scope of this rulemaking. In considering the comment, the NRC re-examined the cited section of the proposed rule's preamble [73 FR 3815 c. 1]. As stated there, the scope of this rulemaking "does not include offsite contamination discovered during decommissioning." This preamble for the final rule deletes the following text which conditioned the above statement: "unless such contamination is an extension of onsite contamination (e.g., a contaminated ground water plume originating from the licensee's facility)." What the NRC may later choose to do regarding offsite contamination discovered during decommissioning is unknown at this point, and making the above deletion avoids any limitation on future actions the NRC may take on this issue.

With respect to RIS 2008-03, when this RIS was issued, the term "radioactive material" was used in 10 CFR 20.1501(a) creating the need to differentiate licensed from unlicensed material. RIS 2008-03 provides a distinction between onsite and offsite unlicensed material. Offsite unlicensed material results primarily from authorized effluent discharges to unrestricted areas that have been evaluated in accordance with regulatory requirements. Radioactive effluent discharge controls, environmental dispersion modeling and dose assessments ensure that any public dose is within public radiation protection standards. The licensed radioactive material that was properly discharged in accordance with 10 CFR 20 to the unrestricted area is

no longer the responsibility of the licensee. However, onsite unlicensed material is sometimes co-mingled with licensed radioactive material (for example from leaks or spills), and generally cannot be distinguished from or separated from licensed radioactive material. Both licensed and unlicensed radioactivity (e.g., from returned or re-used effluents) at the site are the responsibility of the licensee, during operations and during decommissioning. Unlicensed radioactivity from the return or recycle of previously discharged radioactive effluents can be discharged in liquid or gaseous effluents to the environment in accordance with RIS 2008-03. The control of residual radioactivity at the site during operations increases the assurance that the 10 CFR 20.1402 criteria will be met at the time of decommissioning. The reasons NRC is using the term residual radioactivity in new § 20.1406(c) and amended § 20.1501 were set forth in the proposed rule's preamble [73 FR 3814 c.2]. The NRC does not agree that the definition of "residual radioactivity" in 10 CFR 20.1003 is inconsistent with RIS 2008-03.

*Comment G.20: Clarify what is meant by "significant" residual radioactivity.*

A commenter stated that the term "significant" is not defined and may be open to wide interpretation by licensees and others. Similarly, several other commenters stated that the NRC should define "significant" contamination, and should specify: (1) methods required to conduct surveys and their frequency, to ensure consistency in the ground-water monitoring and sampling program; and (2) the constituents to be sampled, the timing and frequency of the sampling, sampling techniques, and how to analyze samples.

*Response:* The intended meaning of the phrase "significant residual radioactivity" – which is not a defined regulatory term -- is discussed in the proposed rule's preamble [73 FR 3815 c. 1 and 3835 c. 3]. As stated there, "significant" residual radioactivity is a quantity of radioactive material that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. Draft Regulatory Guide DG-4014, released for

public comment to support this final rule, provides guidance to licensees on acceptable methods to conduct soil and ground-water sampling to meet the new survey requirements.

*Comment G.21: Subsurface and significant contamination.*

One commenter disagreed with the statement in the proposed rule's preamble [73 FR 3819 c. 3] that subsurface contamination occurs in an area at least 15 centimeters (6.0") below the surface, arguing that instead it should be defined to, and inclusive of, the ground water table. The same commenter noted that "Significant contamination" is not defined, contrary to a recommendation made at page 22 of the 2006 Final Report of the NRC Liquid Radioactive Release Lessons Learned Task Force.

*Response:* NRC's use of the term "subsurface" in the proposed rule preamble is consistent with the definition of "subsurface" used in NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual." As stated on page 3-14 of that manual, the surface layer is represented as the top 15 centimeters (6 in.) and may include gravel fill, waste piles, concrete, or asphalt paving. Subsurface soil and media are defined on that same page of the manual as any solid materials not considered to be surface soil.

In this rulemaking, the NRC decided not to make "significant contamination" a defined term in the regulations. Instead, the NRC found that "residual radioactivity" – which is already a defined regulatory term – covers the type of subsurface contamination that prompted the creation of the Liquid Radioactive Release Lessons Learned Task Force. Additionally, as stated in the response to Comment G.20, the proposed rule's preamble provides guidance on the level of residual radioactivity that is considered to be "significant."

*Comment G.22: Additional site characterization and monitoring not warranted.*

Several commenters stated that the proposed NRC regulations could have the unintended consequence of triggering performance of extensive characterization and remediation efforts, without regard to the degree of actual health and safety impact. The

proposed regulations would require the evaluation of subsurface contamination based on future decommissioning exposure scenarios, even though no foreseeable operating exposure limits would be exceeded. Furthermore, due to access constraints, it is unlikely that subsurface characterization efforts at an operating reactor would provide any better DCE input data (i.e., volumes and locations of subsurface media exceeding decommissioning criteria) than that produced by experienced decommissioning experts making engineering judgments using information currently available as 10 CFR 50.75(g) file data.

*Response:* As stated in the proposed rule's preamble [73 FR 3813 c. 3], the NRC identified the need for licensees during facility operations to timely report the existence of subsurface contamination that has the potential to complicate future decommissioning efforts. But as indicated in responses to other comments, these commenters incorrectly state that the proposed regulations require the immediate evaluation of subsurface contamination even in cases where no foreseeable operating exposure limits would be exceeded by the contamination. As stated in draft Regulatory Guide DG-4014, released for public comment to support this rule, a licensee may decide to perform extensive characterization following its initial scoping surveys and preliminary characterization to determine if an area at the site contains significant residual radioactivity. There may be a need for additional monitoring and modeling, following evaluation of the initial scoping surveys, based on the significance of a spill or leak. But if there is no significant residual radioactivity at a site, then it is likely that the licensee's current monitoring plan is sufficient and no additional surveys or monitoring are necessary. When there is significant residual radioactivity at a site, survey results will serve as a technical basis to support the licensee's estimates of volumes and locations of subsurface contamination. Such estimates will in turn aid the licensee in arriving at a more accurate DCE.

*Comment G.23: Frequency of surveys.*

One commenter said that the phrase in 10 CFR 20.1501(b), which requires that records from surveys "describing the location and amount of subsurface residual radioactivity identified at the site" be kept, does not clarify whether the surveys made by licensees are simply one-time snapshots of residual radioactivity at one time, or if the surveys are to be conducted periodically. The commenter urged the NRC to specify that surveys are mandatory, conducted periodically, and the results submitted to the NRC and made public.

*Response:* The frequency of surveys is dependent on site-specific conditions and is a topic discussed in guidance. The survey results that are included in records important for decommissioning are a licensee recordkeeping requirement for NRC review. As noted in the response to comment D.4, the NRC understands that power reactor licensees will be submitting the onsite ground water sampling results as part of their annual effluent and environmental reports and this information is planned to be publicly available in ADAMS similar to the annual effluent and environmental reports that are currently publicly available.

*Comment G.24: Assessed background radioactivity prior to operation.*

One commenter questioned the NRC statement that materials licensees already must assess their background radiation prior to operation. Another commenter argued that materials licensees are not now required by 10 CFR 20.1301(a)(1) to make comprehensive measurements of radioactivity in soil or ground water before operation to distinguish levels of residual radioactive material from that due to natural background or the operations of others.

*Response:* The statement in the proposed rule's preamble that "All licensees with operating facilities must have performed an assessment of background radiation prior to operating their facility, to be compliant with the requirements in 10 CFR 20.1301(a)(1)" [73 FR 3819 c.3] is not correct, and NRC regrets the error. Measuring background before plant operation is not a regulatory requirement in 10 CFR Parts 20, 50 or 52. Instead, the position is stated in Regulatory Guide 4.1, "Programs for Monitoring Radioactivity in the Environs of

Nuclear Power Plants", that a licensee or license applicant for a nuclear power plant should initiate preoperational monitoring 2 years before operations to provide a sufficient data base for comparison with operational data. This would include surveys of background radioactivity.

*Comment G.25: The proposed rules effectively eliminate the option to use restricted release for license termination*

A commenter stated that the intent of the proposed rule is to address amounts of residual radioactivity at a site that are significant to achieve effective decommissioning planning. For operating facilities, these events are assumed in the proposed rule to result in residual radioactivity in a quantity that would later require remediation during decommissioning to meet the unrestricted use criteria of 10 CFR 20.1402. The established approach for determining the cost under ALARA is not factored into the proposed remediation decision. Further, as currently worded, the proposed rule and draft regulatory guidance have the apparently unintended consequence of eliminating the ability to use the restricted release criteria at license termination because a spill has to be remediated to the Derived Concentration Guideline Levels (DCGLs) for unrestricted release of the site. If the licensee does not remediate to the screening DCGLs, they must put money into decommissioning fund to remediate such that the license can be terminated for unrestricted use of the site.

*Response:* The NRC does not agree that it is effectively eliminating licensees' use of the restricted release option for license termination. On the contrary, the changes being made to 10 CFR 30.35(e)(1)(i)(B), 40.36(d)(1)(i)(B), 70.25(e)(1)(i)(B), and 72.30(b)(2)(iii) allow licensees during facility operations to base their DFP on the 10 CFR 20.1403 restricted release criteria, if the licensee can demonstrate its ability to meet the provisions of § 20.1403. The NRC will accept a reasonable methodology used by a licensee to evaluate remediation costs that support a licensee's decision regarding its response to a spill or leak, and to demonstrate that the licensee is achieving doses at the site that are ALARA. The DCGL screening criteria in

NUREG 1757, Volume 1, Rev. 1, "Consolidated NMSS Decommissioning Guidance," apply when the site is a relatively simple site with residual radioactivity in topsoil, typically in the top centimeters of surface soils. For more complex sites with deeper subsurface residual radioactivity, the criteria for significant residual radioactivity may require an evaluation using a more complex modeling code, such as RESRAD or equivalent, to determine whether the subsurface residual radioactivity is significant with respect to decommissioning criteria of 25 mrem per year total effective dose equivalent. Draft Regulatory Guide DG-4014 provides more guidance to licensees on this topic.

*Comment G.26: Reporting and recordkeeping requirements.*

Numerous commenters addressed the reporting and recordkeeping requirements. Most were critical, although for widely differing reasons. Several commenters criticized the requirements as unnecessary or too broad. One agreed that documentation of subsurface contamination should be placed in decommissioning records. However, the commenter stated that a small leak or spill inside a building that is promptly cleaned up is not a decommissioning issue. Thus, the commenter objected to references to "any" leakage or spills. Another commenter stated that licensees are currently required to report significant environmental impacts to both NRC-Agreement State agencies and the EPA. A commenter from a power reactor stated that reporting rules under Part 20 were unnecessary because of the requirements already in place in 10 CFR 50.75(g). One commenter also pointed to potential double counting, noting that 10 CFR Part 20 prohibits gaseous effluent releases to the atmosphere above regulatory limits. In accordance with 10 CFR Part 50, appendix I, releases within regulatory limits must account for the dose to the public. Thus, low levels of radioactivity could be deposited onto the site due to rainout, washout and other means, which could then leach into the subsoil. The proposed rule does not consider that these gaseous effluents are accounted for at the time of their release, causing them to be counted again. Finally, one commenter

stated that if the proposed rule is finalized, more than 60 days will be needed to implement it. At least a year should be provided to prepare the required reports.

*Response:* Licensees are responsible for completing decommissioning activities, and thus must, for decommissioning planning purposes, determine which leaks and spills must be documented. NRC has removed its reference to "any" leakage or spills in draft Regulatory Guide DG-4014. The NRC agrees that gaseous effluents that are properly discharged in accordance with 10 CFR 20 to an unrestricted area are no longer the responsibility of the licensee. However, because onsite unlicensed material is sometimes co-mingled with licensed radioactive material (for example from leaks or spills) and generally cannot be distinguished from or separated from licensed radioactive material, both licensed and unlicensed radioactivity (e.g., from returned or reused effluents) at the site are the responsibility of the licensee, during operations and during decommissioning. The control of residual radioactivity at the site during operations ensures that the 10 CFR 20 Subpart E criteria for unrestricted release will be met at the time of decommissioning. NRC agrees with the commenter on the effective date of the final rule and has established an implementation period of one year following publication of the final rule in the *Federal Register*.

*Comment G.27: Public documentation of spills and leaks.*

Several commenters argued that the proposed rule was inadequate because although licensees are required to keep records of spills and leaks on site, they are not required to notify NRC regional office or headquarters of the facts that such spills and leaks have occurred. Thus, information about spills and leaks will not be added to the "public side" of the Commission's ADAMS document management system, nor will the Commission ever "possess" a document for purposes of the Federal Freedom of Information Act. The proposed rule will not enable the public to see the company's memo documenting the leak, spill, or plume. These commenters argued that the final rule must require that all licensees submit their documentation of spills and

leaks to the NRC and that the NRC promptly make such documentation available to the public. One stated that operating facilities must be required to inform state and local officials, with follow-up notification to the NRC regarding onsite leaks and spills into ground water, and onsite or offsite water sample results that exceed established criteria in the radiological monitoring program. Another said that all surveys and reports of leaks and spills prepared pursuant to § 20.1406, § 20.1501 and § 50.75(g) must be submitted to the NRC and disclosed to the general public through publication on the NRC'S ADAMS Database.

*Response:* The proposed rule did not contain new reporting requirements regarding spills and leaks, and the issues raised in this comment are not within the scope of this rulemaking.

H. Financial Assurance Mechanisms and Reporting

*Comment H.1: Need for regulations.*

Several commenters argued that the current decommissioning rules in 10 CFR Parts 20, 30, 50, 70, and 72 already provide reasonable assurance of adequate protection of public health, safety, and the environment related to decommissioning, and therefore new and additional financial assurance requirements are unnecessary. One commenter, whose comments were endorsed by several other commenters, cited that statement in SECY-03-0069 that "no licensee providing a parent company or self-guarantee has entered bankruptcy or has failed to proceed with decommissioning projects in an adequate manner." This commenter further quoted the SECY statement that the NRC "staff has not observed an example of an NRC licensee whose decommissioning funding fell short because of inadequate disclosure of the licensee's financial position." One commenter stated that the proposed rules contained some modest improvements in financial assurance for materials facilities and interim spent fuel

storage installations, but argued that it did nothing to require licensees of operating power reactors to set aside sufficient funds for decommissioning.

*Response:* The proposed rule did not identify any changes to financial assurance requirements specifically applicable to licensees of operating power reactors. Thus, comments arguing for such changes are outside the scope of this rulemaking, and will not be considered here.

The NRC agrees with the other commenters that an extensive revision to the financial assurance requirements applicable to operating reactors is not necessary, because in general the current requirements have worked effectively since they were promulgated in 1988. However, since then, the financial industry, accounting standards, bankruptcy law, and commercial law and practices have evolved, and the NRC periodically amends its financial assurance rules to address these changes. The NRC disagrees with the commenters that the current rules are fully adequate and require no changes to update or improve them. The agency's goal is to address potential risks to the financial assurance system as they are identified, rather than waiting until the risks manifest themselves as delays in decommissioning or the addition of more legacy sites.

*Comment H.2: Financial tests.*

One commenter stated that the current financial tests in appendix A (Parent Company Guarantee) and appendix C (Self-Guarantee) of Part 30 have proved to be an economical way for materials licensees to demonstrate financial assurance sufficient to fund decommissioning efforts. The NRC has not demonstrated a need, and in fact it is unnecessary, to impose greater restrictions in those tests to provide reasonable assurance of decommissioning funding. Another commenter expressed support for the clarification in the proposed rule that adjustments of "+" or "-" to bond ratings are included. However, another commenter questioned the proposed requirement that bond ratings be for the most recent "uninsured, uncollateralized, and

unencumbered" bond issuance. The commenter stated that NRC had not presented any evidence concerning the need for this change, particularly because ratings for senior secured debt are a relevant indicator of good financial health. The same commenter argued that although annual reevaluation of the financial test was already the practice, such reevaluations should not be required to be certified by an independent Certified Public Accountant (CPA).

*Response:* Although the NRC agrees that the current parent company guarantee and self-guarantee mechanisms have been effective means of demonstrating financial assurance, it believes that the revisions to the financial tests that determine eligibility to use the guarantees will strengthen the tests and thereby increase the assurance provided by the guarantees. Other changes will codify established NRC practice. The NRC currently allows the use of "+" and "-" bond ratings. The requirement for "uninsured, uncollateralized, and unencumbered" bonds is currently part of some, but not all, financial tests used by the NRC and the agency is making all the tests consistent with respect to this criterion. The NRC is convinced that this requirement is desirable and increases assurance. An uninsured, uncollateralized, and unencumbered bond rating is an opinion on the ability of the issuer to meet its repayment obligations in a timely manner. Rating agencies typically go through an extensive financial evaluation process and credit analysis before they assign ratings to the debt of an organization, including meeting with management, examination of financial statements, research into industry and market conditions, and review of non-publicly available information obtained from the organization. However, bonds that are insured, collateralized, or encumbered are not rated in the same manner. Instead, the rating of insured bonds is based on the rating assigned the insurance company, and can change significantly if that rating changes. The NRC notes recent public discussions of sudden declines in the rating of insured debt instruments based on declines in the rating of the insurers. Similarly, the rating of collateralized bonds depends on an evaluation of the quality of the collateral rather than an evaluation of the underlying financial condition of the bond issuer,

and can change quickly and significantly if the quality of the collateral declines. Bonds issued for certain purposes (usually by public entities) may be tied (encumbered) to property that is affected by activities paid for by the revenues from the bonds and the property may, in turn, serve as collateral for the bonds. The ratings for such bonds may be affected by all of these factors. Therefore, the NRC is requiring bonds used as part of a demonstration that the firm can pass a financial test to be uninsured, uncollateralized, and unencumbered. With respect to CPA certifications, this requirement is currently part of the financial tests, and NRC did not propose to revise it. The agency therefore is going forward with the changes as proposed.

*Comment H.3: Insurance.*

One commenter addressed the NRC's decision not to require materials licensees to obtain environmental cleanup insurance/onsite property damage insurance. The commenter agreed with the NRC's assessment that the cost of such insurance would be prohibitive for a very rare event.

*Response:* In the absence of any comments supporting the inclusion of an insurance requirement, the agency plans to continue tracking the issue but is not adopting such a requirement at this time.

*Comment H.4: License transfer application.*

The three commenters who addressed this topic supported the proposed requirement to supply financial assurance information as part of a license transfer application. Two comments supported the § 30.34 proposed requirements, and another supported the proposed addition to 10 CFR 72.50. This commenter pointed to the possibility of licensees spinning off a merchant nuclear plant into a new holding company with limited financial assets. The commenter stated that under the current regulations, it remains unclear what financial assurance applicants have to provide to the NRC to address this issue.

*Response:* The NRC agrees with the commenters that it is important, before approving a license transfer, to determine whether the proposed license transferee will be able to provide the required financial assurance for decommissioning. Therefore, the NRC is adopting this proposed requirement.

*Comment H.5: Tangible net worth requirement increase to $21 Million.*

One commenter agreed with the proposal to increase the tangible net worth requirement in the existing financial tests to address inflation since the financial tests were adopted, but argued that the amount of $19 million was based on a calculation performed in 2005. This commenter stated that the NRC should recalculate the proposed $19 million for tangible net worth on the basis of 2007 or 2008 to ensure that it is fully current. The commenter estimated that approximately $21 million would be the more appropriate amount.

Another commenter noted that the proposed rule would also modify Part 30, appendix C to add a new criterion to the financial test for an entity that would provide a self-guarantee. The proposal would add a requirement for demonstrating a tangible net worth of at least $19 million. The commenter noted that the only basis given for this change is that it would make appendix C consistent with the financial tests in appendix A (parent company guarantees) and appendix D (companies with no outstanding rated bonds). However, the commenter argued that the proposed change is unnecessary, first because the proposed test ($19 million) has no correlation to the decommissioning obligation, and second because a focus on tangible net worth as a measure of financial stability and risk of default is unnecessary. The commenter stated that for many companies a $19 million tangible net worth test that excludes intangible assets would serve little purpose. The commenter concluded that NRC should not adopt this requirement.

*Response:* The NRC agrees with the comment to increase the tangible net worth requirement to $21 million for the financial tests, and has made this change in the final rule text.

The NRC disagrees with the second comment, and is making the change to all of the financial tests in 10 CFR Part 30 as a means to provide regulatory consistency and to maintain regulatory efficiency. The tangible net worth test as one criterion for using a guarantee has been in the regulations since the parent guarantee was established in 1988 and is considered by NRC and the EPA as an effective financial threshold among the other financial tests that may be applied by licensees to use a guarantee mechanism.

*Comment H.6: Inclusion of salvage value.*

One commenter argued that the NRC should consider allowing DCEs to consider the resale value of product and other valuable assets, determined on a case-by-case basis. The amount could be limited to less than the contingency factor in the cost estimate.

*Response:* Since the financial assurance requirements were promulgated in 1988 the NRC has taken the consistent position, expressed in guidance until issuance of this proposed rule, that licensees should not take credit in their DCEs for the value of any materials that may be byproducts of the decommissioning process (e.g., salvage value). Estimates of salvage value are considered extremely speculative and uncertain, and allowing such estimates to be included in DCEs as offsets would raise the possibility that the amount of financial assurance would be inadequate if at the time of decommissioning such salvage value could not be realized. Allowing salvage value to be included up to the amount of the contingency factor would subvert the reason for the contingency factor, because it is required to address unforeseen technical situations that increase the cost of decommissioning.

*Comment H.7: Assume 1 percent real rate of return in §20.1403 trust.*

Several commenters addressed the proposal to require licensees to assume only a 1 percent real rate of return on funds set aside to provide long-term care and maintenance of sites decommissioned for restricted use. Commenters' positions ranged from support for the

proposal to statements that the 1 percent rate was too high and statements that it was unnecessarily low.

*Comment H.7.1:* One commenter who supported the proposal noted that a similar provision is currently contained in 10 CFR Part 40, appendix A, Criterion 10, which provides that if a site-specific evaluation shows that a sum greater than the minimum amount specified in the rule is necessary for long-term surveillance following decontamination and decommissioning of a uranium mill site, the total amount to cover the cost of long-term surveillance must be that amount that would yield interest in an amounts sufficient to cover the annual costs of site surveillance, assuming a 1 percent annual real rate of interest. The commenter noted that once reclamation is complete at Title II uranium mill tailings sites, the licensee is required to transfer the land containing the 11(e)2 byproduct to the Federal Government/Department of Energy (DOE) or to the State government (if the State agrees to accept it) along with funds (a minimum of $250,000 in 1978 dollars or more if necessary) to fund long term site monitoring and maintenance assuming a 1 percent real rate of return on the funds. The commenter believed that extending this type of regulation to other licensees is consistent and fair.

*Response:* No response is necessary.

*Comment H.7.2:* One commenter criticized the proposed amendment to 10 CFR 20.1403. This commenter argued that the 30-year period of interest rates examined by the NRC resulting in the 1 percent proposal did not adequately represent the highly variable history of interest rates. The commenter argued that NRC should incorporate the uncertainty of predicting future interest rates into its analysis of the correct rates for long term care by adopting a sliding and declining interest rate assumption. The commenter cited an academic expert's suggestion for a sliding scale of interest rates ranging from 4 percent (years 1-5) to 0 percent (years 300 and over). However, the commenter did not explicitly endorse the sliding scale provided in its comments.

*Response:* For the reasons discussed in the January 22, 2008, proposed rule, the NRC's view remains that an assumed 1 percent annual rate of return is an appropriate criterion to qualify for license termination under restricted conditions. From 1975 to 2005, U.S. Treasury Bills returned an average of 1.58 percent per year, and government bonds returned an average of 4.87 percent per year [73 FR at 3824 col. 1]. Additionally, the method by which the assumed annual real rate of return would be applied is the same as the method required by 10 CFR Part 40, appendix A, Criterion 10 (rule for determining the adequacy of funds provided by a licensee for long-term surveillance and control of tailings prior to the termination of a uranium or thorium mill license). NUREG-0706 provides details to determine the minimum charge for long-term surveillance and control. Pages 14-12 through 14-16 of NUREG-0706, Volume 1, provide examples of the method, including Table 14.2 that shows different levels of the total fund amount based on three values of annual monitoring expense and three values for the real rate of return. The method used to derive the values in Table 14.2 is known as an annuity that has no definite end, which would be appropriate for long-term surveillance and control of a site contaminated with uranium or thorium. An annuity that has no definite end is a "perpetuity", or a "perpetual annuity". The present value of a perpetuity is equal to the amount of the annual payment, assumed to be in identical amounts each year, divided by the appropriate rate of return. The perpetuity acceptable to the NRC includes the annual payments for an independent third-party to perform the surveillance and control work, including the 25 percent contingency. For example, if the annual payment was determined to be $200,000 at the time the license was terminated, then a minimum amount of $20 million would be required at an assumed 1 percent real rate of return. This method to derive the value of an adequate amount of decommissioning financial assurance is not the same as a sinking fund method, suggested by the commenter, in which a sliding scale of interest rates could be applied over a specified period of time. The NRC considers an assumed annual 1 percent real rate of return on investment to be appropriate for

10 CFR 20.1403(c)(1) , as it is for 10 CFR Part 40, appendix A, Criterion 10, even if historically low rates of return prevail for extended periods of time. The method is well suited for assessment of sites for which restricted use is planned for license termination. Accordingly, the NRC is making no change to the rule text in 10 CFR 20.1403(c)(1) in the final rule compared to the proposed rule.

*Comment H.7.3:* Some commenters argued that the proposed rate to be used in determining the appropriate amount to be set aside in a trust for long-term surveillance and monitoring was too low. They argued that the trust funds would be managed to the standard of care required by State or Federal law or one or more State or Federal regulatory agencies with jurisdiction over the trust funds, or, to the standard of care of that a prudent investor would use in the same circumstances. In light of these new restrictions on the handling and segregation of long-term funds, the adequacy of the trust funds should be assessed based on an assumed annual 2 percent real rate of return on investment. This would bring the treatment of long-term surveillance and monitoring funds into line with the other NRC regulatory provisions, such as 10 CFR 50.75(e)(l)(ii), which permit credit for projected earnings using up to a 2 percent annual real rate of return. One commenter noted that the 2 percent real rate of return assumption is already very conservative and is used over very long periods of time, including SAFSTOR periods for shutdown reactors. The commenter asserted that the NRC should not depart from a real rate of return standard that is already adequately conservative. The commenter stated that it did not find the argument for considering the 1 percent real rate of return compelling.

*Response:* For the reasons discussed in the response to Comment H.7.2, the NRC believes an assumed 1 percent annual rate of return is an appropriate criterion to qualify for license termination under restricted conditions.

*Comment H.8: Standby trust established for all guarantees.*

Several commenters opposed the proposed requirement that a standby trust fund be set up at the same time that a licensee proposes using a parent company guarantee for financial assurance. One commenter argued that to qualify for the parent-company guarantee, the licensee's guarantor must pass a rigorous financial test with acceptance criteria that banks, which would engage with licensees to establish the standby trust fund, may not satisfy. There would be no need for such a company, particularly with an AAA rating, to establish a trust fund with a bank with a rating that is at the same level or lower. It makes no sense for NRC to prefer to accept this potentially greater vulnerability. Another commenter noted that a Part 50 reactor licensee may have established a decommissioning trust and be using a guarantee to provide financial assurance for the balance of the decommissioning assurance required. This commenter argued that a standby trust should not be required to support a parent company guarantee if the licensee has already established a decommissioning trust. The same commenter also argues that, for non-reactor licensees, this requirement imposes an unnecessary burden and significant cost, including the cost to develop the trust arrangements and ongoing trustee fees. These costs are not insignificant in the context of the amount of the guarantees being provided by many non-reactor licensees. Moreover, the cost is simply not justified given the already very high thresholds for qualifying to give a guarantee (e.g., an investment grade credit rating). A company that drops to a slightly below investment grade rating is not necessarily in financial distress. This itself is a very early warning signal, which can be used as the trigger point for requiring the creation of the trust and setting aside of funds, long before the company's ability to fund the guarantee can seriously be questioned. Thus, the commenter suggests that the requirement to establish a trust be imposed at the time this advance indicator of a potential financial issue arises, and payment under a guarantee is required under the new rules. For reactor licensees, the requirement for an existing standby trust is not a major issue, because existing trust arrangements should qualify to serve this

purpose. If this requirement is retained, a clarifying sentence should be added: "An existing trust established for purposes of meeting the prepayment or external sinking fund methods pursuant to 10 CFR 50.75(e)(1) is acceptable to serve as the "standby trust." This commenter concluded that there is insufficient justification to require additional standby trust agreements for financially sound companies well in advance of the need.

*Response:* As stated in the proposed rule's preamble, the standby trust is necessary to ensure that if the entity supplying financial assurance is required to provide funds, the funds do not need to go directly to the NRC, which would then be required to remit them to the U.S. Treasury. For funds placed in a standby trust, the NRC can issue instructions to the trustee to expend the funds on decommissioning without facing the possibility of significant delays in carrying out decommissioning. If the NRC has required the guarantor to fund the standby trust, it will be because the parent or self-guarantor no longer can pass the financial test and has not been able to obtain alternative financial assurance in an approved form. Thus, because the financial strength of the parent or self-guarantor at that point will not be sufficient to pass the financial test the argument about the financial vulnerability of the guarantor versus the vulnerability of the trustee is not relevant. Furthermore, the licensee should be able to set up a standby trust with de minimus funding at relatively little cost. The NRC is not aware of any reason why a nuclear power reactor could not revise and use a tax-qualified or non-tax-qualified trust fund that the reactor already has in place as its standby trust. Having the trust in place from the beginning of time that the licensee relies on a guarantee for its financial assurance will ensure that if the funds are needed for decommissioning delays will not occur while the trust is set up.

*Comment H.9: Parent company guarantor is subject to Commission orders.*

One commenter noted that the proposed rule would require that what is essentially a consent order be entered into by a parent company seeking to provide a guarantee on behalf of its subsidiary.

*Response:* The NRC believes that the provision under which a parent company, providing a parent company guarantee on behalf of its subsidiary, must agree that it would be subject to Commission orders to make payments under the guarantee agreement would essentially require the parent's consent to NRC personal jurisdiction, and acknowledgement that it is engaged in NRC subject matter jurisdiction, but not the parent's waiver of all hearing rights or defenses.

*Comment H.10: Joint and several liability for the full cost of decommissioning.*

*Comment H.10:* Several commenters objected to the proposed addition of a new joint and several liability provision to Part 30 appendix A. The provision (designated as Section III.E in the proposed rule) pertains to the parent company guarantee option NRC licensees have for providing financial assurance, and states as follows:

> The guarantor must agree that it is jointly and severally liable with the licensee for the full cost of decommissioning, and that if the costs of decommissioning and termination of the license exceed the amount guaranteed, the guarantor will pay such additional costs that are not paid by the licensee.

The comments objecting to this provision are collectively summarized below in the following paragraphs.

Adopting the proposed requirement would effectively eliminate the ability of power reactor licensees to combine use of the parent company guarantee method with an external sinking fund method for providing financial assurance. In 1998, NRC changed its rules to specifically permit the current practice of using a parent guarantee in combination with a trust fund balance, a practice which had been prohibited until 1998. Now, under existing 10 CFR 50.75(e)(1)(iii)(B), a parent guarantee for a reactor licensee is expected to conform to the

“guarantee and test as contained in appendix A to 10 CFR Part 30.” Thus, changing appendix A to part 30 impacts how 10 CFR 50.75(e)(1) is applied with respect to approval of parent company guarantees, in which a guaranty is typically provided in a limited specified amount in combination with a trust fund or external sinking fund. For example, if a licensee’s trust balance is $350 million, and the NRC required amount of assurance is $360 million, a parent company guarantee may be provided in the amount of $10 million. The parent company is not guaranteeing the full $360 million. The preamble of the proposed rule published in January 2008 [73 FR at 3818] states that no changes to 10 CFR 50.75(e) requirements were being proposed. Imposing the above joint and several liability requirement on power reactors may thus be an unintended consequence of this proposed change to appendix A to 10 CFR Part 30.

Further examples were cited in which parent company guarantees have been approved by the NRC for power reactor licensees, including Orders in individual license transfer cases that do not provide for joint and several liability between a parent guarantor and licensee. In one such case, a company had acquired an ownership share in a reactor licensee and the NRC approved a guaranty (given by the parent company on behalf of the acquiring company) to provide financial assurance for the difference between the amount that was deposited in a decommissioning trust account and the NRC’s 10 CFR 50.75(c) formula amount for decommissioning. Imposition of a new requirement for the parent to assume joint and several liability above and beyond the amount of the parent guarantee would be a fundamental change, after the fact, to the terms of this transaction. There has not been any practical experience demonstrating a need to impose such a joint and several liability requirement on parent guarantors. The proposed rule’s package provides no specific evidence of any vulnerability in a parent guarantee arrangement, only a brief reference to a "potential" vulnerability [73 FR 3815]. The NRC has not articulated a factual or legal basis justifying this proposed change to Part 30.

The parent company guarantee is a legal commitment only to cover costs up to the guarantee amount. If the proposed requirement is adopted, financial auditors might consider it necessary to require the guarantors to reflect the entire projected cost among their liabilities on their financial statements. This could have the result of negatively impacting corporate credit ratings and the guarantor's ability to borrow.

*Response:* Between publication of the proposed rule and this final rule, the NRC staff has reconsidered the joint and several liability issue. For the reasons discussed below, and in consideration of the comments summarized above, the proposed joint and several liability provision is not included as part of the final rule.

During the 1990's, the NRC took steps to address the deregulation of electric utilities. As part of this effort, a "Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry" was published on August 19, 1997 (62 FR 44071). In responding to comments on joint ownership issues raised in the draft policy statement, the NRC stated in the policy preamble as follows:

> The NRC recognizes that co-owners and co-licensees generally divide costs and output from their facilities by using a contractually-defined, pro rata share standard. The NRC has implicitly accepted this practice in the past and believes that it should continue to be the operative practice, but reserves the right, in highly unusual situations where adequate protection of public health and safety would be compromised if such action were not taken, to consider imposing joint and several liability on co-owners of more than *de minimis* shares when one or more co-owners have defaulted. The NRC is addressing the issue of non-owner operators separately. [62 FR 44074].

In line with the above, a proposed rule ("Financial Assurance Requirements for Decommissioning Nuclear Power Reactors") was published on September 10, 1997 [62 FR 47588] wherein the NRC stated in the preamble as follows:

> The regulations do not explicitly impose joint liability on co-owners and co-licensees. … [The NRC] sees no need to impose an additional regulatory obligation of joint liability on co-owners or co-licensees. [62 FR at 47594 col. 2].

In response to requested input on how to address the issue of future funding shortfalls caused by underestimates of decommissioning costs, the NRC noted in this preamble its authority to require power reactor licensees to submit their current financial assurance mechanisms for review, and stated in this regard as follows:

> "The Commission reserves the right to take the following steps in order to assure a licensee's adequate accumulation of decommissioning funds: review, as needed, the rate of accumulation of decommissioning funds; and either independently or in cooperation with either the FERC and the State PUC's, take additional actions as appropriate on a case-by-case-basis, including modification of a licensee's schedule for accumulation of decommissioning funds. [62 FR at 47597 col. 2].

In the final published rule ("Financial Assurance Requirements for Decommissioning Nuclear Power Reactors" (63 FR at 50465 et seq., September 22, 1998), the above-quoted language from the preamble was codified as 10 CFR 50.75(e)(2), and this provision remains in place today.

In the 1998 final rulemaking, rather than revising the Part 50 definition of "electric utility" as initially proposed, the NRC instead amended 10 CFR 50.75 by replacing its references to electric utilities with references to power reactor licensees. This action had the effect of separating issues of whether applicants for reactor licenses are financially qualified under 10 CFR 50.33(f) (where the definition of "electric utility" is still relevant) from 10 CFR 50.75 financial assurance for decommissioning issues [see 63 FR at 50466].

In this latter area, the NRC endorsed the need for flexibility given the ongoing restructuring of the electric power industry. For example, situations could arise in which the plant operator has greater financial resources than the plant owner, and the NRC therefore declined to exempt operator licensees from financial assurance for decommissioning requirements [See 63 FR at 50468]. Among the 1998 amendments, 10 CFR 50.75(e)(1)(vi) was added, and 10 CFR 50.75(e)(1) was otherwise structured to provide a variety of approved financial assurance mechanisms [see 63 FR at 50469 col. 2].

In 1998, the NRC similarly endorsed using combinations of financial assurance methods, and the 1998 rulemaking removed the regulatory prohibition which did not allow use of either the self-guarantee or parent company guarantee "in combination with other mechanisms" (but in order to avoid double counting the same assets, the prohibition on using the self-guarantee and parent company guarantee "in combination with each other" was retained) [63 FR at 50473]. The combination of a self-guarantee or parent company guarantee and an external sinking fund "appears to provide a relatively low-cost means" to provide financial assurance while the reactor licensee continues to "gradually fund decommissioning costs over time." Accordingly, 10 CFR 50.75(e)(1) was amended as described above, which "eliminated the prohibition on combining parent company or self-guarantees with external sinking funds" [63 FR at 50473].

The proposed Decommissioning Planning rule was published for comment on January 22, 2008 (73 FR at 3812 et seq). The January 2008 preamble's statement (73 FR at 3818) that no changes to 10 CFR 50.75(e) were being proposed was accurate. But the Staff failed to acknowledge there the connection between 10 CFR 50.75(e)(1) and 10 CFR Part 30, Appendix A. The existing parent company guarantee provisions of 10 CFR 50.75(e)(1)(iii) reference 10 CFR Part 30, Appendix A. Thus, adding a joint and several liability provision to the Parent Company Guarantee requirements under Section III of Appendix A to Part 30 would effectively change the 10 CFR 50.75(e)(1) requirements. No such change in policy was intended, and this was not part of the Decommissioning Planning rule's technical basis.

The decision not to establish here by rule a joint and several liability requirement should not be read as meaning that the NRC will henceforth never seek to impose such liability on the parent corporation of an NRC licensee. In unusual cases where the legal doctrine known as "piercing the corporate veil" may be applicable, the NRC may pursue such a remedy (as it has in the past). Thus, in taking this rulemaking action, the NRC intends no change in its position

regarding its legal right to seek funds from a licensee's corporate parent in appropriate, case-specific circumstances.

*Comment H.11: Issues when guarantor is in financial distress.*

One commenter, supported by several additional commenters, argued that the proposed rule is overly harsh in requiring payment of the guarantee if a triggering event occurs. Options short of such payment should include use of a third party letter of credit. The rules should be revised to provide that upon NRC's determination that the guarantee is no longer acceptable, it may be replaced by another acceptable form of financial assurance.

*Response:* The current decommissioning financial assurance rules allow a licensee that has previously relied upon a parent guarantee or self-guarantee, but which no longer can do so because it or its parent cannot pass the financial test, to obtain a replacement form of financial assurance. However, if a guarantor's ability to pay its debts is compromised, the NRC may seek immediate payment of the entire DCE, or a lesser amount if the guarantee is combined with another financial assurance mechanism, to the standby trust. Under the existing financial assurance requirements, a licensee must notify the NRC in writing immediately following the filing of a bankruptcy action. The revisions to the requirements provide a more detailed description of the information to be provided in such a situation, as previously set forth in guidance.

*Comment H.12: Elimination of the escrow.*

Several commenters supported retention of the escrow as a financial assurance mechanism. One commenter argued that NRC lacked a clear basis for eliminating the escrow, stating that the escrow account is a sound financial instrument that is protected to the same extent as a trust fund during bankruptcy. It stated that NRC's arguments that a dedicated trust fund should be outside the reach of creditors in a bankruptcy also would apply to a dedicated escrow account. The commenter noted that in cases where the amount of decommissioning

funding assurance is relatively small, e.g., $100,000, use of an escrow account may be less expensive and more appropriate, because the cost of trust arrangements and annual trustee fees may be prohibitive. While eliminating the escrow option would thus particularly impact small materials licensees, small minority owners of power reactors during decommissioning may also want to use an escrow account. Two other commenters said that NRC should not limit the options (instruments) available for financial assurance, and noted that Agreement State licensees were using escrows.

*Response:* As stated in the proposed rule's preamble, the NRC does not agree that escrows are as secure as trust funds in the event of bankruptcy [73 FR 3819 c. 1], and the commenter's general statements to the contrary are not persuasive. While the NRC agrees that a number of financial assurance options should be available, the NRC must balance cost and availability with other factors, including especially the ability of the mechanism to provide funds for decommissioning when needed. The NRC has evaluated the likelihood that an escrow could survive the bankruptcy, insolvency, or financial incapacity of the licensee, and concluded that in comparison to other financial mechanisms like the trust, surety bond, or letter of credit, the escrow is significantly less secure. The U.S. Environmental Protection Agency decided in 1981 not to add the escrow account as an approved financial assurance mechanism [January 12, 1981; 46 FR 2827]. Based on these considerations, the NRC is removing the escrow from the list of approved mechanisms in 10 CFR 30.35(f)(1), 40.36(e)(1), 70.25(f)(1), and 72.30(e)(1). Note that this rulemaking does not eliminate use of escrows as an option for Part 50 licensees. Power reactor licensees are allowed to continue their use of an escrow account, pursuant to 10 CFR 50.75(e), due to an unintentional omission by NRC to include paragraphs 10 CFR 50.75(e)(1), (h)(1), and (h)(2) in the scope of the proposed rule text. The NRC plans to make that regulatory change in the future in a separate rulemaking.

*Comment H.13: Elimination of the line of credit.*

One commenter supported retention of the line of credit, noting that while no NRC licensees were apparently using a line of credit for financial assurance, such is not the case with respect to Agreement State licensees.

*Response:* The NRC finds that a letter of credit - which will be available for use - has many of the attributes in terms of cost and availability as a line of credit, but provides greater security. A line of credit can be cancelled quickly if certain financial conditions are not met, while a letter of credit represents a more binding obligation of the financial institution. Based on these considerations, and those discussed in the proposed rule's preamble [73 FR 3826 c. 3], the NRC is removing the line of credit from the list of approved mechanisms in 10 CFR 30.35(f)(1), 40.36(e)(1), 50.75(e)(1)(iii)(A), 70.25(f)(1), and 72.30(e)(1).

*Comment H.14: Allowing intangible assets in the determination of net worth.*

Some commenters disagreed with the proposal to allow intangible assets to be used in the determination of net worth for purposes of meeting the financial test applied to those seeking to use a parent company or self-guarantee financial assurance method. Two commenters, including CRCPD, pointed to recent overvaluing of bundled mortgage assets, and said that in light of this experience the NRC should reconsider allowing intangible assets to be used in conjunction with an investment grade bond rating to meet financial test criteria.

In contrast, several commenters representing both materials licensees and reactor licensees stated that consideration of intangible assets should be allowed. One commenter noted that the NRC had already granted an exemption to one licensee allowing a company with an investment grade bond rating to consider intangible assets to meet the 10 times ratio test. The commenter noted that intangible assets generally include assets such as goodwill, brand value, or patents and that, as recognized in the proposed rule's preamble [73 FR 3812, 3825], financial accounting standards issued after 1988 (when the NRC's original decommissioning

rule was adopted) provide objective methods for valuation of such intangible assets. According to the commenter, for a diversified technology and manufacturing company with a history of acquisitions intangible assets are a significant measure of the financial stability of the company. Another commenter stated that permitting the consideration of intangible assets is an appropriate change in light of the development of objective methods to value intangible assets.

*Response:* The NRC agrees with this latter set of comments. The NRC has examined a sample of firm financial reports to ensure that confirmatory information about intangible assets could be obtained from publicly available quarterly and annual reports of publicly traded firms. The NRC finds that bundled mortgage assets are sufficiently dissimilar to intangible assets that the recent problems associated with bundled mortgages do not provide a basis for withdrawing this provision from the final rule. On the basis of these considerations, and those discussed in the proposed rule's preamble [73 FR 3825], the NRC will allow the use of intangible assets.

*Comment H.15: CPA evaluation of off-balance sheet transactions.*

A commenter opposed the requirement that the CPA provide information about off-balance sheet transactions, stating that it was already difficult to meet the timetable for annual submittal of the financial assurance report, which already must be reviewed by a CPA. The commenter consulted with an independent accountant, who said that meeting the additional requirements would take considerable more evaluation time at a greater cost. According to the commenter, if the proposed provision is adopted, the date for submission of financial assurance reports will need to be extended by at least one month to allow reasonable performance of the additional evaluation. Another commenter argued that CPA certification was an unnecessary burden and cost, because company officials are already required to submit information that is complete and accurate in all material respects, and this should provide adequate assurance that the financial information is being evaluated by qualified company personnel.

*Response:* Firms may, as a means of reducing risk or achieving tax minimization opportunities, account for certain kinds of transactions off the company's balance sheet. Recent experience has shown, however, that such off-balance sheet transactions may constitute a source of risk to the firm. Information should be readily available concerning such transactions, particularly for publicly traded firms. Section 401(a) of the Sarbanes-Oxley Act of 2002 requires disclosure of off-balance sheet transactions that may be material. The Securities and Exchange Commission in 2003 issued regulations to implement Section 401(a). The American Institute of Certified Public Accountants has prepared materials for company audit committees and accountants on the identification and evaluation of such transactions. The NRC therefore finds that the proposed requirement will be neither difficult nor unduly expensive for licensees to meet. The NRC is therefore retaining the proposed requirement in the final rule.

*Comment H.16: CPA verification of bond ratings.*

One commenter opposed the proposed new requirement for certification by an independent CPA of a parent company's or a licensee's bond ratings as part of showing that the criteria for using a parent company guarantee or self guarantee are met (as set forth in 10 CFR Part 30 appendices A and C, respectively). The commenter stated that this new requirement would impose an additional unnecessary burden and cost. Company officials now are required to submit information that is complete and accurate in all material respects, e.g., 10 CFR 30.10, 40.10, 50.5, 70.10, and 72.12. This should provide adequate assurance that the specific bond rating is being evaluated by qualified company personnel, and if the importance of such information needs to be emphasized the rule could simply require a company to certify its accuracy.

*Response:* In the past, those addressing the 10 CFR Part 30 Appendices A and C financial test criteria have frequently failed to correctly apply the requirement to use the current rating of the most recent bond issuance. As stated in the proposed rule's preamble [73 FR

3826 c. 2], NRC finds that requiring an audit of the bond rating will minimize the potential of future such errors being made. An independent CPA is already required to audit the financial test data for a parent company and a self guarantee, and adding the verification of a bond rating to this existing audit is not a significant burden.

*Comment H.17: Requirement to base DFP on unrestricted release*.

Two commenters supported the proposal to require licensees to base their DFPs and DCEs on unrestricted release, unless they can show the ability to meet the restricted release criteria. Making early funding arrangements to cover the increased costs of unrestricted release will increase the likelihood that the funds will be available when needed.

*Response:* The NRC agrees with these comments. Based on these considerations, and those discussed in the proposed rule's preamble [73 FR 3818 c. 3], the NRC is retaining the proposed requirement in the final rule.

*Comment H.18: Basis for the cost estimate in the DFP*.

One commenter argued that the DFP should include an estimate of the funds necessary to pay licensing fees. The public should not have to pay the costs of inspections, document reviews, license amendments, and other NRC regulatory activities when a license is taken over by an independent third party. Nor should a licensee be exempted for annual fees that ordinarily would have been assessed. Recovery of these fees should be part of any financial assurance.

*Response*: Applicable guidance (section A.3.17 of NUREG-1757, Volume 3, appendix A) specifies that one of the miscellaneous costs that should be included in the DCE is licensing fees. But making this a regulatory requirement was not proposed in the draft rules published for public comment. The NRC thus views this comment as raising issues that are outside the scope of this rulemaking.

*Comment H.19: Basis for certification.*

Two commenters argued that DCEs should be based on a licensee's actual radionuclide inventory, rather than on license limits. Both stated that, for example, broad scope licensees may be licensed to possess multi-Ci quantities of a broad range of radionuclides, but may actually possess only limited quantities of radionuclides in a narrow range. The DCEs should be based on the historic use as indicated in licensee inventory records.

*Response:* This concern is addressed in part by existing regulations in 10 CFR Parts 30, 40, and 70, allowing licensees holding limited amounts of licensed material to certify and to provide specified amounts of financial assurance. Such licensees need not submit a DCE and DFP to NRC for approval. The NRC recently updated the certification amounts in another rulemaking, and in the current rulemaking is updating NUREG-1757, Volume 3, appendix A, Attachment 1 to reflect those changes to certification amounts. However, the agency did not propose in this rulemaking to revise the certification amounts or the basis upon which a licensee determines the certification amount it must provide. Therefore, the request to base the certification amounts on actual radionuclide inventory is not within the scope of this rulemaking.

*Comment H.20: Use of third-party costs*.

One commenter opposed the proposed requirement in § 30.35(e)(1)(i)(A) that each DFP must be based on the cost of an independent contractor to perform all decommissioning activities. It stated that its industry had extensive experience using licensee staff to perform decommissioning, and made use of custom-designed equipment that only licensee staff was experienced in using safely. Use of licensee staff, according to the commenter, provided the optimum cost effective schedule.

*Response:* The rule is not intended to preclude the use of licensee staff to carry out decommissioning activities. However, the financial assurance requirements are designed to

provide the funds necessary to carry out decommissioning activities even when the licensee is no longer present or financially able to do so and, as a consequence, licensee staff are not available to perform decommissioning. Thus, NRC has recommended in guidance since 1988 that DFPs be based on the use of third party contractors, which as the commenter notes are likely to be more expensive than licensee staff, to ensure that if third party contractors must be relied upon the necessary funds are available. The proposed rule codifies the previously mentioned guidance.

*Comment H.21: Timing of preparation of DFP and DCE*.

One commenter stated that the proposed requirement in § 30.35(e)(2) to submit a DFP at the time of license renewal, in addition to submitting one at intervals not to exceed 3 years, would cause an excessive frequency of submissions because the license renewal interval is typically 5 years. The commenter suggested that submission of an updated DFP be required only at the time of license renewal or when a substantive change is necessary or as specified as a license condition. Of these alternatives, the commenter recommended specifying the renewal period as a license condition, possibly on the order of 5 to 6 years. The commenter argued that improvements in operations tended to cancel out inflation in the costs of decommissioning and waste disposal.

*Response:* Frequent revisions are desirable to ensure that the DCE remains accurate and reflects current prices for labor and materials, even in periods of rapid inflation. On balance, the NRC finds the benefits of frequent revisions to the DCE outweigh the costs, and that revisions should be submitted as part of a license renewal request in addition to being submitted every 3 years.

*Comment H.22: Status of DFPs for operating power reactors*.

One commenter criticized the proposed rules on the basis that they would require all types of licensees, except licensees of operating power reactors, to submit a DFP to the NRC if

during the site survey the licensee detects radioactive contamination that would have to be removed during decommissioning. Under the proposed rule, the licensee would have a year after detection of the contamination to submit the funding plan or update to the NRC. The commenter supports this concept, and notes that it may in some instances serve as an incentive to minimize contamination so that the licensee does not have to go to the trouble and expense of preparing or updating a DFP and setting aside additional decommissioning funds. But the flaw in the NRC's proposed changes to 10 CFR 30.35, 40.36, 70.25, and 72.30 is the apparent exemption being granted to power reactor licensees. According to the commenter, a survey of a power reactor site may detect an amount of contamination that materially increases the cost of decommissioning, yet the NRC proposes to give such a licensee the option of doing nothing more than recording the information in the plant's decommissioning planning records. This is not acceptable, and is not protective of long-term public safety.

Another commenter objected to the proposed rule's failure to require full public reporting of the factors used to estimate decommissioning costs, and the NRC's failure to set a specific and responsible deadline for licensee submission of DFPs incorporating costs stemming from known subsurface contamination. The commenter urged the NRC to require power reactor, dry cask storage, and materials licensees to thoroughly survey their facilities for contamination within six months of the final rule's effective date, and submit a survey report and a DFP within a year of that date. The commenter said the NRC also should require reactor licensees to submit an updated DFP to the NRC within a year of discovery of site contamination.

*Response:* Existing 10 CFR Part 50 regulations (e.g. § 50.75 and § 50.82) contain a comprehensive set of decommissioning requirements unique to power reactors. The NRC does not agree that these requirements fail to adequately protect public health and safety. Moreover, in the proposed rule's preamble, the NRC stated that it was making no changes with respect to the obligated amount for power reactor decommissioning financial assurance [73 FR 3818 c. 1].

Because the proposed rule did not address the manner or amount of financial assurance required for nuclear power reactors, comments seeking such actions are outside the scope of this rulemaking.

*Comment H.23: Potential redundancy in DFP requirements*.

Two commenters stated that in proposed § 72.30(b), paragraphs (b)(1) and (b)(4) are partially redundant and should be merged. The commenter also noted that the comment also related to the proposed rules in 10 CFR Parts 30, 40, and 70.

*Response:* The NRC disagrees that paragraphs (b)(1) and (b)(4) should be merged. Section 72.30(b) previously read as follows:

> "(b) The proposed decommissioning plan must also include a decommissioning funding plan containing information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI or MRS. This information must include a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning from paragraph (c) of this section, including means of adjusting cost estimates and associated funding levels periodically over the life of the ISFSI or MRS."

In the proposed rule, 10 CFR 72.30(b)'s first sentence has become paragraph (b)(1), which states the overall general obligation regarding the DFP. The proposed requirement in paragraph (b)(4) largely repeats the text in the last sentence of the preceding paragraph, describing in detail the method of assuring funds. Both paragraphs (b)(1) and (b)(4) have independent utility – just as the two sentences in the former 10 CFR 72.30(b) had – so no change in the final rule will be made in response to this comment.

*Comment H.24: Implementation schedule for submission of revised DFPs.*

Several commenters addressed the implementation of the revised DCE and DFP requirements. One commenter urged the NRC to allow at least one year for licensees to prepare and submit their first updated DFPs, and to state this submittal time in the final rule.

Another suggested that NRC should consider a time frame of 5 years for implementation, because existing sites would face significant costs retrofitting or upgrading their facilities.

*Response:* The NRC has established the final rule effective date to be one-year following final rule publication in the *Federal Register*. This provides sufficient time to respond to the revised DFP requirements. The NRC concluded that adoption of a period as long as 5 or 6 years between revisions of the DFP could cause the DCEs to fall substantially out of date.

*Comment H.25: Special requirements for 10 CFR Part 72 licensees*.

*Comment H.25.1:* One commenter, supported by several additional commenters, noted that proposed rule section 10 CFR 72.13 states that only § 72.30(e) and (f) apply to ISFSI general licensees (holders of a Part 50 License). The commenter believes that the basis for excluding ISFSI general licensees from compliance with the new requirements in proposed rule § 72.30(b), (c), and (g), was that these licensees have a Part 50 license and, therefore, have accumulated or have access to adequate funds for decommissioning. However, the commenter argued that as written the proposed rule § 72.30(b)(2)(i) would require holders of a Part 50 license, who are also Part 72 specific licensees, to submit a separate DCE for their ISFSI. This effectively prohibits the Part 50 licensee from continuing to include in the Part 50 DCE, the ISFSI decommissioning costs and related assumptions. The commenter urged the NRC to revise the proposed rule to allow a Part 72 specific licensee, who also holds a Part 50 license, to continue to include in the Part 50 DCE the ISFSI decommissioning costs and related assumptions. The same commenter also noted that, as written, the proposed rule § 72.30(c) would require holders of a Part 50 license, who are also Part 72 specific licensees, to report their adjusted ISFSI DCE information to the NRC at intervals not to exceed 3 years. Part 72 specific licensees that have a Part 50 license normally have included costs for decommissioning of the ISFSI in their Part 50 DCE. The proposed rule should be revised to allow a Part 72

specific licensee with a Part 50 license to continue to report their ISFSI DCE information to the NRC in their Part 50 DCE submittal using the Part 50 reporting interval.

*Response:* This rulemaking revises § 72.30(b), and adds new paragraphs (c), (d), and (g). Existing paragraph (c) is redesignated as paragraph (e), and existing paragraph (d) is redesignated as paragraph (f). Section 72.13(b) references the Part 72 provisions applicable to those holding Part 72 specific licenses, and 10 CFR 72.13(c) references the Part 72 provisions applicable to those holding Part 72 general licenses. Thus, any amendments to 10 CFR 72.30 need to be reflected in 10 CFR 72.13.

In considering this comment, the NRC realized that the proposed changes to 10 CFR 72.30 - as published in the January 22, 2008 proposed rule - are not fully reflected in the discussion there of the proposed amendments to 10 CFR 72.13. While the NRC correctly stated in its January 2008 proposed rule that 10 CFR 72.13(c) was being amended to reference 10 CFR 72.30(e) and (f) – reflecting the fact that existing 10 CFR 72.13(c) references 10 CFR 72.30(c) and (d) – the proposed revisions to paragraph (b), and the addition of new paragraphs (c), (d), and (g) to 10 CFR 72.30 are not referenced in the discussion of 10 CFR 72.13. As discussed further in this document, the NRC is correcting the inadvertent omissions in the final rule, and finds that Part 72 general licensees were fairly on notice that they were subject to revisions in DFP requirements due to the provisions of existing § 72.30(d)(4).

As stated previously, existing 10 CFR 72.13(c) references 10 CFR 72.30(d). Thus, those holding Part 72 general licenses are subject to the 10 CFR 72.30(d) requirements, including the DFP provisions referenced in 10 CFR 72.30(d)(4). The new provisions in 10 CFR 72.30(b) provide further details of what initial DFPs must include. New paragraph (c) of 10 CFR 72.30 provides a set of timing provisions describing when updated DFPs must be submitted for NRC approval. New paragraph (d) of 10 CFR 72.30 is a special 1-year DFP update provision based on 10 CFR 20.1501 survey results. Together, these new DFP requirements, for

purposes of applicability, should be treated the same as the existing 10 CFR 72.30(d)(4) DFP provisions, as it would make no sense to have some but not all DFP requirements be applicable to Part 72 general licensees.

Existing Part 72 subpart K requirements already impose similar requirements on Part 72 general licensees. Existing 10 CFR 72.218(a) references 10 CFR 50.54(bb), which is the functional equivalent of a DFP provision in requiring a one-time report setting forth the licensee's program to provide funding for management of spent fuel during the time between when the reactor shuts down and when DOE accepts title to and takes possession of the spent fuel. Existing 10 CFR 72.218(a) further requires that a plan be identified for removing spent fuel from the reactor site in connection with decommissioning activities. Part 72 general licensees are thus already subject to spent fuel funding requirements. Similarly, 10 CFR 72.218(b) references 10 CFR 50.82, stating that such applications must describe how spent fuel will eventually be removed from the reactor site.

A further reason that the new 10 CFR 72.30 provisions referenced previously are applicable to Part 72 general licensees is the connection some of the provisions have [10 CFR 72.30(b)(2)(iii) and (b)(5), and 72.30(d)] with 10 CFR Part 20 requirements. Such requirements are applicable to the Part 72 general licensees because Part 20 is applicable to all Part 50 licensees.

Accordingly, the final rule amends 10 CFR 72.13(c) so that it correctly references 10 CFR 72.30(b), (c), (d), (e), and (f) as being applicable to holders of Part 72 general licenses.

The requirements of new 10 CFR 72.30(g) – under which licensees must replenish fund levels if decommissioning funds fall below specified levels – are unlike the previously referenced DFP and related requirements in that no similar provisions now exist in either Part 72 or Part 50. Additionally, the January 2008 proposed rule gave no notice that any such provisions would be added to Part 50, and a Part 72 general licensee can only be subject to requirements that a

Part 50 licensee is subject to. Accordingly, new 10 CFR 72.30(g) will be applicable only to holders of Part 72 specific licenses. There is no need to amend 10 CFR 72.13(b) in this regard, because it already specifies that 10 CFR 72.30 requirements apply to holders of Part 72 specific licenses.

*Comment H.25.2:* Another commenter argued that the NRC had approved partial exemptions from 10 CFR 72.30(c)(5) for Part 72 specific licensees to continue to rely on 10 CFR 50.75(e)(1)(ii)(A) as their exclusive mechanism for providing financial assurance for ISFSI decommissioning even after the reactor's Part 50 license was terminated. This commenter also encouraged the NRC to allow Part 72 specific licensees that no longer have a power reactor license under Part 50 to continue to use the methods of 10 CFR 50.75(b), (e), and (h) without the need for an exemption. The commenter provided recommended wording changes to 10 CFR 72.30(e)(5) to achieve this result.

*Response:* The NRC agrees with these comments and has made the suggested changes to the final rule text in § 72.30(e)(5), as discussed further in Section IV below.

*Comment H.25.3:* A commenter stated that to meet the requirements of this rule change, a Part 72 specific licensee will need a considerable amount of time and resources to prepare this DFP and its detailed DCE for submittal to the NRC. It is recommended that the NRC provide at least one year following the effective date of the rule change for Part 72 specific licensees to prepare and submit their first updated DFP. This submittal time should be stated in § 72.30(c) of the final rule.

*Response:* NRC agrees with this comment, except that there is no need to specify a submittal time in § 72.30(c). As explained in Section II.S above, a one year implementation period is provided for all of the final rule requirements (except for the reporting provisions in 10 CFR 50.82(a)(8)(v) and (vii), which are due by March 31, 2010).

*Comment H.25.4:* Several commenters cited the proposed provision in § 72.30(c) which states: "If the amount of financial assurance will be adjusted, this cannot be done until the updated decommissioning funding plan is approved." The commenters asked why increases could not occur before approval of the DFP. One commenter noted that § 72.54(e) currently states that, "the amount of financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning…" and recommended that the wording in the proposed § 72.30(c)'s last sentence be changed to read as follows: "If the amount of financial assurance will be decreased, this cannot be done until the updated decommissioning funding plan is approved."

*Response:* NRC agrees with the commenters that it needs to approve only reductions in the amount of financial assurance in the DFP. In conformance with this comment, the NRC has made changes to the final rule text in § 30.35(e)(2), § 40.36(d)(2), § 70.25(e)(2), and § 72.30(c).

*Comment H.25.5:* A commenter noted that Part 72 does not have provisions for an ISFSI licensee to certify to a prescribed amount of financial assurance like Parts 30, 40, and 70 material licensees do. Therefore, the § 72.30(f)(4) wording, related to certifying to a prescribed amount of financial assurance, should be deleted and item (4) be reworded as: "(4) Records of the cost estimate performed for the decommissioning funding plan and records of the funding method used for assuring funds are available for decommissioning." The same commenter recommended changes in cross references in Part 72 to address proposed rule changes.

*Response:* The commenter has identified a technical error in the existing regulations which was not identified in the proposed rule. Because the suggested action to remove "amount certified for decommissioning" constitutes a technical correction, the NRC is making the correction in Part 72 even though it was not previously proposed. The NRC is also correcting cross references in the final rule.

*Comment H.26: Monitor decommissioning fund investment balance.*

*Comment H.26.1:* Several commenters disagreed with the proposed regulations in 10 CFR 30.35(e)(1)(iv), 40.36(d)(1)(iv), 70.25(e)(1)(iv), and 72.30(b)(6) requiring that if there are changes to the DCE, the amount of financial assurance must be revised to match the cost estimate. One commenter agreed that licensees might consider increasing decommissioning assurance when remediation costs exceed the initial DCE, but said the increase should not be a requirement. The actual remediation costs could exceed DCEs due to a licensee deciding for business purposes to choose an expensive method to remediate. This might be to minimize a business interruption or to organize the remediation around ongoing operations. Another commenter stated that the new rules require that additional financial assurance must be provided each year, if there is any shortfall in existing assurance levels. An annual assessment of financial assurance is already required by 10 CFR 50.75(b)(2), but the new rules would impose a firm requirement, which would be less flexible than NRC's current case-by-case evaluation of the funding plans for shutdown reactors. To assure that the new rule is not interpreted as a departure from current practice, the commenter recommended that NRC revise the language to provide that either additional assurance be provided or that the licensee submit an acceptable plan for obtaining additional assurance.

*Response:* Decommissioning financial assurance is required in the amount of the DCE. Just as a licensee that has not used its financial assurance proceeds wisely to remediate a site is still required to provide financial assurance to complete the remediation work, a licensee that decides to use a more expensive remediation method is required to provide financial assurance to cover the entire cost estimate. A plan for obtaining additional assurance is not considered financial assurance, and allowing a licensee to rely on a mere plan may result in significant delays and insufficient funds being available for decommissioning.

*Comment H.26.2:* Another commenter stated that the new § 72.30(g) of the proposed rule contains excessive requirements for monitoring and correcting fund balances. It noted that

Part 72 specific licenses are normally a 20 year license that will need to be renewed or extended until the U.S. Department of Energy takes title to the spent nuclear fuel. Based on continuing delays in the scheduled opening of the federal repository, a specific and realistic ISFSI facility decommissioning date cannot be determined, however, it may not occur until approximately 2030 or 2040. Based on such a long period of ISFSI licensed operations, the requirements in § 72.30(g) to monitor decommissioning fund balances "quarterly" and "at any time" and to increase fund balances "within 5 days" are very excessive. The commenter recommended several changes to simplify the rule and reduce an unnecessary burden on Part 72 specific licensees, while still providing adequate assurance and information to the NRC. The commenter stated that it was not clear why the requirements in both § 72.30(g)(1) and (g)(2) are needed, because the required action (increase fund balance within five days) and reporting requirement (30 day report to NRC) are essentially the same. One monitoring requirement that requires timely action and adequate reporting should be sufficient. Based on the long duration of ISFSI operations, an annual (versus quarterly) monitoring requirement and a 30 day (versus 5 days) requirement to increase the fund balance is considered more reasonable and adequate. The commenter provided recommended wording incorporating this recommendation. The commenter also suggested that the NRC could, if it found it necessary to know when a licensee's fund balance falls below 75 percent of the required amount, add a new reporting provision. The commenter recommended language for such a provision. Finally, the commenter recommended parallel changes to § 30.35(h), § 40.36(g), and § 70.25(h).

*Response:* While ISFSIs may operate for many years, always having access to adequate financial funds is crucial if the creation of additional legacy sites is to be avoided, and funding shortfalls cannot be tolerated. However, the NRC has considered the fact that some ISFSI licensees hold both Part 72 general and specific licenses at a single ISFSI site. With respect to providing financial assurance, Part 72 general licensees are subject to Part 50

requirements, and are thus required by 10 CFR 50.75(b)(2) to adjust their financial assurance annually using a rate at least equal to formula adjustment factors in 10 CFR 50.75(c). As discussed above in comment section H.25, new 10 CFR 72.30(g) applies only to Part 72 specific licensees. To achieve greater consistency in how Part 72 general and specific licensees are regulated in this regard, the NRC is revising proposed 72.30(g)(1) in this final rule to require that the fund balance be monitored every calendar year, rather than every calendar quarter.

The NRC considers ISFSI operations to be at a lesser risk of becoming a legacy site compared to other materials licensees because many of the Part 72 licensees are also electric utilities, and thus can more easily gain access to decommissioning financial assurance funding for their ISFSI operations. The proposed quarterly monitoring requirement is being retained in this final rule for Part 30, 40, and 70 licensees.

In further response to the comment, the NRC had decided to give Part 30, 40, 70, and 72 licensees 30 days – rather than the proposed 5 days – to increase the fund balances when specified funding shortfalls exist. The process of obtaining access to funds may, in many cases, take longer than 5 days, and such a short period of time may have generated an excessive number of exemption requests for more time. Accordingly, the proposed 5-day timing provisions are revised to 30 days in 10 CFR 30.35(h), 40.36(g), 70.25(h), and 72.30(g) of this final rule. Thus, if a fund balance drops by more than 25 percent, the licensee must increase the balance within 30 days of the occurrence, and the increase must be sufficient to cover the cost of decommissioning. If a fund balance drops by 25 percent or less, Part 30, 40, and 70 licensees must increase the balance within 30 days after the end of the calendar quarter, and the increase must be sufficient to cover the cost of decommissioning. In such cases, Part 72 licensees must increase the balance within 30 days after the end of the calendar year, and the increase must be sufficient to cover the cost of decommissioning.

*Comment H.26.3:* A commenter requested that the following contents of reports required by 10 CFR 50.82(a)(8)(v) and (vii) be made available to the public: (1) The amount of funds accumulated to cover the current cost of managing spent fuel; (2) The projected costs of spent fuel management until the Department of Energy takes title to the spent fuel; and (3) The plan to obtain additional spent fuel management funds if the accumulated funds do not cover the projected costs. Potential delays in the availability of a long-term repository, issues of repository capacity, and the consequent likelihood of long-term storage of spent fuel at reactor sites make this information particularly important. This commenter also stated that the power reactor decommissioning fund should never be allowed to pay for onsite spent fuel storage.

*Response:* The financial assurance status report, due annually from the power reactor licensees under the proposed requirements in 10 CFR 50.82(a)(8)(v) and (vii), will be subject to the public disclosure requirements in 10 CFR 2.390. If a power reactor licensee considers the submitted information to be proprietary, the licensee must meet the requirements in 10 CFR 2.390(b) to support withholding the report from public disclosure. Absent such a showing, the report will be made publicly available in ADAMS. As stated by the commenter, this final rule requires in 10 CFR 72.30(g) that decommissioning financial assurance funds must be used only for decommissioning activities which would not include onsite spent fuel storage operations.

*Comment H.27: Replenish funds if an external sinking fund is used.*

*Comment H.27.1:* Almost all of the comments on the proposed requirements to track the level of decommissioning financial assurance, and to replenish the funds if, as a result of market fluctuations or other causes, they fall below certain specified levels, addressed the implications of the requirement for ISFSI's and related to 10 CFR 72.30(g) in particular. One commenter noted that the new § 72.30(g) requirements, which are consistent with the new requirements being added to § 30.35(h), § 40.36(g), and § 70.25(h) for other material licensees, would apply only to Part 72 specific licensees. These new requirements are focused on the portion of a

licensee's decommissioning funds that have been prepaid or collected and are subject to market variations. The licensee's funds associated with the prepayment and external sinking fund methods will be invested and may be subject to market variations. Because the prepayment method is expected to be fully funded at all times, the commenter believed the proposed wording would work for that mechanism. However, in the case of the external sinking fund method, the fund is not required to be fully funded until the final facility decommissioning is expected to begin. Section 72.30(b) of the proposed rule would require a Part 72 specific licensee to have an NRC approved DFP for their external sinking fund and to make deposits into the fund at least annually. Parts 30, 40, and 70 material licensees may also use an external sinking fund and could have an NRC approved DFP. The proposed wording in § 30.35(h), § 40.36(g), § 70.25(h), and § 72.30(g) does not recognize that a licensee's fund balance for their external sinking fund is not required to contain "the amount necessary to cover the cost of decommissioning" until the final facility decommissioning begins. As these proposed rule sections are currently worded, on the effective date of the rule change, some licensees would be required to fully fund their external sinking fund to cover the cost of decommissioning within 5 days and make the 30 day report to the NRC. The commenter therefore recommended that wording similar to the following be added to the proposed § 72.30(g)(1) and (g)(2) and the corresponding sections in Part 30, 40, and 70: "If …, the fund balance is below the amount necessary to cover the cost of decommissioning, or in the case of an external sinking fund the amount required at that point in time by the approved funding plan, the licensee must increase the balance to provide the required amount of funds ...."

*Response*: If funds from a Part 50 external sinking fund are to be used for Part 72 decommissioning, the funds must be reported separately under 10 CFR Part 72.30 for the ISFSI and held in a separate subaccount and this subaccount must be identified for spent fuel. The certification for an external sinking fund will include a calculation section in which the licensee

can take credit for future contributions that are provided by ratepayers and a 2 percent growth rate for the estimated number of years remaining prior to title transfer and possession of the fuel by DOE. For the Part 72 specific licensee, if this calculation yields anything lower than the total cost estimate, than the fund balance must be increased. If the fund balance is underfunded by more than 25 percent, the Part 72 specific licensee must fully fund the balance within 5 days of when such funding occurs. If the fund balance is underfunded by 25 percent or less, than the Part 72 specific licensee must fully fund the balance within 5 days after the end of the calendar quarter.

*Comment H.27.2:* A commenter stated that the proposed rule was appropriate only for prepaid funds and should not be applied to ISFSI general licensee facilities using external sinking funds. The commenter also argued that the quarterly monitoring requirements and the reporting requirements were very excessive for ISFSI facilities, which may not be decommissioned until 2030 or 2040. The commenter stated that the rule should specify the NRC position/office which should receive reports, and whether a written report is required.

*Response:* The NRC partially agrees with these comments. The reporting requirements in § 72.30(b), (c), and (d) apply to Part 72 specific and general licensees. Likewise, the financial assurance requirements in § 72.30(e), the maintenance of records important for decommissioning, and the § 72.30(f) DCE funding plan requirements, apply to Part 72 specific and general licensees. The final rule language in § 72.30(e)(5), allowing use of the external sinking fund in 10 CFR 50.75(e)(1)(ii) as the exclusive funding method, applies to Part 72 licensees who hold a 10 CFR Part 50 power reactor license and to Part 72 specific licensees who meet the Part 50 definition of an "electric utility." Regarding the reporting requirements in § 72.30(g), which apply to Part 72 specific licensees, if the decommissioning fund balance needs to be replenished, the required written report must be submitted to the Director, Office of Federal and State Materials and Environmental Management Programs. The NRC is not

adopting the commenter's suggestions regarding the timing of required reports, finding that the quarterly monitoring of funds is a prudent business practice. Also, the NRC considers the annual reporting of a financial status report to be a reasonable burden as part of a licensee's responsibility to maintain an accurate DFP.

*Comment H.27.3:* Two commenters supported the changes to § 72.30 because they address the concern that – depending on future NRC actions – spent fuel could remain in dry cask storage at reactors for decades, providing the potential for additional adverse environmental impacts whose remediation costs must be assessed and addressed in the decommissioning plan. This commenter noted that the proposed rule appears to require more specific reporting requirements for ISFSI licensees than would be required for power reactor licensees.

*Response:* NRC shares the commenter's concern about the length of time spent fuel may need to be managed at the ISFSI facility. The NRC provides oversight of the facility operations and decommissioning to prevent adverse environmental impacts. The commenter is correct that the content of the spent fuel financial status report to be required by 10 CFR 50.82(a)(8)(vii) differs from the content of decommissioning financial assurance reports required of power reactor licensees.

*Comment H.28: Support for more detail in the DCE.*

*Comment H.28.1:* Two commenters supported the proposed requirements in 10 CFR 30.35(e)(2), 40.36(d)(2), 70.25(e)(2), and 72.30(c) requiring the licensee to address how routine spills and accidental releases affect the cost of decommissioning. They believed this requirement would be a useful reinforcement to the requirements in § 40.36(f) and § 20.1101(b), which had been interpreted to require reducing dose to a receptor, but not to be drivers for environmental monitoring or remediation, particularly if the presumed receptor was not drinking water from the site. Historically, according to these commenters, sites were not characterized

until shortly before closure and routine spills were not considered significant. The commenters believed that the identification of source terms during operations would reduce the possibility of underestimation of public dose. In contrast, one commenter argued that although current regulations do not specifically require a licensee to increase its decommissioning financial assurance following a spill if the licensee decides to defer remediation to a later date, this requirement is covered by broader requirements, including ALARA provisions and the cradle-to-grave principle in managing licensed materials. These provisions can be written into the section of the DFP that specifies how the cost estimate and funding assurance are maintained and kept current. Also the plan typically will have a 25 percent contingency for unexpected cost increases that would cover all but the most unusual spill.

*Response:* The NRC agrees that the documentation of spills and accidental releases will improve the basis for the DCE, and the identification of source terms at the site during operations will help to reduce the possibility of underestimation of public dose due as a result of contaminant migration beyond the licensed site. NRC regulations allow some discretion in the licensee response to a spill or leak that is not an immediate safety concern. If the licensee chooses to defer remediation to a later date in such a situation, the licensee must document the release in its records important for decommissioning and the added cost, if any, to remediate the spill or leak which must be included in the cost estimate, DFP, and financial instruments used as decommissioning financial assurance.

*Comment H.28.2:* One commenter stated that the NRC should ensure that there is a direct correlation between decontamination costs and decommissioning funding assurances. To implement this the NRC should require bi-annual funding reports and a link between the changes proposed to 10 CFR 20.1501 and the DFP required by 10 CFR 50.75(g).

*Response:* The NRC agrees with the commenter regarding a direct correlation between the DCE and the financial assurance provided by the licensee. New 10 CFR 20.1501(b)

provides a link to the existing 10 CFR 50.75(g) provisions in requiring that survey records of subsurface residual radioactivity be kept with records important for decommissioning.

*Comment H.29: Reporting requirements for shut down power reactors.*

*Comment H.29.1:* One commenter interpreted the proposed 10 CFR 50.82(a)(8) reporting requirements as also creating a requirement that an operating utility with a shut-down reactor that funds its spent fuel storage costs from its operating budget, would instead now need to set aside large amounts of dedicated funding to pre-fund the costs of spent fuel storage.

*Response:* The proposed changes in 10 CFR 50.82(a)(8) specify increased reporting requirements for all licensees with a power reactor in decommissioning status. These reporting requirements do not change in any way the existing 10 CFR 50.75 requirements to prepay decommissioning financial assurance, or the existing 10 CFR 50.54(bb) requirements to provide funding for the management of irradiated fuel until title and possession of the fuel is transferred to the Secretary of Energy.

*Comment H.29.2:* A commenter stated that it is not clear what is meant by "the decommissioning criteria upon which the estimate is based" in proposed 10 CFR 50.82(a)(8)(v)(B).

*Response:* The proposed 10 CFR 50.82(a)(8)(v)(B) is a required element of the annual financial assurance status report to be submitted by shutdown power reactors, requiring such licensees to update DCEs. Such estimates must reflect whether the site is planned to be released for unrestricted use, or is planned to be released under restricted conditions. Both of these release options are available -- based on how the term "decommission" is defined in § 50.2 -- and the option chosen will affect decommissioning costs.

*Comment H.29.3:* One commenter argued that the proposed 10 CFR 50.82(a)(8)(vii) reporting requirement regarding spent fuel management costs was not necessary for facilities that are owned by operating utilities with a significant electric sales income and who have

access to rate relief. According to this commenter, for sites owned by an operating utility, the annual expense for nuclear fuel storage will be a very small percentage of the utility's total operating budget and would be included in rate relief proceedings.

*Response:* Regardless of company size, all licensees must demonstrate and provide adequate financial assurance for decommissioning. For facilities that are owned by an electric utility, as defined in 10 CFR 50.2, this demonstration (described in NUREG-1757, Volume 3, Revision 1 released with the final rule) may include a calculation for an external sinking fund in which the licensee can take credit for future contributions that are provided by ratepayers and a 2 percent growth rate for the estimated number of years remaining prior to DOE taking title and possession of the spent fuel. The NRC agrees that the annual expense and future contributions for nuclear fuel storage will be a small percentage of an electric utility's total operating budget.

*Comment H.29.4:* A commenter noted some technical obstacles to the proposed reporting under 10 CFR 50.82(a)(8). First, because DOE has provided no reliable basis for determining when it will begin to perform and complete its obligation to remove the nation's used nuclear fuel from individual facilities or take title to the fuel, the total cost of fuel storage cannot be estimated. The total cost is the summation of annual expenses over time, and because there is a lack of any definitive information on the duration of the storage periods it is unreasonable to require the owners to pay up-front a projected unknown total cost of nuclear fuel storage. Second, under the DOE Standard Contract and legal decisions, DOE is liable to pay for the storage cost for nuclear fuel. Ongoing and possible future litigation will eventually determine the schedule and amounts for which the DOE is responsible. For permanently shutdown plants, it is the DOE, not the utility, which should be required to provide financial assurance for fuel storage.

*Response:* The extent to which the DOE may be responsible for onsite spent fuel storage costs is an issue that is outside the scope of this rulemaking. Moreover, the NRC

disagrees with the claim that total spent fuel storage costs cannot be estimated. Similar cost estimates for decommissioning are required by existing regulations [10 CFR 50.82(a)(8)(iii)], and have duly been submitted by NRC licensees. While estimates of future costs will always be based on uncertainties to some extent, this does not mean that no estimate at all can be made. This is as true for estimated spent fuel storage costs as for any other estimated cost.

*Comment H.29.5:* One commenter argued that the NRC is imposing a new annual reporting requirement on shutdown reactors that requires a higher level of detail than the annual decommissioning funding status reports currently required under 10 CFR 50.75(f). It is not clear why the existing reports are not adequate, but at a minimum, there should not be duplicative requirements. If NRC adopts this provision, it should remove the reporting requirement under 10 CFR 50.75(f). To the extent that NRC's desire is to ensure appropriate funds will be available by reviewing the historical expenditures, power reactor licensees are able provide this information. However, it is unlikely to be useful other than for interest's sake, and further use of this data to predict future decommissioning costs may be suspect. The value of the reporting requirement does not justify burden upon licensees, because only a few plants have decommissioned to unrestricted release and this data does not constitute a representative sample. Licensees will be unduly challenged by rate regulators, financial auditors and other stakeholders having opposing interests as they relate to funding decommissioning. The existing NRC minimum funding formulae provide stability in rate regulation prior to retirement. Estimates of only forward-looking expenses have provided the same stability for retired units. This section should be focused only on forward-looking needs to meet decommissioning liabilities.

*Response:* The final rule 10 CFR 50.82(a)(8)(v) reporting requirements do not duplicate the existing 10 CFR 50.75(f) reporting requirements. As stated in the proposed rule's preamble [73 FR 3828 c. 1], the reports under 10 CFR 50.75(f) do not require information on the actual amount of funds spent on decommissioning, whereas such information is required by proposed

10 CFR 50.82(a)(8)(v). The new reporting requirements are not intended for comparison between different power reactor decommissioning costs. The purpose of obtaining the information reported under 10 CFR 50.82(a)(8)(v) is to identify actual expenditures at a particular site and projected costs to complete the decommissioning.

I. Draft Regulatory Guidance

*Comment I.1: The survey and monitoring guidance goes beyond what is required.*

Several commenters criticized the draft guidance on subsurface residual radioactivity. They argued that the guidance went substantially beyond what the rule required with respect to site surveys, the timeframe for remediation, retrofitting facilities to eliminate sources of subsurface residual radioactivity, monitoring, use of MARSSIM, and remediation during operations. One commenter, who provided detailed comments on many parts of the guidance, stated that it described actions that were not necessary to protect public health, safety, and the environment.

*Response:* All comments were reviewed and considered by the agency in preparing draft Regulatory Guide DG-4014 released for public comment to support this final rule.

*Comment I.2: The survey and monitoring guidance requires prompt remediation.*

A commenter on the draft guidance on subsurface residual radioactivity argued that, as written, the remediation language in the draft regulatory guidance document could have the unintended consequence of disrupting safe plant operation, without regard to actual health or environmental impacts. Another commenter, supported by several additional commenters, argued that the emphasis on “prompt” remediation, found especially in the draft guidance, of a leak or spill is unreasonable and is not always practically achievable. Licensees should be given the flexibility to define the appropriate timeframe for clean-up of a spill or leak, taking into consideration ALARA, realistic exposure pathways, and the site-specific soil and ground water

characteristics. Another commenter said it makes little sense to require remediation during operation of the site. The commenter noted that the draft guidance encourages licensees to perform cost-effectiveness analyses of prompt versus delayed clean up of residual radioactivity at the site.

*Response:* The NRC is aware that in some cases subsurface residual radioactivity is located where the only feasible remediation measures that can be taken without disrupting safe plant operation must occur at the time of final plant decommissioning. The NRC does not intend that licensees adopt remediation measures that will disrupt safe plant operation. The topic of cleanup activities during facility operations, especially in the context of soil contamination, is very dependent on site-specific conditions. In response to the commenters, the NRC has applied a performance-based approach in the DG-4014 survey and monitoring guidance released for public comment to support this final rule. Small leaks and spills that have no impact on decommissioning planning are not within the scope of the guidance, but the larger leaks and spills to the subsurface that could affect decommissioning planning are addressed in the guidance. The NRC has placed in draft Regulatory Guide DG-4014 a discussion on different approaches that may be used by licensees to determine the cost-effectiveness of prompt compared to deferred cleanup. Licensees should become familiar with this guidance and can develop reasoned explanations to support deferral of cleanup activities where there has been a significant amount of subsurface contamination.

*Comment I.3: The survey and monitoring guidance should clarify cost-effectiveness calculations.*

One commenter stated that the cost-effectiveness calculation recommended in the guidance will nearly always show that it is more cost-effective to wait until a site has ceased operations to dispose of contaminated soil or conduct any remediation. The proposed regulations would require and the guidance describes methods to evaluate subsurface

contamination based on future decommissioning exposure scenarios, even though no foreseeable operating exposure limits would be exceeded.

*Response:* The NRC agrees with this comment that it is likely that licensees will decide to remediate soil contamination during decommissioning rather than during operations, although this is a site-specific and licensee-specific decision. The NRC believes it is beneficial for licensees to remediate certain types of contaminating events on a timely basis. This certainly includes contaminating events that have the potential to reach a ground water pathway or that are cost-effective to perform earlier rather than later as determined by an analysis performed by the licensee, as recommended in draft Regulatory Guide DG-4014.

*Comment I.4: The survey and monitoring guidance is contrary to Commission direction.*

A commenter stated that that the draft guidance's references to MARSSIM for "subsurface" survey requirements, documentation and quality assurance/quality control requirements are contrary to the Commission's SRM in SECY-03-0069 regarding MARSSIM.

*Response:* This final rule is not requiring any MARSSIM submittals. The optional use of the MARSSIM screening values is discussed in draft Regulatory Guide DG-4014 along with several other low cost approaches as a means for the licensee to apply sampling concentration results to dose based results. The dose based results are the basis by which the facility will be evaluated for license termination.

*Comment I.5: The financial assurance guidance needs to clarify acceptable methods for Part 72 licensees.*

The comments on the revisions to NUREG-1757, Volume 3, raised questions concerning how 10 CFR Part 72 licensees, and in particular specific licensees and general licensees, should implement the proposed rules. The commenters also suggested renumbering of certain sections of the guidance and pointed out possible typographical errors.

*Response:* All comments were reviewed and considered by the agency in preparing Revision 1 to NUREG-1757, Volume 3 to accompany this final rule. Additional sections have been added to the guidance document for the Part 72 licensees.

J. OMB Supporting Statement

In comments on the OMB Supporting Statement submitted to OMB, NEI argued that NRC's justification for imposing new information collection requirements was flawed because the proposed rule, including the information collection requirements, was designed to address problems that no longer existed because of intervening regulatory developments. In addition, NRC enforcement and oversight could address any problems more efficiently. Secondly, NEI argued that the proposed information collection and recordkeeping requirements are not justified because current reporting and recordkeeping requirements are adequate, and any necessary clarification can be achieved in a less burdensome manner. NEI therefore concluded that the requirements of the Paperwork Reduction Act were not met because the required balancing of the burden against the need for the information showed that the burden was excessive. NEI argued that the estimate of the burden did not adequately include costs of new equipment, physical containment barriers, procedures, and training, which it suggested might total as much as $500 thousand to $1 million per nuclear power reactor. NEI did not agree with the NRC's conclusion that the voluntary implementation of the nuclear industry's GPI will make it unnecessary for nuclear power reactors to take any additional significant steps to comply with the reporting and recordkeeping requirements of these rules.

In comments on the January 2008 proposed rules, the NEI again addressed only the reporting and recordkeeping requirements associated with 10 CFR 20.1406 and 20.1501. NEI noted that the estimate for the burden for Part 50 implementation of those two provisions was zero. NEI then essentially summarized its previous comments on the OMB Supporting

Statement, although it also addressed in the same comment proposed implementing guidance. NEI argued that the burden estimate in the supporting statement for implementation of the Part 20 requirements by nuclear power reactors was "grossly inaccurate" because as "an industry, nuclear power plants have spent thousands of person hours and millions of dollars implementing the Industry Groundwater Protection Initiative. Given that the GPI is a voluntary effort and, to some degree, adopts a more graded approach to reevaluation of a site's hydrogeology, as an example, the amount of time and resources necessary to implement the proposed rule using the draft guidance are significantly greater than zero hours."

*Response:* The NRC, after careful consideration of the comments, has concluded that the commenters are correct that the time certain licensees will need to spend to determine whether a particular facility is affected by the final rule's Part 20 regulations should have been included as part of the paperwork burden. Therefore, the burden estimate has been increased significantly for new § 20.1406(c) and amended § 20.1501(a) to account for the time necessary to read the regulations, determine their impact, if any, on the licensee, and prepare a record of this activity. NRC, however, does not agree with the commenter that time and other resources used to implement the preexisting voluntary industry ground water initiative are properly attributable as reporting or recordkeeping burden for this rule. Although the NRC received no public comments on the reporting and recordkeeping requirements in the proposed rule for 10 CFR Parts 30, 40, 70, or 72, it has reviewed all of those provisions and in a few instances increased the burden estimates for particular sections of those rules. Finally, the NRC has added an estimate of the burden for 10 CFR Part 50 licensees of changes to the financial test requirements in 10 CFR Part 30, which are cross referenced in 10 CFR 50.75.

K. Agreement State Compatibility

Two comments were received on the Agreement State Compatibility table published with the Decommissioning Planning proposed rule. One of the commenters, an organization representing multiple states, stated that it had no issues with the compatibility designations in the proposed rule. Another commenter stated that the Compatibility Table for the final rule should be expanded to include 10 CFR 20.1401 and 20.1402, and that these sections should be assigned Agreement State Compatibility Category B instead of the existing Category C. The commenter believes this change is needed to eliminate inconsistency in regulatory approach in the Agreement States. The commenter believes that some states, using the Compatibility Category C guideline to adopt NRC "essential objectives," are regulating site termination and release under schemes that are unreasonable and impractical, resulting in excessive burden on licensees without measurable benefit to the public or the environment.

*Response:* The commenter is correct that 10 CFR 20.1401 and 20.1402 are both assigned Compatibility Category C. But those two sections were not included in the technical basis supporting the Decommissioning Planning proposed rule, and no changes to these regulations were proposed. The NRC does not have a technical basis to support a Compatibility Category change for these regulations, and the change request is outside the scope of this rulemaking. Accordingly, the NRC is making no change in this final rule to the compatibility designations for 10 CFR 20.1401 and 20.1402.

## IV. Discussion of Final Amendments by Section

*Section 20.1403 Criteria for license termination under restricted conditions.*

This rulemaking amends § 20.1403(c)(1) to require financial assurance funds to be placed into a trust segregated from the licensee's assets and outside the licensee's

administrative control, and eliminates the licensee's option to use other prepayment financial mechanisms, such as the escrow account, government fund, certificate of deposit, or deposit of government securities. This subsection is further amended to require that the initial amount of the trust fund established for long-term care and maintenance be based on a conservative assumption of a 1 percent annual real rate of return on investment.

The current § 20.1403(c)(2) is deleted to remove the licensee's option to use a surety method, insurance, or other guarantee method to provide financial assurance for a restricted release site. The provisions for government entities to provide financial assurance for long term control and maintenance contained in existing § 20.1403(c)(3) and (4) is retained but redesignated as § 20.1403(c)(2) and (3).

*Section 20.1404 Alternate criteria for license termination.*

This rulemaking adds a new § 20.1404(a)(5) specifying a fifth criterion that the NRC must consider in determining whether to terminate a license under alternate site release criteria. This new fifth criterion pertains to whether the licensee has provided sufficient financial assurance in the form of a trust fund to enable an independent third party, including a government custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site.

*Section 20.1406 Minimization of contamination.*

This rulemaking adds a new § 20.1406(c) to require licensees, to the extent practical, to conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface. The term "residual radioactivity," defined in 10 CFR Part 20, identifies the type and scope of radioactive material that must be considered by licensees to effectively plan for

decommissioning activities during facility operations. The term includes licensed and unlicensed radioactive material.

*Section 20.1501 General.*

This rulemaking amends § 20.1501(a) to specify that licensee survey requirements include consideration of residual radioactivity, conforming to the new § 20.1406(c). The linkage between new § 20.1406(c) and amended § 20.1501(a) requires that surveys be performed if there is reason to believe that significant subsurface contamination is present which constitutes a potential radiological hazard.

This rulemaking adds a new § 20.1501(b) to require licensees to maintain records from surveys describing the location and amount of subsurface residual radioactivity identified at the site with records important for decommissioning. Existing § 20.1501(b) has been redesignated as paragraph (c), and existing § 20.1501(c) has been redesignated as paragraph (d).

*Section 30.34 Terms and conditions of licenses.*

Existing § 30.34(b) has been redesignated as paragraph (b)(1) and a new paragraph (b)(2) has been added to require that an application for license transfer must include the proposed transferee's identity, its technical and financial qualifications, and a showing that it will be able to provide adequate financial assurance for decommissioning.

Existing § 40.46 and § 70.36 contain parallel provisions to those in § 30.34(b). Sections 40.46 and 70.36 have been redesignated as § 40.46(a) and § 70.36(a), respectively. New § 40.46(b) and § 70.36(b) parallel the new § 30.34(b)(2) provisions described previously.

*Section 30.35 Financial assurance and recordkeeping for decommissioning.*

A new paragraph (c)(6) has been added to 10 CFR 30.35 [and parallel § 40.36(c)(5) and § 70.25(c)(5)], to reflect the changes being made to the § 20.1501(a) survey requirements. If these surveys detect residual radioactivity at a site at levels that would, if left uncorrected, prevent the site from meeting the § 20.1402 criteria for unrestricted use, the licensee must submit a DFP within one year of when the survey is complete.

Existing § 30.35(e) [and in parallel § 40.36(d)(1) and (d)(2), Part 40 appendix A, § 70.25(e)(1) and (e)(2), and § 72.30(b) and (c)] have been amended to contain new paragraphs (e)(1) and (e)(2). Section 30.35(e)(1) requires that each DFP submitted for review and approval must contain a DCE based on three cost components. Two of the cost components (a dollar amount adequate to cover the cost of an independent contractor to perform all decommissioning activities, and an adequate contingency factor) are described in existing guidance. The new cost component is an estimate of the volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the decommissioning criteria. Additionally, the DCE must be based on the cost of meeting the § 20.1402 criteria for unrestricted use unless it can be adequately shown that the requirements of § 20.1403 will be met.

A new provision, § 30.35(e)(1)(ii), requires the licensee to identify and justify the basis for all key assumptions underlying the DCE.

Section 30.35(e)(1)(iii) retains the existing § 30.35(e) provision requiring a description of the method of assuring funds for decommissioning. Section 30.35(e)(1)(iv) retains the existing § 30.35(e) provision requiring a certification by the licensee that financial assurance for decommissioning has been provided in the amount of the DCE. Section 30.35(e)(1)(v) retains the existing § 30.35(e) requirement that the DFP include “a signed original of the financial

instrument" being used to provide financial assurance, if it has not been previously submitted and accepted as the financial instrument to cover the cost estimate for decommissioning.

New § 30.35(e)(2) requires that the DFP be submitted at the time of license renewal, and at intervals not exceeding 3 years with adjustments as necessary to account for changes in costs and the extent of contamination. The updated DFP must specifically consider the effect of the following events on the cost of decommissioning:

- Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;
- Waste inventory increasing above the amount previously estimated;
- Waste disposal costs increasing above the amount previously estimated;
- Facility modifications;
- Changes in authorized possession limits;
- Actual remediation costs that exceed the previous cost estimate;
- Onsite disposal; and
- Use of a settling pond.

As discussed further in this section, this rulemaking amends the introductory language in 10 CFR 30.35(f), and amends paragraphs (f)(1) through (f)(3). Parallel changes have been made in § 40.36(e), § 40.36(e)(1), (e)(2) and (e)(3), § 70.25(f), § 70.25(f)(1), (f)(2) and (f)(3), § 72.30(e), § 72.30(e)(1), (e)(2) and (e)(3).

Section 30.35(f) is amended to require that the financial instrument used for decommissioning funding assurance include the licensee's name, license number, and docket number, and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. If there are any changes to this information, the licensee must submit financial instruments reflecting these changes within 30 days.

Section 30.35(f)(1) is amended to require that the prepayment financial method be in the form of a trust. This parallels the rule text change in § 20.1403, eliminating the four other prepayment mechanisms (i.e., the escrow account, government fund, certificate of deposit, and deposit of government securities).

Section 30.35(f)(2) is amended to eliminate the existing line of credit option as a guarantee method for financial assurance.

Section 30.35(f)(3) is amended to require an external sinking fund to be in the form of a trust, eliminating the escrow account, government fund, certificate of deposit, and deposit of government securities because of their relative risk of loss during bankruptcy.

Section 30.35(h) has been added [and in parallel new § 40.36(f) and § 70.25(h)] specifying that each licensee must use its financial assurance funds only for decommissioning activities. The new section also requires monitoring by the licensee of its investment balance in the decommissioning trust account. Conservative investments are expected in the trust account. If the investment balance in the trust account is below the estimated cost of decommissioning, but is not below 75 percent of the cost, then the licensee must, within 30 days after the end of the calendar quarter, deposit funds into the trust account to fully cover the estimated cost. If at any time the loss results in a balance that is below 75 percent of the amount necessary to cover the decommissioning cost, the licensee must, within 30 days of such occurrence, deposit funds into the trust account to fully cover the estimated cost. The licensee must report taking such actions to the NRC within 30 days of the occurrence.

*Part 30 Appendices A, C, D, and E.*

This rulemaking makes a set of parallel amendments to 10 CFR Part 30, appendices A, C, D, and E. The types of guarantors for which the financial tests in these appendices apply are:

- Appendix A, Parent company guarantees;
- Appendix C, Self-guarantees;
- Appendix D, Self-guarantees by companies that have no rated commercial bonds;
- Appendix E, Self-guarantees by non-profit colleges, universities and hospitals.

In the financial test in Section II.A in appendices A, C, and D of Part 30, this rulemaking adds language to allow the inclusion of intangible assets in the determination of net worth. Net worth is defined to exclude the net book value and goodwill of the nuclear facility and site. Tangible net worth is defined to exclude all intangible assets and the net book value of the nuclear facility and site. In appendix A, Section II.A.2.(ii) has been revised to require the licensee to perform a net worth calculation instead of a tangible net worth calculation.

In the financial test in Section II.A in appendices A, C, and D of Part 30, this rulemaking requires that the guarantor's tangible net worth be at least $ 21 million to pass one of the criteria for that financial test.

Each set of changes to Appendices A, C, D, and E of Part 30 requires the independent CPA (who compares the data used in the financial tests against data in year-end financial statements) to evaluate the guarantor's off-balance sheet transactions regarding the impact these transactions may have on the guarantor's ability to pay decommissioning costs. The CPA also must verify bond ratings if these are used to pass the financial test.

For those licensees or guarantors that issue bonds and use the financial test under Section II.B of appendices A, C, and E of Part 30, this rulemaking specifies that the current rating of the most recent bond issuance of AAA, AA, or A by Standard and Poor's could include adjustments of + or - (i.e., AAA+, AA+, or A+ and AAA-, AA-, and A- would meet the criterion) and the current rating of Aaa, Aa, or A by Moody's could include adjustments of 1, 2, or 3. In each of these appendices, this rulemaking also requires the bond to be the most recent "uninsured, uncollateralized, and unencumbered" bond issuance.

In each appendix A, C, D, and E of Part 30, this rulemaking makes changes to the 90 day test to show continued eligibility for the licensee and guarantor.

In each appendix A, C, D, and E to Part 30, this rulemaking amends Section III to clarify that the guarantor is required to set up a standby trust, with new criteria for selecting an acceptable trustee.

In appendix A to Part 30, this rulemaking amends section III to require that the parent company guarantor agree to make itself subject to Commission orders (e.g., order to make payments under the guarantee agreement).

In each appendix A, C, D, and E to Part 30, this rulemaking amends Section III to allow the Commission, in cases of the guarantor company's financial distress, to declare the financial assurance guaranteed by the guarantor to be immediately due and payable to the standby trust. The guarantor companies also are required to notify the NRC, in writing, immediately following the occurrence of events signifying financial distress.

*Section 40.36 Financial assurance and recordkeeping for decommissioning.*

This rulemaking amends § 40.36(c)(5) in changes that are parallel to those described under § 30.35(c)(6); amends § 40.36(d)(1) and (d)(2) in changes that are parallel to those described under § 30.35(e)(1) and (e)(2); amends § 40.36(e) in changes that are parallel to those described under § 30.35(f); and amends § 40.36(f) in changes that are parallel to those described under § 30.35(h).

*Section 40.46 Inalienability of licenses.*

This rulemaking amends § 40.46. The changes are described under the section for § 30.34.

*Part 40 Appendix A.*

This rulemaking amends appendix A, Criterion 9, to Part 40. For the most part, the changes are parallel to those described under § 30.35(e)(1) and § 30.35(e)(2). However, two errors contained in the proposed published amendments to Criterion 9 are being corrected. First, in proposed Criterion 9(b)(2) – relating to financial surety arrangements that uranium recovery licensees must establish – the term “residual radioactive material” was used in describing one of the items that a Commission-approved cost estimate must contain. This term, as defined in existing 10 CFR 40.4, applies only to uranium mill sites that were inactive (so-called Title I sites) as of 1978 when the Uranium Mill Tailings Radiation Control Act was enacted. To avoid confusion, the proposed use of "residual radioactive material" is replaced by the phrase "radioactive contamination" in Criterion 9(b)(2). Second, in proposed Criterion 9(f)(4) – relating to required adjustments in surety liability amounts – the term "residual radioactivity" was used in conjunction with the phrase "license termination criteria." Such a juxtaposition is appropriate for 10 CFR Part 30 licensees and most others. But pursuant to 10 CFR 20.1401(a), the scope of 10 CFR Part 20 subpart E, "Radiological Criteria for License Termination," does not include facilities subject to Part 40 appendix A, which contains its own set of provisions governing the long term control and remediation of tailings and associated contaminants. Accordingly, in Criterion 9(f)(4), the term "residual radioactivity" is replaced by the word "contamination"; and the phrase "license termination criteria" is replaced by the phrase "applicable remediation criteria."

*Section 50.75 Reporting and recordkeeping for decommissioning planning.*

This rulemaking eliminates the line of credit in § 50.75(e)(1)(iii)(A) as a guarantee method for financial assurance. Additionally, in the parallel provisions of § 50.75(f)(1) and (f)(2), in each paragraph between its second and third sentences, the following additional sentence is

added: "If any of the preceding items is not applicable, the licensee should so state in its report." This change clarifies that not all listed items in § 50.75(f)(1) and (f)(2) are applicable to all reactor licensees, and resolves an issue raised in a recent NRC audit of decommissioning funding assurance requirements. The NRC is also making minor editorial and clarifying changes in § 50.75(f)(1) and (f)(2) that impose no additional requirements, and are not substantive modifications.

*Section 50.82 Termination of license.*

This rulemaking revises § 50.82(a)(4)(i) to require that additional details be included in the PSDAR. The PSDAR must now include a description of the planned decommissioning activities, a schedule for their accomplishment, and an estimate of expected costs. As revised, this regulation will now also require that the PSDAR cost estimates include those for managing irradiated fuel.

This rulemaking also adds paragraphs (v) through (vii) to existing § 50.82(a)(8). New paragraph (a)(8)(v) requires that a power reactor licensee, that has submitted its certification of permanent cessation of operation, must report annually on the status of its radiological decommissioning funding on a calendar-year basis.

New paragraph (a)(8)(vi) requires that if funds reported in the financial assurance status report are below the estimated cost to complete the decommissioning, the licensee must include additional financial assurance to make up the difference.

New paragraph (a)(8)(vii) requires an annual report on the status of funds for managing irradiated fuel. This report includes the accumulated amount, the projected costs until title to the fuel is transferred to the Secretary of Energy, and the plan to obtain the necessary additional funds if the total projected cost is higher than the accumulated amount.

*Section 70.25 Financial assurance and recordkeeping for decommissioning.*

This rulemaking amends § 70.25. The changes are parallel to those described under § 30.35.

*Section 70.36 Inalienability of licenses.*

This rulemaking amends § 70.36. The changes are parallel to those described under § 30.34.

*Section 72.13 Applicability.*

As stated in the January 2008 notice for the proposed rule, references in § 72.13(c) to § 72.30 are being changed to conform with the revisions to § 72.30, whereby § 72.30(c) is being re-designated as § 72.30(e), and § 72.30(d) is being re-designated as § 72.30(f). This reflects the fact that existing 10 CFR 72.13(c) references 10 CFR 72.30(c) and (d).

However, the January 2008 notice's discussion of proposed changes in the cross-referencing provisions of § 72.13 did not capture all of the proposed changes to 10 CFR 72.30 (i.e., the revisions to 10 CFR 72.30(b), and the addition of new subsections (c), (d), and (g) to 10 CFR 72.30). Section 72.13(b) references the Part 72 provisions applicable to those holding Part 72 specific licenses, and 10 CFR 72.13(c) references the Part 72 provisions applicable to those holding Part 72 general licenses. Thus, any amendments to 10 CFR 72.30 need to be reflected in 10 CFR 72.13. An expanded discussion of the changes in the cross-referencing provisions of § 72.13 is set forth below (a more detailed discussion of these and related issues appears in the response to comment H.25 above).

As stated above, existing 10 CFR 72.13(c) references 10 CFR 72.30(d). Thus, those holding Part 72 general licenses are already subject to all of the existing 10 CFR 72.30(d) requirements. Such requirements include the decommissioning funding plan (DFP) provisions

referenced in 10 CFR 72.30(d)(4) – which this rulemaking re-designates as 10 CFR 72.30(f)(4). The new provisions in 10 CFR 72.30(b) provide further details of what initial DFPs must include. New subsection (c) of 10 CFR 72.30 presents a set of timing provisions describing when updated DFPs must be submitted for NRC approval. New subsection (d) of 10 CFR 72.30 is a special 1-year DFP update provision based on 10 CFR 20.1501 survey results. Together, these new DFP requirements, along with the 10 CFR 72.30(f)(4) DFP provisions, will be referenced in 10 CFR 72.13(c), and will thus be applicable to Part 72 general licensees.

Accordingly, the final rulemaking amends 10 CFR 72.13(c) so that it correctly includes references 10 CFR 72.30(b), (c), (d), (e), and (f) that are applicable to holders of Part 72 general licenses.

The requirements of new 10 CFR 72.30(g) – under which licensees must replenish fund levels if decommissioning funds fall below specified levels – are unlike the above-referenced DFP requirements in that no similar provisions now exist in either Part 72 or Part 50. Aside from requirements listed in 10 CFR 72.13(c), a Part 72 general licensee can only be subject to requirements that a Part 50 licensee is subject to. Thus, the new 10 CFR 72.30(g) requirements will be applicable only to holders of Part 72 specific licenses. No amendment to 10 CFR 72.13(b) is necessary to reflect this, because existing 10 CFR 72.13(b) lists "72.16 through 72.34" as being among the part 72 requirements that are applicable to specific licenses.

*Section 72.30 Financial assurance and recordkeeping for decommissioning.*

This rulemaking amends § 72.30. The changes are similar to those described under § 30.35(e), and two existing paragraphs are redesignated.

Additionally, the NRC is amending the newly redesignated § 72.30(e)(5) – formerly § 72.30(c)(5) – to allow a licensee, who is also an electric utility as defined in 10 CFR Part 50, to continue to rely on Part 50 mechanisms for decommissioning financial assurance. In the event

that funds remaining to be placed into the licensee's ISFSI decommissioning external sinking fund are no longer approved for recovery in rates by a competent rate making authority, the licensee must make changes to provide financial assurance using the methods in 10 CFR 72.30(e). This change was not noticed in the January 2008 proposed rule. It is being made as a result of a public comment on the proposed rule, regarding acceptable mechanisms in providing decommissioning financial assurance under § 72.30(e). The commenter noted that it and another licensee, each with Part 72 specific licenses, were granted in 2005 exemptions from 10 CFR 72.30(c)(5) – now 72.30(e)(5) -- allowing them to continue to use 10 CFR 50.75(e)(1)(ii)(A) as the exclusive mechanism for ISFSI decommissioning financial assurance. This rulemaking change in § 72.30(e)(5) provides adequate financial assurance for decommissioning an ISFSI, and will improve regulatory efficiency and effectiveness by allowing ISFSI licensees who are also an electric utility to continue their use of the Part 50 sinking fund applied to ISFSI decommissioning after the power reactor has been decommissioned.

The NRC in this rulemaking is amending the newly redesignated § 72.30(f)(4) to remove the reference to "the amount certified for decommissioning" which occurs in the existing regulation, under § 72.30(d)(4). Part 72 does not have provisions for an ISFSI licensee to certify to a prescribed amount of financial assurance. This rulemaking change is being made as a technical correction.

New § 72.30(g) states that each licensee with a Part 72 specific license must use its financial assurance funds only for decommissioning activities. As discussed above in response to a comment, the NRC in this final rule is revising the proposed section 72.30(g) to require monitoring by the licensee of its investment balance in the decommissioning trust account, on an annual rather than quarterly basis. If, at the end of a calendar year, the investment balance in the trust account is below the estimated cost of decommissioning, but is not below 75 percent of the cost, then licensees must, within 30 days after the end of the calendar year, deposit funds

into the trust account to fully cover the estimated cost. If at any time the loss results in a balance that is below 75 percent of the amount necessary to cover the decommissioning cost, the licensee must, within 30 days of such occurrence, deposit funds into the trust account to fully cover the estimated cost. The licensee must report taking such actions to the NRC within 30 days of the occurrence.

*Section 72.50 Transfer of license.*

This rulemaking amends § 72.50 by adding a new paragraph (b)(3), requiring that the license transfer application describe the financial assurance that will be provided for the decommissioning under § 72.30.

*Section 72.80 Other records and reports.*

References in § 72.80(e) and (f) are corrected to conform with the changes to § 72.30, whereby § 72.30(d) would become § 72.30(f).

## V. Criminal Penalties

For the purpose of Section 223 of the Atomic Energy Act (AEA), the Commission is amending 10 CFR Parts 20, 30, 40, 50, 70, and 72 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

## VI. Agreement State Compatibility

Under the "Policy Statement on Adequacy and Compatibility of Agreement State Programs" approved by the Commission on June 30, 1997, and published in the *Federal Register* on September 3, 1997 (62 FR 46517), this final rule is a matter of compatibility

between the NRC and the Agreement States, thereby providing consistency among the Agreement States and the NRC requirements. The NRC staff analyzed the final rule in accordance with the procedure established within Part III, "Categorization Process for NRC Program Elements," of Handbook 5.9 to Management Directive 5.9, "Adequacy and Compatibility of Agreement State Programs" (a copy of which may be viewed at http://www.nrc.gov/reading-rm/doc-collections/management-directives/).

NRC program elements (including regulations) are placed into four compatibility categories (See the Compatibility Table in this section). In addition, the NRC program elements also can be identified as having particular health and safety significance or as being reserved solely to the NRC. Compatibility Category A establishes program elements that are basic radiation protection standards and scientific terms and definitions that are necessary to understand radiation protection concepts. An Agreement State should adopt Category A program elements in an essentially identical manner to provide uniformity in the regulation of agreement material on a nationwide basis. Compatibility Category B establishes program elements that apply to activities that have direct and significant effects in multiple jurisdictions. An Agreement State should adopt Category B program elements in an essentially identical manner. Compatibility Category C establishes program elements that do not meet the criteria of Category A or B, but the essential objectives of which an Agreement State should adopt to avoid conflict, duplication, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis. An Agreement State should adopt the essential objectives of the Category C program elements. Compatibility Category D establishes program elements that do not meet any of the criteria of Category A, B, or C, above, and, thus, do not need to be adopted by Agreement States for purposes of compatibility.

Health and Safety (H&S) are program elements that are not required for compatibility but are identified as having a particular health and safety role (i.e., adequacy) in the regulation of

agreement material within the State. Although not required for compatibility, the State should adopt program elements in this H&S category based on those of the NRC that embody the essential objectives of the NRC program elements, because of particular health and safety considerations. Compatibility Category NRC establishes program elements that address areas of regulation that cannot be relinquished to Agreement States under the Atomic Energy Act, as amended, or provisions of Title 10 of the Code of Federal Regulations. These program elements are not adopted by Agreement States.

The following table lists the parts and sections that have been added or revised by this final rule and their corresponding categorization under the "Policy Statement on Adequacy and Compatibility of Agreement State Programs."

## Compatibility Table for Decommissioning Planning final rule

| Section | Change | Subject | Compatibility | |
|---|---|---|---|---|
| | | | Existing | New* |
| 20.1403(c)(1) | Amend | Trust fund for restricted use | C | C |
| 20.1403(c)(2) | Deleted | Acceptable financial assurance methods | C | C |
| 20.1403(c)(3) & (4) | Redesignated | Government entity financial assurance | C | C |
| 20.1404(a)(5) | Add | Trust fund for alternate criteria | - | C |
| 20.1406(c) | Add | Minimize residual radioactivity | - | C |
| 20.1501(a) | Amend | Surveys and monitoring | H&S | H&S |
| 20.1501(b) | Add | Records from surveys | - | H&S |
| 30.34(b)(1) | Redesignated | License transfer requirements | C | C |
| 30.34(b)(2) | Add | License transfer requirements | - | C |
| 30.35(c)(6) | Add | Assess subsurface contamination | - | D |
| 30.35(d) | No change | Certification amounts financial assurance | H&S** | D |
| 30.35(e)(1) | Amend | Contents of decommissioning funding plan | D*** | H&S |
| 30.35(e)(2) | Amend | Updates of decommissioning funding plan | D*** | H&S |
| 30.35(f) | Amend | Methods for financial assurance | D | D |
| 30.35(h) | Add | Monitor the balance of funds | - | D |
| 30 Appendix A | Amend | Parent company guarantee | D | D |
| 30 Appendix C | Amend | Self-guarantee with bonds | D | D |
| 30 Appendix D | Amend | Self-guarantee without bonds | D | D |
| 30 Appendix E | Amend | Self-guarantee nonprofits | D | D |
| 40.36(c)(5) | Add | Assess subsurface contamination | - | D |
| 40.36(d)(1) | Amend | Contents of decommissioning funding plan | H&S | H&S |
| 40.36(d)(2) | Amend | Updates of decommissioning funding plan | H&S | H&S |
| 40.36(e) | Amend | Methods for financial assurance | D | D |
| 40.36(g) | Add | Monitor the balance of funds | - | D |
| 40.46(a) | Redesignated | License transfer requirements | C | C |
| 40.46(b) | Add | License transfer information requirements | - | C |
| 40 Appendix A Criterion 9(b) | Amend | DCEs and financial surety [with 11e.(2)] | C | C |
| 40 Appendix A Criterion 9(b) | Amend | DCEs and financial surety [without 11e.(2)] | NRC | NRC |
| 50.75(e) & (f) | Amend | Surety and reporting of status of funding | NRC | NRC |
| 50.82(a)(4) | Amend | Cost information in the PSDAR | NRC | NRC |
| 50.82(a)(8)(v), (vi) & (vii) | Add | Cost information in the annual financial assurance status report | - | NRC |
| 70.25(c)(5) | Add | Assess subsurface contamination | - | D |
| 70.25(d) | No change | Certification amounts financial assurance | H&S** | D |
| 70.25(e)(1) | Amend | Contents of decommissioning funding plan | D*** | H&S |
| 70.25(e)(2) | Amend | Updates of decommissioning funding plan | D*** | H&S |
| 70.25(f) | Amend | Methods for financial assurance | D | D |
| 70.25(h) | Add | Monitor the balance of funds | - | D |
| 70.36(b) | Add | License transfer requirements | - | C |
| 72.13 & 72.30(b) | Amend | Applicability and contents of funding plan | NRC | NRC |
| 72.30(c) | Add | Updates of decommissioning funding plan | - | NRC |
| 72.30(d) | Add | Assess subsurface contamination | - | NRC |
| 72.30(e) | Amend | Methods for financial assurance | NRC | NRC |
| 72.30(g) | Add | Monitor the balance of funds | - | NRC |
| 72.50(b)(3) & 72.80 | Add | License transfer and other records | - | NRC |

* final rule compatibility category
** The compatibility category for § 30.35(d) and § 70.25(d) were incorrectly specified in the 68 FR 57334, October 3, 2003, Financial Assurance for Materials Licensees final rule. The correct category for both of these sections is D.
*** The compatibility category for § 30.35(e) and § 70.25(e) were incorrectly specified in the 68 FR 57334, October 3, 2003, Financial Assurance for Materials Licensees final rule. The correct category for both of these sections is H&S.

## VII. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Pub. L. 104-113, requires that Federal agencies use technical standards developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. There are no consensus standards regarding acceptable methods for radiological surveys across a broad spectrum of licensed facilities, or for preparing DCEs or providing financial assurance for decommissioning that would apply to the requirements imposed by this final rule. Thus, the provisions of the Act do not apply to this rule.

## VIII. Environmental Assessment and Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this rule is not a major Federal action significantly affecting the quality of the human environment and therefore an environmental impact statement is not required. The Commission has prepared an environmental assessment for this final rule.

The amendments in this final rule require licensees, to the extent practical, to conduct their operations to minimize the introduction of residual radioactivity into the site, particularly in the subsurface soil and ground water. There are a variety of monitoring methods to evaluate subsurface characteristics, and these are highly site specific with respect to their effectiveness. One or more licensees may find that compliance with the amendments will mean the installation of ground water monitoring wells and surface monitoring devices at their sites. The installation

of these monitoring devices and wells is generally expected to result in small environmental impacts due to their very localized nature.

During sampling and testing, the amendments introduce the potential for a small amount of increased occupational exposures. These exposures are expected to remain within 10 CFR Part 20 limits and to be ALARA. If subsurface contamination is detected, licensees may choose to remediate when contamination levels are lower and more manageable, which could result in reduced future occupational exposure rates than if the contamination conditions were allowed to remain and become increasingly more hazardous. Licensees may alternatively choose to provide adequate funding in response to their knowledge of the extent of any subsurface contamination, which will better ensure that the area is remediated following decommissioning to a degree that supports public health and safety, and protection of the environment.

If significant onsite residual radioactivity in the subsurface is found due to the monitoring imposed by these amendments, such knowledge will better ensure the protection of public health and safety, and protection of the environment. Identifying and resolving the source of the contamination will better ensure that waste is not allowed to migrate offsite. Early identification also provides more time to plan waste remediation strategies that are both safe and cost effective. The effect of the amendments is anticipated to be beneficial to the environment, and it is expected that the overall environmental impacts will be positive.

Therefore, the determination of the environmental assessment is that there will be no significant impact to the human environment from this action.

This conclusion was published in the environmental assessment that was posted to the NRC rulemaking website: http://www.regulations.gov for 75 days after publication of the proposed rule. Two comments were received on the content of the environmental assessment. These comments did not change the conclusion of the environmental assessment. These comments are discussed above in Section III.D.

## IX. Paperwork Reduction Act Statement

This final rule imposes new or amended information collection requirements contained in 10 CFR Parts 20, 30, 40, 50, 70, and 72, 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 numbers 3150-0014, -0017, -0020, -0011, -0009, and –0132.

The burden to the public for these information collections is estimated to average 12 hours per response. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments on any aspect of these information collections, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS.resource@nrc.gov; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0011), Office of Management and Budget, Washington, DC 20503 or by Internet electronic mail to Nathan J. Frey@omb.eop.gov.

*Public Protection Notice*

The NRC may not conduct or sponsor, and a person is not required to respond to a request for information for an information collection requirement unless the requesting document displays a currently valid OMB control number.

## X. Regulatory Analysis

As part of this final rulemaking, the Commission has prepared a regulatory analysis examining the costs and benefits of the rulemaking and alternatives considered by the Commission.

The regulatory analysis was performed over a 15 year analysis period using 2007 dollars. The implementation of the final rule by industry, NRC and Agreement States is estimated to cost about $43 million, over the 15 year analysis period at a 3 percent discount rate. NRC licensee costs are about $6 million, and NRC costs are about $3 million. Agreement State licensee costs are about $22 million, and Agreement State costs are about $12 million. Virtually all of the industry costs are due to changes to 10 CFR Parts 20 and 30.

The regulatory analysis is available for inspection in the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD, and may be downloaded from the NRC rulemaking website at www.regulations.gov. Single copies of the regulatory analysis are available from Kevin O'Sullivan, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-8112, e-mail Kevin.OSullivan@nrc.gov.

## XI. Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. Only about 300 NRC materials licensees are required to have decommissioning financial assurance and the large majority of these organizations do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or

the Small Business Size Standards set out in regulations issued by the Small Business Administration at 13 CFR Part 121. Based on the regulatory analysis, the NRC believes that the amendments in this final rule are the least burdensome, most flexible alternative that would accomplish the NRC's regulatory objective.

## XII. Backfit Analysis

As discussed more fully in the regulatory analysis, the NRC has determined that the NRC's backfitting rules at issue here (10 CFR 50.109, 70.76, and 72.62) do not require the preparation of a backfit analysis for this rulemaking. A backfit is the modification of equipment or procedures required to operate a facility resulting from new or amended NRC regulations, or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position.

The new or amended regulations in this final rule either clarify existing requirements, or require the collection and reporting of information using existing equipment and procedures, or are administrative matters outside the scope of the backfitting rules. The amended survey and monitoring requirements in Part 20 of this rulemaking do not constitute a backfit because they are information collection requirements to support licensee and NRC decisions on decommissioning planning and related activities. The decommissioning financial assurance requirements being amended in Parts 30, 40, 50, 70, and 72 of this rulemaking do not entail modifying any equipment or procedures required to operate the types of NRC-licensed facilities covered by the backfitting rules. These regulatory changes concern administrative matters and are not backfits. Therefore, as discussed further below, the NRC finds that preparation of a backfit analysis is not required for this rulemaking.

In part, this rulemaking amends 10 CFR 20.1406 and 20.1501. Section 20.1406, "Minimization of contamination," is amended by adding a new subsection (c) to read as follows:

> (c) Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in Subpart B and radiological criteria for license termination in Subpart E of this part.

This is not a backfit because it clarifies licensee requirements under existing regulations applicable to licensed operations. The current § 20.1101(a) requires each licensee to implement a radiation protection program to ensure compliance with the regulations in 10 CFR Part 20. The current § 20.1101(b) requires each licensee to use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are ALARA, during operations and during decommissioning. These operating procedures and controls need to include methods to minimize the introduction of residual radioactivity into the site, including the subsurface, during active facility operations to achieve doses that are ALARA. Otherwise, licensees will lack a substantive basis to demonstrate that they have achieved, during the life cycle of the facility (which includes decommissioning), public and occupational exposures that are ALARA. The concept of reducing residual radioactivity to ALARA levels as part of the decommissioning criteria has been a position of the NRC since at least 1994 (NUREG-1501, page iii). Licensees should already have these procedures in place as part of their radiation protection program, and 10 CFR 20.1406(c) clarifies this requirement.

As stated above, this rulemaking also amends 10 CFR 20.1501, “General” (part of Subpart F, "Surveys and Monitoring"). Section 20.1501 is amended by revising subsection (a), and inserting a new subsection (b), to read as follows:

(a) Each licensee shall make or cause to be made, surveys of areas, including the subsurface, that--

(1) May be necessary for the licensee to comply with the regulations in this part; and

(2) Are reasonable under the circumstances to evaluate --

(i) The magnitude and extent of radiation levels; and

(ii) Concentrations or quantities of residual radioactivity; and

(iii) The potential radiological hazards of the radiation levels and residual radioactivity detected.

(b) Records from surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning.

The amended 10 CFR 20.1501(a) replaces the undefined term "radioactive material" with "residual radioactivity," a term already defined in 10 CFR Part 20. As defined in existing 10 CFR 20.1003, residual radioactivity includes subsurface contamination within its scope, and the word "subsurface" is being added to 10 CFR 20.1501(a). The current 10 CFR 20.1501(a)(2)(iii) already requires the evaluation of potential radiological hazards. Thus, as amended, 10 CFR 20.1501(a) makes clear that subsurface residual radioactivity is a potential radiological hazard that is within the scope of these survey requirements. This clarification of existing requirements does not represent a new NRC position and therefore does not fall within the definition of backfitting as set forth in the applicable backfitting regulations.

As set forth above, new paragraph (b) to 10 CFR 20.1501 requires that survey records describing the location and amount of subsurface residual radioactivity identified at a licensed site be kept with records important for decommissioning. NRC licensees are already required to keep records important for decommissioning. See, e.g., 10 CFR 50.75(g), 70.25(g), and

72.30(d). Moreover, the new 10 CFR 20.1501(b) is not intended to require recordkeeping of any and all amounts of subsurface residual radioactivity, but only amounts that are significant to achieve effective decommissioning planning and ALARA dose requirements. Regulatory changes imposing information collection and reporting requirements do not constitute regulatory actions to which the backfit rule applies. New subsection 20.1501(b) and amended section 20.1501(a) contain provisions which require the licensee to perform surveys to collect data on the location and amount of subsurface residual radioactivity that may be a radiological hazard and important for decommissioning planning. Neither of these provisions constitutes a backfit because they are information collection requirements to support licensee and NRC decisions on decommissioning activities.

This rulemaking also revises decommissioning planning and financial assurance requirements in 10 CFR Parts 30, 40, 50, 70 and 72. These revisions do not entail modifying any equipment or procedures required to operate the types of NRC-licensed facilities subject to the backfitting rules. Therefore, preparation of a backfit analysis is not required for the proposed revisions to the decommissioning planning and financial assurance requirements.

Accordingly, the NRC has determined that the final rule's provisions do not constitute backfitting and do not require the preparation of a backfit analysis. The regulatory analysis identifies the benefits and costs of the rulemaking, discusses the voluntary Industry Ground Water Protection Initiative (GPI), and evaluates other options for addressing the identified issues. The regulatory analysis constitutes a "disciplined approach" for evaluating the merits of the final rule and is consistent with the intent of the backfit rule.

## XIII. Congressional Review Act

In accordance with the Congressional Review 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 of OMB.

## List of Subject Terms

10 CFR Part 20

Byproduct material, Criminal penalties, Licensed material, Nuclear materials, Nuclear power plants and reactors, Occupational safety and health, Packaging and containers, Radiation protection, Reporting and recordkeeping requirements, Source material, Special nuclear material, 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 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

Administrative practice and procedure, Criminal penalties, Manpower training programs, Nuclear materials, Occupational safety and health, Penalties, Radiation protection, Reporting and recordkeeping requirements, Security measures, Spent fuel, Whistleblowing.

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, 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, sec. 1701, 106 Stat. 2951, 2952, 2953 (42 U.S.C. 2073, 2093, 2095, 2111, 2133, 2134, 2201, 2232, 2236, 2297f), secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44

U.S.C. 3504 note), sec. 651(e), Pub. L. 109–58, 119 Stat. 806-810 (42 U.S.C. 2014, 2021, 2021b, 2111).

2. In § 20.1403, paragraph (c)(2) is removed, paragraph (c)(3) is redesignated as paragraph (c)(2), and paragraph (c)(4) is redesignated as paragraph (c)(3), and paragraph (c)(1) is revised to read as follows:

**§ 20.1403 Criteria for license termination under restricted conditions.**

*****

(c) ***

(1) Funds placed into a trust segregated from the licensee's assets and outside the licensee's administrative control, and in which the adequacy of the trust funds is to be assessed based on an assumed annual 1 percent real rate of return on investment;

*****

3. In § 20.1404, paragraph (a)(5) is added to read as follows:

**§ 20.1404 Alternate criteria for license termination.**

(a) ***

(5) Has provided sufficient financial assurance in the form of a trust fund 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.

*****

4. In § 20.1406, paragraph (c) is added to read as follows:

**§ 20.1406 Minimization of contamination.**

*****

(c) Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in Subpart B and radiological criteria for license termination in Subpart E of this part.

5. In § 20.1501, paragraph (b) is redesignated as paragraph (c), and paragraph (c) is redesignated as paragraph (d), the introductory text of paragraphs (a) and (a)(2), and paragraphs (a)(2)(ii) and (a)(2)(iii) are revised, and a new paragraph (b) is added to read as follows:

**§ 20.1501 General.**

(a) Each licensee shall make or cause to be made, surveys of areas, including the subsurface, that --

*****

(2) Are reasonable under the circumstances to evaluate --

*****

(ii) Concentrations or quantities of residual radioactivity; and

(iii) The potential radiological hazards of the radiation levels and residual radioactivity detected.

(b) Records from surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning.

*****

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); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); sec. 651(e), Pub. L. 109-58, 119 Stat. 806-810 (42 U.S.C. 2014, 2021, 2021b, 2111).

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 (42 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 § 30.34, paragraph (b) is redesignated as paragraph (b)(1) and a new paragraph (b)(2) is added to read as follows:

**§ 30.34 Terms and conditions of licenses.**

*****

(b) ***

(2) An application for transfer of license must include:

(i) The identity, technical and financial qualifications of the proposed transferee; and

(ii) Financial assurance for decommissioning information required by § 30.35.

*****

8. In § 30.35, a new paragraph (c)(6) is added, and paragraph (e), the introductory text in paragraph (f), paragraph (f)(1), the introductory text of paragraph (f)(2) and paragraph (f)(3) are revised, and a new paragraph (h) is added to read as follows:

**§ 30.35 Financial assurance and recordkeeping for decommissioning.**

*****

(c) ***

(6) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in the facility and environment, including the subsurface, is detected at levels that would, if left uncorrected, prevent the site from meeting the 10 CFR 20.1402 criteria for unrestricted use, the licensee must submit a decommissioning funding plan within one year of when the survey is completed.

*****

(e)(1) Each decommissioning funding plan must be submitted for review and approval and must contain –

(i) A detailed cost estimate for decommissioning, in an amount reflecting:

(A) The cost of an independent contractor to perform all decommissioning activities;

(B) The cost of meeting the 10 CFR 20.1402 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of 10 CFR 20.1403, the cost estimate may be based on meeting the 10 CFR 20.1403 criteria;

(C) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination; and

(D) An adequate contingency factor.

(ii) Identification of and justification for using the key assumptions contained in the DCE;

(iii) A description of the method of assuring funds for decommissioning from paragraph (f) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

(iv) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(v) A signed original of the financial instrument obtained to satisfy the requirements of paragraph (f) of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

(2) At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

(i) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;

(ii) Waste inventory increasing above the amount previously estimated;

(iii) Waste disposal costs increasing above the amount previously estimated;

(iv) Facility modifications;

(v) Changes in authorized possession limits;

(vi) Actual remediation costs that exceed the previous cost estimate;

(vii) Onsite disposal; and

(viii) Use of a settling pond.

(f) The financial instrument must include the licensee's name, license number, and docket number, and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. The financial instrument submitted must be a signed original or signed original duplicate, except where a copy of the

signed original is specifically permitted. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment.* Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method.* These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix A to this part. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix C to this part. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in appendix D to this part. For nonprofit entities, such as colleges, universities, and nonprofit hospitals, a guarantee of funds by the applicant or licensee may be used if the guarantee and test are as contained in appendix E to this part. Except for an external sinking fund, a parent company guarantee or a guarantee by the applicant or licensee may not be used in combination with any other financial methods used to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

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(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund.* An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (f)(2) of this section.

*****

(h) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar quarter, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase the balance to cover the cost, and must do so within 30 days after the end of the calendar quarter.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (g)(1) or (g)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Federal and State Materials and Environmental Management Programs, and state the new balance of the fund.

9. In appendix A to Part 30, Section II, the introductory text of paragraph A, paragraphs A.1.(ii), A.1.(iii), A.2.(i), A.2.(ii), A.2.(iii), B, and C.1. are revised, in Section III paragraphs B, C, and D are revised, and new paragraphs E, F, and G are added to read as follows:

**Appendix A to Part 30—Criteria Relating to Use of Financial Tests and Parent Company Guarantees for Providing Reasonable Assurance of Funds for Decommissioning**

*****

II. ***

A. To pass the financial test, the parent company must meet the criteria of either paragraph A.1 or A.2 of this section. For purposes of applying the appendix A criteria, tangible net worth must be calculated to exclude all intangible assets and the net book value of the nuclear facility and site, and net worth must be calculated to exclude the net book value and goodwill of the nuclear facility and site.

1. ***

(ii) Net working capital and tangible net worth each at least six times the amount of decommissioning funds being assured by a parent company guarantee for the total of all nuclear facilities or parts thereof (or prescribed amount if a certification is used); and

(iii) Tangible net worth of at least $ 21 million; and

*****

2. ***

(i) A current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, A, or BBB (including adjustments of + and -) as issued by Standard and Poor's or Aaa, Aa, A, or Baa (including adjustment of 1, 2, or 3) as issued by Moody's; and

(ii) Net worth at least six times the amount of decommissioning funds being assured by a parent company guarantee for the total of all nuclear facilities or parts thereof (or prescribed amount if a certification is used); and

(iii) Tangible net worth of at least $ 21 million; and

*****

B. The parent company's independent certified public accountant must compare the data used by the parent company in the financial test, which is derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. The accountant must evaluate the parent company's off-balance sheet transactions and provide an opinion on whether those transactions could materially adversely affect the parent company's ability to pay for decommissioning costs. The accountant must verify that a bond rating, if used to demonstrate passage of the financial test, meets the requirements of paragraph A of this section. In connection with the auditing procedure, the licensee must inform NRC within 90 days of any matters coming to the auditor's attention which cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test.

C.1. After the initial financial test, the parent company must annually pass the test and provide documentation of its continued eligibility to use the parent company guarantee to the Commission within 90 days after the close of each succeeding fiscal year.

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III. ***

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B. If the licensee fails to provide alternate financial assurance as specified in the Commission's regulations within 90 days after receipt by the licensee and Commission of a notice of cancellation of the parent company guarantee from the guarantor, the guarantor will provide alternative financial assurance that meets the provisions of the Commission's regulations in the name of the licensee.

C. The parent company guarantee and financial test provisions must remain in effect until the Commission has terminated the license, accepted in writing the parent company's alternate financial assurances, or accepted in writing the licensee's financial assurances.

D. A standby trust to protect public health and safety and the environment must be established for decommissioning costs before the parent company guarantee agreement is submitted. The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal Government agency or an entity which has the authority to act as a trustee, whose trust operations are regulated and examined by a Federal or State agency. The Commission has the right to change the trustee. An acceptable trust will meet the regulatory criteria established in these regulations that govern the issuance of the license for which the guarantor has accepted the obligation to pay for decommissioning costs.

E. The guarantor must agree that it would be subject to Commission orders to make payments under the guarantee agreement.

F. The guarantor must agree that if the guarantor admits in writing its inability to pay its debts generally, or makes a general assignment for the benefit of creditors, or any proceeding is instituted by or against the guarantor seeking to adjudicate it as bankrupt or insolvent, or seeking dissolution, liquidation, winding-up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency, or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, custodian, or other similar official for the guarantor or for any substantial part of its property, or the guarantor takes any action to authorize or effect any of the actions stated in this paragraph, then the Commission may:

1. Declare that the financial assurance guaranteed by the parent company guarantee agreement is immediately due and payable to the standby trust set up to protect the public

health and safety and the environment, without diligence, presentment, demand, protest or any other notice of any kind, all of which are expressly waived by guarantor; and

2. Exercise any and all of its other rights under applicable law.

G. 1. The guarantor must agree to notify the NRC, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of title 11 (Bankruptcy) of the United States Code, or the occurrence of any other event listed in paragraph G of this Appendix, by or against:

(i) The guarantor;

(ii) The licensee;

(iii) An entity (as that term is defined in 11 U.S.C. 101(14)) controlling the licensee or listing the license or licensee as property of the estate; or

(iv) An affiliate (as that term is defined in 11 U.S.C. 101(2)) of the licensee.

2. This notification must include:

(i) A description of the event, including major creditors, the amounts involved, and the actions taken to assure that the amount of funds guaranteed by the parent company guarantee for decommissioning will be transferred to the standby trust as soon as possible;

(ii) If a petition of bankruptcy was filed, the identity of the bankruptcy court in which the petition for bankruptcy was filed; and

(iii) The date of filing of any petitions.

10. In appendix C to Part 30, in Section II, paragraphs A., B.(2) and B.(3) are revised, in Section III, paragraphs E and F are revised, and paragraphs G, H, and I are added to read as follows:

**Appendix C to Part 30—Criteria Relating to Use of Financial Tests and Self Guarantees for Providing Reasonable Assurance of Funds for Decommissioning**

*****

II. ***

A. To pass the financial test a company must meet all of the criteria set forth below. For purposes of applying the appendix C criteria, tangible net worth must be calculated to exclude all intangible assets and the net book value of the nuclear facility and site, and net worth must be calculated to exclude the net book value and goodwill of the nuclear facility and site. These criteria include:

(1) Tangible net worth of at least $ 21 million, and net worth at least 10 times the amount of decommissioning funds being assured by a self-guarantee, for all decommissioning activities for which the company is responsible as self-guaranteeing licensee and as parent-guarantor for the total of all nuclear facilities or parts thereof (or the current amount required if certification is used).

(2) Assets located in the United States amounting to at least 90 percent of total assets or at least 10 times the amount of decommissioning funds being assured by a self-guarantee, for all decommissioning activities for which the company is responsible as self-guaranteeing licensee and as parent-guarantor for the total of all nuclear facilities or parts thereof (or the current amount required if certification is used).

(3) A current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, or A (including adjustments of + and -) as issued by Standard and Poor's, or Aaa, Aa, or A (including adjustments of 1, 2, or 3) as issued by Moody's.

B.***

(2) The company's independent certified public accountant must compare the data used by the company in the financial test, which is derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. The accountant must evaluate the company's off-balance sheet transactions and provide an opinion

on whether those transactions could materially adversely affect the company's ability to pay for decommissioning costs. The accountant must verify that a bond rating, if used to demonstrate passage of the financial test, meets the requirements of Section II paragraph A of this appendix. In connection with the auditing procedure, the licensee must inform NRC within 90 days of any matters coming to the auditor's attention which cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test.

(3) After the initial financial test, the company must annually pass the test and provide documentation of its continued eligibility to use the self-guarantee to the Commission within 90 days after the close of each succeeding fiscal year.

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III. ***

E. (1) If, at any time, the licensee's most recent bond issuance ceases to be rated in any category of ''A-'' and above by Standard and Poor's or in any category of ''A3'' and above by Moody's, the licensee will notify the Commission in writing within 20 days after publication of the change by the rating service.

(2) If the licensee's most recent bond issuance ceases to be rated in any category of A or above by both Standard and Poor's and Moody's, the licensee no longer meets the requirements of Section II.A. of this appendix.

F. The applicant or licensee must provide to the Commission a written guarantee (a written commitment by a corporate officer) which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the Commission, the licensee will fund the standby trust in the amount guaranteed by the self-guarantee agreement.

G. (1) A standby trust to protect public health and safety and the environment must be established for decommissioning costs before the self-guarantee agreement is submitted.

(2) The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal Government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency. The Commission has the right to change the trustee. An acceptable trust will meet the regulatory criteria established in these regulations that govern the issuance of the license for which the guarantor has accepted the obligation to pay for decommissioning costs.

H. The guarantor must agree that if the guarantor admits in writing its inability to pay its debts generally, or makes a general assignment for the benefit of creditors, or any proceeding is instituted by or against the guarantor seeking to adjudicate it as bankrupt or insolvent, or seeking dissolution, liquidation, winding-up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency, or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, custodian, or other similar official for the guarantor or for any substantial part of its property, or the guarantor takes any action to authorize or effect any of the actions stated in this paragraph, then the Commission may:

(1) Declare that the financial assurance guaranteed by the self-guarantee agreement is immediately due and payable to the standby trust set up to protect the public health and safety and the environment, without diligence, presentment, demand, protest or any other notice of any kind, all of which are expressly waived by guarantor; and

(2) Exercise any and all of its other rights under applicable law.

I. The guarantor must notify the NRC, in writing, immediately following the occurrence of any event listed in paragraph H of this appendix, and must include a description of the event, including major creditors, the amounts involved, and the actions taken to assure that the amount

of funds guaranteed by the self-guarantee agreement for decommissioning will be transferred to the standby trust as soon as possible.

11. In appendix D to Part 30 in section II, the introductory text of paragraph A., paragraphs A.(1), B.(1), and B.(2) are revised, in section III paragraph D is revised and paragraphs E, F, and G are added to read as follows:

**Appendix D to Part 30—Criteria Relating to Use of Financial Tests and Self-Guarantee for Providing Reasonable Assurance of Funds for Decommissioning by Commercial Companies That Have no Outstanding Rated Bonds**

*****

II. ***

A. To pass the financial test a company must meet all of the criteria set forth below. For purposes of applying the appendix D criteria, tangible net worth must be calculated to exclude all intangible assets and the net book value of the nuclear facility and site.

(1) Tangible net worth greater than $ 21 million, and at least 10 times the amount of decommissioning funds being assured by a self-guarantee, whichever is greater, for all decommissioning activities for which the company is responsible as self-guaranteeing licensee and as parent-guarantor for the total of all nuclear facilities or parts thereof (or the current amount required if certification is used).

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B. ***

(1) The company's independent certified public accountant must compare the data used by the company in the financial test, which is derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. The accountant must evaluate the company's off-balance sheet transactions and provide an opinion

on whether those transactions could materially adversely affect the company's ability to pay for decommissioning costs. In connection with the auditing procedure, the licensee must inform NRC within 90 days of any matters coming to the auditor's attention which cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test.

(2) After the initial financial test, the company must annually pass the test and provide documentation of its continued eligibility to use the self-guarantee to the Commission within 90 days after the close of each succeeding fiscal year.

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III. ***

D. The applicant or licensee must provide to the Commission a written guarantee (a written commitment by a corporate officer) which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the Commission, the licensee will fund the standby trust in the amount of the current cost estimates for decommissioning.

E. A standby trust to protect public health and safety and the environment must be established for decommissioning costs before the self-guarantee agreement is submitted. The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal Government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency. The Commission will have the right to change the trustee. An acceptable trust will meet the regulatory criteria established in the part of these regulations that governs the issuance of the license for which the guarantor has accepted the obligation to pay for decommissioning costs.

F. The guarantor must agree that if the guarantor admits in writing its inability to pay its debts generally, or makes a general assignment for the benefit of creditors, or any proceeding is

instituted by or against the guarantor seeking to adjudicate it as bankrupt or insolvent, or seeking dissolution, liquidation, winding-up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency, or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, custodian, or other similar official for the guarantor or for any substantial part of its property, or the guarantor takes any action to authorize or effect any of the actions stated in this paragraph, then the Commission may:

(1) Declare that the financial assurance guaranteed by the self-guarantee agreement is immediately due and payable to the standby trust set up to protect the public health and safety and the environment, without diligence, presentment, demand, protest or any other notice of any kind, all of which are expressly waived by guarantor; and

(2) Exercise any and all of its other rights under applicable law.

G. The guarantor must notify the NRC, in writing, immediately following the occurrence of any event listed in paragraph F of this appendix, and must include a description of the event, including major creditors, the amounts involved, and the actions taken to assure that the amount of funds guaranteed by the self-guarantee agreement for decommissioning will be transferred to the standby trust as soon as possible.

12. In appendix E to Part 30, in Section II, paragraphs A.(1), B.(1), C.(1), and C.(2) are revised, in Section III, paragraphs D and E are revised and paragraphs F, G, and H are added to read as follows:

**Appendix E to Part 30—Criteria Relating to Use of Financial Tests and Self-Guarantee for Providing Reasonable Assurance of Funds for Decommissioning by Nonprofit Colleges, Universities, and Hospitals**

*****

II. ***

A. ***

(1) For applicants or licensees that issue bonds, a current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, or A (including adjustments of + or -) as issued by Standard and Poor's (S&P) or Aaa, Aa, or A (including adjustments of 1, 2, or 3) as issued by Moody's.

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B.***

(1) For applicants or licensees that issue bonds, a current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, or A (including adjustments of + or -) as issued by Standard and Poor's or Aaa, Aa, or A (including adjustments of 1, 2, or 3) as issued by Moody's.

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C.***

(1) The licensee's independent certified public accountant must compare the data used by the licensee in the financial test, which is derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. The accountant must evaluate the licensee's off-balance sheet transactions and provide an opinion on whether those transactions could materially adversely affect the licensee's ability to pay for decommissioning costs. The accountant must verify that a bond rating, if used to demonstrate passage of the financial test, meets the requirements of Section II of this appendix. In connection with the auditing procedure, the licensee must inform NRC within 90 days of any matters coming to the auditor's attention which cause the auditor to believe that the data specified in the financial test should be adjusted and that the licensee no longer passes the test.

(2) After the initial financial test, the licensee must repeat passage of the test and provide documentation of its continued eligibility to use the self-guarantee to the Commission within 90 days after the close of each succeeding fiscal year.

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III. ***

D. The applicant or licensee must provide to the Commission a written guarantee (a written commitment by a corporate officer or officer of the institution) which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the Commission, the licensee will fund the standby trust in the amount of the current cost estimates for decommissioning.

E. (1) If, at any time, the licensee's most recent bond issuance ceases to be rated in any category of ''A'' or above by either Standard and Poor's or Moody's, the licensee shall notify the Commission in writing within 20 days after publication of the change by the rating service.

(2) If the licensee's most recent bond issuance ceases to be rated in any category of "A-" and above by Standard and Poor's or in any category of "A3" and above by Moody's, the licensee no longer meets the requirements of Section II.A. of this appendix.

F. (1) A standby trust to protect public health and safety and the environment must be established for decommissioning costs before the self-guarantee agreement is submitted.

(2) The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal Government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency. The Commission has the right to change the trustee. An acceptable trust will meet the regulatory criteria established in the part of these regulations that governs the issuance of the license for which the guarantor has accepted the obligation to pay for decommissioning costs.

G. The guarantor must agree that if the guarantor admits in writing its inability to pay its debts generally, or makes a general assignment for the benefit of creditors, or any proceeding is instituted by or against the guarantor seeking to adjudicate it as bankrupt or insolvent, or seeking dissolution, liquidation, winding-up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency, or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, custodian, or other similar official for guarantor or for any substantial part of its property, or the guarantor takes any action to authorize or effect any of the actions stated in this paragraph, then the Commission may:

(1) Declare that the financial assurance guaranteed by the self-guarantee agreement is immediately due and payable to the standby trust set up to protect the public health and safety and the environment, without diligence, presentment, demand, protest or any other notice of any kind, all of which are expressly waived by guarantor; and

(2) Exercise any and all of its other rights under applicable law.

H. The guarantor must notify the NRC, in writing, immediately following the occurrence of any event listed in paragraph G of this appendix, and must include a description of the event, including major creditors, the amounts involved, and the actions taken to assure that the amount of funds guaranteed by the self-guarantee agreement for decommissioning will be transferred to the standby trust as soon as possible.

**PART 40 — DOMESTIC LICENSING OF SOURCE MATERIAL.**

13. 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); sec. 193, 104 Stat. 2835, as amended by Pub. L. 104-134, 110 Stat. 1321, 1321-349 (42 U.S.C. 2243); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

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).

14. In § 40.36, a new paragraph (c)(5) is added, paragraph (d), the introductory text in paragraph (e), and paragraphs (e)(1), the introductory text of paragraph (e)(2) and paragraph (e)(3) are revised, and a new paragraph (g) is added to read as follows:

**§ 40.36 Financial assurance and recordkeeping for decommissioning.**

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(c) ***

(5) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in the facility and environment, including the subsurface, is detected at levels that would, if left uncorrected, prevent the site from meeting the 10 CFR 20.1402 criteria for unrestricted use, the licensee must submit a decommissioning funding plan within one year of when the survey is completed.

(d)(1) Each decommissioning funding plan must be submitted for review and approval and must contain –

(i) A detailed cost estimate for decommissioning, in an amount reflecting:

(A) The cost of an independent contractor to perform all decommissioning activities;

(B) The cost of meeting the 10 CFR 20.1402 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of 10 CFR 20.1403, the cost estimate may be based on meeting the 10 CFR 20.1403 criteria;

(C) The volume of onsite subsurface material containing residual radioactivity that will require remediation; and

(D) An adequate contingency factor.

(ii) Identification of and justification for using the key assumptions contained in the DCE;

(iii) A description of the method of assuring funds for decommissioning from paragraph (e) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

(iv) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(v) A signed original, or if permitted, a copy, of the financial instrument obtained to satisfy the requirements of paragraph (e) of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

(2) At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

(i) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;

(ii) Waste inventory increasing above the amount previously estimated;

(iii) Waste disposal costs increasing above the amount previously estimated;

(iv) Facility modifications;

(v) Changes in authorized possession limits;

(vi) Actual remediation costs that exceed the previous cost estimate;

(vii) Onsite disposal; and

(viii) Use of a settling pond.

(e) The financial instrument must include the licensee's name, license number, and docket number; and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. The financial instrument submitted must be a signed original or signed original duplicate, except where a copy is specifically permitted. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment.* Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method.* These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix A to this part. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are

as contained in appendix C to this part. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in appendix D to this part. For nonprofit entities, such as colleges, universities, and nonprofit hospitals, a guarantee of funds by the applicant or licensee may be used if the guarantee and test are as contained in appendix E to this part. Except for an external sinking fund, a parent company guarantee or guarantee by the applicant or licensee may not be used in combination with any other financial methods used to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

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(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund.* An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (e)(2) of this section.

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(g) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor

the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar quarter, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase the balance to cover the cost, and must do so within 30 days after the end of the calendar quarter.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (g)(1) or (g)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Federal and State Materials and Environmental Management Programs, and state the new balance of the fund.

15. In § 40.46, the current paragraph is designated as paragraph (a) and a new paragraph (b) is added to read as follows:

**§ 40.46 Inalienability of licenses.**

*****

(b) An application for transfer of license must include:

(1) The identity, technical and financial qualifications of the proposed transferee; and

(2) Financial assurance for decommissioning information required by § 40.36 or appendix A to this part, as applicable.

16. In appendix A to Part 40, Section II, Criterion 9 is revised to read as follows:

**Appendix A to Part 40—Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for Their Source Material Content**

*****

II. ***

*Criterion 9*-- (a) Financial surety arrangements must be established by each mill operator before the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the mill and site and for the reclamation of any tailings or waste disposal areas. The amount of funds to be ensured by such surety arrangements must be based on Commission-approved cost estimates in a Commission-approved plan, or a proposed revision to the plan submitted to the Commission for approval, if the proposed revision contains a higher cost estimate, for

(1) Decontamination and decommissioning of mill buildings and the milling site to levels which allow unrestricted use of these areas upon decommissioning, and

(2) The reclamation of tailings and/or waste areas in accordance with technical criteria delineated in Section I of this appendix.

(b) Each cost estimate must contain –

(1) A detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting:

(i) The cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities; and

(ii) An adequate contingency factor;

(2) An estimate of the amount of radioactive contamination in onsite subsurface material;

(3) Identification of and justification for using the key assumptions contained in the DCE; and

(4) A description of the method of assuring funds for decontamination, decommissioning, and reclamation.

(c) The licensee shall submit this plan in conjunction with an environmental report that addresses the expected environmental impacts of the milling operation, decommissioning and tailings reclamation, and evaluates alternatives for mitigating these impacts. The plan must include a signed original of the financial instrument obtained to satisfy the surety arrangement requirements of this criterion (unless a previously submitted and approved financial instrument continues to cover the cost estimate for decommissioning). The surety arrangement must also cover the cost estimate and the payment of the charge for long-term surveillance and control required by Criterion 10 of this section.

(d) To avoid unnecessary duplication and expense, the Commission may accept financial sureties that have been consolidated with financial or surety arrangements established to meet requirements of other Federal or state agencies and/or local governing bodies for decommissioning, decontamination, reclamation, and long-term site surveillance and control, provided such arrangements are considered adequate to satisfy these requirements and that the portion of the surety which covers the decommissioning and reclamation of the mill, mill tailings site and associated areas, and the long-term funding charge is clearly identified and committed for use in accomplishing these activities.

(e) The licensee's surety mechanism will be reviewed annually by the Commission to assure, that sufficient funds would be available for completion of the reclamation plan if the work had to be performed by an independent contractor.

(f) The amount of surety liability should be adjusted to recognize any increases or decreases resulting from:

(1) Inflation;

(2) Changes in engineering plans;

(3) Activities performed;

(4) Spills, leakage or migration of radioactive material producing additional contamination in onsite subsurface material that must be remediated to meet applicable remediation criteria;

(5) Waste inventory increasing above the amount previously estimated;

(6) Waste disposal costs increasing above the amount previously estimated;

(7) Facility modifications;

(8) Changes in authorized possession limits;

(9) Actual remediation costs that exceed the previous cost estimate;

(10) Onsite disposal; and

(11) Any other conditions affecting costs.

(g) Regardless of whether reclamation is phased through the life of the operation or takes place at the end of operations, an appropriate portion of surety liability must be retained until final compliance with the reclamation plan is determined.

(h) The appropriate portion of surety liability retained until final compliance with the reclamation plan is determined will be at least sufficient at all times to cover the costs of decommissioning and reclamation of the areas that are expected to be disturbed before the next license renewal. The term of the surety mechanism must be open ended, unless it can be demonstrated that another arrangement would provide an equivalent level of assurance. This assurance would be provided with a surety instrument which is written for a specified time (e.g., 5 years) and which must be automatically renewed unless the surety notifies the beneficiary (the Commission or the State regulatory agency) and the principal (the licensee) with reasonable time (e.g., 90 days) before the renewal date of their intention not to renew. In such a situation the surety requirement still exists and the licensee would be required to submit an acceptable replacement surety within a brief time to allow at least 60 days for the regulatory agency to collect.

(i) Proof of forfeiture must not be necessary to collect the surety. In the event that the licensee can not provide an acceptable replacement surety within the required time, the surety shall be automatically collected before its expiration. The surety instrument must provide for collection of the full face amount immediately on demand without reduction for any reason, except for trustee fees and expenses provided for in a trust agreement, and that the surety will not refuse to make full payment. The conditions described previously would have to be clearly stated on any surety instrument which is not open-ended, and must be agreed to by all parties. Financial surety arrangements generally acceptable to the Commission are:

(1) Trust funds;

(2) Surety bonds;

(3) Irrevocable letters of credit; and

(4) Combinations of the financial surety arrangements or other types of arrangements as may be approved by the Commission. If a trust is not used, then a standby trust must be set up to receive funds in the event the Commission or State regulatory agency exercises its right to collect the surety. The surety arrangement and the surety or trustee, as applicable, must be acceptable to the Commission. Self insurance, or any arrangement which essentially constitutes self insurance (e.g., a contract with a State or Federal agency), will not satisfy the surety requirement because this provides no additional assurance other than that which already exists through license requirements.

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**PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES.**

17. The authority citation for Part 50 continues to read as follows:

Authority: Secs. 102, 103, 104, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, 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); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); sec. 651(e), Pub. L. 109-58, 119 Stat. 806-810 (42 U.S.C. 2014, 2021, 2021b, 2111). Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5841). Section 50.10 also issued under secs. 101, 185, 68 Stat. 955, as amended (42 U.S.C. 2131, 2235); sec. 102, Pub. L. 91-190, 83 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).

18. In § 50.75, the introductory text of paragraph (e)(1)(iii)(A), and paragraphs (f)(1) and (f)(2) are revised to read as follows:

**§ 50.75 Reporting and recordkeeping for decommissioning planning.**

*****

(e) ***

(1) ***

(iii) ***

(A) These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

*****

(f)(1) Each power reactor licensee shall report, on a calendar-year basis, to the NRC by March 31, 1999, and at least once every 2 years thereafter on the status of its decommissioning funding for each reactor or part of a reactor that it owns. However, each holder of a combined license under part 52 of this chapter need not begin reporting until the date that the Commission has made the finding under § 52.103(g) of this chapter. The information in this report must include, at a minimum, the amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c); the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report; a schedule of the annual amounts remaining to be collected; the assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections; any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section; any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and any material changes to trust agreements. If any of the preceding items is not applicable, the licensee should so state in its report. Any licensee for a plant that is within 5 years of the projected end of its operation, or where conditions have changed such that it will close within 5 years (before the end of its licensed life), or that has already closed (before the end of its licensed life), or that is involved in a merger or an acquisition shall submit this report annually.

(2) Each power reactor licensee shall report, on a calendar-year basis, to the NRC by March 31, 1999, and at least once every 2 years thereafter on the status of its decommissioning funding for each reactor or part of a reactor that it owns. The information in this report must

include, at a minimum, the amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c); the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report; a schedule of the annual amounts remaining to be collected; the assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections; any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section; any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and any material changes to trust agreements. If any of the preceding items is not applicable, the licensee should so state in its report. Any licensee for a plant that is within 5 years of the projected end of its operation, or where conditions have changed such that it will close within 5 years (before the end of its licensed life), or that has already closed (before the end of its licensed life), or that is involved in a merger or an acquisition shall submit this report annually.

*****

19. In § 50.82, paragraph (a)(4)(i) is revised, and paragraphs (a)(8)(v), (a)(8)(vi), and (a)(8)(vii) are added to read as follows:

**§ 50.82 Termination of license.**

*****

(a) ***

(4)(i) Within 2 years following permanent cessation of operations, the licensee shall submit a post-shutdown decommissioning activities report (PSDAR) to the NRC, and a copy to the affected State(s). The PSDAR must contain a description of the planned decommissioning activities along with a schedule for their accomplishment, a discussion that provides the reasons for concluding that the environmental impacts associated with site-specific decommissioning

activities will be bounded by appropriate previously issued environmental impact statements, and a site-specific DCE, including the projected cost of managing irradiated fuel.

*****

(8) ***

(v) After submitting its site-specific DCE required by paragraph (a)(4)(i) of this section, and until the licensee has completed its final radiation survey and demonstrated that residual radioactivity has been reduced to a level that permits termination of its license, the licensee must annually submit to the NRC, by March 31, a financial assurance status report. The report must include the following information, current through the end of the previous calendar year:

(A) The amount spent on decommissioning, both cumulative and over the previous calendar year, the remaining balance of any decommissioning funds, and the amount provided by other financial assurance methods being relied upon;

(B) An estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and the decommissioning criteria upon which the estimate is based;

(C) Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and

(D) Any material changes to trust agreements or financial assurance contracts.

(vi) If the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a 2 percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning, the financial assurance status report must include additional financial assurance to cover the estimated cost of completion.

(vii) After submitting its site-specific DCE required by paragraph (a)(4)(i) of this section, the licensee must annually submit to the NRC, by March 31, a report on the status of its funding for

managing irradiated fuel. The report must include the following information, current through the end of the previous calendar year:

(A) The amount of funds accumulated to cover the cost of managing the irradiated fuel;

(B) The projected cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Secretary of Energy; and

(C) If the funds accumulated do not cover the projected cost, a plan to obtain additional funds to cover the cost.

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**PART 70--DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL**

20. The authority citation for Part 70 continues to read as follows:

Authority: Secs. 51, 53, 161, 182, 183, 68 Stat. 929, 930, 948, 953, 954, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2071, 2073, 2201, 2232, 2233, 2282, 2297f); secs. 201, as amended, 202, 204, 206, 88 Stat. 1242, as amended, 1244, 1245, 1246 (42 U.S.C. 5841, 5842, 5845, 5846). Sec. 193, 104 Stat. 2835, as amended by Pub. L. 104-134, 110 Stat. 1321, 1321-349 (42 U.S.C. 2243); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

Sections 70.1(c) and 70.20a(b) also issued under secs. 135, 141, Pub. L. 97-425, 96 Stat. 2232, 2241 (42 U.S.C. 10155, 10161). Section 70.7 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 70.21(g) also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Section 70.31 also issued under sec. 57d, Pub. L. 93-377, 88 Stat. 475 (42 U.S.C. 2077). Sections 70.36 and 70.44 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 70.81 also issued under secs. 186, 187, 68 Stat. 955 (42 U.S.C. 2236, 2237). Section 70.82 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138).

21. In § 70.25, a new paragraph (c)(5) is added, paragraph (e), the introductory text in paragraph (f), and paragraph (f)(1), the introductory text of paragraph (f)(2) and paragraph (f)(3) are revised, and a new paragraph (h) is added to read as follows:

**§ 70.25 Financial assurance and recordkeeping for decommissioning.**

*****

(c) ***

(5) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in the facility and environment, including the subsurface, is detected at levels that would, if left uncorrected, prevent the site from meeting the 10 CFR 20.1402 criteria for unrestricted use, the licensee must submit a decommissioning funding plan within one year of when the survey is completed.

*****

(e)(1) Each decommissioning funding plan must be submitted for review and approval and must contain –

(i) A detailed cost estimate for decommissioning, in an amount reflecting:

(A) The cost of an independent contractor to perform all decommissioning activities;

(B) The cost of meeting the 10 CFR 20.1402 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of 10 CFR 20.1403, the cost estimate may be based on meeting the 10 CFR 20.1403 criteria;

(C) The volume of onsite subsurface material containing residual radioactivity that will require remediation; and

(D) An adequate contingency factor.

(ii) Identification of and justification for using the key assumptions contained in the DCE;

(iii) A description of the method of assuring funds for decommissioning from paragraph (f) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

(iv) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(v) A signed original, or, if permitted, a copy, of the financial instrument obtained to satisfy the requirements of paragraph (f) of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

(2) At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

(i) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;

(ii) Waste inventory increasing above the amount previously estimated;

(iii) Waste disposal costs increasing above the amount previously estimated;

(iv) Facility modifications;

(v) Changes in authorized possession limits;

(vi) Actual remediation costs that exceed the previous cost estimate;

(vii) Onsite disposal; and

(viii) Use of a settling pond.

(f) The financial instrument must include the licensee's name, license number, and docket number; and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within

30 days, submit financial instruments reflecting such changes. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment.* Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method.* These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix A to this part. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix C to this part. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in appendix D to this part. For nonprofit entities, such as colleges, universities, and nonprofit hospitals, a guarantee of funds by the applicant or licensee may be used if the guarantee and test are as contained in appendix E to this part. Except for an external sinking fund, a parent company guarantee or a guarantee by the applicant or licensee may not be used in combination with any other financial methods used to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

*****

(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund.* An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (f)(2) of this section.

*****

(h) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar quarter, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase the balance to cover the cost, and must do so within 30 days after the end of the calendar quarter.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (g)(1) or (g)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Federal and State Materials and Environmental Management Programs, and state the new balance of the fund.

22. In § 70.36, the current paragraph is designated as paragraph (a) and a new paragraph (b) is added to read as follows:

**§ 70.36 Inalienability of licenses.**

*****

(b) An application for transfer of license must include:

(1) The identity, technical and financial qualifications of the proposed transferee; and

(2) Financial assurance for decommissioning information required by § 70.25.

**PART 72--LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE**

23. The authority citation for Part 72 continues to read as follows:

Authority: Secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 68 Stat. 929, 930, 932, 933, 934, 935, 948, 953, 954, 955, as amended; sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2282); sec. 274, Pub. L. 86-373, 73 Stat. 688, as amended (42 U.S.C. 2021); sec. 201, as amended; 202, 206, 88 Stat. 1242, as amended; 1244, 1246 (42 U.S.C. 5841, 5842, 5846); Pub. L. 95-601, sec. 10, 92 Stat. 2951, as amended by Pub. L. 102-486, sec. 7902, 106 Stat. 3123 (42 U.S.C. 5851); sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332); secs. 131, 132, 133, 135, 137, 141, Pub. L. 97-425, 96 Stat. 2229, 2230, 2232, 2241; sec. 148, Pub. L. 100-203, 101 Stat. 1330-235 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); sec. 651(e), Pub. L. 109–58, 119 Stat. 806–10 (42 U.S.C. 2014, 2021, 2021b, 2111).

Section 72.44(g) also issued under secs. 142(b) and 148(c), (d), Pub. L. 100-203, 101 Stat. 1330-232, 1330-236 (42 U.S.C. 10162(b), 10168(c), (d)). Section 72.46 also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239); sec. 134, Pub. L. 97-425, 96 Stat. 2230 (42 U.S.C. 10154). Section 72.96(d) also issued under sec. 145(g), Pub. L. 100-203, 101 Stat. 1330-235 (42 U.S.C. 10165(g)). Subpart J also issued under secs. 2(2), 2(15), 2(19), 117(a), 141(h), Pub. L. 97-425, 96 Stat. 2202, 2203, 2204, 2222, 2224 (42 U.S.C. 10101, 10137(a), 10161(h)). Subparts K and L are also issued under sec. 133, 98 Stat. 2230 (42 U.S.C. 10153) and sec. 218(a), 96 Stat. 2252 (42 U.S.C. 10198).

24. In § 72.13, paragraph (c) is revised to read as follows:

**§ 72.13 Applicability.**

*****

(c) The following sections apply to activities associated with a general license: 72.1; 72.2(a)(1), (b), (c), and (e); 72.3 through 72.6(c)(1); 72.7 through 72.13(a) and (c); 72.30(b), (c), (d), (e) and (f); 72.32(c) and (d); 72.44(b) and (f); 72.48; 72.50(a); 72.52(a), (b), (d), and (e); 72.60; 72.62; 72.72 through 72.80(f); 72.82 through 72.86; 72.104; 72.106; 72.122; 72.124; 72.126; 72.140 through 72.176; 72.190; 72.194; 72.210 through 72.220, and 72.240(a).

*****

25. In § 72.30, paragraph (b) is revised, paragraph (c) is redesignated as paragraph (e) and the introductory text of the newly redesignated paragraph (e), paragraphs (e)(1), the introductory text of paragraph (e)(2) and paragraph (e)(3) are revised, paragraph (e)(5) is revised, paragraph (d) is redesignated as paragraph (f) and the newly redesignated paragraphs (f)(3)(ii) and (f)(4) are revised, and new paragraphs (c), (d), and (g) are added to read as follows:

**§ 72.30 Financial assurance and recordkeeping for decommissioning.**

*****

(b) Each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that must contain:

(1) Information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI or MRS.

(2) A detailed cost estimate for decommissioning, in an amount reflecting:

(i) The cost of an independent contractor to perform all decommissioning activities;

(ii) An adequate contingency factor; and

(iii) The cost of meeting the § 20.1402 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of § 20.1403 of this chapter, the cost estimate may be based on meeting the § 20.1403 criteria.

(3) Identification of and justification for using the key assumptions contained in the DCE.

(4) A description of the method of assuring funds for decommissioning from paragraph (e) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility.

(5) The volume of onsite subsurface material containing residual radioactively that will require remediation to meet the criteria for license termination.

(6) A certification that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning.

(c) At the time of license renewal and at intervals not to exceed 3 years the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the

original or prior approved plan and must specifically consider the effect of the following events on decommissioning costs:

(1) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material.

(2) Facility modifications.

(3) Changes in authorized possession limits.

(4) Actual remediation costs that exceed the previous cost estimate.

(d) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in soils or ground water is detected at levels that would require such radioactivity to be reduced to a level permitting release of the property for unrestricted use under the decommissioning requirements in part 20 of this chapter, the licensee must submit a new or revised decommissioning funding plan within one year of when the survey is completed.

(e) The financial instrument must include the licensee's name, license number, and docket number; and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment*. Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method*. These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a

financial test may be used if the guarantee and test are as contained in appendix A to part 30 of this chapter. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix C to part 30 of this chapter. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in appendix D to part 30 of this chapter. Except for an external sinking fund, a parent company guarantee or a guarantee by the applicant or licensee may not be used in combination with other financial methods to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

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(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund*. An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (e)(2) of this section.

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(5) In the case of licensees who are issued a power reactor license under part 50 of this chapter or ISFSI licensees who are an electric utility, as defined in part 50 of this chapter, with a

specific license issued under this part, the methods of 10 CFR 50.75(b), (e), and (h), as applicable. In the event that funds remaining to be placed into the licensee's ISFSI decommissioning external sinking fund are no longer approved for recovery in rates by a competent rate making authority, the licensee must make changes to provide financial assurance using one or more of the methods stated in paragraphs (1)-(4) of this section.

(f) ***

(3) ***

(ii) All areas outside of restricted areas that require documentation under § 72.30(f)(1).

(4) Records of the cost estimate performed for the decommissioning funding plan and records of the funding method used for assuring funds are available for decommissioning.

(g) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar year, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase the balance to cover the cost, and must do so within 30 days after the end of the calendar year.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (g)(1) or (g)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Federal and State Materials and Environmental Management Programs, and state the new balance of the fund.

26. In § 72.50, paragraph (b)(3) is added to read as follows:

**§ 72.50 Transfer of license.**

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(b) ***

(3) The application shall describe the financial assurance that will be provided for the decommissioning of the facility under § 72.30.

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27. In § 72.80, paragraphs (e) and (f) are revised to read as follows:

**§ 72.80 Other records and reports.**

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(e) Prior to license termination, the licensee shall forward records required by § 20.2103(b)(4), of this chapter, and § 72.30(f) to the appropriate NRC Regional Office.

(f) If licensed activities are transferred or assigned in accordance with § 72.44(b)(1), the licensee shall transfer the records required by § 20.2103(b)(4), of this chapter, and § 72.30(f) to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated.

* * * * *

Dated at Rockville, Maryland, this _th day of _____ 2008.

For the Nuclear Regulatory Commission.

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Annette Vietti-Cook,
Secretary for the Commission.