

Rulemaking Plan  
Financial Assurance-- Materials Licensees

I. Regulatory Issue

A. Financial Assurance for Decommissioning

The NRC regulations requiring financial assurance for decommissioning are designed to assure that adequate funding will be available for timely decommissioning by licensees. The financial assurance regulations for materials licensees are part of the strategy described in the NRC strategic plan. The strategic plan states “ However, we must take the necessary regulatory actions, including financial assurance, so that remediation can be completed consistent with our regulations to assure meeting the performance goal of maintaining safety and protection of the environment.<sup>1</sup> “

Financial assurance is composed of several parts: (1) appropriate identification of licensees for which financial assurance should be required; (2) the amount of financial assurance required for each licensee must be adequate to fund current decommissioning costs; and (3) appropriate financial assurance mechanisms (surety bonds, escrow accounts, parent or self-guarantee, etc.) must be required.

The objective of this planned rulemaking is to maintain adequate financial assurance by addressing gaps in the current regulatory framework regarding (1) and (2) above.

B. Regulatory Problems to be Addressed by This Planned Rulemaking

Under current decommissioning regulations, materials licensees using substantial quantities of nuclear materials must provide financial assurance for decommissioning (most materials licensees do not need to provide financial assurance because their possession limits

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<sup>1</sup> U.S. Nuclear Regulatory Commission Strategic Plan - Fiscal Year 2000- Fiscal Year 2005, Appendix, NUREG-1614, Vol. 2, Part 2, p.57.

are below the threshold for requiring financial assurance). The financial assurance requirements were promulgated in 1988 as part of the decommissioning rulemaking (53 FR 24018, June 27, 1988). Revision to some of the financial assurance requirements for materials licensees are needed because there have been changes in decommissioning costs since that time, and NRC experience has revealed that for certain types of licensees, such as waste brokers, special considerations exist which require different treatment.

## 1. Certification Amounts

The amount of financial assurance which must be provided can be based on either: (1) a facility-specific decommissioning cost estimate provided by the licensee in a decommissioning funding plan<sup>2</sup> ; or (2), one of several dollar amounts (certification amounts) given in the regulations. Which certification amount is required of a licensee depends on the possession limits for radioactive materials applicable to that license. At present, about 60% of materials licensees required to have financial assurance use the certification amounts.

The present certification amounts are based on decommissioning cost estimates that are now more than ten years old. When the decommissioning rule was established, it was expected that periodic adjustments to the certification amounts would be needed as decommissioning costs changed over time. It is necessary to review the current decommissioning cost information, and make adjustments to the certification amounts in cases where decommissioning costs for licensees clearly exceed the certification amounts which the licensees may use. The NRC anticipates that this type of review may be needed approximately every ten years. More frequent reviews could be conducted if cost-effective, taking into consideration the cost of the reviews and the extent of increases in decommissioning costs .

## 2. Sealed Source Licensees

The NRC has approximately 3800 sealed source licensees, of which approximately 350 require financial assurance. Decommissioning costs for sealed source licensees are greatly

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<sup>2</sup>For some types of licensees using large amounts of radioactive material, a facility specific cost estimate must be used.

dependent on how the sources are disposed. Sealed source disposal costs can be extremely variable, depending on the availability of opportunities to return sources to the seller/manufacturer, or transfer the sources to another licensee. Where this is the case, disposal costs are relatively low. However, where the licensee cannot return or transfer sources and must dispose of them, this can be relatively expensive.

For some sealed source licensees, it appears that the financial assurance requirements do not provide funding sufficient to cover decommissioning costs. This is especially apparent in the case of certain large irradiators. Under current regulations, irradiators with possession limits allowing millions of curies may use the \$75K certification amount. Estimates of decommissioning costs for these large irradiators are substantially above \$75K<sup>3</sup>. The threshold possession limits triggering a requirement for financial assurance, and the adequacy of the certification amounts for financial assurance for sealed source licensees should be reviewed, and revised where needed.

### (3) Waste Broker Licensees

Waste broker licensees are those licensees that handle radioactive waste associated with or generated under other licenses. There is no definition of “waste broker” in existing NRC regulations and the term is commonly used to describe several different activities. The NRC financial assurance regulations treat waste brokers in the same way as other materials licensees; there are no special financial assurance requirements applicable only to waste brokers. However, NRC practice has been that waste broker refers to any licensee that engages in the following activities: waste collection and consolidation; waste storage; waste processing, repackaging, or other treatment (e.g., decay in storage, compaction); or transfer to another waste broker or to a licensed low-level radioactive waste land disposal facility. The NRC has 13 waste broker licensees, of which 6 require financial assurance. Many waste broker licensees also conduct other types of licensed activities as part of their overall business.

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<sup>3</sup>Technology , Safety, and Costs of Decommissioning a Reference Large Irradiator and Reference Sealed Sources, NUREG/CR-6280, Pacific Northwest National Laboratory, January, 1996, p. 4.9.

From the viewpoint of financial assurance, waste broker activities are unique in that: (1) waste brokers are likely to have radioactive wastes generated by other licensees, and the inventory of waste a broker will have on site at any time may fluctuate considerably and be difficult to predict; and (2) waste brokers have a financial interest in maximizing the amount of radioactive waste that they handle -- waste broker revenues are directly correlated to the amount of waste accepted.

The disposal costs of waste inventories are very high - much greater than when the decommissioning regulations were promulgated. The current financial assurance regulations do not consider the costs of disposing of significant volumes of waste generated outside the decommissioning process, such as inventories of brokered waste. Waste brokers currently may be required to maintain a level of financial assurance which is inadequate for disposal of waste inventories. Charges for disposal of waste at low-level waste disposal facilities are based on the volume of waste disposed, and also on level of activity of the waste. The possession limits, that determine what level of financial assurance a waste broker licensee must have, are based on the quantity of curies of material possessed, not volume of material possessed. A waste broker that must dispose of large volumes of relatively low activity waste would be subject to substantial waste disposal charges. However, that same waste broker might be required to have an inadequate amount of financial assurance to pay these charges because the financial assurance requirements are based only on curie level. In addition, some waste brokers with low possession limits may not be subject to any financial assurance requirements, even though, by waste volume, waste inventories may be very large.

## II. Current Rule Requirements

### A. 10 CFR Part 30

10 CFR Part 30 requires a licensee authorized to possess large quantities of unsealed byproduct material to submit a decommissioning funding plan which includes a site-specific decommissioning cost estimate.

Part 30 licensees authorized to possess lesser amounts of unsealed byproduct material may either submit a decommissioning funding plan, or submit a certification that financial assurance for decommissioning has been provided. Certification amounts of \$750,000, or \$150,000, depending on the quantity of material the licensee is authorized to possess, are applicable to Part 30 licensees.

Part 30 licensees authorized to possess certain quantities of byproduct material in sealed sources or plated foils may either submit a decommissioning funding plan or submit a certification that financial assurance has been provided in the amount of \$75,000.

#### B. 10 CFR Part 40

Part 40 financial assurance requirements are divided into two categories; one which applies to uranium mill facilities ( Appendix A, Criterion nine), and another (10 CFR 40.36) which applies to all other Part 40 licensees. Uranium mill licensees must provide financial assurance based on site-specific reclamation cost estimates. This rulemaking plan does not address financial assurance requirements for uranium mill licensees.

Section 40.36 requires a licensee authorized to possess large quantities of material to submit a decommissioning funding plan which includes a site-specific decommissioning cost estimate. Section 40.36 licensees authorized to possess lesser amounts of material may either submit a decommissioning funding plan, or submit a certification that financial assurance for decommissioning has been provided in the amount of \$150,000.

#### C. 10 CFR Part 70

10 CFR Part 70 requires a uranium enrichment facility licensee, or a licensee authorized to possess large quantities (based on applicable quantities in Appendix B to Part 30) of unsealed special nuclear material having a half-life greater than 120 days to submit a decommissioning funding plan, which includes a site-specific decommissioning cost estimate.

Part 70 licensees other than uranium enrichment facility licensees authorized to possess

lesser amounts of such special nuclear material may either submit a decommissioning funding plan, or submit a certification that financial assurance for decommissioning has been provided. Certification amounts of \$750,000 or \$150,000, depending on the quantity of material the licensee is authorized to possess, are applicable to Part 70 licensees.

#### D. 10 CFR Part 72

10 CFR Part 72 licensees are required to provide a decommissioning funding plan which includes a site-specific cost estimate. This rulemaking plan does not address Part 72 licensees.

### III. Background

In a memorandum from the Commission dated March 30, 1993, "Reexamination of NRC Decommissioning Funding Requirements for Reactors and Major Fuel Cycle Facilities" (COMIS-93-002), the staff was asked to recommend whether or not a re-examination of NRC's requirements for decommissioning funding was appropriate, and if so how such a re-examination should be carried out. As part of the staff's response (Memorandum to the Commission from James M. Taylor, May 28, 1993), the Commission was informed that a reevaluation of the certification amounts would be done.

Pacific Northwest National Laboratory (PNNL) conducted a number of studies to update decommissioning cost estimates for materials licensees over the past several years. The results of its studies; Technology, Safety, and Costs of Decommissioning a Reference Large Irradiator and Reference Sealed Sources, NUREG/CR-6280, PNNL, January, 1996, and Revised Analyses of Decommissioning Reference Non-Fuel-Cycle Facilities, draft NUREG/CR-6477, PNNL, July, 1998, provide some of the background technical information for this rulemaking. The staff will use the results of PNNL's work and other information as the basis of adjustment to the certification amounts to be done through rulemaking.

In 1996, NRC surveyed Agreement States to gather information on waste brokers licensed by Agreement States. The survey requested information on numbers of waste brokers

requiring/not requiring financial assurance, the level of financial assurance required and how the level is determined, the amount of waste authorized on site, and any special conditions applicable to waste brokers in each State.

NRC has also completed studies of financial assurance requirements for waste brokers, and of the adequacy of the current certification amounts. The studies were carried out by a contractor with extensive experience in financial assurance, ICF, Inc. The studies, "Assessment of the Financial Assurance Requirements for Waste Broker Material Licensees," ICF, Inc., December 28, 1998, and "Analysis of Decommissioning Certification Amounts for Materials Licensees- Parts 30, 40, and 70," provide information which forms a part of this rulemaking plan.

The NRC recently denied a petition for rulemaking from Mr. Charles T. Gallagher (PRM-30-64) that focused on several financial assurance issues (66 FR 20099, April 19, 2001). The NRC considered the petition and public comments received, and denied the petition because of insufficient information provided by the petitioner to support a basis for revising the financial assurance regulations. The proposed regulatory changes in this rulemaking plan are different than those advocated in the petition.

#### IV. How the Regulatory Problem Will be Addressed by Rulemaking

- For licensees using material in unsealed form, the dollar amounts used for certification of financial assurance will be adjusted as needed to reflect current decommissioning costs. Decommissioning costs have increased significantly since the promulgation of the 1988 decommissioning rule, and a large number of licensees using these certification amounts would now face actual decommissioning costs in excess of their required certification amount. To provide a basis for adjusting certification amounts, an analysis of current decommissioning costs for types of licensees using the \$150K and \$750K certification amounts has been conducted. This analysis identifies differences between estimated current decommissioning costs and required certification amounts for various types of licensees. In these cases, the certification dollar amounts will be

adjusted accordingly. In addition, one or more additional certification amounts may need to be established, such as an intermediate certification amount whose dollar amount would be set somewhere in between the lower and upper amounts. The 1988 decommissioning rule did not specify radiological criteria for decommissioning. Since then, the NRC has promulgated a final rule establishing such criteria (62 FR 39805, July 21, 1997) including criteria for unrestricted use as well as criteria for license termination under restricted conditions. The certification amounts are intended to be estimates of the approximate cost of decommissioning a facility to unrestricted release limits, as given in 10 CFR 20.1402. The estimates assume offsite disposal of radioactive waste.

- For sealed source licensees, the rulemaking will address the threshold possession limit triggering the requirement for financial assurance. The threshold possession limit may need to be lowered. In addition, the rulemaking will address the possession limits under which sealed source licensees may use a certification amount. In cases where certain types of sealed source licensees, such as large irradiators, have decommissioning costs greatly exceeding their applicable certification amount (\$75K), possession limits under which these licensees can use a certification amount will be adjusted. The certification amount is intended to be an estimate of the approximate cost of decommissioning a facility to unrestricted release limits, and disposing of radioactive waste offsite. At present, there is no upper bound to possession limits under which a sealed source licensee may use the \$75K certification amount. An upper bound will be established by this rulemaking; licensees exceeding this limit would have to base financial assurance on a facility-specific decommissioning cost estimate.
- A separate section of the financial assurance regulations will be established for waste brokers. Financial assurance will be adequate to cover the costs of decommissioning the facility to meet the criteria for unrestricted use and disposal of radioactive waste offsite. The amount of financial assurance required for waste brokers will be made directly proportional to the volume of waste inventories in the possession of the licensee. For waste brokers, volume of waste inventory is the best indicator of decommissioning obligations. Each waste broker would be required to maintain financial assurance based on a site-specific inventory of waste. Volume of waste held in a licensee's inventory is a



readily available, easily verified number for both licensee and NRC. A waste broker licensee would continue to have the option of basing financial assurance on a decommissioning plan.

In some cases, it may be that facility specific factors would enable a licensee to complete decommissioning and license termination at a lower cost than specified by the certification amount. In such cases, a licensee has the flexibility to submit a decommissioning funding plan (DFP) containing a cost estimate that takes facility specific factors into account. The facility specific cost estimate may be lower than the certification amount. The licensee must provide financial assurance sufficient to cover its cost estimate, so a DFP may result in providing a lower amount of financial assurance than specified by the applicable certification amount. However, current regulations do not specify the license termination criteria that must be used as the basis of the cost estimate contained in the DFP, nor do they specify whether onsite disposal of radioactive material may be used in the cost basis. The cost of decommissioning can vary significantly with changes in the license termination criteria or disposal of radioactive materials. Therefore, the rulemaking will consider whether or not to specify that a DFP must use unrestricted use criteria and offsite disposal of waste as the cost basis in order to justify a lower amount of financial assurance than the certification amount applicable to the licensee's authorized possession limits.

## V. Preliminary Regulatory Analysis Information

### A. Alternatives

The two alternatives considered here are (1) no action, and (2) carrying out the rulemaking described in this plan.

#### (1) No Action

Under this alternative, no rulemaking would be done. The amount of financial assurance required would not be adequate to fully fund decommissioning activities for a large number of licensees. This gap in funding would increase the likelihood that decommissioning

of some facilities would not be carried out in a timely manner. It would also increase the likelihood that State or local governments and/or the general public would have to bear the costs of decommissioning.

## (2) Rulemaking to Revise the Financial Assurance Requirements for Materials Licensees

A rulemaking to revise the financial assurance requirements for materials licensees would increase the assurance of adequate funding for decommissioning activities. This increased assurance would make timely decommissioning more likely, contributing to maintaining public health and safety. This action would also decrease the likelihood that State and local governments and/or the general public would have to bear the costs of decommissioning.

### B. Basis for Cost/Effectiveness of Planned Rulemaking

The benefit of the planned rulemaking is the continuation of assurance of adequate funding for timely decommissioning. As stated above, there are gaps in the current financial assurance regulations, mainly due to large increases in decommissioning costs since the financial assurance regulations were put in place. Allowing these gaps to remain could increase the likelihood of inadequate funding for timely decommissioning.

The effect of inadequate/untimely funding of decommissioning may have adverse impacts on public health and safety. If a site is not decommissioned due to insufficient funds there is an increased likelihood of contamination and/or exposure of members of the public. The changes to the regulations proposed by this plan are concentrated in areas where the likelihood of inadequate funding relative to decommissioning costs appear to be relatively high. Firstly, the financial assurance requirements are imposed only on those licensees having the highest possession limits, and thus the potential for highest doses. Only about ten percent of materials licensees must provide financial assurance. Secondly, the changes proposed in this plan mostly address situations where risk of inadequate funding of decommissioning obligations is greatest -- where required amounts of financial assurance appear to be substantially less

than decommissioning costs.

Failure to provide adequate financial assurance for decommissioning also has equity considerations. The potential public costs involved in cleanup of contaminated facilities where financial assurance is inadequate must be considered. Equity considerations call for adequate financial assurance so that a licensee's decommissioning costs are borne by the licensee.

In addition, public confidence in NRC regulation is an issue. A default/bankruptcy by an NRC licensee which resulted in cleanup costs being born by a State or local government could result in serious adverse impacts on public confidence.

### C. Potential Impacts on Licensees

Approximately 300 NRC materials licensees required to have financial assurance use the certification amounts rather than a facility-specific decommissioning funding plan. These licensees could face increased costs of obtaining financial assurance if an increase in certification amounts resulted from this proposed rulemaking. Changes in possession limits for use of certification amounts could subject some licensees to increased costs. All licensees using the certification amounts would continue to have the option of submitting a facility-specific decommissioning funding plan. If a licensee believed that the certification amounts were excessive for its decommissioning obligations, it could use the alternative of a facility-specific decommissioning funding plan. The facility-specific cost estimate should provide a more accurate estimate of decommissioning costs, but would involve more effort on the part of licensees to prepare such an estimate.

Some additional sealed source licensees would be required to have financial assurance if the threshold possession limits were lowered. Revision of the possession limits under which a sealed source licensee may use the \$75K certification amount would make some licensees base financial assurance on the alternative of a site-specific decommissioning funding plan cost estimate. This facility-specific cost estimate is likely to be higher than \$75K, and the licensee would incur higher financial assurance costs. The facility-specific cost estimate should provide a more accurate estimate of decommissioning costs, but would involve more effort on the part

of licensees to prepare such an estimate.

Creation of a new section of the financial assurance regulations for waste brokers, with the amount of financial assurance required dependent on waste inventories, would make some additional waste broker licensees provide financial assurance. Some other waste broker licensees already providing financial assurance would have to provide an increased amount of financial assurance. The current number of NRC waste broker licensees which could be affected is 13.

#### D. Resource Cost to NRC of Planned Rulemaking

NRC resources to accomplish the rulemaking are estimated at 2.4 Full Time Equivalent Staff Years (FTE's) for NRC staff time. At current NRC labor rates, this represents approximately \$300K. Direct contractor support for the rulemaking is estimated at approximately \$115K. The total NRC resource commitment is thus approximately \$415K. (Some part of the costs of the background studies of decommissioning costs done by Pacific Northwest National Laboratory can also be considered an indirect cost.)

#### VI. Office of the General Counsel Legal Analysis

The proposed rule would amend the Commission's requirements for financial assurance to better reflect current decommissioning costs. The amendments to 10 CFR Parts 30, 40, and 70 would address (1) certification amounts, i.e., the fixed amounts of financial assurance certain licensees need in the absence of a specific decommission cost estimate (e.g. \$75,000, \$150,000, \$750,000), (2) threshold levels for submitting cost estimates for sealed sources, and (3) definition of "waste brokers" and associated financial assurance requirements. As to waste brokers, it appears that the amendments may base financial assurance requirements only on volume. Consideration of the quantity of curies and type of material may also be relevant.

The rulemaking plan appropriately addresses backfit requirements and Agreement State compatibility and coordination. It recognizes the need to perform an environmental assessment and addresses the Paperwork Reduction Act, the Small Business Regulatory Flexibility Act, and

the Regulatory Flexibility Act.

In conclusion, OGC has determined that there are no known bases for legal objection to the contemplated rulemaking.

## VII. Backfit Analysis

The rulemaking actions discussed in this plan would not affect power reactors, or impose backfits as defined in 10 CFR 70.76, or 10 CFR 72.62(a), and no backfit analysis is necessary.

## VIII. Agreement State Implementation Issues

Under the “Policy Statement on Adequacy and Compatibility of Agreement State Programs” which became effective on September 3, 1997 (62 FR 46517), NRC program elements (including regulations) can be placed into four compatibility categories. In addition, 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 are those 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 in order to provide uniformity in the regulation of agreement material on a nationwide basis.

Compatibility Category B are those 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 are those 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 are those 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 (i.e., Category D), but have been identified as having a particular health and safety role (i.e., adequacy) in the regulation of agreement material within the State. Because of their health and

safety significance, the State should adopt program elements in this category based on those of NRC that embody the essential objectives of the NRC program elements.

Compatibility Category NRC are those program elements that address areas of regulation that cannot be relinquished to Agreement States pursuant to the AEA or provisions of Title 10 of the Code of Federal Regulations. These program elements should not be adopted by Agreement States.

This Rulemaking Plan will make adjustments to the sealed sources threshold possession limits for triggering the requirement for financial assurance and to the certification amounts in cases where decommissioning costs for licensees clearly exceed the certification amounts which the licensees may use. Because the sealed sources threshold possession limits and certification amounts are of health and safety significance (i.e., designated as H&S), any changes made to these limits or amounts would need to be adopted by the Agreement States.

The draft Rulemaking Plan has been provided to the Agreement States for a period of 45 days to obtain their input. Three comment letters were received, from Colorado, Illinois, and Washington.

#### IX. Public Participation

There is no need for formal enhanced public participation, with public meetings, for this rulemaking. The staff proposes to get early stakeholder input by placing the proposed rule on the technical conference forum, subject to Commission approval. The proposed rule and accompanying documents will be placed on the NRC rulemaking forum in addition to publication.

#### X. Supporting Documents Needed

An environmental assessment will be prepared. Since the rule provides for submittal of information by certain licensees, the information collection burden under the Paperwork Reduction Act will need to be addressed. Based upon its Regulatory Analysis, the NRC will also need to

prepare a certification that the proposed rule would not, if promulgated, have a significant economic impact on a substantial number of small entities. (Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, Pub. L. No. 104-121 (March 29, 1996) (SBREFA). The staff will also need to prepare in support of the final rule a report to be submitted to the Congress and GAO in accordance with the provisions of SBREFA. The staff will follow the procedures set forth in the Executive Director for Operations memorandum to Office Directors, dated June 25, 1996. The Regulatory Guide on financial assurance for materials licensees, Reg. Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning under 10 CFR Parts 30, 40, 70, and 72," will need to be updated.

#### XI. Issuance

This planned rulemaking represents a significant policy issue and it is recommended that the Commission issue this rule, if approved.

#### XII. Resources Needed to Complete Rulemaking

Lead Office: NMSS

IMNS, NMSS	1.6 FTE (write rulemaking documents)
DWM, NMSS	0.5 FTE (provide technical input, review documents)
OGC	0.15 FTE (provide legal input, review documents)
other (Admin., OSTP, CFO, CIO)	review documents 0.15 FTE

Total NRC 2.4 FTE

Approximately \$115K in contractor funding has been used to develop information for this rulemaking. Additional contractor support for rulemaking development, such as support for public comment analysis, may be needed (estimated \$30K).



XIII. Management Steering Group

Not needed for this rulemaking.

XIV. Staff Working Group

Concurring Official

C. Prichard, NMSS, IMNS

M. Virgilio

T. Fredrichs, NMSS, DWM

M. Virgilio

S. Lewis, OGC

S. Treby

T. O'Brien, OSTP

P. Lohaus

XV. Schedule

Final Draft Rulemaking plan to EDO

4/30/01

Proposed rule to EDO

9 months after approval of rulemaking plan

Final rule to EDO

6 months after close of public comment period