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ASSURING THE AVAILABILITY OF FUNDS FOR DECOMMISSIONING NUCLEAR REACTORS

USNRC REGULATORY GUIDES

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A. INTRODUCTION

The general requirements for applications for license termination and decommissioning nuclear power, research, and test reactors are contained in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." On June 27, 1988, the Commission published amendments to 10 CFR Part 50 (53 FR 24018) concerning specific criteria for decommissioning nuclear facilities.

Amended 10 CFR 50.33(k), 50.75, and 50.82(b) require operating license applicants and existing licensees to submit information on how reasonable assurance will be provided that funds are available to decommission the facility. Amended § 50.75 establishes requirements for indicating how this assurance will be provided, namely the amount of funds that must be provided, including updates, and the methods to be used for assuring funds.

This regulatory guide has been developed in conjunction with the rule amendments and was published for public comment in May 1989. This version incorporates, where appropriate, the public comments received. Its purpose is to provide guidance to applicants and licensees of nuclear power, research, and test reactors concerning methods acceptable to the NRC staff for complying with requirements in the amended rule regarding the amount of funds for decommissioning. It also provides guidance on the content and form of the financial assurance mechanisms indicated in the rule amendments.

As a guidance document, this regulatory guide and its provisions are not designed to be restrictive or to represent binding requirements. The guide presents methods acceptable to the NRC staff for complying with the decommissioning regulations. The NRC staff recognizes that in certain circumstances (e.g., to meet requirements established by Federal or State economic regulatory agencies or to comply with other applicable laws) other approaches may be necessary.

Any information collection activities mentioned in this regulatory guide are contained as requirements in 10 CFR Part 50, which provides the regulatory basis for this guide. The information collection requirements in 10 CFR Part 50 have been cleared under OMB Clearance No. 3150-0011.

B. DISCUSSION

Decommissioning means to safely remove nuclear facilities from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license. As used in this context, the term "nuclear facilities" refers to the contaminated components (or non-contaminated components required to be dismantled to obtain access to contaminated components) of the site, buildings and contents, and equipment associated with all NRC-licensed activities within the scope of 10 CFR 50.75.

There are three primary methods of decommissioning nuclear reactors.

DECON is the method in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for unrestricted use shortly after cessation of operations.

SAFSTOR is the method in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use.

ENTOMB is the method in which radioactive contaminants are encased in a structurally long-lived material, such as concrete. The entombed structure is appropriately maintained, and continued surveillance is carried out until the radioactivity decays to a level permitting unrestricted release of the property.

So that a lack of funds does not result in delays in or improper conduct of decommissioning that may adversely affect public health and safety, the rule amendments on decommissioning require that applicants and licensees provide reasonable assurance that adequate funds for performing decommissioning will be available at the end of operation. To provide this assurance, the rule requires that two factors be considered, namely, the amount of funds needed for decommissioning and the method used to provide financial assurance.

1. AMOUNT OF FUNDS FOR DECOMMISSIONING

Estimating the correct amount of funds needed for decommissioning is important to prevent funding shortfalls that could adversely affect public health and safety. Requirements for establishing funding amounts for decommissioning are set out in 10 CFR 50.33(k), 50.75, and 50.82(b). These include:

a. An initial certification amount (or, for non-power reactors, a site-specific estimate) established at the operating license stage (for existing licensees, by July 26, 1990) (10 CFR 50.75(b) and 50.75(c)(1));

b. Adjustments to the certification amount (or site-specific estimate) over the operating life and storage period, if any, of the facility. Specifically, 10 CFR 50.75(b) requires each licensee to annually adjust the initial certification amount by use of the equation in paragraph 50.75(c)(2), which provides for escalation factors for labor, energy, and waste burial; in addition, paragraph 50.75(f) requires each licensee to submit, about 5 years prior to the projected end of operation, a preliminary decommissioning plan containing a site-specific cost estimate based on an up-to-date assessment of major technical factors that could affect planning for decommissioning;

c. A detailed cost estimate updating the cost estimate in the preliminary decommissioning plan, if necessary, to be made at the time the licensee applies to the Commission for authority to decommission (10 CFR 50.82).

As indicated in 10 CFR 50.75(b), each electric utility applicant and licensee is to provide certification of financial assurance. (Paragraph 50.2 defines electric utility to mean any entity engaged in the generation or distribution of

electricity that recovers, directly or indirectly, the cost of this electricity through rates.) The specific information noted in b and c above must also be provided at the appropriate time. The certification amounts in 10 CFR 50.75(c)(1) act as threshold review levels. While not necessarily representing the actual cost of decommissioning for specific reactors, these certification amounts provide assurance that licensees are able to demonstrate adequate financial responsibility in that the bulk of the funds necessary for a safe decommissioning are being considered and planned for early in facility life, thus providing adequate assurance that the facility would not become a risk to public health and safety when it is decommissioned. To estimate increases in the cost of decommissioning over the operating life of the facility, 10 CFR 50.75(c)(2) contains a formula to account for inflation that has occurred in the labor, energy, and waste burial components of decommissioning costs.

As indicated in 10 CFR 50.75(d), each non-electric-utility applicant and licensee is to submit a cost estimate for decommissioning its facility. For the purposes of this guidance, non-electric-utility applicants and licensees are license applicants for or licensees of research and test reactors whose primary purpose is not to produce electricity. The initial cost estimate is not an exact accounting of the actual cost of decommissioning but is intended to provide an approximation of what decommissioning the reactor will cost at the proposed time of decommissioning. This estimate may be based on information from the literature (e.g., generic studies, licensee models, experience). Battelle Pacific Northwest Laboratory (PNL) has made detailed cost estimates of the conceptual decommissioning for research and test reactors (Ref. 1) that can be used as a basis, for regulatory purposes, for developing estimates of the costs of decommissioning.

Use of the certification approach is a first step in providing reasonable assurance of decommissioning funds. The second step is that, five years prior to the expected end of operations, licensees are required to submit (or for non-power reactors, to update) a site-specific decommissioning cost estimate based on an up-to-date assessment of the actions necessary for decommissioning and the plans for adjusting levels of funds. As required by 10 CFR 50.75(f), this estimate is to be based on a then-current assessment of major factors that could affect decommissioning cost and is to include relevant, up-to-date information. The third step is a licensee evaluation of specific decommissioning provisions close to the commencement of decommissioning. Together, these steps provide reasonable assurance that the NRC's objective will be met--namely, at the time of permanent end of operations, sufficient funds are available to decommission the reactor in a manner that protects public health and safety.

2. METHODS OF FINANCIAL ASSURANCE

The rule amendments in 10 CFR 50.75 indicate the general requirements for methods that are considered acceptable for providing reasonable assurance of the availability of funds for decommissioning nuclear reactors. These methods and how they are evaluated are discussed in detail in the supplementary information to the final rule amendments on "General Requirements for Decommissioning Nuclear Facilities" (53 FR 24018, June 27, 1988), in an NRC staff report (Ref. 2), and in the Generic Environmental Impact Statement on Decommissioning Nuclear Facilities (Ref. 3). These documents present a rationale for the acceptability of methods for providing financial assurance. The Supplementary Information accompanying the final decommissioning rule indicates that, although some

methods for providing funding assurance now may not be available, they are allowed in the event that they become available. This guide addresses the more feasible alternatives in greater detail. Licensees are, of course, free to use any acceptable method as it becomes available.

Section 50.75 of the rule amendments indicates that the following methods are acceptable for reactors (a glossary of these terms is provided in Appendix A).

- Prepayment - can be in the form of a trust, escrow account, or government-held fund using certificates of deposit, deposits of government securities, or other investments.

- Guarantee Method - can be in the form of surety bonds, letters of credit, or insurance; for non-electric-utility applicants and licensees, parent company guarantees may be used.

- External Sinking Fund - can be in the form of accounts or instruments similar to those described above for prepayment but which are collected over the remaining operating life of the reactor; for non-electric-utility applicants and licensees, the rule amendments indicate that this method must be coupled with a guarantee method.

  The conditions stipulated in 10 CFR 50.75(e)(1)(ii) that an external sinking fund be "segregated from licensee assets and outside the licensee's administrative control" are intended to ensure that the integrity of decommissioning trust funds will be maintained, especially with respect to protection from creditors in a bankruptcy situation. A case-by-case "reasonableness" standard will be applied to licensee compliance with these provisions. The phrase "segregation from licensee assets" does not require that an external trust fund be established as a separate tax-paying entity. Thus, a grantor trust may be used. In addition, the phrase "outside the licensee's administrative control" allows licensees general management oversight of trust fund investments to the extent allowed under State trust law. The NRC staff recognizes that licensees have legitimate interests and responsibilities in ensuring appropriate investment strategies for these funds and monitoring the progress of investments. However, licensees should avoid active day-to-day management of these funds. In this regard, if a trustee is unable to act as an investment manager, use of a professional investment manager is encouraged, although not required.

- Statement of Intent by a government agency, if applicable, indicates that funds for decommissioning will be obtained when necessary.

To simplify the preparation, submittal, and review of information on funding methods acceptable for its non-reactor licensees, the NRC has prepared Regulatory Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72" (Ref. 4). This document contains recommended wording for financial assurance instruments. The instruments in Regulatory Guide 3.66 are included in modified form in this regulatory guide in Appendix B and are referenced in Regulatory Position 2. Because of the more extensive economic regulation faced by reactor

licensees as opposed to materials licensees, the sample wording is provided for illustration and is not necessarily recommended for use by any individual licensee.

C. REGULATORY POSITION

This section describes methods of implementing the general requirements for financial assurance for decommissioning for reactor licensees and applicants who must comply with 10 CFR Part 50.

Regulatory Position 1 provides guidance to applicants and licensees on establishing the amount of funds necessary for decommissioning as required by the regulations. Regulatory Position 2 provides guidance on methods acceptable to the NRC for assuring funds.

1. AMOUNT OF FUNDS FOR DECOMMISSIONING

1.1 Funding Requirements for the Decommissioning Report/Initial Amounts To Be Set Aside

1.1.1 Electric Utility Applicants and Licensees

For electric utility applicants and licensees, the initial certification amount of funds for decommissioning is based on the equations in 10 CFR 50.75(c)(1) and represents the minimum level that electric utility licensees must meet.

At its discretion, an electric utility licensee may submit a certification based either on the formula provided in 10 CFR 50.75(c)(1) or on a facility-specific cost estimate that is equal to or greater than that calculated in the formula in 10 CFR 50.75(c)(1). A facility-specific cost estimate may include non-NRC-required costs, but such costs should be identified. If such a combined submittal is used, licensees should assure that the NRC-required cost component at least equals the certification amount. A facility-specific cost estimate for decommissioning that is more than the amount stated in the table of 10 CFR 50.75(c)(1) need not be submitted until 5 years before the projected end of operation. For estimates below the amount stated in the table of 10 CFR 50.75(c)(1), licensees should submit an exemption request containing details as outlined in Regulatory Position 1.4. For power reactors not included in the table in 10 CFR 50.75(c)(1), licensees should submit a site-specific cost estimate. For such licensees an exemption request is not necessary.

The purpose of the decommissioning report required under 10 CFR 50.33(k) and described in 10 CFR 50.75(b) and (c) is to provide reasonable assurance that licensees have a viable plan to accumulate funds in the certification amount, adjusted for inflation, by the projected time of permanent cessation of operations. Each licensee should submit a statement indicating the certification amount and inflation adjustment appropriate for its reactor or reactors together with a photocopy or conformed copy of the instrument being used to provide assurance of decommissioning funding. If an external sinking fund is being used, the proposed amount of annual (or more frequent) payments should be provided. If the initial payment to an external sinking fund will not be made within 1 year of July 26, 1990, the licensee should submit as part of its decommissioning report a statement that it has filed or intends to file

in a timely manner a rate request with its public utility commission (PUC) or the Federal Energy Regulatory Commission (FERC) to allow decommissioning costs to be recovered from its customers. Notwithstanding action on such a rate request by a PUC or FERC, a licensee should make its initial sinking fund payment by July 26, 1993 as a demonstration of good-faith compliance with 10 CFR 50.75(e)(3)(ii). Licensees that have permanently ceased operations prior to the July 27, 1988, effective date of the rule need not submit a decommissioning report, but are required to submit preliminary or proposed decommissioning plans as required under 10 CFR 50.75(f) and 50.82(a).

1.1.2 Non-Electric-Utility Applicants and Licensees

For non-electric-utility applicants and licensees, the initial amount of funds is to be based on a cost estimate for decommissioning the facility and submitted to the NRC in a report required by 10 CFR 50.33(k). The initial cost estimate for decommissioning need not be an exact accounting of the actual cost of decommissioning, but rather an estimate of the costs for decommissioning the reactor. The PNL studies (Ref. 1) may be used by applicants or licensees for initial cost estimates with suitable adjustments to account for facility-specific differences as discussed in Regulatory Position 1.4.2. The level of detail necessary to support the cost estimate is discussed in Regulatory Position 1.4.

1.2 Adjustments to Certification Amounts or Site-Specific Estimates

For electric utility applicants and licensees, certification amounts described in Regulatory Position 1.1 are to be adjusted annually based on 10 CFR 50.75(b) and (c)(2) and should be available for NRC inspection, as requested. The adjustment factor in 10 CFR 50.75(c)(2) is 0.65L + 0.13E + 0.22B, where L, E, and B are escalation factors for labor, energy, and waste burial costs respectively. Although these adjustments are to be made annually, they need not be submitted to the NRC. Reasonably recent editions of the documents cited below should be used.

The escalation factor for labor, L, can be obtained from "Monthly Labor Review," published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Specifically, the appropriate regional data from the table (currently Table 24) entitled "Employment Cost Index, Private Nonfarm Workers," subtitled "Compensation," should be used. L should be escalated from a base value in Table 24 corresponding to the amounts in the decommissioning rule amendments that are in January 1986 dollars. The base values of L from the BLS data corresponding to January 1986 are 130.5, 127.7, 125.0, and 130.1 for the Northeast, South, Midwest, and West regions, respectively. For example, the value of L for December 1987 in the Northeast region is 141.9 ÷ 130.5 = 1.087. This value of L could then be used in the equation in paragraph 50.75(c)(2) of the rule amendments.

The escalation factor for energy, E, can be obtained from the "Producer Price Indexes," published by the U.S. Department of Labor, BLS. Specifically, data from the table (currently Table 6) entitled "Producer Price Indexes for Commodity Groupings and Individual Items" (PPI) should be used. The energy term, E, is made up of two components, namely electric power, P, and fuel oil, F. Hence, E should be obtained from the BLS data by using the following equations: for the reference PWR, [0.58P + 0.42F], and for the reference BWR,

[0.23P + 0.77F].[1] P should be taken from appropriate regional data for industrial power (Commodity code 0543 in Table 6) and F should be taken from data for light fuel oils (Commodity code 0573 in Table 6). As discussed for L in the preceding paragraph, P and F should be escalated from a base value in the BLS table corresponding to the amounts in the decommissioning rule amendments that are in January 1986 dollars. The base values of P from the BLS data corresponding to January 1986 are 105.8, 111.9, 115.3, 115.65, 119.3, 117.4, 111.4, 119.3, and 112.2 for the following regions, respectively: New England, Mid-Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific. The base value of F for January 1986 is 82 (no regional BLS data for PPI is available). Thus, for example, the value of P for July 1988 in the New England region is 93.3 ÷ 105.8 = 0.88 and the value of F is 46.9 ÷ 82 = 0.57; therefore the value of E in this case for the equation in 10 CFR 50.75(c) for the reference PWR is [0.58 x 0.88 + 0.42 x 0.57] = 0.75.

The escalation factor for waste burial, B, can be taken directly from data on the appropriate waste burial location in Table 2.1 of NUREG-1307, "Report on Waste Burial Charges." (Ref. 7). The base value of B for January 1986 is 1.0. This corresponds to the value used in the calculation of the waste burial cost for decommissioning in 10 CFR 50.75(c) and reflects the base cost for waste burial at the Washington site. For example, the value of B in January 1988 for the Washington burial site is 1.183 ÷ 1.0 = 1.183. Similarly, for Nevada and South Carolina the values for a PWR in January 1988 are 1.14 ÷ 1.0 and 2.007 ÷ 1.0, respectively. These values for B could then be used in the equation in 10 CFR 50.75(c)(2).

Because this formula does not provide for estimates of future inflation but only of inflation that has already occurred, licensees should recalculate the certification amount each year using the previous year's data as described in 10 CFR 50.75(c)(2). This recalculation is for certification purposes only and does not affect estimated future inflation that a licensee may calculate to establish amortization or collection schedules for rate-making purposes.

For non-electric-utility applicants and licensees who have prepared a decommissioning cost estimate, adjustments to the cost estimate should also be prepared annually but need not be submitted to the NRC staff (see Regulatory Position 1.5).

1.3 Cost Estimates in the Preliminary Decommissioning Plan

Paragraph 50.75(f) requires that, about 5 years prior to the projected end of operation, a preliminary decommissioning plan be submitted containing a cost estimate for decommissioning and an up-to-date assessment of the major technical factors that could affect planning for decommissioning. This estimate is to consider relevant up-to-date information that could be important to adequate planning and funding for decommissioning before the commencement of decommissioning. The major factors include the anticipated decommissioning method,

[1]These equations are derived from Table 6.3 of NUREG/CR-0130, Addendum 4 (Reference 5) and Table 5.3 of NUREG/CR-0672, Addendum 3 (Reference 6), respectively.

major technical factors necessary to carry out decommissioning safely, the current situation with regard to disposal of high-level and low-level radioactive waste, residual radioactivity criteria, as well as other site-specific conditions that could affect decommissioning planning and cost. The assessment would include preparation of a cost estimate as in Regulatory Position 1.4.

1.4 Basis for Decommissioning Cost Estimates

1.4.1 References for Developing Cost Estimates

Cost estimates for specific reactors may be developed using, as a basis, the studies performed by Battelle Pacific Northwest Laboratory (PNL) and Oak Ridge National Laboratory (ORNL) (Refs. 1, 5, 6, 8, and 9). Appropriate adjustments to account for differences between the specific reactor and the reference case in the PNL and ORNL studies should be made based on Regulatory Position 1.4.4 of this guide.

Studies other than the PNL and ORNL studies may be used to estimate decommissioning costs. The reasonableness of the estimate should be shown by indicating the bases used (e.g., NUMARC (formerly AIF) studies, other generic studies, licensee model, recent experience), and the principal assumptions used in the estimate as discussed in Regulatory Position 1.4.4.

1.4.2 Scope of Cost Estimate

In preparing cost estimates for submittal to NRC, costs of all activities involved in normal decommissioning necessary for termination of the license should be included (see Regulatory Position 1.4.4). Costs of removal and disposal of nonradioactive structures and materials beyond that necessary for license termination need not be included as part of the decommissioning cost estimate submitted to the NRC, or, if included, should be separately identified. Also, costs of removal and disposal of the spent fuel itself should not be included because this is considered an operational cost and is covered by other regulatory provisions (e.g., 10 CFR 50.54(bb)). However, the cost of removal and disposal of facilities involved in onsite storage of spent fuel should be included as part of the decommissioning cost. Licensees may assume, for purposes of estimating the date of spent fuel shipments off site, that storage capacity will be available in accordance with the most recent update of the "Waste Confidence" rulemaking, or otherwise in accordance with the licensee's contract with DOE for disposal of spent fuel.

1.4.3 General

1.4.3.1. The estimates should be based on technology current at the time the estimate is prepared.

1.4.3.2. The estimate should indicate the year's dollars on which the costs are based.

1.4.3.3. The estimates should be based on existing guidance and criteria on residual radioactivity and occupational exposure. Currently, guidance is applied on a case-by-case basis using (1) NRC Regulatory Guide 1.86 and (2) a level of either 5 μr/hr or 10 mr/yr at 1 meter. Additional guidance on residual radioactivity is being developed for publication by the NRC staff.

1.4.4 Details of Cost Estimates

1.4.4.1. In arriving at cost estimates, major decommissioning activities such as the following should be considered:

- Planning and preparation of the facility and site for decommissioning includes labor and materials necessary to gather and analyze pertinent data, develop work plans and procedures, procure special equipment and contractors, train staff, prepare documentation for regulatory agencies, and other engineering activities.

- Decontamination and dismantling of radioactive facility structures, systems, and components includes the labor to carry out these activities, the equipment and supplies used (e.g., decontamination chemicals, dismantling equipment), and the power requirements.

- Packaging, shipment, and burial of radioactive wastes includes quantities and types of waste requiring disposal (e.g., neutron-activated materials, contaminated materials, wet and dry radwastes), and unit costs for containers, shipments, and burial.

- The final radiation survey includes labor and materials to complete the tasks associated with the final survey.

1.4.4.2. Information in the PNL studies or in other studies or study bases may be used in developing costs for the activities listed above in Regulatory Position 1.4.4.1. If the PNL studies are used, costs for the specific facility being considered should be obtained by adjusting the study costs to include those principal factors specific to that facility. If other studies are used, a summary should be included that indicates the principal factors used in the estimates. The following principal factors should be included:

1. The estimated radiological conditions at the time of facility shutdown, including radionuclide inventories and component and surface dose rates. (Estimates in the PNL studies may be useful in developing this information.)

2. Inflation occurring between the time the studies were completed and the time the facility-specific cost estimate is made, including the basis for inflation factors.

3. Major facility design and layout differences from the studies that could significantly influence decommissioning costs.

4. The cost of labor. The estimated staff-years to complete the major decommissioning activities discussed above should be indicated, including the bases for the estimate. Data in the PNL studies on staff-years may be used. In addition, unit costs of labor specific to the locale in which the decommissioning is to take place should be indicated. If contractors are expected to be used to perform major decommissioning tasks, this should be indicated and the effect on labor cost (as well as other costs) should be described and its effect estimated.

5. The cost of energy. The estimated energy usage during the major decommissioning activities discussed above should be indicated, including the bases. Data in the PNL studies on energy may be used. In addition, unit costs of energy such as electricity and fuel oil, specific to the locale in which the facility is located, should be indicated.

6. Waste disposal costs. For the wastes discussed above, the estimated number of containers and casks to be packaged, shipments to be made, and burial volumes should be indicated. Special charges such as curie or liner surcharges, special containers, and overweight shipments should be indicated, including the bases for the estimates. Data in the PNL studies on waste quantities may be used. Unit costs for containers, shipments, and burial at low-level waste burial grounds should be indicated. The PNL studies may be useful for developing this information, although facility-specific differences such as differences in transport distances from those indicated in the PNL study and effects of escalation should be indicated, and the effects of those differences should be estimated.

7. Estimated costs of major items, specifically special tools and equipment, supplies, specialty contractors, nuclear property and liability insurance, and fees, should be indicated and a basis given. Information contained in the PNL studies in these areas may be used.

1.4.4.3. The information indicated in Regulatory Position 1.4.4.2 should be summarized by indicating the total estimated cost of decommissioning and the major components of that cost, including staff labor, waste disposal, energy, equipment and supplies, specialty contractors, other expenses such as license fees or insurance, and contingency.

1.4.5 Delayed Decommissioning Cost Factors

If a delayed decommissioning method (SAFSTOR or ENTOMB) is anticipated, cost estimates should be based on the same procedures outlined in Regulatory Position 1.4.4. However, the estimate should include the activities involved in placing the facility into the storage mode, surveillance and maintenance of the facility while in storage, and the cost of deferred decontamination at the end of storage, where necessary, to release the facility for unrestricted use. As noted in Regulatory Position 1.4.2, costs of fuel storage during the period, if any, need not be included as part of the decommissioning cost estimate because 10 CFR 50.54(bb) requires that funds be provided as an operating cost for spent fuel management 5 years prior to license expiration.

1.4.6 Nuclear Multiple-Unit Stations

If a facility is a nuclear multiple-unit station, total decommissioning costs for all units should be indicated as well as for each unit individually. Specific provisions and cost factors for the multiple-unit facility, such as the timing of decommissioning and length of storage period for each unit, should be discussed so that the net effect on the total cost is clear. Funding adjustments resulting from any such factors will be evaluated on a case-by-case basis when such revisions are made.

1.5 Adjustments to Cost Estimates

In order to maintain adequate funds until completion of decommissioning, funding provisions should contain procedures for periodic review and adjustment of the initial amount set aside, during both operation and any storage periods, based on the following.

1.5.1 Inflation

The effect of inflation on the estimated cost should be determined. For those licensees subject to the certification requirements of 10 CFR 50.75(b), the certification amount should be adjusted annually using the formula in 10 CFR 50.75(c)(2) (see Regulatory Position 1.2). For licensees using site-specific cost estimates (i.e., research and test reactor licensees, power reactor licensees not covered by 10 CFR 50.75(c), or electric utility licensees submitting preliminary or proposed decommissioning plans pursuant to 10 CFR 50.75(f) and 50.82(a)), new cost estimate studies should be conducted periodically to determine whether the estimate reflects cost changes from inflation or other factors. As an alternative to performing new site-specific cost estimates, licensees may use standard measures of price indexing such as the annual Consumer Price Index published by the U.S. Department of Labor, Bureau of Labor Statistics, or the inflation factor derived from the Implicit Price Deflator for the Gross National Product as published in the "Survey of Current Business" by the U.S. Department of Commerce or in "Economic Indicators" by the Council of Economic Advisors. The licensee may also use the factors indicated in Regulatory Position 1.2 for escalating the principal components of the cost estimate. Estimates of future inflation should bear a reasonable relationship to recent (i.e., within 10 years) economic performance or other relevant economic conditions and factors. The licensee should document the bases for all estimates of past and future inflation.

1.5.2 Technological and Status Changes

For plant-specific decommissioning cost estimates, the effect of technological changes or changes in plant status (e.g., whether the plant has been shut down for an extended period) on the cost estimate should be determined. This could include reasonably determined recent developments in decontamination, waste processing and disposal, or cutting-equipment technology, updated information about the facility conditions such as larger levels of contamination than anticipated, updated waste disposal conditions, updated residual radioactivity limits, and experience gained from actually decommissioning similar facilities.

1.5.3 Frequency of Adjustment

Adjustment to the certification amount and site-specific cost estimates should be made at least once a year for the effects described in Regulatory Position 1.5.1. Adjustment to site-specific cost estimates for the effects described in Regulatory Position 1.5.2 should be made according to the amount of change experienced, as appropriate, but at least once every 5 years. Adjustments to funding levels to account for adjustments to the certification amount or site-specific cost estimates are addressed in Regulatory Position 2.2.5.

1.6 Final Decommissioning Cost Estimate

Paragraph 50.82(b) requires that an updated estimate of cost for decommissioning be submitted with the decommissioning plan at the time the licensee applies to terminate the license. This cost estimate should be prepared using the same bases as in Regulatory Position 1.4, except that:

- Cost estimates should be based on plant conditions, such as contamination levels, specific to that facility to the extent they are known.
- Cost estimates should be based on decommissioning procedures that are included in the decommissioning plan for that facility.
- Cost estimates should consider the existing experience in comparable facilities using comparable decommissioning methods. Such experience would be derived from already or substantially completed decommissioning of other facilities, to the extent practical.

2. METHODS OF FINANCIAL ASSURANCE

Amended 10 CFR 50.75 indicates methods considered acceptable for reactors for assuring the availability of funds for decommissioning. The following sections provide specific guidance to licensees for complying with the various types of methods specified in 10 CFR 50.75.

2.1 Guidance Applicable to All Methods of Financial Assurance

2.1.1. The method should provide that if more than one licensee owns a facility, there is clear indication of funding provisions made by each licensee or agent acting for a licensee. Multiple licensees may, at their discretion, pool decommissioning funds for a jointly-owned facility or facilities as long as the contribution of each licensee and each facility are separately identifiable within the methods being used. Decommissioning funding plans may be submitted either jointly or separately by co-licensees. However, each licensee should ensure the accuracy of its pro rata share of the total NRC-required amount being certified plus periodic adjustments.

2.1.2. The applicant or licensee should indicate that the method used provides, or will provide at the projected cessation of operations, an amount at least equal to the estimated or certified decommissioning cost for the facility. If a licensee uses different methods for assuring decommissioning funds in combination, the combined total of the methods being used should equal the certification amount, plus adjustments projected to be needed. At its discretion, a licensee may use an assurance method to provide funds for the adjusted certification amount plus non-NRC-required decommissioning costs.

2.1.3. The applicant or licensee should provide evidence that the parties signing the financial instrument (for the applicant or licensee) are authorized to represent the organization in the transaction.

2.1.4. The applicant or licensee should provide evidence that the financial instrument is either a conformed copy or photocopy of the original instrument.

2.1.5. Each of the methods of financial assurance should be capable of being adjusted to take into account variations in earnings and adjustments in the amount of funds being set aside for decommissioning both during operation and during storage periods, if any (see Regulatory Position 1.5). Adjustments to the annual amount of funds being collected may be made to coincide with rate cases considered by a licensee's public utility commission (PUC) or by the Federal Energy Regulatory Commission (FERC), but, in any event, should be made at least once every 5 years (see Regulatory Position 1.5).

2.1.6. The licensee should maintain continuity in the funding method as follows:

2.1.6.1. If the licensee decides either to change or significantly modify the funding method during the life of the facility or during the storage period, these changes or modifications should be submitted within a reasonable time based on the requirements in 10 CFR Part 50 and this guidance. An existing method of financial assurance is to be maintained until the licensee has instituted a new method.

2.1.6.2. If ownership or operating responsibility of a facility is transferred, the existing financial assurance method is to be maintained until the new owner has submitted a certificate of financial assurance. (Sale-leaseback agreements do not require new or amended financial assurance mechanisms unless so provided by such agreements.)

2.1.6.3. An acceptable assurance method is to be maintained until the Part 50 license is terminated.

2.2 Prepayment and External Sinking Fund

Funding methods of this type should have the following characteristics:

2.2.1. An applicant or licensee using an escrow account, certificate of deposit, or trust agreement to satisfy 10 CFR 50.75(c) may use the sample wording for those methods contained in Appendices B.1, B.2, and B.3 of this guide, respectively. These sample forms have been provided for general guidance. Specific provisions may not be applicable to particular licensees and may be modified as a licensee's specific situation warrants. However, each licensee should ensure that the escrow account, certificate of deposit, or trust agreement complies with applicable state law for such instruments.

2.2.2. The financial assurance instrument, signed by individuals authorized to act for the appropriate parties, should be maintained in the licensee's records and be available for inspection until termination of the Part 50 license. If feasible, records or duplicates should be maintained onsite.

2.2.3. The trustee of a fund should be an appropriate State or Federal government agency or an entity that has the authority to act as a trustee and whose trust operations are regulated or examined by a State or Federal agency.

2.2.4. Any trust investments complying with IRS Code Section 468A or with approval of or guidance from a utility's State PUC, other State agency, or from FERC would be acceptable to the NRC staff. Licensees not eligible or willing to use decommissioning trusts established under IRS Code Section 468A or not

subject to PUC or FERC jurisdiction should limit trust investments to "investment-grade" securities. Investment-grade bonds and preferred stocks are those rated at least "BBB" or equivalent by a national rating service. Speculative issues of common stocks should be avoided.

2.2.5. Annual deposits in an external sinking fund, including projected earnings, should attempt to approximate the total amount remaining to be accumulated, divided by the remaining years of the license, as determined by the initial and updated certification amount specified in 10 CFR 50.75(c)(1) and (2).

Arithmetic precision is not required for fund accumulation rates, however. If, during the course of collecting funds, a licensee has accumulated significantly greater decommissioning funds than anticipated, it may reduce its remaining contributions commensurately. Likewise, if a licensee is significantly behind in collections, increased contributions should be used to make up the deficit. A reasonable time may be used to make up any deficit, consistent with good-faith efforts to obtain appropriate rate relief. However, licensees should avoid undue reliance upon contributions weighted in constant dollars toward the end of projected facility operating life. Additionally, the NRC staff considers reliance on an estimated tax deduction for decommissioning expenses at the time such expenses are incurred to be a form of internal reserve and thus not allowed under 10 CFR 50.75(e). If sufficient rate relief by a State PUC or FERC is ultimately not obtained, licensee's stockholders will be expected to cover decommissioning costs through reduced return on equity. Projected rates of earnings on an external sinking fund during plant operation should reasonably approximate the historical real rate of earnings (i.e., after inflation) obtained by a given type of investment.

As discussed in Section B of this guide, licensees should avoid day-to-day management of trust funds. In this regard, if a trustee is unable to act as an investment manager, use of a professional investment manager should be considered by the licensee.

2.3 Guarantee Methods

Guarantee methods include surety bonds, letters of credit, lines of credit, and insurance. For non-electric-utility reactors, parent company guarantees may be used. Acceptable guarantee methods should have the following characteristics:

2.3.1. An applicant or licensee using a surety bond, letter of credit, or parent company guarantee may use the sample wording for these methods contained in Appendices B.4, B.5, and B.6, respectively. These sample forms have been provided for illustrative purposes. Specific provisions may not be applicable to particular licensees and may be modified as a licensee's specific situation warrants. However, each licensee should be sure that the instrument being used conforms to applicable State law.

2.3.2. The following documents should be maintained in the licensee's records and be available for inspection by the NRC:

- For surety bonds: An originally signed duplicate or conformed copy of the surety bond signed by individuals authorized to act for the licensee and the surety company.

- For letters of credit: An originally signed duplicate or conformed copy of the letter of credit signed by individuals authorized to act for the licensee and the financial institution.

- For insurance: A certificate of insurance signed by individuals authorized to act for the licensee and the insurer or a conformed copy of such.

2.3.3. The following should be considered for financial institutions used as guarantors:

- For surety bonds: The surety company must be listed by the U.S. Department of the Treasury in the most recent edition of Circular 570 and have a coverage limit sufficient to cover the cost estimates for which assurance is sought. Circular 570 is published annually about July 1 and is updated in the Federal Register.

- For letters of credit: The issuing institution must be an entity that has the authority to issue a letter of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

- For insurance: The insurance company must be licensed by State regulatory authorities to transact business as an insurer in one or more States.

2.3.4. If lines of credit are used, the applicant or licensee should obtain from the lender a written commitment to provide funds for all decommissioning expenditures required by the rule.

2.4 Standby Trust

2.4.1. Under the decommissioning regulations, a licensee or applicant using a surety bond, letter of credit, line of credit, or insurance must establish a "standby" trust fund to receive funds from the other financial instruments, if necessary. Under this arrangement, if a licensee defaults on decommissioning requirements, the issuer or provider of the instrument (or beneficiary, if appropriate) will draw on the funds held in the instruments listed and deposit them directly into the standby trust for use as required for decommissioning. In addition to the instruments listed, applicants or licensees using parent company guarantees, certificates of deposit, or government securities should establish a standby trust.

2.4.2. An applicant or licensee establishing a standby trust is directed to the sample wording for the instrument contained in Appendix B.3.2.

2.4.3. Appropriate documentation regarding the standby trust should be maintained in the licensee's records as indicated in Regulatory Position 2.2.2.

2.5 Governmental Statement of Intent

A government licensee or license applicant as designated in 10 CFR 50.75(e) can submit a statement of intent that contains a cost estimate for decommissioning and indicates that funds for decommissioning will be obtained when necessary. The statement of intent should contain the following:

- Identification of the facility or facilities for which it provides the financial assurance and the corresponding decommissioning costs.

- An indication that funds for decommissioning will be requested and obtained sufficiently in advance of decommissioning to prevent delay of required activities.

- Evidence of the authority of the official of the government entity to sign the statement of intent.

A signed copy of the statement of intent that funds will be obtained when necessary should be maintained in the licensee's records and be available for inspection.

2.6 Proposed Decommissioning Plans

In 10 CFR 50.82, submittal of a proposed decommissioning plan is required at the time a licensee applies for termination of a license. The plan is to include provisions for funding. The following should be included:

- An updated decommissioning cost estimate (see Regulatory Position 1.6).

- Provisions for funding the difference, if any, between the final estimate of costs needed to decommission made prior to permanent cessation of operation and the amount raised during the facility's operating life.

- Provisions for maintaining adequate levels of funding during the decommissioning period (including any period of safe storage), with specific provision for escalation of costs from inflation or engineering changes less any disbursements for decommissioning expenses.

2.7 Funding Methods for Existing Licensees

According to 10 CFR 50.33(k)(2) and 50.75, existing licensees, on or before July 26, 1990, are required to submit a report to NRC identifying a method for providing financial assurance. This method should indicate its implementation schedule (i.e., the timing by which a licensee determines the amount of and schedule for planned decommissioning fund accumulations). Existing funds, if left in internal reserves, will not be acceptable for use as a funding assurance method as described in 10 CFR 50.75(e)(3) for meeting the certification amount described in 10 CFR 50.75(c).

2.8 Procedures for Shutdown Reactors

The funding requirements of 10 CFR 50.75 and 50.82 apply to all reactors, including those that were shut down prior to the effective date of the final rule (July 27, 1988), because these reactors possess a Part 50 license, albeit modified. As indicated in the Supplementary Information to the final rule, details concerning financial assurance, primarily the time period for accumulating funds not set aside during operation, would be decided on a case-by-case basis. However, a licensee of a reactor that is currently shut down should submit a report to NRC by July 26, 1990, if it has not yet done so, that includes the following:

2.8.1. Information on how reasonable assurance will be provided that funds will be available to decommission the facility.

2.8.2. Information on the amount of funds for decommissioning as required by 10 CFR 50.75(f). That is, a cost estimate that includes provisions for adjusting the estimate should be submitted based on Regulatory Position 1.

2.8.3. Information on the method of financial assurance to be used as required by 10 CFR 50.75(e). That is, funds needed to complete decommissioning are to be placed in an account segregated from licensee assets and outside the licensee's administrative control, or a surety method or fund statement of intent should be maintained based on Regulatory Position 2.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this regulatory guide.

Except in those cases in which an applicant or licensee proposes an acceptable alternative method for complying with the specified portions of the Commission's regulations, this guide, which reflects public comments received, will be used to evaluate compliance with the requirements of 10 CFR 50.33(k), 50.75, and 50.82 applicable to the following nuclear reactors:

(1) All plants having an operating license in effect on July 27, 1990, or later.

(2) All plants for which an application for an operating license is submitted or under NRC review after the July 27, 1988, effective date of the final decommissioning rule (53 FR 24018, June 27, 1988).

REFERENCES

1. G. J. Konzek, "Technology, Safety, and Costs of Decommissioning Reference Nuclear Research and Test Reactors" (prepared by Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission), NUREG/CR-1756, March 1982, and Addendum 1, July 1983.

2. Robert S. Wood, "Assuring the Availability of Funds for Decommissioning Nuclear Facilities," U.S. Nuclear Regulatory Commission, Draft Report, NUREG-0584, Rev. 3, March 1983.

3. U.S.Nuclear Regulatory Commission, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG-0586, August 1988.

4. U.S. Nuclear Regulatory Commission, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72," Regulatory Guide 3.66, June 1990.

5. R. I. Smith, G. J. Konzek, and W. E. Kennedy, Jr., "Technology, Safety, and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station" (prepared by Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission), NUREG/CR-0130, June 1978; and Addendum 1, July 1979, Addendum 2, July 1983; Addendum 3, September 1984; and Addendum 4, July 1988.

6. H. D. Oak et al., "Technology, Safety, and Costs of Decommissioning a Reference Boiling Water Reactor Power Station" (prepared by Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission), NUREG/CR-0672, June 1980; Addendum 1, July 1983; Addendum 2, September 1984; and Addendum 3, July 1988.

7. U.S. Nuclear Regulatory Commission, "Report on Waste Burial Charges," NUREG-1307, Revision 1, October 1989.

8. N. G. Wittenbrock, "Technology, Safety, and Costs of Decommissioning Nuclear Reactors at Multiple-Reactor Stations" (prepared by Battelle Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission), NUREG/CR-1755, January 1982.

9. J. P. Witherspoon, "Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities" (prepared by Oak Ridge National Laboratory for the U.S. Nuclear Regulatory Commission), NUREG/CR-2241, February 1982.

NOTE: Copies of these referenced documents may be purchased through the U.S. Government Printing Office by calling (202) 275-2060 or by writing to the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies may also be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. Copies are available for inspection or copying for a fee in the NRC Public Document Room, 2120 L Street NW., Washington, DC.

APPENDIX A

GLOSSARY OF FINANCIAL TERMS

Certificate of Deposit (CD) - A bank's or other financial institution's written acknowledgement of the receipt and deposit of a sum of money by the licensee or applicant and its promise of repayment. When using a CD to demonstrate financial assurance for decommissioning, the licensee deposits with a bank or other financial institution funds sufficient to cover the certification amount or site-specific cost of decommissioning the licensed facility and receives a CD.

Escrow Account - An account containing funds deposited by the licensee or applicant and held by a bank or other financial institution. An escrow account differs from similar accounts in that the licensee or applicant provides funds that are held by the escrow until the happening of a contingency or the performance of a condition such as commencement of decommissioning, and then the funds are released to the grantee. The bank or other financial institution where the funds are deposited is the escrow agent.

External Sinking Fund - A fund established and maintained by periodically setting funds aside in an account segregated from licensee assets and outside the licensee's administrative control. The total external sinking fund would be sufficient to pay decommissioning costs at the expected time of termination of operation. An external sinking fund may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposits of government or corporate securities.

Financial Test - An accounting ratio requirement, net worth requirement, bond rating requirement, or similar requirement or combination of requirements that measures the financial strength of a firm providing financial assurance. The financial test is used by a firm that provides a guarantee to a licensee to show its own financial strength and its ability to support the guarantee. This mechanism is unavailable to electric utility (power reactor) licensees. (See 10 CFR Part 30, Appendix A.)

Insurance - Insurance in this case would be similar to surety bonding as discussed below in that it would guarantee that decommissioning costs will be paid to a trustee should the licensee default.

Letter of Credit - A binding agreement by which the issuing party, such as a bank or other financial institution, agrees on behalf of the applicant or licensee (the account party) to pay a governmental or government-approved authority (the beneficiary) in the event of any default by the licensee in the performance of decommissioning.

Line of Credit - An arrangement of the licensee with a lender (a bank or other financial institution) in which the lender agrees to provide funds required for decommissioning of the licensee's facility. The maximum amount of credit stated in the contract between the applicant or licensee and the lender must be at least sufficient to equal the certified or estimated cost of decommissioning.

Parent Company Guarantee - A promise by one party (the guarantor) to pay specified debts or perform specified obligations of another party (the principal) in the event that the principal fails to satisfy the debts or obligations. Specifically, to satisfy the decommissioning regulations, an applicant's or licensee's parent corporation agrees to guarantee to provide specified dollar amounts to fund performance of decommissioning in the event of the licensee's default. A parent company guarantee is not an acceptable method of financial assurance for power reactor licensees. (See 10 CFR Part 30, Appendix A.)

Prepayment - The deposit prior to the start of operation (or, for existing facilities, by a specified time provided in the regulations) 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. Types of accounts can be similar to those described above for an external sinking fund.

Surety Bond - A guarantee that decommissioning costs will be paid should the licensee default. The surety bond is a contract that the licensee or applicant (the principal) enters into with a qualified surety company (the surety) to assure the Commission or State regulatory agency that the licensee will fulfill its decommissioning obligations. In the event of the licensee's default, the surety guarantees that decommissioning costs will be paid.

Trust Fund - A three-party agreement whereby the licensee or applicant, called the grantor or trustor, transfers assets at least equal to the cost of decommissioning to a trustee, such as a bank, other financial institution, or governmental authority, to hold on behalf of the beneficiary, the Commission, or a State agency.

APPENDIX B

EXAMPLES OF FINANCIAL ASSURANCE INSTRUMENTS

The following formats for financial assurance instruments provide samples of language and provisions for compliance with financial assurance requirements for decommissioning. Although the sample language is not required by decommissioning regulations, except for certain provisions in the parent guarantee, applicants and licensees will find that its use will simplify the submittal process. Licensees may add, delete, or modify sample provisions as their circumstances warrant. However, licensees should ensure that the financial assurance instruments being used are valid under applicable State law and comply with NRC's decommissioning regulations in 10 CFR 50.33, 50.75, and 50.82.

APPENDIX B.1

SAMPLE ESCROW AGREEMENT

ESCROW NUMBER _____

Paragraph 1. Establishment of Escrow Account

It is agreed between the parties that [insert name of licensee], licensee, has elected to establish an escrow account with [insert name, address, and position of escrow agent] to provide financial assurance for decommissioning of the facility(ies) in the amounts shown below:

> [For each facility for which financial assurance is provided by the escrow agreement, list facility name, address, and license number, corresponding estimated or certified decommissioning costs, and indicate amount of financial assurance provided by the escrow account.]

Paragraph 2. Description of Property in Escrow Account

It is hereby acknowledged by the parties that [list the assets that have been delivered to the escrow agent and indicate the value of each item] has (have) been delivered to escrow and will remain in the escrow account created by this agreement until one of the two conditions stated in Paragraph 3 of this agreement has been satisfied.

[Insert name of licensee] warrants to and agrees with [insert name of escrow agent] that, unless otherwise expressly set forth in this Agreement: there is no security interest in the property in the escrow account or any part thereof; no financing statement under the Uniform Commercial Code is on file in any jurisdiction claiming a security interest in or describing (whether specifically or generally) the escrow account or any part thereof; and the escrow agent shall have no responsibility at any time to ascertain whether or not any security interest exists or to file any financing statement under the Uniform Commercial Code with respect to the escrow account or any part thereof.

Paragraph 3. Conditions of Escrow Agreement

The property described in Paragraph 2, above, will remain in the escrow account created by this agreement until one of the two following conditions has been satisfied: (1) the decommissioning activities required by 10 CFR 50 have been completed, the license has been terminated, the facility site is available for unrestricted use for any public or private purpose, and the escrow account has been terminated by notice, in writing, from [insert name of licensee] or (2) the escrow agent, [insert name of the escrow agent] has been notified by the [insert NRC or name of the State regulatory agency], in writing, that the licensee, [name of licensee] has defaulted on the agreed obligation to carry out the decommissioning for the above listed facility(ies).

Paragraph 4. Disbursement of Property in Escrow Account

The [insert name of escrow agent] shall make payments from the escrow account upon the presentation of a certificate duly executed by the Secretary or appropriate Officer of the [insert name of licensee] attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and upon presentation of a certification attesting to the following conditions:

(1) that decommissioning is proceeding pursuant to an NRC-approved plan, and

(2) that the funds withdrawn will be expended for activities undertaken pursuant to that plan.

Or upon [insert name of escrow agent] receiving written notification of licensee's default from the [insert NRC or State regulatory agency], [insert name of escrow agent] shall make payments from the escrow account as the [insert NRC or name of State regulatory agency] shall direct, in writing, to provide for the payment of the costs of the required decommissioning activities covered by this agreement. The escrow agent shall reimburse the licensee or other persons as specified by the [insert NRC or State regulatory agency] from the escrow account for expenses for required activities in such amounts as the [insert NRC or name of the State regulatory agency] shall direct in writing. In addition, the escrow agent shall refund to [insert name of licensee] such amounts as the [insert NRC or the name of the State regulatory agency] specifies, in writing. Upon refund, such funds shall no longer constitute part of the escrow account as described in paragraph 2, above.

Paragraph 5. Irrevocability

It is also agreed between the parties that this escrow is revocable upon delivery to [insert name of escrow agent], the escrow agent, only on the occurrence of one of the conditions described in Paragraph 3 above or by transfer of the funds held in escrow to another financial assurance mechanism permitted under 10 CFR 50.75(e).

Paragraph 6. Powers of the Escrow Agent

The only powers and duties of the escrow agent shall be to hold the escrow property and to invest and dispose of it in accordance with the terms of this agreement.

Escrow Account Management

The escrow agent shall invest and reinvest the principal and income of the escrow account and keep the escrow account invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the [insert name of licensee] may communicate in writing to the escrow agent from time to time, subject, however, to the provisions of the escrow account; the escrow agent shall discharge its duties with respect to the escrow account solely in the interest of [insert name of licensee's] decommissioning obligation and with the care, skill, prudence, and diligence, under the circumstances then prevailing, that persons of prudence, acting in like capacity

and familiar with such matters, would use in the conduct of an enterprise of like character and with like aims; except that:

(a) Securities or other obligations of the licensee, or any other owner or operator of the licensed facility(ies), or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80A. 2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal government;

(b) The escrow agent is authorized to hold cash, awaiting investment or distribution uninvested, for ___ days and without liability for the payment of interest thereon.

Express Power of the Escrow Agent

Without in any way limiting the powers and discretion conferred upon the escrow agent by other provisions of this agreement or by law, the escrow agent is expressly authorized and empowered:

(a) To register any securities held in the escrow account in its own name and to hold any security in bearer form or in book entry, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the escrow agent shall at all times show that all such securities are part of the escrow account;

(b) To deposit any cash in the escrow account in interest-bearing accounts or savings certificates;

(c) To pay taxes, from the account, of any kind that may be assessed or levied against the escrow account and all brokerage commissions incurred by the escrow account.

Paragraph 7. Annual Valuation

After delivery has been made into this escrow account, the escrow agent shall [monthly, quarterly, annually] furnish to the licensee a statement confirming the value of the escrow account. Any securities in the account shall be valued at market value within a reasonable time before issuance of such statement. The failure of the licensee to object in writing to the escrow agent within 90 days after the statement has been furnished to the licensee shall constitute a conclusively binding assent by the licensee, barring the licensee from asserting any claim or liability against the escrow agent with respect to the matters disclosed in the statement.

Paragraph 8. Successor Escrow Agent

Upon 90 days prior notice to the licensee, [insert name of licensee], the escrow agent may resign; upon 90 days notice to the escrow agent, the licensee, [insert name of licensee], may replace the escrow agent provided that such resignation or replacement is not effective until the escrow agent has appointed a successor escrow agent and this successor accepts the appointment or another financial assurance instrument has been secured pursuant to paragraph 5. The successor

escrow agent shall have the same powers and duties as those conferred upon the escrow agent under this agreement. Upon the successor's acceptance of the appointment, the escrow agent shall assign, transfer, and pay over to the successor the funds and properties then constituting the escrow account. If for any reason the licensee cannot or does not act in the event of the resignation of the escrow agent, the escrow agent may apply to a court of competent jurisdiction for the appointment of a successor, or for instructions. The successor escrow agent shall specify the date on which it assumes administration of the escrow account in a writing sent to the licensee and the current escrow agent by certified mail 10 days before the change becomes effective. Any expenses incurred by the escrow agent as a result of any of the acts contemplated by this paragraph shall be paid as provided in Paragraph 10 of this agreement.

Paragraph 9. Instructions to the Escrow Agent

All orders, requests, and instructions from the licensee to the escrow agent shall be in writing, signed by such persons as are signatories to this agreement, or such other designees as the licensee may designate in writing. All orders, requests, and instructions from the [insert the NRC or the name of the State regulatory agency] shall be in writing, signed by the designees of the [insert NRC or the name of the State regulatory agency]. The escrow agent shall be fully protected in acting in accordance with such orders, requests, and instructions. The escrow agent shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the licensee or [insert the NRC or the name of the State regulatory agency] under this agreement has occurred. The escrow agent shall have no duty to act in the absence of such orders, requests, and instructions from the licensee and/or [insert the NRC or the name of the State regulatory agency], except as provided in this agreement.

Paragraph 10. Compensation and Expenses of the Escrow Agent

The fee of the escrow agent for its services in establishing the escrow account shall be $_____, payable at the time of the execution of this agreement, to be borne by [insert the name of the licensee], licensee.

Expenses of the escrow agent for the administration of the escrow account, the compensation of the escrow agent for services subsequent to the establishing of the escrow account to the extent not paid directly by the licensee, and all other proper charges and disbursements shall be paid from the escrow account.

Paragraph 11. Amendment To This Agreement

This agreement may be amended by an instrument in writing executed by the licensee and the escrow agent.

Paragraph 12. Termination

This agreement can be terminated by written notice of termination to the escrow agent signed by [insert the name of licensee], licensee, and by the [insert NRC or the name of the State regulatory agency] alone, if the licensee has ceased to exist.

Paragraph 13. Interpretation

This escrow agreement constitutes the entire agreement between [insert the name of licensee] and [insert the name of the escrow agent]. The escrow agent shall not be bound by any other agreement or contract entered into by [insert name of licensee] and the only document that may be referenced in case of ambiguity in this escrow agreement is the licensing agreement between [insert name of licensee] and the United States Nuclear Regulatory Commission, or its successor.

Paragraph 14. Acceptance of Appointment by Escrow Agent

[Insert name, address, and position of escrow agent] does hereby acknowledge its appointment by [insert name of licensee], the licensee, to serve as escrow agent for the escrow account created under this agreement and agrees to carry out its obligations and duties as stated in this escrow agreement.

Paragraph 15. Severability

If any part of this agreement is invalid, it shall not affect the remaining provisions, which remain valid and enforceable.

Paragraph 16.

This agreement shall not become effective (and the escrow agent shall have no responsibility hereunder except to return the escrow property to the [insert name of licensee]) until the escrow agent shall have received the following and shall have advised [insert name of licensee] in writing that the same are in form and substance satisfactory to the escrow agent:

> Certified resolution of its Board of Directors authorizing the making and performance of this Agreement;
>
> Certificate as to the names and specimen signatures of its officers or representative authorized to sign this Agreement and notices, instructions and other communications hereunder.

[Signatures and positions of the designees of the licensee and the escrow agent.]

[Insert name of escrow agent]	[Insert name of licensee]
By _____	By _____
Name _____	Name _____
Title _____	Title _____

Date.

Witness by Notary Public.

APPENDIX B.1.1

SPECIMEN CERTIFICATE OF EVENTS

[Insert name and address of escrow agent]

Attention: Escrow Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, [Authorized Officer] of [insert name of licensee], hereby certify that the following events have occurred:

1. [Insert name of licensee] is required to commence the decommissioning of its facilities located at [insert location of facility] (hereinafter called the decommissioning).

2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).

3. The Board of Directors of [insert name of licensee] has adopted the attached resolution authorizing the commencing of the decommissioning.

_____
[Authorized Officer] of [insert name of licensee]

_____
Date

APPENDIX B.1.2

SPECIMEN CERTIFICATE OF RESOLUTION

I, _____, do hereby certify that I am [Authorized Officer] of [insert name of licensee], a [insert state of incorporation] corporation, and that the resolution listed below was duly adopted at a meeting of this Corporation's Board of Directors on _____, 19 __.

IN WITNESS WHEREOF, I have hereunto signed my name and affixed the seal of this Corporation this _____ day of _____, 19 __.

_____
[Authorized Officer] of [insert name of licensee]

RESOLVED, that this Board of Directors hereby authorizes the President or such other employee of the Company as he may designate [insert, as appropriate, "to enter into an escrow agreement," or "to commence decommissioning activities at (name of facility)] with the [insert name of escrow agent] in accordance with the terms and conditions described to this Board of Directors at this meeting and with such other terms and conditions as the President shall have approved with and upon the advice of Counsel.

APPENDIX B.2

SAMPLE CERTIFICATES OF DEPOSIT

APPENDIX B.2.1

SAMPLE NEGOTIABLE CERTIFICATE OF DEPOSIT PAYABLE AT THE EXPIRATION OF A SPECIFIED TIME

CERTIFICATE OF DEPOSIT

(Financial Institution)

Place _____ No. _____

_____
(Date)

[Insert name of licensee or applicant] has deposited not subject to check _____ Dollars ($_____) payable to the order of the holder in current funds _____(not less than 30 days)_____ days after date, upon surrender of this certificate properly endorsed, with interest at the rate of ___ percent per annum from date to maturity only. The rate of interest payable hereunder is subject to change by the bank to such extent as may be necessary to comply with requirements of the Federal Reserve Board made from time to time pursuant to the Federal Reserve Act.

These funds are deposited for the purpose of providing financial assurance for the cost of decommissioning activities as required under Title 10 of the Code of Federal Regulations Part 50. Accordingly, this certificate will be renewed automatically unless written notice of (1) the default of the [insert name of licensee or applicant] on these obligations; (2) the termination of the facility license; or (3) the substitution of another financial assurance mechanism is received from [the name of licensee or applicant].

_____
Cashier or Officer

Note:

The negotiable Certificate of Deposit should be in the possession of the trustee of the concurrently created standby trust or the escrow agent of an escrow account.

The certificate should be for a limited time period, such as 1 to 5 years, so that the face value can be adjusted.

APPENDIX B.2.2

SAMPLE NONNEGOTIABLE CERTIFICATE OF DEPOSIT
PAYABLE ON A CERTAIN DATE

CERTIFICATE OF DEPOSIT

_____
(Financial Institution)

Certificate of Deposit _____, 19 __

[Insert name of licensee or applicant] has deposited in the financial institution the sum of _____ Dollars ($ _____) payable to [State regulatory agency (if the agency can hold special funds under applicable state law), trustee of standby trust, or escrow agent], _____ months after date, with interest thereon at the rate of _____ percent per annum from date, upon presentation of this certificate properly endorsed. These funds are deposited for the purpose of providing financial assurance for the cost of decommissioning activities as required under Title 10 of the Code of Federal Regulations Part 50. Accordingly, this certificate will be renewed automatically unless written notice of (1) the default of the [insert name of licensee or applicant] on these obligations; (2) the termination of the facility license; or (3) the substitution of another financial assurance mechanism is received from [the name of the licensee or applicant].

_____
Cashier or Officer

Note: The certificate should be for a limited time period, such as 1 to 5 years, so that the face value can be adjusted.

APPENDIX B.3

SAMPLE TRUST FUND AND STANDBY TRUST AGREEMENTS

APPENDIX B.3.1

SAMPLE TRUST FUND AGREEMENT

TRUST AGREEMENT, the Agreement is entered into as of [date] by and between [name of NRC licensee], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], herein referred to as the "Grantor," and [name and address of an appropriate State or Federal government agency or an entity that has the authority to act as trustee and whose trust operations are regulated or examined by a State or Federal agency], the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 50. These regulations, applicable to the Grantor, require that a holder of, or an applicant for a license issued pursuant to 10 CFR Part 50 provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a trust fund to provide [insert "all" or "part"] of such financial assurance for the facilities identified herein and also provide such additional decommissioning funds not required by the NRC as the Grantor may elect;

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Costs of Decommissioning. This Agreement pertains to the costs of decommissioning the facility identified in License Number [insert license number] issued pursuant to 10 CFR Part 50.

Section 3. Establishment of Fund. The Grantor and Trustee hereby establish a trust fund (the Fund) for the benefit of [insert the Grantor or other appropriate beneficiary such as a State agency or the NRC]. The Grantor and the Trustee intend that no third party shall have access to the Fund except as provided herein. [Modification of this provision to cover sale-leaseback agreements should be made contingent upon continued dedication of the trust to provide funds for decommissioning.]

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of property acceptable to the Trustee. Such property and any other property subsequently transferred to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided.

Section 5. Payment for Required Activities Specified in the Plan. The Trustee shall make payments from the Fund to the Grantor or to a decommissioning contractor of the Grantor as the Grantor may designate upon presentation to the Trustee of the following:

a. A certificate duly executed by the [Authorized Officer] of the Grantor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate (see certificate following standby trust), and

b. A certificate attesting to the following conditions;

(1) that decommissioning is proceeding pursuant to an NRC-approved plan, and

(2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall: (1) make payments from the Fund as the NRC or State agency shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement; (2) make disbursements to the Grantor or other persons as specified by the NRC, or State agency, from the Fund for expenditures for required activities in such amounts as the NRC, or State agency, shall direct in writing; and (3) refund to the Grantor such amounts remaining after the license has been terminated or as the NRC or State Agency specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the Fund in the best interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U S.C. 80A-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government; and

(b) For a reasonable time, not to exceed ___ days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80A-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest and dividends payments and funds from matured and redeemed instruments, to file proper forms concerning securities held in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund may be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee may be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this trust fund, the Trustee shall [monthly, quarterly, annually] furnish to the Grantor a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value within a reasonable time of such statement. The failure of the Grantor to object in writing to the Trustee within __ days after the statement has been furnished to the Grantor shall constitute a conclusively binding assent by the Grantor, barring the grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. Upon __ days notice to the Grantor, the Trustee may resign; upon __ days notice to the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has either appointed a successor Trustee and this successor accepts the appointment or implements another financial assurance mechanism specified in Title 10, Chapter I, Code of Federal Regulations, Section 50.75(e). The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor and the present Trustee by certified mail __ days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. If the NRC or State agency issues orders, requests, or instructions to the Trustee in the event of Grantor default, these shall be in writing, signed by the NRC, State agency, or their designees, and the Trustee shall act and shall be fully

protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor, the NRC, or State agency, hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the NRC, or State agency, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and, if applicable, the NRC or State agency, or by the Trustee and the NRC or state agency if the Grantor ceases to exist.

Section 16. Termination. This trust agreement shall continue until terminated at the written agreement of the Grantor, the Trustee and, if applicable, the NRC or State agency, or by the Trustee and the NRC or State agency, if the grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor, or transferred to another financial assurance mechanism specified in 10 CFR 50.75(e), as appropriate.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor, the NRC, or State agency, issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of [insert name of State].

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

ATTEST:

[Insert name of licensee (Grantor)]
[Signature of representative of Grantor]
[Title]

[Title]
[Seal]

[Insert name of Trustee]
[Signature of representative of Trustee]
[Title]

ATTEST:

[Title]
[Seal]

APPENDIX B.3.2

SAMPLE STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of [date] by and between [name of NRC licensee], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], herein referred to as the "Grantor," and [name and address of an appropriate State or Federal government agency or an entity that has the authority to act as trustee and whose trust operations are regulated or examined by a State or Federal agency], the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 50. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 50 license provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a [insert "letter of credit," "line of credit," "surety bond," "insurance policy," "parent guarantee," "certificate of deposit," or "deposit of government securities"] to provide [insert "all" or "part"] of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a [insert "letter of credit," "line of credit," "surety bond," "insurance policy, "certificate(s) of deposit," "deposit of government securities," or "parent guarantee"], this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

[The remainder of the recommended wording for the Standby Trust Agreement is as indicated in B.3.1 for the Trust Fund Agreement except that the words "Standby Trust Fund" should be substituted in Section 3 and Section 10 in place of the words "Trust Fund."]

APPENDIX B.3.2.1

SPECIMEN CERTIFICATE OF EVENTS

[Insert name and address of trustee]

Attention: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, [Authorized Officer] of [insert name of licensee], hereby certify that the following events have occurred:

1. [Insert name of licensee] is required to commence the decommissioning of its facility located at [insert location of facility] (hereinafter called the decommissioning).

2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).

3. The Board of Directors of [insert name of licensee] has adopted the attached resolution authorizing the commencement of the decommissioning.

_____
[Authorized Officer] of [insert name of licensee]

_____
Date

APPENDIX B.3.2.2

SAMPLE CERTIFICATE OF RESOLUTION

I, _____, do hereby certify that I am [Authorized Officer] of [insert name of licensee], a [insert state of incorporation] corporation, and that the resolution listed below was duly adopted at a meeting of this Corporation's Board of Directors on _____, 19 __

IN WITNESS WHEREOF, I have hereunto signed my name and affixed the seal of this Corporation this _____ day of _____, 19__.

_____
[Authorized Officer]

RESOLVED, that this Board of Directors hereby authorizes the President, or such other employee of the Company as he may designate, to commence decommissioning activities at [insert name of facility] in accordance with the terms and conditions described to this Board of Directors at this meeting and with such other terms and conditions as the President shall approve with and upon the advice of Counsel.

APPENDIX B.3.3

SAMPLE OF ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

[The following is an example of the acknowledgement that should accompany the trust agreement for a standby trust fund or trust fund.]

STATE OF _____

To Wit: _____

CITY OF _____

On this _____ day of _____, before me, a notary public in and for the city and State aforesaid, personally appeared _____, and she/he did depose and say that she/he is the [title], of [financial institution], Trustee, which executed the above instrument, that she/he knows the seal of said association; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the association; and that she/he signed her/his name thereto by like order.

_____
[Signature of notary public]

My Commission Expires: _____
[Date]

APPENDIX B.4

SAMPLE PAYMENT SURETY BOND

PAYMENT SURETY BOND

Date bond executed: _____

Effective date: _____

Principal: [legal name and business address of licensee or applicant]

Type of organization: [insert "proprietorship," "joint venture," "partnership" or "corporation"]

State of incorporation: _____ (if applicable)

NRC license number, name and address of facility, and amount(s) for decommissioning activity guaranteed by this bond: _____

Surety(ies) [name(s) and business address(es)]

Type of organization: [insert "proprietorship," "joint venture," "partnership" or "corporation"]

State of incorporation: _____ (if applicable)

Surety's qualification in jurisdiction where licensed facility(ies) is (are located)

Surety's bond number: _____

Total penal sum of bond: $_____

Know all persons by these presents, That we, the Principal and Surety(ies) hereto, are firmly bound to the [insert U.S. Nuclear Regulatory Commission (hereinafter called NRC) or the name of the State agency] in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS, the U.S. Nuclear Regulatory Commission, an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 50, applicable to the Principal, which require that a license holder or an applicant for a license provide financial assurance that funds will be available when needed for facility decommissioning;

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of decommissioning of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility;

Or, if the Principal shall fund the standby trust fund in such amount(s) after an order to begin facility decommissioning is issued by [insert "the NRC" or the name of the State agency] or a U.S. district court or other court of competent jurisdiction;

Or, if the Principal shall provide alternative financial assurance and obtain the written approval of the [insert "NRC" or the name of the State agency] of such assurance, within 30 days after the date a notice of cancellation from the Surety(ies) is received by both the Principal and the [insert "NRC" or the name of the State agency], then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the [insert "NRC" or the name of the State agency] that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the [insert "NRC" or the name of the State agency] provided, however, that cancellation shall not occur during the 90 days beginning on the date of receipt of the notice of cancellation by both the Principal and the [insert "NRC" or the name of the State agency], as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the [insert "NRC" or name of State agency] and to Surety(ies) 90 days prior to the proposed date of termination, provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond from the [insert "NRC" or the name of the State agency].

The Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new amount, provided that the penal sum does not increase by more than 20 percent in any one year.

In Witness Whereof, the Principal and Surety(ies) have executed this financial guarantee bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies).

Principal

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate seal]

Corporate Surety(ies)

[Name and address]

State of incorporation: _____

Liability limit: $_____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety(ies) above.]

Bond premium: $_____

APPENDIX B.5

SAMPLE IRREVOCABLE STANDBY LETTER OF CREDIT

STANDBY LETTER OF CREDIT NO. [INSERT NO.]

This Credit Expires [insert date]

Issued To: [Insert U.S. Nuclear Regulatory Commission; Washington, DC 20555, or name and address of appropriate State agency.]

Dear Sir or Madam:

We hereby establish our Standby Letter of Credit No. _____ in your favor, at the request and for the account of [applicant's name and address] up to the aggregate amount of [in words], U. S. dollars $_____ available upon presentation of:

(1) your sight draft, bearing reference to this Letter of Credit No. _____ and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of _____."

This letter of credit is issued in accordance with regulations issued under the authority of the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. The NRC has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 50, which require that a holder of, or an applicant for, a license issued under 10 CFR Part 50 provide assurance that funds will be available when needed for decommissioning.

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least 90 days before the current expiration date, we notify both you and [licensee's name], as shown on the signed return receipts. If [licensee's name] is unable to secure alternative financial assurance to replace this letter of credit within 30 days of notification of cancellation the NRC may draw upon the full value of this letter of credit prior to cancellation. We shall give immediate notice to the applicant and the [insert "NRC" or name of State agency] of any notice received or action filed alleging (1) the insolvency or bankruptcy of the financial institution or (2) any violations of regulatory requirements that could result in suspension or revocation of the bank's charter or license to do business. We also shall give immediate notice if we, for any reason, become unable to fulfill our obligation under the letter of credit.

Whenever this letter of credit is drawn on under and in compliance with the terms of this letter of credit, we shall duly honor such draft upon its presentation to us within 30 days, and we shall deposit the amount of the draft directly into the standby trust fund of [licensee's name] in accordance with your instructions.

Each draft must bear on its face the clause: "Drawn under Letter of Credit No. _____, dated _____, and the total of this draft and all other drafts previously drawn under this letter of credit does not exceed [fill in amount]."

[Signature(s) and title(s) of official(s) of issuing institution]

[Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code"].

APPENDIX B.6

SAMPLE DOCUMENTS RECOMMENDED TO SUPPORT CORPORATE GUARANTEE

APPENDIX B.6.1

SAMPLE LETTER FROM CHIEF FINANCIAL OFFICER OF CORPORATE PARENT, INCLUDING COST ESTIMATES AND DATA FROM AUDITED FINANCIAL STATEMENTS

(Address to U. S. Nuclear Regulatory Commission or State regulatory agency)

I am the chief financial officer of [name and address of firm], a [insert "proprietorship," "joint venture," "partnership," or "corporation"]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in 10 CFR Part 50.

[Complete the following paragraph regarding facility(ies) and associated cost estimates. For each facility, include its license number, name, address, and current cost estimates for the specified activities.]

This firm guarantees, through the parent company guarantee submitted to demonstrate compliance under 10 CFR Part 50, the decommissioning of the following facility(ies) owned or operated by subsidiary(ies) of this firm. The current cost estimates or certified amounts for decommissioning, so guaranteed, are shown for each facility:

Name of Facility	Location of Facility	Current Cost Estimates

This firm [insert "is required" or "is not required"] to file a Form 10K with the U.S. Securities and Exchange Commission for the latest fiscal year.

This fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements and footnotes for the latest completed fiscal year, ended [date].

[Insert completed Alternative I or Alternative II.]

I hereby certify that the content of this letter is true and correct to the best of my knowledge.

[Signature]
[Name]
[Title]
[Date]

APPENDIX B.6.2

Financial Test: Alternative I

1.	Decommissioning cost estimates for facility [insert license number] (total of all cost estimates shown in paragraphs above)	$ _____
*2.	Total liabilities (if any portion of the cost estimates for decommissioning is included in total liabilities on your firm's financial statement, deduct the amount of that portion from this line and add that amount to lines 3 and 4)	$ _____
*3.	Tangible net worth	$ _____
*4.	Net worth	$ _____
*5.	Current assets	$ _____
*6.	Current liabilities	$ _____
*7.	Net working capital (line 5 minus line 6)	$ _____
*8.	The sum of net income plus depreciation, depletion, and amortization	$ _____
*9.	Total assets in United States (required only if less than 90 percent of firm's assets are located in the United States)	$ _____

		Yes	No
10.	Is line 3 at least $10 million?	___	___
11.	Is line 3 at least 6 times line 1?	___	___
12.	Is line 7 at least 6 times line 1?	___	___
13.	Are at least 90 percent of firm's assets located in the United States? If not, complete line 14.	___	___
14.	Is line 9 at least 6 times line 1?	___	___
	(Guarantor must meet two of the following three ratios)	___	___
15.	Is line 2 divided by line 4 less than 2.0?	___	___
16.	Is line 8 divided by line 2 greater than 0.1?	___	___
17.	Is line 5 divided by line 6 greater than 1.5?	___	___

*Denotes figures derived from financial statements.

APPENDIX B.6.3

Financial Test: Alternative II

1. Decommissioning cost estimates for facility [insert license number] (total of all cost estimates shown in paragraphs above) $ _____

2. Current bond rating of most recent issuance of this firm and name of rating service _____ _____

3. Date of issuance of bond _____

4. Date of maturity of bond _____

*5. Tangible net worth (if any portion of estimates for decommissioning is included in total liabilities on your firm's financial statements, add the amount of that portion to this line). $ _____

*6. Total assets in United States (required only if less than 90 percent of firm's assets are located in the United States) $ _____

	YES	NO
7. Is line 5 at least $10 million?	___	___
8. Is line 5 at least 6 times line 1?	___	___
*9. Are at least 90 percent of firm's assets located in in the United States? If not, complete line 10.	___	___
10. Is line 6 at least 6 times line 1?	___	___

*Denotes figures derived from financial statements.

APPENDIX B.6.4

SAMPLE OF AUDITOR'S SPECIAL REPORT BY CERTIFIED PUBLIC ACCOUNTANT

CONFIRMATION OF CHIEF FINANCIAL OFFICER'S LETTER

We have examined the financial statements of [company name] for the year ended [date], and have issued our report thereon dated [date]. Our examination was made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary.

The [company name] has prepared documents to demonstrate its financial responsibility under the NRC's financial assurance regulations, 10 CFR Part 50. This letter is furnished to assist the licensee [insert NRC license number and name] in complying with these regulations and should not be used for other purposes.

The attached schedule reconciles the specified information furnished in the chief financial officer's (CFO's) letter in response to the regulations with the company's financial statements. In connection therewith, we have

1. Confirmed that the amounts in the column "Per Financial Statements" agree with amounts contained in the company's financial statements for the year ended [date];

2. Confirmed that the account in the column "Per CEO's Letter" agrees with the letter prepared in response to the NRC's request;

3. Confirmed that the amounts in the column "Reconciling Items" agrees with analyses prepared by the company setting forth the indicated items; and

4. Recomputed the totals and percentages.

Because the procedures in 1-4 above do not constitute a full examination made in accordance with generally accepted auditing standards, we do not express an opinion on the manner in which the amounts were derived in the items referred to above. In connection with the procedures referred to above, no matters came to our attention that cause us to believe that the chief financial officer's letter and supporting information should be adjusted.

_____
Signature

_____
Date

APPENDIX B.6.4.1

SAMPLE SCHEDULE RECONCILING AMOUNTS CONTAINED IN CHIEF FINANCIAL OFFICER'S LETTER WITH AMOUNTS IN FINANCIAL STATEMENTS

XYZ COMPANY

YEAR ENDED DECEMBER 31, 19XX

Line in CFO's Letter	Per Financial Statements	Reconciling Items	Per CFO's Letter
Total current liabilities	X		
Long-term debt	X		
Deferred income taxes	X		
	XX		
Accrued decommissioning costs included in current liabilities	X		
Total liabilities (less accrued decommissioning costs)	X		
Net worth	XX		
Less: Cost in excess of value of tangible assets acquired	X		
	XX		
Accrued decommissioning costs included in current liabilities		X	
Tangible net worth (plus decommissioning costs)			XX

(Balance of schedule is not illustrated.)

This illustrates the form of schedule that is contemplated. Details and reconciling items will differ in specific situations.

APPENDIX B.6.5

SAMPLE PARENT COMPANY GUARANTEE

PARENT COMPANY GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity] a [insert "proprietorship," "joint venture," "partnership," or "corporation"] organized under the laws of the State of [insert name of State], herein referred to as "guarantor," to the U S. Nuclear Regulatory Commission (NRC), or State agency found acceptable to the NRC, [insert name of State agency], obligee, on behalf of our subsidiary [licensee] of [business address].

Recitals

1. The guarantor has full authority and capacity to enter into this guarantee [if guarantor is a corporation, add the following phrase "under its bylaws, articles of incorporation, and the laws of the State of [insert guarantor's state of incorporation], its State of incorporation"]. [If the guarantor has a Board of Directors, insert the following: "Guarantor has approval from its Board of Directors to enter into this guarantee."]

2. This guarantee is being issued to comply with regulations issued by the NRC, an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. NRC has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 50 which require that a holder of, or an applicant for, a license issued pursuant to 10 CFR Part 50 provide assurance that funds will be available when needed for required decommissioning activities.

3. The guarantee is issued to provide financial assurance for decommissioning activities for [identify licensed facility(ies)] as required by 10 CFR Part 50. The decommissioning costs for which are as follows: [insert amount of decommissioning cost guaranteed for each identified facility].

4. The guarantor meets or exceeds the following financial test criteria [insert statement indicating which financial test is being used] and agrees to comply with all notification requirements as specified in 10 CFR Part 50.

The guarantor shall meet one of the following two financial tests:

(a) (i) A current rating of its most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa, A or Baa as rated by Moody's; and

(ii) Tangible net worth is at least $10 million and at least six times the current decommissioning cost estimate (or prescribed amount if a certification is used); and

(iii) Assets located in the United States amounting to at least 90 percent of its total assets or at least six times the current decommissioning cost (or prescribed amount if certification is used).

or

(b) (i) Net working capital and tangible net worth each at least six times the current decommissioning cost estimates (or prescribed amount if certification is used); and

(ii) Assets located in the United States amounting to at least 90 percent of its total assets or at least six times the amount of the current decommissioning cost estimates (or prescribed amount if certification is used); and

(iii) Meets two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities that is greater than 0.1; and a ratio of current assets to current liabilities that is greater than 1.5; and

(iv) Tangible net worth of at least $10 million.

5. The guarantor has majority control of the voting stock for the following licensee(s) covered by this guarantee. [List for each licensee: name, address, the facility(ies) owned or operated by each licensee, and the corresponding license number(s).]

6. Decommissioning activities as used below refers to the activities required by 10 CFR Part 50 for decommissioning of facility(ies) identified above.

7. For value received from [licensees], [if the guarantor is a corporation, add "and pursuant to the authority conferred upon the guarantor by ("the unanimous resolution of its directors" or "the majority vote of its shareholders"), a certified copy of which is attached"] the guarantor guarantees to the [insert "NRC" or the name of the State agency] that if the licensee fails to perform the required decommissioning activities, as required by License No. [insert license number], the guarantor shall

(a) carry out the required activities, <u>or</u>

(b) set up a trust fund in favor of the above identified beneficiary in the amount of these current cost estimates for these activities.

[If a State is the named beneficiary, the guarantee documentation should include written verification from the State agreeing to use the trust funds to carry out the required decommissioning activities for the named facility(ies).]

8. The guarantor agrees to submit revised financial statements, financial test data, and a special auditor's report and reconciling schedule annually within 90 days of the close of the parent guarantor's fiscal year.

9. The guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, it fails to meet the financial test criteria, the licensee shall send within 90 days of the end of the fiscal year, by certified mail, notice to the [insert "NRC" or the name of the State agency] that the licensee intends to provide alternative financial assurance as

specified in 10 CFR Part 50. Within 120 days after the end of the fiscal year, the guarantor shall establish such financial assurance if the [licensee] has not done so.

10. The guarantor also agrees to notify the beneficiary promptly if the ownership of the licensee or the parent firm is transferred and to maintain this guarantee until the new parent firm or the licensee provides alternative financial assurance acceptable to the beneficiary.

11. The guarantor agrees that within 30 days after being notified by the [insert "NRC" or the name of the State agency] of a determination that it no longer meets the financial test criteria or that it is disallowed from continuing as a guarantor for the facility under License No. [insert license number], it shall establish an alternative financial assurance as specified in 10 CFR Part 50 as applicable, in the name of [licensee] unless [licensee] has done so.

12. The guarantor as well as its successors and assigns agree to remain bound jointly and severally under this guarantee notwithstanding any or all of the following: amendment or modification of license or NRC-approved decommissioning funding plan for that facility, the extension or reduction of the time of performance of required activities, or any other modification or alteration of an obligation of the licensee pursuant to 10 CFR Part 50.

13. The guarantor agrees that all bound parties shall be jointly and severally liable for all litigation costs incurred by the beneficiary [insert name] in any successful effort to enforce the agreement against the guarantor.

14. The guarantor agrees to remain bound under this guarantee for as long as [licensee] must comply with the applicable financial assurance requirements of 10 CFR Part 50, for the previously listed facility(ies), except that the guarantor may cancel this guarantee by sending notice by certified mail to the [insert "NRC" or the name of the State agency] and to [licensee], such cancellation to become effective no earlier than 120 days after receipt of such notice by both the [insert "NRC" or the name of the State agency] and [licensee] as evidenced by the return receipts.

15. The guarantor agrees that if [licensee] fails to provide alternative financial assurance as specified in 10 CFR Part 50, as applicable, and obtain written approval of such assurance from the [insert "NRC" or the name of the State agency] within 90 days after a notice of cancellation by the guarantor is received by the [insert "NRC" or the name of the State agency] from the guarantor, the guarantor shall provide such alternative financial assurance in the name of [licensee] or make full payment under the guarantee.

16. The guarantor expressly waives notice of acceptance of this guarantee by the [insert "NRC" or the name of the State agency] or by [licensee]. The guarantor also expressly waives notice of amendments or modification of the decommissioning requirements and of amendments or modifications of the license.

17. If the guarantor files financial reports with the U.S. Securities and Exchange Commission, then it shall promptly submit them to the [insert "NRC" or the name of the State agency] during each year in which this guarantee is in effect.

I hereby certify that this guarantee is true and correct to the best of my knowledge.

Effective date: _____
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary: _____

VALUE/IMPACT STATEMENT

A draft value/impact statement was published with the draft of this guide, DG-1003, when the draft guide was published for public comment in May 1989. No changes were necessary, so a separate value/impact statement for the final guide has not been prepared. A copy of the draft value/impact statement is available for inspection and copying for a fee at the Commission's Public Document Room at 2120 L Street NW., Washington, DC, under Task DG-1003.