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DRAFT REGULATORY GUIDE

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ASSURING THE AVAILABILITY OF FUNDS FOR
DECOMMISSIONING NUCLEAR REACTORS

A. INTRODUCTION

The general requirements for applications for license termination and decommissioning nuclear 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 funding methods to be used.

This regulatory guide has been developed in conjunction with the rule amendments and is being published for public comment. Its purpose is to provide guidance to applicants and licensees of nuclear 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 funding methods indicated in the rule amendments.

Any information collection activities mentioned in this draft 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 CMB Clearance No. 3150-0011.

This regulatory guide is being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. It has not received complete staff review and does not represent an official NRC staff position.

Public comments are being solicited on the draft guide (including any implementation schedule) and its associated regulatory analysis or value/impact statement. Comments should be accompanied by appropriate supporting data. Written comments may be submitted to the Regulatory Publications Branch, DP-PS, Office of Administration and Resources Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Copies of comments received may be examined at the NRC Public Document Room, 2120 L Street NW., Washington, DC. Comments will be most helpful if received by August 4, 1989.

Requests for single copies of draft guides (which may be reproduced) or for placement on an automatic distribution list for single copies of future draft guides in specific divisions should be made in writing to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Information Support Services.

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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 site, buildings and contents, and equipment associated with any NRC-licensed activity.

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.

In order that a lack of funds does not result in delays in or improper conduct of decommissioning that may cause health and safety problems for the public, 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 funding method used.

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. Provisions for establishing funding amounts for decommissioning are required by 10 CFR 50.33(k), 50.75, and 50.82(b), specifically:

- a. An initial amount established at the operating license stage (for existing licensees, by July 26, 1990) (paragraph 50.33(k));
- b. Adjustments to the amount over the operating life and storage period, if any, of the facility. Specifically, paragraph 50.75(b) requires each licensee to annually adjust the initial amount by use of the equation in paragraph 50.75(c)(2); 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 cost estimate based on an up-to-date assessment of major technical factors that could affect planning for decommissioning;
- c. A detailed cost estimate to be made at the time the licensee applies to the Commission for authority to decommission (§ 50.82).

As indicated in paragraph 50.75(b), each electric utility applicant and licensee is to provide certification of financial assurance as stipulated in the regulations. The specific information noted in b and c above must also be provided at the appropriate time. The certification amounts in paragraph 50.75(c)(1) act as threshold review levels and, while not representing the actual cost of decommissioning for specific reactors, are reference levels established to assure that licensees 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, paragraph 50.75(c)(2) contains a formula to estimate inflation in the labor, energy, and waste burial components of decommissioning costs.

As indicated in paragraph 50.75(d), each non-electric-utility applicant and licensee is to submit a cost estimate for decommissioning its facility. 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 provide reasonable estimates of the costs of decommissioning.

The cost estimate required five years before the projected end of operation is intended to ensure that all licensees consider relevant up-to-date information that could be important to adequate planning and funding for decommissioning prior to its commencement. It is expected that the decommissioning fund available at the time of reactor shutdown will not differ significantly from the actual costs of decommissioning.

2. FUNDING METHODS

The rule amendments in § 50.75 indicate the general requirements for funding methods that are considered acceptable for providing reasonable assurance of the availability of funds for decommissioning nuclear reactors.

The funding 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), 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 funding methods. Section 50.75 of the rule amendments indicates that the following funding methods are acceptable for power 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 use types of accounts similar to those described above for prepayment but which are amortized 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.

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

In order to simplify the preparation, submittal, and review of information on funding methods, the Commission has prepared NUREG-1336, "Interim Guidance on the Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning under 10 CFR Parts 30, 40, and 70" (Ref. 4). This document contains recommended wording for financial assurance instruments. Because the basic financial assurance instruments are common for materials licensees and reactor licensees, the recommended wording in NUREG-1336 is included in this regulatory guide in Appendix B and is referenced in Regulatory Position 2.

C. REGULATORY POSITION

This section describes methods of implementing the general requirements for financial assurance 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 funding methods acceptable to the NRC.

1. AMOUNT OF FUNDS FOR DECOMMISSIONING

1.1 Initial Amounts To Be Set Aside

1.1.1 Electric Utility Applicants and Licensees

For electric utility applicants and licensees, the initial amount of funds for decommissioning is based on the equations in paragraph 50.75(c)(1).

At its discretion, an electric utility licensee may submit a certification based either on the formula provided in paragraph 50.75(c)(1) or on a facility-specific cost estimate that is equal to or greater than that calculated in the formula in paragraph 50.75(c)(1). If the amount stated in the certification is based on a cost estimate for decommissioning the facility and the amount is more than that stated in the table of paragraph 50.75(c)(1), details

of the cost estimate need not be submitted because the prescribed amount in the rule represents a threshold review level, and amounts in excess of that would not be a matter for NRC consideration. For estimates below the amount stated in the table of paragraph 50.75(c)(1), licensees should submit an exemption request containing details as outlined in Regulatory Position 1.4.

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 paragraph 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 Funds Set Aside

For electric utility applicants and licensees, funds set aside according to Regulatory Position 1.1 are to be adjusted annually based on paragraphs 50.75(b) and (c)(2). The adjustment factor in paragraph 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 respectively. Although these adjustments are to be made annually, they need not be submitted to the NRC.

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 $141.9 \div 130.5 = 1.087$. 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, in the equation in paragraph 50.75(c) of the decommissioning rule amendments 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 $93.3 \div 105.8 = 0.88$ and the value of F is $46.9 \div 82 = 0.57$; therefore the value of E in this case for the equation in paragraph 50.75(c) for the reference PWR is $[0.58 \times 0.88 + 0.42 \times 0.57] = 0.75$.

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, independent of the burial site location, for January 1986 is 1.0 (this corresponds to the value used in the

¹These 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.

calculation of the waste burial cost for decommissioning in paragraph 50.75(c). For example, the value of B in January 1988 for the South Carolina burial site is $1.536 \div 1.0 = 1.536$. This value of B could then be used in the equation in paragraph 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 paragraph 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 schedules for rate-making purposes. One approach the NRC staff would find acceptable would be for licensees to use approximately straight-line amortization schedules adjusted periodically to reflect inflation.

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, 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 General

1.4.1.1. Cost estimates for specific reactors may be developed using the studies performed by Battelle Pacific Northwest Laboratory (PNL) and Oak Ridge National Laboratory (ORNL) (Refs. 1, 5, 6, 8, and 9) as a basis. 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.

1.4.1.2. 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 should not be included as part of the decommissioning cost. 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., paragraph 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.

1.4.3 General Considerations

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 that dollars in the costs are based on.

1.4.2.3. The estimates should be based on existing guidance and criteria on residual radioactivity and occupational exposure. 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 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 occur, should not be included as part of the decommissioning cost estimate.

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 each unit, should be discussed so that the net effect on the total cost is clear.

1.5 Adjustments to Cost Estimates

In order to maintain the value of the fund until 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 using certification, the licensee is to adjust the certification amount using the formula in paragraph 50.75(c)(2) of 10 CFR Part 30 (see Regulatory Position 1.2). For site-specific cost estimates, new studies may be performed periodically. Alternatively, 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. The licensee should indicate the bases for all estimates of past and future inflation.

1.5.2 Technological and Status Changes

For decommissioning cost estimates, the effect of technological changes or changes in plant status on the cost estimate should be determined. This could include 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

The frequency of adjustment should be based on the amount of change in the factors of 1.5.1 and 1.5.2 above as appropriate, but should be made at least once a year for the effects of 1.5.1 above and once every 5 years for 1.5.2 above.

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 the industry.

2. FUNDING METHODS

Amended § 50.75 of 10 CFR Part 50 indicates funding 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 funding methods specified in § 50.75.

2.1 Guidance Applicable to All Funding Methods

2.1.1. The funding method should provide that if more than one licensee owns a facility, there is clear indication of funding provisions made by each licensee. Multiple licensees may, at their discretion, pool decommissioning funds for the same facility.

2.1.2. The applicant or licensee should indicate that the method used is at least equal in amount to the estimated or certified decommissioning cost for the facility.

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 an originally signed duplicate (e.g., an executed copy of the instrument).

2.1.5. Each of the funding methods 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 amortization for the funding method should be made at least once every 5 years (see Regulatory Position 1.5) and reported to the NRC along with the basis for such changes.

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

2.1.6.1. If the licensee decides to change the funding method during the life of the facility, a revised funding method should be submitted based on the requirements in 10 CFR Part 50 and the guidance in this regulatory guide. The existing funding method is to be maintained until the licensee has submitted a new certificate of financial assurance.

2.1.6.2. If ownership of a facility is transferred, the existing funding method is to be maintained until the new owner has submitted a certificate of financial assurance.

2.1.6.3. The funding method is to be maintained until the license is terminated.

2.2 Repayment 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 fund to satisfy paragraph 50.75(c) should use the recommended wording for those methods contained in Appendices B.1, B.2, and B.3, respectively.

2.2.2. The fund instrument, signed by individuals authorized to act for the appropriate parties, should be maintained in the licensee's records and be available for inspection.

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 and examined by a Federal or State agency.

2.2.4. Any trust investments complying with IRS Code Section 468A or with explicit instructions from a utility's State public utility commission or from the Federal Energy Regulatory Commission would be acceptable to the NRC staff.

2.4.5. Annual deposits in an external sinking fund, including projected earnings, should be at least equal to the total amount remaining to be accumulated, divided by the remaining years of the license.

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 should use the recommended wording for these methods contained in Appendices B.4, B.5, and B.6, respectively.

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 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 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.

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, be licensed to transact business in the State in which the bond is executed, 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 as necessary for decommissioning.

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. According to the regulation, if a licensee defaults on decommissioning requirements, the issuer or provider 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 should use the recommended 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 agency as designated in paragraph 50.75(e) of 10 CFR Part 50 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 records and be available for inspection.

2.6 Decommissioning Plans

Section 50.82 of 10 CFR Part 50 requires submittal of a decommissioning plan 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 cost estimate and the amount raised during the facility's operating life.

Provisions for maintaining adequate levels of funding during the decommissioning period, specifically to provide for escalation of costs from inflation or engineering changes.

2.7 Funding Methods for Existing Licensees

Paragraph 50.33(k)(2) and § 50.75 require existing licensees, on or before July 26, 1990, to submit a report to NRC identifying a funding method. This funding method should indicate the schedule for implementing the funding method. Existing funds, if left in internal reserves, will not be acceptable for use as a funding assurance method as described in paragraph 50.75(e)(3) for meeting the certification amount described in paragraph 50.75(c).

2.8 Procedures for Shutdown Reactors

The funding requirements of paragraph 50.33(k) and § 50.75 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 10 CFR 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, 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 paragraph 50.75(f). That is, a cost estimate that includes provisions for adjusting the estimate should be presented based on Regulatory Position 1.

2.8.3. Information on the funding method to be used as required by paragraph 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.

This draft regulatory guide has been released to encourage public participation in its development. 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, the guidance to be described in the active guide reflecting public comments will be used in the evaluation of funding provisions for the following nuclear reactors:

- (1) All plants having an operating license in effect on July 27, 1990.
- (2) All plants applying for an operating license after the issue date of the final guide.

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, "Interim Guidance on the Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning under 10 CFR Parts 30, 40, and 70," NUREG-1336, December 1988.
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, July 1988.

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 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 funds sufficient to cover the cost of decommissioning the licensed facility and receives a CD.¹

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, and then the funds are released to the grantee. The bank or other institution where the funds are deposited is the escrow agent.¹

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. The external sinking fund can be in the form of a trust or escrow account using government securities, certificates of deposit, or deposits of investment grade 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.¹

¹Taken from NUREG-1336, "Interim Guidance on the Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, and 70."

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 should the licensee default.

Letter of Credit - A binding agreement by which the issuing party, such as a bank, agrees on behalf of the applicant or licensee (the account party) to pay a State authority (the beneficiary) in the event of any default by the licensee in the performance of decommissioning.¹

Line of Credit - An arrangement of the licensee with a lender (generally a bank) 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 sufficient to at least equal the certified or estimated cost of decommissioning.¹

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.¹

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.¹

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 or, in the event of the licensee's default, the surety guarantees that decommissioning costs will be paid.¹

Trust Fund - An irrevocable 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, to hold on behalf of the beneficiary, the Commission, or a State agency.¹

APPENDIX B

RECOMMENDED WORDING FOR FINANCIAL ASSURANCE INSTRUMENTS

The following formats for financial instruments provide recommended language and provisions for compliance with decommissioning financial assurance requirements. 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 and expedite NRC review.

APPENDIX B.1

RECOMMENDED WORDING FOR AN 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 joint notice, in writing, from [insert name of licensee] and [insert NRC or name of the State regulatory agency]; 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 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,
- (2) that the funds withdrawn will be expended for activities undertaken pursuant to that plan, and
- (3) that the NRC has been given 30 days prior notice of [insert name of licensee]'s intent to withdraw funds from the escrow account.

No withdrawal from the account can exceed ____ percent of the outstanding balance of the escrow account or _____ dollars, whichever is greater unless NRC approval is attached.

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 became irrevocable upon delivery to [insert name of escrow agent], the escrow agent, and will remain irrevocable and in full force and effect until the occurrence of one of the conditions described in Paragraph 3, above.

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 the NRC or the name of the state regulatory agency] 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 invest the escrow account in time or demand deposits to the extent insured by an agency of the Federal government; and
- (c) The escrow agent is authorized to hold cash, awaiting investment or distribution uninvested, for a reasonable time 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 to the extent insured by an agency of the Federal government;
- (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 annually, at least 30 days before the anniversary date of receipt of the

property into the escrow account, furnish to the licensee and to the [insert NRC or the name of the State regulatory agency] a statement confirming the value of the escrow account. Any securities in the account shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the escrow account. 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 [insert NRC or State agency] and the licensee, [insert name of licensee], the escrow agent may resign; upon 90 days notice to the [insert NRC or State agency] and the escrow agent, the licensee, [insert name of licensee], may replace the escrow agent upon 30 days prior notice to the [insert NRC or State regulatory agency]; 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. 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, [insert the NRC or the name of the State regulatory agency], 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 or [insert the NRC or the name of the State regulatory agency] 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.

Appendix B.1, continued

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 provided that the licensee has given 30 days prior notice to [insert NRC or State regulatory agency].

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 the [insert NRC or the name of the State regulatory agency], or 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.

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 _____
Name _____
Title _____

By _____
Name _____
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, _____, Secretary 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.

Secretary of [insert name of licensee]

Date

APPENDIX B.1.2

SPECIMEN CERTIFICATE OF RESOLUTION

I, _____, do hereby certify that I am Secretary 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 ____.

Secretary 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 approved with and upon the advice of Counsel

APPENDIX B.2

RECOMMENDED WORDING FOR CERTIFICATES OF DEPOSIT

APPENDIX B.2.1

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

CERTIFICATE OF DEPOSIT

Place _____ Bank of _____
No. _____

(Date)

[Insert name of licensee or applicant] has deposited not subject to check _____ Dollars (\$ _____) payable to 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

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

DRAFT NONNEGOTIABLE CERTIFICATE OF DEPOSIT
PAYABLE ON A CERTAIN DATE

CERTIFICATE OF DEPOSIT

Certificate of Deposit _____, 19 ____

[Insert name of licensee or applicant] has deposited in the bank 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].

The deposit documented in this certificate is insured by the Federal Deposit Insurance Corporation.

Cashier

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

RECOMMENDED WORDING FOR TRUST FUND AND STANDBY TRUST AGREEMENTS

APPENDIX B.3.1

TRUST FUND 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 a national bank or other Trustee acceptable to the Commission or State regulatory 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;

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 as shown in Schedule A (see Schedule A in Appendix B.3.3).

Section 3. Establishment of Fund. The Grantor and Trustee hereby establish a trust fund (the Fund) for the benefit of [insert "NRC" or the name of the State agency]. The Grantor and the Trustee intend that no third party shall have access to the Fund except as provided herein.

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 the property, which is acceptable to the Trustee, described in Schedule B (see Schedule B [in

Appendix B.3.3] following Standby Trust Agreement) attached hereto. 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. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan. The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor 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.
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of [insert name of licensee]'s intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed _____ percent of the outstanding balance of the Fund or _____ dollars, whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse 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. In addition, the Trustee shall refund to the Grantor such amounts as the NRC 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 solely in the 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;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal government; and
- (c) For a reasonable time, not to exceed 60 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 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, to the extent insured by an agency of the Federal government; 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 shall 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 shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NRC, or State agency, 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 Commensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor. (See Schedule C following Standby Trust [in Appendix B.3.3].)

Section 13. Successor Trustee. Upon 90 days notice to the [insert NRC or State agency], the Trustee may resign; upon 90 days notice to [insert NRC or State agency] and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. 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, the NRC or State agency, and the present Trustee by certified mail 10 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 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 the NRC, or State agency, or by the Trustee and the NRC or state agency if the Grantor ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and 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.

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.

Appendix B.3.1, continued

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

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 a national bank or other Trustee acceptable to the Commission or State regulatory 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, _____, Secretary 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.

Secretary of [insert name of licensee]

Date

APPENDIX B.3.2.2

CERTIFICATE OF RESOLUTION

I, _____, do hereby certify that I am Secretary 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__.

Secretary

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 TRUST AGREEMENT SCHEDULES

TRUST AGREEMENT SCHEDULE

SAMPLE SCHEDULE A

This Agreement demonstrates financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. NUCLEAR REGULATORY COMMISSION LICENSE NUMBER</u>	<u>NAME AND ADDRESS OF LICENSEE</u>	<u>ADDRESS OF LICENSED ACTIVITY</u>	<u>COST ESTIMATES FOR REGULATORY ASSURANCES DEMONSTRATED BY THIS AGREEMENT</u>
--	---	---	--

The cost estimates listed here were last adjusted and approved by the NRC on [date].

SAMPLE SCHEDULE B

AMOUNT _____

AS EVIDENCED BY _____

SAMPLE SCHEDULE C

_____, Trustee's fees shall be \$ _____.

APPENDIX B.3.4

SAMPLE OF ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

[The following is an example of the acknowledgement that must 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 [_____], national banking association, 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

RECOMMENDED WORDING FOR 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, and no decrease in the penal sum takes place without the written permission of the [insert "NRC" or the name of the State agency].

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.

Appendix B.4, continued

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

RECOMMENDED WORDING FOR IRREVOCABLE STANDBY LETTER OF CREDIT

IRREVOCABLE 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 Irrevocable 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. The bank 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. The financial institution also shall give immediate notice if the bank, for any reason, becomes unable to fulfill its 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

RECOMMENDED WORDING FOR DOCUMENTS RECOMMENDED TO
SUPPORT CORPORATE GUARANTEE

APPENDIX B.6.1

RECOMMENDED WORDING FOR 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:

<u>Name of Facility</u>	<u>Location of Facility</u>	<u>Current Cost Estimates</u>
-----------------------------	---------------------------------	-----------------------------------

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 <u>all</u> 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) \$ _____
- | | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 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 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 A.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

<u>Line Number in CFO's Letter</u>		<u>Per Financial Statements</u>	<u>Recon- ciling Items</u>	<u>Per CFO's Letter</u>
6	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
4	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

RECOMMENDED WORDING FOR 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, or
 - (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.

Appendix B.6.5, continued

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: _____

DRAFT VALUE/IMPACT STATEMENT

1. PROPOSED ACTION

1.1 Description

A final rule on decommissioning, including decommissioning nuclear power reactors, was published on June 27, 1988 in the Federal Register (53 FR 24018). The final rule requires applicants for a nuclear reactor operating license 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, specifically the amount of funds that must be provided, including updates, and the funding methods to be used.

This proposed action is to issue a regulatory guide on assuring the availability of funds for decommissioning nuclear power reactors. A draft regulatory guide would be issued for comment in support of the amended rules on decommissioning.

1.2 Need

At the present time there are no published regulatory guides concerning methods for complying with the requirements in the rule amendments on decommissioning. Guidance is needed on submittal of the certification of amounts or of cost estimates for decommissioning and on the content of funding methods that are acceptable to the NRC staff for providing reasonable assurance of the availability of funds for decommissioning reactors. Specific information should be provided on certifications and on the cost estimates needed for decommissioning plans so that applicants and licensees can prepare and submit the required information with a minimum of time and effort. This regulatory guide would describe methods to implement the general requirements on financial assurance in the final rule in a manner that will facilitate NRC staff consideration.

1.3 Value/Impact

1.3.1 NRC

This regulatory guide identifies criteria for consistent and efficient staff consideration of methods proposed by applicants and licensees for assuring availability of funds for nuclear reactor decommissionings, and in this way, it will facilitate implementation of the amendments to the regulations concerning decommissioning. The application and use of this guidance by the staff members will aid their consideration of funding methods. The proposed guidance should reduce correspondence between NRC and applicants and licensees.

The regulatory analysis for the decommissioning rule amendments estimated the staff time involved in financial assurance considerations. This guide does not add to this time but provides guidance for satisfying financial assurance provisions required by the rule, and in so doing, minimizes staff time to the extent practical.

1.3.2 Other Government Agencies

Government agencies that are NRC applicants or licensees will be affected in a manner similar to industry (see Section 1.3.3). The principal effect on other government agencies would be to inform them more completely of NRC's decommissioning policy for reactors. This information would be of interest to State and Federal agencies that are involved in the regulation of utility rate-making and trust operations.

1.3.3 Industry

Industry should benefit from the guidance because it would facilitate preparation and submittal of certifications and decommissioning plans and would standardize licensing considerations in this area. The regulatory guide would describe methods for meeting requirements contained in the amended rules on decommissioning, thus benefiting industry by reducing uncertainty regarding the rules and reducing unnecessary communication with NRC, and therefore expediting

implementation of financial assurance provisions. Publication of a draft guide will also allow industry representatives to participate in the development of an active regulatory guide by submitting comments.

The regulatory analysis for the rule amendments on decommissioning estimated the impact on industry for implementation of financial assurance requirements. No additional impact is anticipated as a result of this proposed action since it merely provides guidance for satisfying financial assurance provisions required by the rule, and in so doing, minimizes impact on industry to the extent practical.

1.3.4 Public

The proposed action will benefit the public in improved safety in that the rule changes will be implemented more effectively as a result of this action. The proposed action would help provide assurance of the availability of funds for safe decommissioning as required by the rule.

2. TECHNICAL APPROACH

The major technical questions related to financial assurance for decommissioning have been considered in developing the amended rules on acceptable funding levels and funding methods. In addition, many of the technical questions related to implementing the rule have been considered in the reports that provide a partial basis for this proposed action, i.e., the reports generated under the technical assistance contracts with Battelle Pacific Northwest Laboratories and with Dr. J. Siegel of the Wharton School, NUREG/CR-0130 (Ref. 1), NUREG/CR-0672 (Ref. 2), and NUREG/CR-3899 (Ref. 3), and the reports generated by NRC staff, NUREG-0584 (Ref. 4) and NUREG-1307 (Ref. 5). Thus, major technical questions will not be decided in developing this particular action.

3. PROCEDURAL APPROACH

3.1 Procedural Alternatives

Potential NRC procedures that may be used to promulgate the proposed action include:

- Regulation
- NUREG-series report
- Regulatory guide
- Branch technical position

The major reason for the proposed action is to provide detailed descriptive guidance on the implementation of the final rule on decommissioning, which is not appropriate to include in a regulation.

There have been a number of NUREG reports published that relate to the proposed action, but these do not contain, nor is it appropriate for a NUREG to contain, the specific guidance concerning regulatory positions needed for this action. No branch technical position is being developed on this subject, and over the long term, a branch position would not adequately fill the need in this case. A regulatory guide is the preferred course of action.

4. STATUTORY CONSIDERATIONS

4.1 NRC Authority

Authority for the proposed action is derived from the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended and implemented through the Commission's regulations cited in the introduction to the guide.

4.2 Need for Assessment

Issuance or amendment of guides for implementing regulations in this chapter is a categorical exclusion under paragraph 51.22(c)(16) of 10 CFR Part 51. Thus no environmental impact statement or assessment is necessary.

5. RELATIONSHIP TO OTHER EXISTING OR PROPOSED REGULATIONS OR POLICIES

The draft regulatory guide is being issued for public comment in support of the rule amendments on decommissioning (June 27, 1988, 53 FR 24018).

6. SUMMARY AND CONCLUSIONS

Guidance on nuclear reactor decommissioning funding methods is needed to ensure that the information required by the amended rules on decommissioning is prepared and submitted in a satisfactory manner to the NRC. Publication of a regulatory guide will provide clear guidance for implementing requirements in the amended decommissioning rules, and could significantly reduce the correspondence between applicants and licensees and the NRC staff, both of which would reduce costs. The incremental impact is insignificant. No other alternative than this action is judged to be as satisfactory. Thus, a draft regulatory guide on assuring the availability of funds for decommissioning nuclear reactors should be published for public comment.

REFERENCES

1. 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; Addendum 1, July 1979; Addendum 2, July 1983; Addendum 3, September 1984; and Addendum 4, July 1988.
2. 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.
3. J. J. Siegel, "Utility Financial Stability and the Availability of Funds for Decommissioning" (prepared by Engineering and Economics Research, Inc., for the U.S. Nuclear Regulatory Commission), NUREG/CR-3899, September 1984, and Supplement 1, June 1988.
4. Robert S. Wood, "Assuring the Availability of Funds for Decommissioning Nuclear Facilities," Rev. 3, U.S. Nuclear Regulatory Commission, Draft Report, NUREG-0584, March 1983.
5. U.S. Nuclear Regulatory Commission, "Report on Waste Burial Charges," NUREG-1307, July 1988.

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