

50-390



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 12, 1995

Ms. Jeannine Honicker
362 Binkley Drive
Nashville, TN 37211

Dear Ms. Honicker:

I am responding to your letter dated October 20, 1995, to Chairman Jackson. In that letter, you expressed several concerns related to the ability of the Tennessee Valley Authority (TVA) to safely operate and decommission its nuclear plants, including its Watts Bar facility, because of purported financial weaknesses. This letter addresses your concerns in the order in which you raised them in your letter.

Your first concern: You indicate that, in 1993, TVA sold off the securities in its decommissioning fund and used the proceeds for its power program. Based on this action, you asked, "Did TVA ask NRC's permission to sell its decommissioning funds and divert the proceeds to TVA's power program? Did NRC give its permission?"

You further stated, "I am particularly concerned because of the impending fuel loading of Watts Bar. I believe that this clearly shows that TVA does not nor will it have sufficient money to decommission three reactors at Browns Ferry, two reactors at Sequoyah, and should it ever become radioactive, Watts Bar."

TVA neither asked nor is required under NRC regulations to seek permission to sell the securities in its decommissioning fund. Under 10 CFR 50.75(e)(3)(iv), TVA, as a Federal Government licensee, may provide financial assurance of decommissioning by submitting a statement of intent containing a cost estimate for decommissioning and indicating that funds for decommissioning will be obtained when necessary. The NRC chose to allow TVA to use the "statement of intent" method of providing decommissioning funding assurance during its deliberations in the mid-1980s on the decommissioning funding rule. The NRC based this decision both on TVA's ability to set its own electricity rates, which allows recovery of decommissioning costs over time from its ratepayers, and on the indirect backing of TVA's bonds by the U.S. Treasury.

The NRC currently has a rulemaking plan to reevaluate its decommissioning funding assurance regulations in light of the deregulation projected to occur in the electric utility industry. (This plan is contained in SECY-95-223, enclosed.) If the conditions upon which the NRC allowed statements of intent appear to be changing, the NRC will consider revising the assurance mechanisms allowed for licensees such as TVA. You will, of course, have the opportunity to comment on any rule changes that the NRC proposes as a result of this reevaluation.

9512140173 951212
PDR ADOCK 05000390
H PDR

NRC FILE CENTER COPY

DF011

Your second concern: You assert that TVA is in "desperate financial straits" and state, "The only requirement that NRC has concerning TVA's financial condition is to be assured that TVA has sufficient funds to build and operate all its nuclear plants safely and to be able to decommission them." You also refer to an August 1995 report by the General Accounting Office (GAO), "Tennessee Valley Authority, Financial Problems Raise Questions About Long-term Viability" (GAO/AIMID/RCED-95-134).

The NRC has reviewed the GAO report to which you refer. Although the GAO report raises issues that bring into question TVA's ability over the long term to compete with electric utilities contiguous to its service territory, the NRC does not believe that the report raises significant concerns about TVA's ability to operate and decommission its nuclear plants safely.

NRC's approach for licensees that encounter financial stress is to devote adequate inspection resources to ensure that operations continue to meet NRC safety standards. The NRC has completed several analyses over the past several years that have not shown any consistent relationship between a licensee's overall financial health and safe operation at its nuclear plants. Thus, the NRC believes that its inspection program is more effective than general financial reviews in identifying potential operational safety problems. The NRC intends to use this approach with TVA, as necessary. Further, 10 CFR 50.33(f) of the NRC's regulations provide that a power reactor licensee that is an "electric utility" as defined in 10 CFR 50.2 is exempt from financial qualifications review at the Operating License stage. Because TVA meets the definition of "electric utility," it is exempt from formal NRC financial qualifications review.

Even in the few cases in which power reactor licensees have obtained bankruptcy protection (e.g., Public Service Company of New Hampshire and El Paso Electric Company for minority shares of the Seabrook and Palo Verde facilities, respectively), the Bankruptcy Courts have directed that these companies continue to pay operating and decommissioning costs. (Cajun Electric Power Cooperative, a 30 percent owner of the River Bend facility, has also sought bankruptcy protection. Cajun has withheld payment for its share of River Bend operating expenses, and has indicated its intention to continue to do so until directed otherwise by the Bankruptcy Court. However, Gulf States Utilities Company, the majority owner of River Bend, has covered River Bend's full operating costs. Also, Cajun has continued to pay into River Bend's decommissioning fund.) Although stock and bond holders have suffered losses during these bankruptcy proceedings, utilities have continued to generate sufficient revenues from continued operation of their nuclear and non-nuclear plants to pay for operational and decommissioning costs.

As indicated in my response to your first concern, if the NRC determines that additional financial measures are needed to ensure safe operations and decommissioning as a result of electric utility deregulation, you will have an opportunity to comment on rulemaking that the NRC proposes.

Your third concern: You refer to a report prepared for Greenpeace by David A. Blecker, MSB Energy Associates, Inc., entitled "TVA Watts Bar Unit

The NRC disagrees that decommissioning Watts Bar, Unit 1, will cost nearly \$6 billion. The NRC has recently updated its studies of light-water-reactor decommissioning costs performed by its contractor, Pacific Northwest Laboratory. (See "Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station" (NUREG/CR-5884) and "Revised Analyses of Decommissioning for the Reference Boiling Water Reactor Power Station" (NUREG/CR-6174).) These studies found that decommissioning costs for a pressurized-water reactor will range from \$133 million to \$227 million in 1993 dollars. Costs for decommissioning a boiling-water reactor would range from \$158 million to \$305 million. These estimates include a 25-percent contingency, which the NRC believes represents reasonable engineering judgment. Even if these estimates are inflated for 30 years at the 2-percent real rate assumed in the Blecker study, decommissioning costs would not exceed \$687 million. Further, actual experience at reactor sites that have decommissioned, such as Shippingport and Shoreham, or that are well into the decommissioning process, such as Fort St. Vrain, indicate that actual decommissioning costs are much closer to the NRC estimates than to the Blecker estimates. (Shippingport cost approximately \$91.3 million to decommission; Shoreham approximately \$190 million; and Fort St. Vrain approximately \$190 million.)

Sincerely,

Original Signed By:
WILLIAM T. RUSSELL

William T. Russell, Director
Office of Nuclear Reactor Regulation

Enclosure: As stated

DISTRIBUTION:

Central File (w/incoming)
PUBLIC (w/incoming)
EDO (G.T. #0000778)
PDLR R/F (w/incoming)
NRR Mailroom (G.T. #0000778)
JTaylor, EDO
JMilhoan, EDO
JBlaha, EDO
CPaperiello, NMSS

Sebnetter, RII
OPA
OCA
KCyr, OGC
FGillespie, NRR
RZimmerman, NRR
ATHadani, NRR
RWood, NRR
SWeiss, NRR
LLuther, NRR

BSweeney, NRR
FHebdon, NRR
PTam, NRR

* See previous concurrence

DOCUMENT NAME: A:\TVA.FQ (DISK 6)

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	*D:PDLR	*D:DRPM	*OGC	D:NRR <i>WR</i>	EDO <i>WR</i>
NAME	SNewberry:ng	DCrutchfield		WRussell	
DATE	11/06/95	11/07/95	11/06/95	11/14/95	11/14/95

OFFICIAL RECORD COPY

OCM*

12/08/95

*with edits



RULEMAKING ISSUE

(Information)

September 1, 1995

SECY-95-223

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: NUCLEAR POWER REACTOR DECOMMISSIONING FINANCIAL ASSURANCE
REQUIREMENTS

PURPOSE:

To inform the Commission of the staff's rulemaking plans for amending the nuclear power reactor decommissioning financial assurance rule.

BACKGROUND:

The staff has determined that there is a need to update NRC's financial assurance requirements for the decommissioning of nuclear power plants. Recent studies have shown that the present decommissioning cost requirements are outdated and not based on the most recent technology. Also, the impact of deregulation of the power generating industry has created additional uncertainty with respect to the availability of decommissioning funds. As a result, the staff is planning to make two amendments to 10 CFR 50.75 to address these concerns. The first proposed amendment would modify the amount of the funds required to accomplish the decommissioning and the second would modify the financial mechanism required to provide the decommissioning funds when needed, along with the monitoring of such a mechanism.

DISCUSSION:

In an April 17, 1995, memorandum to the Commission (Attachment 1), the Executive Director for Operations (EDO) informed the Commission on the status of staff activities relating to the reevaluation of reactor decommissioning costs. That memo identified five issues to be addressed by the staff in the development of the rulemaking plan on amending the nuclear power reactor decommissioning financial assurance requirements.

Contact:
Brian J. Richter, RES
415-6221

NOTE: TO BE MADE PUBLICLY AVAILABLE IN
5 WORKING DAYS FROM THE DATE OF THIS PAPER

ATTACHMENT

9509120222

Issue (1) raised in the referenced memorandum was whether the current funding requirements in § 50.75 should be amended. The staff recommends they should. Issue (2) is whether maintenance costs associated with the storage of spent fuel should be considered a decommissioning expense. The staff recommends that they should not. Issue (3) is whether decommissioning costs should address costs to clean up the site to "green field" status. "Green field" status, as used here, refers to the cost of returning the site to its original state beyond what must be spent to remove the radioactive material. The staff recommends that these costs should not be included as decommissioning costs. Issue (4) is whether NRC regulations should have provisions for periodic reporting on a licensee's accumulation of decommissioning funds. The staff recommends these reporting requirements be required by NRC regulations. Issue (5) is whether NRC regulations should include provisions to address the potential for changes in the financial status of licensees due to a change in ownership and its subsequent effect on decommissioning funding. The staff recommends that this item should also be required by NRC regulations.

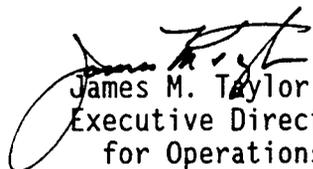
With respect to the proposed action to resolve issue (1) regarding power reactor decommissioning cost requirements, the staff plans to amend 10 CFR 50.75 by replacing the outdated funding amounts presently prescribed with recently revised values based on newer technology and assumptions. Also, licensees would be allowed to use site-specific decommissioning cost estimates in addition to the constant dollar amounts specified in § 50.75. This action is identified as item C2LP-01 in a May 10, 1995, memorandum from James M. Taylor to the Commission, "Rulemaking Activities Under Responsibility of the EDO: Rulemaking Plan and Review Process." Since this amendment imposes no new requirements or burden on licensees and will not result in an increase in financial risk, it involves a minor policy issue. Therefore, the staff proposes that it be approved by the EDO. To accelerate the process for achieving increased flexibility for licensees afforded by this amendment, a separate rulemaking plan (Attachment 2) has been developed in accordance with Management Directive 6.3.

For the proposed action to resolve issues (4) and (5) on power reactor decommissioning financial assurance implementation requirements, the staff plans to clarify decommissioning funding requirements for electrical generating entities without direct access to a rate base and require periodic reporting within § 50.75 to verify the availability of the decommissioning funds. The staff also proposes to allow credit for earnings during safe

The Commissioners

3

storage periods. This action will be added to the next revision of the May 10, 1995, planning document discussed above. This amendment represents a major policy issue that will require Commission approval. The rulemaking plan for this amendment is provided in Attachment 3.


James M. Taylor
Executive Director
for Operations

Attachments: As stated (3)

Attachment 1

Memorandum from James M. Taylor
to the Commission
dated April 17, 1995



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

April 17, 1995

MEMORANDUM TO: The Chairman
Commissioner Rogers
Commissioner de Planque

FROM: James M. Taylor *James L. McWhorter*
Executive Director for Operations

SUBJECT: STATUS OF STAFF ACTIVITIES RELATED TO DECOMMISSIONING COST
RE-EVALUATION (RES-930301) (WITS-9300118)

This memorandum provides information to the Commission on the status of staff activities related to a re-evaluation of reactor decommissioning costs. By memorandum dated November 30, 1994 (attached), the staff provided the Commission with information on costs associated with returning a decommissioned site to a "green field" status and with the management of spent fuel. That memorandum also provided a status of the studies undertaken to update the decommissioning costs used in the development of the 1988 decommissioning rule. Draft NUREG documents were published for public comment in October 1993 (NUREG/CR-5884), and September 1994 (NUREG/CR-6714). In the November 30, 1994, memorandum, the staff indicated that after resolution of public comments on the draft NUREG documents, a proposed rule would be forwarded to the Commission by March 1995.

The contractor has just completed resolution of public comment on the PWR NUREG and publication of this NUREG is anticipated within the next month. Finalization of this NUREG was delayed to allow time for the contractor to provide support for the radiological criteria for decommissioning rulemaking. The comment period has closed on the draft BWR NUREG, and this NUREG is expected to be finalized by September 1995.

The staff is currently developing a rulemaking plan following Management Directive 6.3 and will provide a copy to the Commission by the end of May 1995, with the staff's recommendations to address the following issues: (1) whether the current funding requirements in 10 CFR 50.75 should be amended, (2) whether maintenance costs associated with the storage of spent fuel should be considered a decommissioning expense, (3) whether decommissioning costs should address costs to clean up the site to "green field" status, (4) whether NRC regulations should have provisions for periodic reporting on a licensee's accumulation of decommissioning funds, and (5) whether NRC regulations should

Contact: Cheryl A. Trottier
415-6232

The Commissioners

include provisions to address the potential for changes in the financial status of licensees due to a change in ownership and its subsequent effect on decommissioning funding.

Attachment: As stated

cc: SECY

OGC
OCA
OPA

DISTRIBUTION

JGlenn - RPHEB R/F
RES File No. 3B-3
TPSpeis
LRiani
FCostanzi
FMato, RES No. 930301
WITS 9300118

*see previous concurrence

DOCUMENT NAME: g:\trottier\decmem.001

To receive a copy of this document, indicate in the box "C" = copy without attachment/enclosure, "B" = copy with attachment/enclosure, "N" = No copy

OFFICE:	DRA/RPHEB*	B	DRA/RPHEB*	C	D/DRA/RES	NRR
NAME:	CTrottier;nb		JGlenn	BMorris	BGrimes	
DATE:	4/05/95		4/05/95	4/10/95	4/19/95	

OFFICE:	D/RES	EDB				
NAME:	EBeckjord	JTaylor				
DATE:	4/17/95	4/17/95				

* 3 4/11

OFFICIAL RECORD COPY

Attachment 2

Rulemaking Plan
for Amending Nuclear Power Reactor
Decommissioning Cost Requirements

RULEMAKING PLAN
FOR AMENDING NUCLEAR POWER REACTOR
DECOMMISSIONING COST REQUIREMENTS

Lead Office: Office of Nuclear Regulatory Research

Staff Contact: Brian Richter, RDB

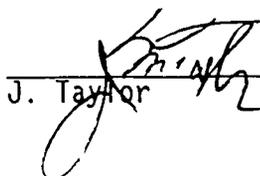
Concurrences:

 7/28/95
Date
D. Morrison, RES

 7/3/95
Date
W. Russell, NRR

Memo S. Truby 7/25/95
Date
K. Cyr, OGC

Approval:

 9/1/95
Date
J. Taylor

RULEMAKING PLAN FOR AMENDING NUCLEAR POWER REACTOR DECOMMISSIONING COST REQUIREMENTS

REGULATORY PROBLEM AND ISSUES TO BE RESOLVED

The staff has determined that there is a need to revise NRC's financial assurance requirements for the decommissioning of nuclear power plants as recent studies have shown that the present funding requirements for decommissioning are outdated and not based on the most recent technology.

Current rule requirements.

Requirements pertaining to financial assurance for the decommissioning of nuclear power reactors are contained in § 50.75, which among other things, specifies generic decommissioning costs for PWRs and BWRs of \$105 million and \$135 million, respectively (1986 \$). An inflation formula is also prescribed (that accounts for the cost of labor, energy, and waste burial) in § 50.75 for licensees to use in performing periodic updates of their decommissioning cost estimates.

Regulatory problem to be resolved.

The decommissioning cost estimates derived from § 50.75 are at variance with recent studies from Battelle Pacific Northwest Laboratories (PNL). Consequently, the present regulations, which require more funds than presently estimated, may represent an unnecessary financial burden on power reactor licensees.

The present § 50.75 was issued in 1988 and contains 1986 dollar-adjusted estimates based on PNL studies completed in 1978 for the reference PWR (NUREG/CR-0130) and in 1980 for the reference BWR (NUREG/CR-0672).

During the years since the initial decommissioning cost estimates were conducted, a number of changes in decommissioning technology and the framework for waste disposal have occurred. To provide current technical bases for decommissioning cost analyses, the NRC staff contracted with PNL to revise the decommissioning cost estimates for the reference PWR and BWR plants (Trojan and WNP-2, respectively). These will be used as part of the NRC's review of the reasonableness of licensee-submitted decommissioning and radiation dose estimates.

The situation with respect to waste disposal has drastically changed since the original PNL estimates were completed. When those studies were conducted, waste disposal was not considered a problem as it was assumed that low level waste could be disposed of easily and at reasonable costs and that spent fuel would be reprocessed. Because of the current high cost of low level waste (LLW) disposal, licensees have undertaken efforts to reduce waste volume. Based on these efforts for the reference PWR analysis, the waste disposal volume estimate from the original study was reduced from approximately 18,340 to 8250 cubic meters (24,000 to 10,800 cubic yards).

A final report for the reference PWR will be published (NUREG/CR-5884) after

the resolution of public comments, and a draft report is being revised to include resolution of public comments for the reference BWR (NUREG/CR-6174). The PNL results from the analysis are presented in Table 1. (These results may be subject to some minor adjustment when the final NUREG/CR-5884 is issued.) The first column of the table provides estimates of the current rule in 1986 dollars. The next two columns provide estimates based upon the existing rule but in 1993 dollars. The last two columns contain the estimates based upon the revised PNL values.

TABLE 1
DECOMMISSIONING COST ESTIMATES*

	Current Rule (1986 \$)	Current Rule Comparables (1993 \$)		Revised PNL Estimates (1993 \$)	
		Hanford	Barnwell	Hanford	Barnwell
PWR	\$105	\$154	\$371	\$133	\$227
BWR	\$135	\$196	\$419	\$158	\$305

Sources: 10 CFR 50.75.
U.S. NRC, "Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station," NUREG/CR-5884 (PNL-8742), Vols. 1 and 2, forthcoming.
U.S. NRC, "Revised Analyses of Decommissioning for the Reference Boiling Water Reactor Power Station," (Draft Report for Comment) NUREG/CR-6174 (PNL-9975), Vols. 1 and 2, Sept. 1994.

* Values are expressed in millions of dollars.

The lower costs for the revised estimates arise mainly because of an expected lower volume of waste, compensating for the currently higher cost of disposal.

Also, in preparing the above referenced NUREG/CR's (0130 and 0672), PNL performed detailed technical studies of decommissioning costs, with the information available at that time, using two model facilities (the Trojan reactor for the PWR case and WNP-2 for the BWR case). In situations where data was scarce, assumptions were used to obtain conservative but reasonable bounds on the decommissioning costs. These calculations were intended to be one-time estimates and thus parameter variability, as it might pertain to other reactor decommissioning situations, was not considered to any significant extent (e.g., use of unit cost factors for performing repetitive tasks, amount and size of piping required cutting and disposal, etc.).

Site-specific decommissioning cost estimates have also been developed since the original PNL studies were completed. TLG Corporation has performed the

majority of the decommissioning cost estimates for industry, and these estimates have been consistently higher than the PNL estimates.

Because of the apparent disparity between many industry cost estimates, primarily done by TLG, and the PNL results, a detailed decommissioning cost comparison of the PNL and TLG results was performed by PNL for the reference BWR used in the earlier PNL study (NUREG/CR-0672, Addendum 4; December 1990). The results of that comparison indicated that the PNL estimates are about 50% lower than the TLG ones, caused primarily by large differences in estimates of staff hours to perform tasks. While PNL gives reasons for the comparative cost differences, ultimately they arise because of reasonable, but differing, engineering judgements. Moreover, given the inherent uncertainties of some of these estimates, a difference of this magnitude is considered reasonable as stated in SECY-91-164, a Commission paper on "Decommissioning Costs," dated May 31, 1991. Additionally, the statements of consideration to the present § 50.75 (53 FR 24018; June 27, 1988) indicated that the intent of the financial assurance provision is not to precisely estimate decommissioning costs, but to ensure that the bulk of the funds will be available for decommissioning.

Further, the present rule contains an inflation formula for licensees to use in their annual updates of the decommissioning cost estimates. The inflation formula contains coefficients for low level waste, labor, and energy cost adjustments. These coefficients were changed by the revised PNL cost estimates. The new inflation formula would require a revision to the regulations. By placing the inflation formula and parameters in a regulatory guide, any future changes to these coefficients would not require a rule change, and there would be more flexibility for licensees in updating decommissioning costs estimates.

Finally, some other factors may have contributed to confusion concerning decommissioning costs. Many licensees include contributors such as the (1) cost of storing spent fuel and (2) the cost of returning the site to its original state beyond what must be spent to remove the radioactive material. Item (2) is referred to as the "green field" cost. Such costs are not included in the PNL estimates nor required by the NRC.

PRELIMINARY REGULATORY ANALYSIS

Options.

Based on the above, the following options were considered for the power reactor decommissioning cost requirements:

- (1) No action, except removal of the inflation formula and the reference to NUREG-1307;
- (2) Use the PNL reevaluation results to replace the PWR and BWR funding amounts prescribed in the current rule;
- (3) Same as Option (2) but also allow licensees to submit case-specific decommissioning cost estimates;

- (4) In addition to either Option (2) or (3) include the cost of the maintenance and storage of the spent fuel that has been permanently removed from the reactor vessel to be a required decommissioning cost; and
- (5) Require the cost of restoring the site to a "green field" condition to be a decommissioning cost.

It should be noted that all options, including Option (1), call for removal of the inflation formula and the reference to NUREG-1307 presented in the rule as discussed under "Regulatory problem to be resolved."

Decision criteria.

Option (1): This is the no action option, which retains the current decommissioning cost estimating methodology, but would call for the removal of the inflation formula and the reference to NUREG-1307 presented in the current rule. It provides no other reduced burden or enhanced flexibility to licensees.

Option (2): Option (2) replaces the constant up-front required decommissioning costs with the revised PNL numbers. The annual inflation formula specified in § 50.75 to update the up-front decommissioning costs would be removed through amendment in Option (1) and not included in Option (2). This formula would be included in a regulatory guide.

Option (3): This option gives more flexibility to the licensee than Options (1) or (2) by allowing the licensee to submit a site-specific decommissioning cost analysis instead of the generic values. Option (3) may provide additional savings to the licensee because the required level of decommissioning funding may be reduced. Alternatively, it may allow licensees to collect more funds to cover a higher estimate of required decommissioning funding. Using a site-specific cost estimate would provide the licensee greater flexibility in dealing with site-specific issues such as differences in decommissioning methodology, expected waste volumes, and anticipated labor efforts to perform specific tasks. This would be fairer to ratepayers than using the generic estimate provided in the rule. Moreover, licensees would be able to use an existing PC-based, NRC-endorsed code to incorporate site-specific conditions into their cost estimate. Note however, that annual decommissioning cost updates would be required for the site-specific cost estimates, just as they presently are for the constant dollar amounts.

For licensee submittal of site-specific decommissioning cost estimates, the burden on the NRC staff may be lessened by issuance of a regulatory guide endorsing use of the NRC code or a licensee supplied one. However, additional NRC staff resources would be needed for the review if many licensees elect to use the site-specific funding option for decommissioning cost estimates. Should half of the licensees use the option, it is estimated that the NRC's burden would amount to 0.2 staff year.

Assuming the licensee elected to use a site-specific cost estimate and used

the NRC-endorsed code, it is estimated that the licensee burden would be about 40 hours to input and run the NRC-endorsed code. If the licensee were required to provide NRC specified input parameters with their cost estimate, it is estimated that, for those licensee cost estimates that the NRC staff chooses to audit, the NRC staff burden to input and run the NRC-endorsed code would be about 8 hours. The requirements for code use and input parameter specifications would be described in a regulatory guide.

Further, the staff intends to ask for public comment in the Federal Register notice on the merits of using one or both of the elements of Option (3).

Option (4): The cost of maintenance and storage of spent fuel is an operational cost that a licensee is obliged to assume based on the conditions of its license. Licensees are currently contributing to a fund for permanent spent fuel disposal and have contracts with the Department of Energy for disposition of spent fuel. In this regard, it can be considered not directly pertinent to decommissioning. Furthermore, the requirement for providing financial assurance for the maintenance and storage of spent fuel after the reactor permanently ceases operation is already contained in § 50.54(bb). Including this cost up-front would place additional burden on licensees because it would increase the amount of decommissioning funds for which a licensee must provide early financial assurance. As in the current rule regarding financial assurance for power reactor decommissioning, a licensee can provide this assurance through an accumulation of funds in an external reserve account.

Option (5): The requirement for providing up-front funding for restoring the site to "green field" would be totally new. The most compelling argument against this option is that once radioactive contamination of the reactor facility is removed to a level acceptable to the NRC, there is no longer a health and safety concern preventing the NRC license from being terminated. Therefore, it is recommended that such costs not be included as decommissioning costs. Also, it should be noted that the PNL modeling for decommissioning costs did not assume restoration to "green field" as a starting objective and is not included in their current decommissioning cost results.

The preferred option, Option (3), is the same as Option (2) but also allows for site-specific decommissioning cost estimates by the licensee in addition to the constant dollar amounts specified in § 50.75 that give the minimum amounts of decommissioning funds for which the licensee must provide assurance.

Option (3) would not require any additional action on the part of the licensee. Any change in the level of funding in the licensee's decommissioning fund would be at the licensee's discretion. These funds could either be reduced from current values to the new lower funding levels based on the NRC-endorsed code, or be based on a site-specific analysis. This would be accomplished at no change in risk to the public's health and safety. The formula to account for cost adjustments would be removed from § 50.75 and a revised formula would be placed in a regulatory guide. The use of this

revised formula is not expected at any time in the future to increase the required level of decommissioning funding above the previously required value. Therefore, Option (3) would not constitute a backfit.

OGC'S LEGAL SUFFICIENCY ANALYSIS DEMONSTRATING THAT NO KNOWN BASIS EXISTS FOR LEGAL OBJECTION

OGC finds that the options for the rulemakings delineated in this plan are within the authority of the Commission, granted to the agency to protect the public health and safety through licensing of commercial production and utilization facilities under the Atomic Energy Act of 1954, as amended.

Of primary concern in developing the proposed rule is the question of the backfit justifications for the proposed options. Some portions of the proposed options for the rule may be voluntary in nature, and therefore may not involve a backfit. Other portions of the rule may require a backfit justification. The staff should be prepared to address the backfit issue as the proposed rule is developed.

While the above must be addressed as the options in this plan are pursued, there is nothing evident at this time to indicate that these legal issues will prevent successful pursuit of the course of action recommended in this rulemaking plan.

AGREEMENT STATE CONSIDERATIONS

Although, Agreement States do not license power reactors, they are involved to some degree in the low level waste disposal process and associated costs.

SUPPORTING DOCUMENTS

For all options, a regulatory guide containing the revised inflation values and reference to the most recent NUREG-1307 is required. For Option (3), an expanded regulatory guide on the implementation of the financial assurance methodology would be appropriate.

RESOURCES REQUIRED

Resources are included in the current Five Year Plan to complete and implement the rulemaking. The offices involved are RES, NRR, and OGC.

IS IT RECOMMENDED THAT THE EDO ISSUE THE RULE IN ACCORDANCE WITH MANAGEMENT DIRECTIVE 9.17?

Yes. Since this amendment imposes no new requirements or burden on licensees and will not result in an increase in financial risk, it involves a minor policy issue. Therefore, the staff proposes that it be approved by the EDO.

LEAD OFFICE STAFF AND STAFF WITHIN EACH OFFICE WHO WILL BE INVOLVED

RES/DRA

Thomas Martin

Brian Richter

NRR

Seymour Weiss

Anthony Markley/Robert Wood

OGC

Stewart Treby

Bradley Jones

USE OF STEERING GROUP

No. These rule amendments are not considered to be significantly complex to warrant a steering group.

ENHANCED PUBLIC PARTICIPATION

No. The impacts of up-front decommissioning funding have already been accounted for in earlier decommissioning rulemaking. These proposed amendments are simply providing the licensees with greater flexibility of implementation.

SCHEDULE

Expressed in terms of time from approval of the Rulemaking Plan.

Proposed rule to EDO, includes Regulatory Guide	6 months
Public comment period ends	9 months
Final rule to EDO	1 year

Attachment 3

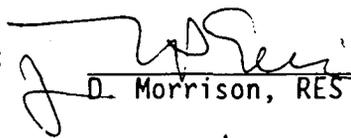
Rulemaking Plan for Amending Nuclear Power Reactor
Decommissioning Financial Assurance
Implementation Requirements

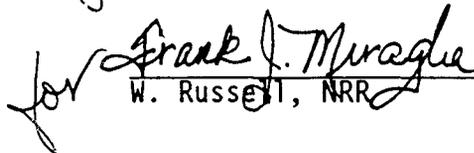
RULEMAKING PLAN FOR AMENDING NUCLEAR POWER REACTOR
DECOMMISSIONING FINANCIAL ASSURANCE
IMPLEMENTATION REQUIREMENTS

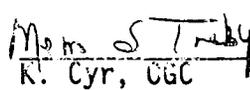
Lead Office: Office of Nuclear Regulatory Research

Staff Contact: Brian Richter, RDB

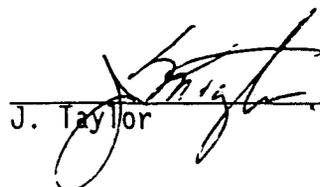
Concurrences:

 7/28/95
D. Morrison, RES Date

for  7/3/95
W. Russell, NRR Date

 7/25/95
K. Cyr, CGC Date

Approval:

 9/1/95
J. Taylor Date

RULEMAKING PLAN FOR AMENDING NUCLEAR POWER REACTOR
DECOMMISSIONING FINANCIAL ASSURANCE
IMPLEMENTATION REQUIREMENTS

REGULATORY PROBLEM AND ISSUES TO BE RESOLVED

The staff has determined that there is a need to update NRC's financial assurance requirements for the decommissioning of nuclear power plants. The impact of deregulation of the power generating industry has created potential uncertainty with respect to the availability of decommissioning funds and requires a modification of the financial mechanism required to provide the decommissioning funds when needed. Along with the modification, a monitoring of such a mechanism would be required.

Current rule requirements.

Requirements pertaining to financial assurance for the decommissioning of nuclear power reactors are contained in § 50.75. Under § 50.75(e)(3), the NRC allows power reactor licensees, who are defined as "electric utilities" under 10 CFR 50.2, to set aside funds annually over the estimated life of the reactor. It was the capability to collect funds through the ratepayer that allowed these licensees to use an external sinking fund. Under § 50.75(e)(2), the NRC requires non-electric utilities to set aside an external sinking fund coupled with a surety method or insurance. However, with the advent of deregulation, the NRC needs to clarify the definition of "electric utility"¹. These funds are to be placed in external decommissioning trust or escrow accounts so as to be reserved only for decommissioning activities.² Under the definition of external sinking fund, power reactor licensees must accumulate all the funds estimated to be needed for decommissioning by the time their facilities are permanently shut down. Although § 50.75(e) also allows power reactor licensees to use surety bonds, letters of credit, and

¹Electric utility means any entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority. Investor-owned utilities, including generation or distribution subsidiaries, public utility districts, municipalities, rural electric cooperatives, and State and Federal agencies, including associations of any of the foregoing, are included within the meaning of "electric utility."

² Note: Many licensees that have established decommissioning trust funds for their power reactors are making deposits into their trust accounts both for decommissioning costs as defined under § 50.2 and for other decommissioning-associated costs such as interim spent fuel management and storage and "green field" costs. The NRC allows licensees to deposit funds in the same trust account as long as the trust has sub-accounts which clearly delineate the purposes of the sub-account. A trust or sub-account established to provide assurance of NRC-defined decommissioning costs should be prioritized to cover NRC-defined decommissioning costs before any other purpose.

prepayment to provide funding assurance, virtually all power reactor licensees use the external sinking fund method of assurance.

Regarding the financial assurance implementation requirement, the intent of the current decommissioning rule is that the assurance mechanism ensures that funds for decommissioning can be obtained when necessary with reasonable assurance. The inability of the licensee to provide such assurance can be considered in some circumstances, if cleanup is over long periods, to result in a health and safety issue and certainly is a financial risk to taxpayers (i.e., if the licensee cannot pay for decommissioning, the taxpayers would ultimately pay the bill.) Such a finding provided the basis for the current decommissioning rule requirements. At the time the decommissioning rule was finalized, the Commission believed that for a regulated power reactor utility, an external reserve account collected over the estimated remaining reactor life would provide the necessary required reasonable assurance. As a conservatism built into the rule, the NRC decided not to allow licensees to take credit for earnings on their trust funds while their reactors were in extended safe storage. Rather, the NRC implicitly assumed that, during safe storage the rate of return on external decommissioning trust funds would equal the decommissioning cost escalation rate. Thus, the after-tax, after inflation earnings rate would effectively be zero.

When the NRC promulgated the 1988 decommissioning rule, it did not require licensees to report periodically on the status of their decommissioning funds. Rather, NRC viewed licensee compliance with the funding assurance requirements as a matter to be determined through the inspection process when necessary. Also, the NRC respects the State Public Utility Commissions' (PUCs) and the Federal Energy Regulatory Commission's (FERC) authority to set annual contribution rates to decommissioning funds and to establish investment and other management criteria for the funds. The PUCs and FERC also actively monitor decommissioning funds of licensees under their jurisdiction as part of their rate regulatory responsibility. Moreover, the Financial Accounting Standards Board (FASB), a national organization that sets accounting standards, recently initiated a review of reporting of decommissioning obligations on electric utility financial statements. Although FASB has not established a final standard, it appears that it will increase the level of detail on their financial statements. If adopted, this standard would likely give the NRC and others additional information on the status of decommissioning funds. For these reasons, the staff has not devoted significant resources to date on determining decommissioning fund status.

Regulatory problem to be resolved.

For the following reasons, the staff is considering amending the rule.

Issue A: Should we limit or supplement the method for assuring the availability of decommissioning funds for situations where electric utilities' access to collection of funds from ratepayers becomes restricted due to the impact of deregulation?

FERC and several State PUCs (e.g., California and Michigan) have recently initiated policy changes that would, over the next several years, deregulate

utilities providing electric services. Although exact prediction of the structure of the future electric utility industry is difficult, there may be cases where companies providing electricity generation, including generation from nuclear power reactors, will be separated from companies providing both bulk transmission services for wholesale and distribution to the end-use customer. As these policy changes were developing, several owners of NRC-licensed power reactors established holding companies that control NRC licensees.

In view of impending utility deregulation, the distinction between owners and operators of nuclear power plants may become less clear. All plant co-owners are licensees but they may only be licensed to possess the plant and its radioactive material. Normally, only one licensee, usually the majority owner, is licensed to operate the plant. However, some utilities have established generating subsidiaries to operate the plant. If the utility parent remains on the license, or otherwise commits through operating agreements or other mechanisms, to pay safety-related costs, including decommissioning, there should be no serious concern that decommissioning funds will be unavailable. However, as deregulation proceeds, both plant operators and co-owners may reduce or eliminate their links with affiliated electric utilities.

As indicated in SECY-94-280 (November 18, 1994), the staff's position is that there appears to be no immediate safety concern with these reorganizations, particularly since the staff has sought and received commitments that licensees will notify the NRC when significant assets are transferred from a licensee to its non-licensed parent company. However in the longer-term, trends in deregulation and reorganization may cause power reactor licensees to have smaller asset bases and reduced recourse to decommissioning cost recovery through rates approved by PUCs or FERC. This would be contrary to the assumptions underlying the Commission's decision to allow regulated electric utilities more liberal methods (i.e., uninsured external sinking fund) of providing decommissioning funding assurance than other NRC licensees.

Issue B: Should the NRC allow licensees to take credit for earnings on their trust funds during an extended safe storage period?

Some licensees have argued that they are able to earn a positive real rate of return on their decommissioning funds during safe storage. These licensees argue that by requiring all decommissioning funds to have been collected by shutdown, the NRC may require some licensees to collect more funds from ratepayers than is absolutely necessary given the potential for accrual of interest. If, as a result, substantially more funds than needed are collected from ratepayers while the plant was operating, this would result in an unwarranted expense to licensees, their ratepayers, or stockholders. Also, inequities could be created between generations of ratepayers.

Issue C: Should the NRC determine compliance with decommissioning funding assurance regulations by power reactor licensees through a periodic reporting requirement or through the inspection process?

The NRC has not deemed it necessary nor has monitored licensee compliance with

the decommissioning rule's funding assurance requirements. The evolving situation with utility financial viability has resulted in a need for the NRC to monitor more closely the availability of decommissioning funds as required.

Recently the Cajun Electric Power Cooperative, a licensee of the River Bend nuclear power plant, filed for Chapter 11 Bankruptcy. Cajun is past due on the payment on some of its liabilities. Documents submitted by Cajun and Gulf States Utilities indicate that Cajun has made and continues to make required payments for the ultimate decommissioning of the River Bend unit. Two other power reactor licensees went through Chapter 11 bankruptcy reorganization without degradation of decommissioning funding assurance³.

Also, for the past several years Congress and various media organizations have requested the NRC to provide information on the status of decommissioning funds. The NRC has thus far been unable to honor these requests.

PRELIMINARY REGULATORY ANALYSIS

Options.

Based on the information presented above, the options for rule amendment considerations concerning implementation of financial assurance mechanisms and monitoring of the financial assurance plan can be enumerated in the following three categories. The first relates to the financial assurance implementation mechanism. The second relates to the collection of decommissioning funds by licensees during the safe storage period. The last addresses licensee monitoring or reporting to confirm compliance with financial assurance requirements. Each of the three issues discussed above has both a no-action option and one that, if adopted, would change existing NRC policy.

A. Additional assurance needed due to deregulation?

- (1) No action option (i.e., retain the current financial assurance implementation mechanism);
- (2) Revise the regulations to require that electric utility reactor licensees provide assurance that the full estimated cost of decommissioning will be available through a formal guarantee mechanism if they are no longer able to set rates or are not subject to rate regulation by the PUCs or FERC (e.g., restrict the definition of "electric utility" in §50.2 to exclude reference to indirect ability to recover cost of electricity generation or

³To date, the Bankruptcy Court has considered decommissioning and other safety-related expenses for nuclear power plant licensees to be high priority expenses and has allowed them to be paid ahead of most other creditor claims. While these experiences provide some comfort that bankruptcies are not presenting immediate problems for decommissioning fund adequacy, there is no assurance that Bankruptcy Courts will treat unregulated power generators in the same manner as regulated utilities.

distribution);

B. Allow credit for earnings during safe storage period?

- (1) No action option (i.e., continue to require all funds needed for decommissioning to be available at time of shutdown);
- (2) Allow licensees to collect decommissioning funds during the safe storage period and/or allow licensees to assume a positive real rate of return on decommissioning funds during safe storage;

C. Collection monitoring through reporting?

- (1) No action option (i.e., continue to require no periodic reporting of decommissioning funding requirements, but allow for their inspection); and
- (2) Implement a periodic reporting requirement.

Decision criteria.

Option (A-1): Continue allowing power reactor licensees to fund decommissioning over the estimated remaining life of the facility without requiring a formal guarantee mechanism for the balance of decommissioning costs that remains unfunded. This option, the no action option, would maintain the distinction between electric utility licensees as currently defined and other NRC-licensed facilities and would continue to recognize the unique status of regulated electric utilities in terms of their ability to provide long-term assurance of decommissioning funding through the rate-making process.

Option (A-2): Revise the Commission's decommissioning regulations to require that, in situations where an electric utility's access to collect funds from ratepayers is limited due to deregulation, power reactor licensees provide assurance of the full estimated cost of decommissioning through a formal guarantee mechanism. This could take the form of either: (a) a guarantee of any unfunded decommissioning liability with prepayment, a surety bond, letter of credit, or other method allowed in § 50.75(e)(1)(iii); (b) a parent company or self guarantee through passing a financial test similar in scope to the one contained in 10 CFR Part 30, Appendices A and C, to assure that a licensee has an adequate resource base to fund decommissioning; or (c) a certification to the NRC from the rate-making authority that all unfunded decommissioning obligations under NRC regulations will be collected in rates.

Licensees must be able to obtain funds for decommissioning when necessary. The inability of a licensee to provide decommissioning funding assurance may result in a potential health and safety issue and clearly a financial risk to taxpayers. For a regulated power reactor utility, an external reserve account would provide the necessary required reasonable assurance. This reasonable assurance may cease to exist if electric utilities are deregulated,

particularly if a power reactor is shut down prematurely⁴. Therefore, the staff regards Option (A-2) as the recommended option because it provides additional assurance that decommissioning funds will be available along with a tiered system of choices to licensees in selecting financial assurance mechanisms that are appropriate to their circumstances.

Comparison of Options (A-1) and (A-2): The regulatory analysis for Option (A-1) was considered in the 1988 decommissioning rule. Because this option proposes to continue the current methods of funding assurance, no additional costs or benefits should occur. Option (A-2) would impact only those licensees that were no longer able to set rates subject to a PUC or FERC. There are presently no power reactor licensees in this category. For those non-rate setting licensees that would attempt to qualify for a parent company or self-guarantee, the staff estimates 8 to 40 hours would be needed to complete the financial test documents. The burden on the NRC to review these documents would be approximately 2 hours per licensee. If one-third of the present licensees were in this category, the total burden on the NRC is estimated to be less than 100 staff hours.

Those licensees unable to qualify for the financial test would be required under Option (A-2) to obtain a surety bond, letter of credit, or other acceptable guarantee mechanism for the projected unfunded decommissioning expense balance. If this balance is assumed to be \$100 million for the typical licensee, at a cost of 1% to 2% of the amount guaranteed, the cost per affected licensee would be \$1 million to \$2 million per year. This cost would decline as licensees' decommissioning trust funds increased over time. Total cost to all licensees would thus be \$40 million to \$120 million per year to start, but would subsequently decline as decommissioning trust funds increased. However, these costs would only be incurred in cases where licensees can no longer collect decommissioning costs through rate payments.

Option (B-1): Continue to require all funds needed for decommissioning to be available at time of shutdown.

⁴ For power reactor licensees who are "electric utilities" as defined in § 50.2, including generating or operating subsidiaries, decommissioning funding assurance for prematurely shut down plants was addressed in a 1992 rulemaking (57 FR 30383; July 9, 1992). This rule amended § 50.82 to provide that the NRC will evaluate, on a case-by-case basis, the decommissioning funding plans of licensees who have not accumulated sufficient funds because their plants were shut down prematurely. Essentially the NRC evaluates the particular safety and financial situation of each licensee to determine if the ability of a licensee to collect funds after shutdown provides reasonable assurance that funds will be available when needed. The staff has evaluated several funding plans on a case-by-case basis and has found that, for electric utilities that are regulated or set their own rates, this approach has worked well. However, without rate regulation or rate-setting ability, assurance of decommissioning costs, particularly for prematurely shut down plants, may not be adequately provided under current NRC policy.

Option (B-2): Allow licensees to collect decommissioning funds during the safe storage period and/or allow licensees to assume a positive real rate of return on decommissioning funds during safe storage.

With respect to when decommissioning funds should be available, reasonable assurance is best provided by having funds collected during plant operation (Option (B-1)). However, the assumption of a zero real rate of return is too conservative. Given that historically, real (i.e. inflation-adjusted, after-tax) rates of return using U.S. Treasury issues have been around 2%, the staff proposes to allow licensees to use this rate in their calculations (Option (B-2)). If rates turn out to be lower than this, \$ 50.82 already provides that licensees are to adjust decommissioning funds during safe storage to reflect changes in cost estimates. Thus, there is little risk that there will be major shortfalls in decommissioning funds.

Comparison of Options (B-1) and (B-2): Since Option (B-1) is the present situation, and the staff is proposing relief from current requirements, Option (B-2), there is no adverse impact on licensee or NRC resources.

Option (C-1): Continue to require no periodic reporting, but rely on the inspection process to determine power reactor licensee compliance with NRC decommissioning funding requirements.

Option (C-2): Implement a periodic reporting requirement.

With respect to reporting requirements, the staff recommends Option (C-2), to implement a periodic reporting requirement. The staff needs appropriate assurance that licensees are collecting their required decommissioning funds. This can be done by licensees submitting a simple statement to the NRC of information they have available regarding funds in their external account. This choice is considerably less costly to both the licensee and the NRC than relying on inspections and involves little effort. It is intended that in the proposed rule comments be solicited from the public on which method of providing such information to the NRC would be preferred.

Comparisons of Options (C-1) and (C-2): Because of close PUC and FERC monitoring, the staff believes that the great majority of licensees prepare and submit annual reports on decommissioning fund status to their rate regulators. Asking licensees to submit a copy of this report to the NRC would require only minimal effort by each licensee. On the other hand, obtaining this information through the inspection process would likely be more burdensome for the NRC and for those licensees inspected each year. The staff concluded that the benefit of obtaining this information through a reporting requirement, in terms of both determining licensee compliance with NRC decommissioning funding regulations and responding to Congressional and other requests, outweigh the minimal impact of the requirement and, as explained below, would be less burdensome to licensees and the NRC than relying on the NRC inspection process. Thus, the staff is proposing options for the Commission's consideration.

If the NRC imposed a periodic reporting requirement (e.g., every 3 years) on

the status of decommissioning funding assurance, the staff estimates that licensees would submit approximately 100 reports every 3 years, or an average of 33 reports each year. In some cases, a report will cover more than one power reactor owned by the same licensee. In other cases, co-owners will submit separate reports for their proportionate shares of the same reactor. The impact on licensee resources should be minimal. As indicated above, most power reactor licensees already prepare annual reports for their PUCs or FERC containing the information that would be required in a periodic report. Also, virtually all licensees receive periodic reports from their decommissioning trustees giving the status of decommissioning funds. Thus, no licensee should need to expend additional preparation time in complying with an NRC reporting requirement. The impact on licensees would be in copying and transmitting information they already have, which staff estimates to be approximately 2 staff-hours per licensee or 66 staff-hours annually. If the NRC were to use FASB information, if it becomes available, no additional impact on licensees would occur since the staff could obtain this information from publicly available sources. Licensees that the NRC chose to inspect in any year would spend at least 5 staff-hours and, possibly, considerably more time preparing for the inspection, assisting the NRC during the inspection, and responding to the inspection results.

It should take approximately 1 NRC-staff hour on average to review and analyze each report. An annual summary report based on the submissions current up to that year should require approximately 8 NRC-staff hours to prepare and disseminate. No contractor effort should be needed. Thus, total NRC staff effort should be about 41 staff-hours annually (i.e., 33 reports x 1 NRC-staff hour + 8 NRC-staff hours) for a decommissioning funding status report. Using FASB information would entail similar staff effort.

The primary option to annual reports would be for the NRC to monitor compliance through selective annual inspections of licensees. A reasonable annual inspection rate would be about 20%, or approximately 22 units, each year. Although the time to review each report would be the same (i.e., 1 staff-hour for each report), the staff would require additional coordination and communication time with the licensee for each inspection. If inspections were conducted from NRC headquarters by written correspondence or telephone, staff estimates an additional 1.5 staff-hours per inspection would be required for this coordination and communication time. If inspections were conducted at licensees' facilities, required coordination and communication time would likely increase on average to at least 8 staff-hours per inspection. An annual summary report based on the annual inspections conducted would also require about 8 staff-hours to prepare and disseminate. Thus, annual NRC staff requirements for an inspection approach would be from 63 staff-hours for headquarters-based inspections to 206 staff-hours for field-based inspections. Therefore, the staff believes that a periodic report would likely have a much smaller impact on NRC staff resources than selective inspections.

With respect to the backfit rule, the conditions under which nuclear power reactors have been regulated have changed greatly since the rule was written. Because of the NRC responding to these changing circumstances, this action is a case of adequate protection, not requiring a backfit analysis. Specifically with respect to Option (A-2), the lack of adequate financial assurance is a

potential health and safety concern and a financial risk to taxpayers. The choice of a tiered option approach for the licensee, however, would help mitigate impacts that the use of an Option (A-2) requirement would impose. With respect to the backfit rule regarding Option (C-2), the reporting requirement is a reasonable and cost-effective mechanism to confirm compliance. Use of Option (C-2) would be a much more efficient expenditure of effort on the part of the licensee and the NRC than selective inspections. However, to mitigate any impacts this action would impose, it is intended that comments be solicited from the public on the option to choose for the reporting requirement.

OGC'S LEGAL SUFFICIENCY ANALYSIS DEMONSTRATING THAT NO KNOWN BASIS EXISTS FOR LEGAL OBJECTION

OGC finds that the options for the rulemakings delineated in this plan are within the authority of the Commission, granted to the agency to protect the public health and safety through licensing of commercial production and utilization facilities under the Atomic Energy Act of 1954, as amended.

Of primary concern in developing the proposed rule is the question of the backfit justification for the proposed rule. Since the primary impetus for the rulemaking appears to be the newly developed corporate organizations, the proposal seems to be a prime candidate for justification as changes necessary to maintain "adequate safety." For the options addressing new corporate organizations, the staff should plan to explicitly address the question of "adequate protection of public health and safety" in discussing the applicability of backfit rule. The backfit issue must also be addressed for the issue of periodic reporting. It is premature at this juncture to reach a conclusion on whether a reporting requirement can be justified under the backfit rule.

The staff will need to consider and get appropriate OMB approvals related to paperwork reduction activities as the financial reporting options are pursued.

As the staff pursues the options related to various corporate organizations, it will be necessary to develop strong justifications for why certain reactor owners and operators are being designated as requiring additional actions for financial assurance. These justifications will provide significant input for the backfit discussions to the extent the justifications are used to explain the basis for concluding that "adequate public health and safety" considerations satisfy backfit questions associated with this rulemaking.

While the above issues must be addressed as the options in this plan are pursued, there is nothing evident at this time to indicate that these legal issues will prevent successful pursuit of the course of action recommended in this rulemaking plan.

AGREEMENT STATE CONSIDERATIONS

Although Agreement States do not license power reactors, they are involved to some degree in the low level waste disposal process and associated costs.

SUPPORTING DOCUMENTS

A Regulatory Guide or Branch Technical Position will need to be published for this action.

RESOURCES REQUIRED

Resources are included in the current Five Year Plan to complete and implement the rulemaking. The offices involved are RES, NRR, and OGC.

IS IT RECOMMENDED THAT THE EDO ISSUE THE RULE IN ACCORDANCE WITH MANAGEMENT DIRECTIVE 9.17?

No. Due to the imposition of additional requirements of reporting and providing additional assurance of decommissioning fund availability, this is regarded as more than a minor amendment and should require a notation vote on the part of the Commission.

LEAD OFFICE STAFF AND STAFF WITHIN EACH OFFICE WHO WILL BE INVOLVED

RES/DRA	Thomas Martin	Brian Richter/Raj Auluck
NRR	Seymour Weiss	Anthony Markley/Robert Wood
OGC	Stewart Treby	Bradley Jones

USE OF STEERING GROUP

No. These rule amendments are not considered to be significantly complex to warrant a steering group.

ENHANCED PUBLIC PARTICIPATION

No. The impacts of up-front decommissioning funding have already been accounted for in earlier decommissioning rulemaking. These proposed amendments are simply providing the licensees with greater flexibility of implementation.

SCHEDULE

Expressed in terms of time from approval of the Rulemaking Plan.

Proposed rule to EDO, includes Regulatory Guide	1 year
Public comment period ends	18 months
Final rule to EDO	2 years

ACTION

EDO Principal Correspondence Control

FROM: DUE: 11/13/95

EDO CONTROL: 0000778
DOC DT: 10/20/95
FINAL REPLY:

Jeannine Honicker
Nashville, TN

Received 10/31/95

TO: Chairman Jackson

FOR SIGNATURE OF : ** GRN **
Russell

CRC NO: 95-0934

DESC: Q'S RE TVA SOLD OFF THE SECURITIES IN ITS
DECOMMISSIONING FUND AND USED THE PROCEEDS FOR
ITS POWER PROGRAM

ROUTING:
Taylor
Milhoan
Thompson
Blaha
Paperiello, NMSS
SEbnetter, RII
Cyr, OGC

DATE: 10/27/95

ASSIGNED TO: CONTACT:
NRR Russell

SPECIAL INSTRUCTIONS OR REMARKS:

NRR RECEIVED: October 31, 1995
NRR ACTION: DRPM:CRUTCHFIELD
NRR ROUTING: RUSSELL
GILLESPIE
THADANI
ZIMMERMAN
BOHRER

ACTION
DUE TO NRR DIRECTOR'S OFFICE
BY *[Signature]* Nov. 8, '95

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-95-0934 LOGGING DATE: Oct 27 95
ACTION OFFICE: EDO
AUTHOR: JOHN HOSKINS
AFFILIATION: TENNESSEE
ADDRESSEE: CHAIRMAN JACKSON
LETTER DATE: Oct 20 95 FILE CODE: IDR-5 WATTS
SUBJECT: ALLEGES THAT TVA SOLD SECURITIES IN ITS
DECOMMISSIONING FUND AND USED THE PROCEEDS FOR ITS
POWER PROGRAM-QUESTIONS NRC'S KNOWLEDGE OF THIS
TRANSACTION
ACTION: Direct Reply
DISTRIBUTION: CHAIRMAN, ROGERS, DSB
SPECIAL HANDLING: NONE
CONSTITUENT:
NOTES:
DATE DUE: Nov 13 95
SIGNATURE: . DATE SIGNED:
AFFILIATION:

EDO --- 000778

362 Binkley Dr.
Nashville, Tn. 37211
October 20, 1995

Dr. Shirley Jackson, Chairperson
US Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Dear Dr. Jackson:

In 1993, The Tennessee Valley Authority (TVA) sold off the securities in its decommissioning fund and used the proceeds for its power program. See enclosed letter addressed to me from John M. Hoskins, Vice President and Treasurer of TVA, dated September 28, 1995 and copies of pages from TVA's "Energy Vision 2020, (Draft, Volume 2, dated 7/95, page T3-8).

Also enclosed is my response to Mr. Hoskins' letter, with supporting documentation.

Did TVA ask NRC's permission to sell its decommissioning funds and divert the proceeds to TVA's power program? Did NRC give its permission?

I am particularly concerned because of the impending fuel loading of Watts Bar. I believe that this clearly shows that TVA does not nor will it have sufficient money to decommission three reactors at Browns Ferry, two reactors at Sequoyah, and should it ever become radioactive, Watts Bar.

Clearly the raiding of the decommissioning funds shows what desperate financial straits TVA is in. The only requirement that NRC has concerning TVA's financial condition is to be assured that TVA has sufficient funds to build and operate all its nuclear plants safely and to be able to decommission them. As the August 1995 GAO report, "Tennessee Valley Authority, Financial Problems Raise Questions About Long-term Viability," (GAO/AIMID/RCED-95-134) clearly shows, only Congress and the NRC have any oversight over TVA. You are the agency that is entrusted with protecting the public's health and safety as far as nuclear plant construction and operation is concerned. Therefore, I appeal to you.

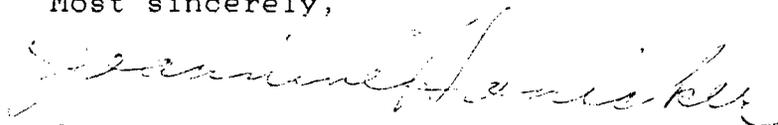
page 2

TVA is fast approaching its debt ceiling, and is even having to go into partnership with a private company to develop a hydro pumped storage peaking plant. I do not believe that TVA is financially solvent enough to operate its coal, hydro, and nuclear plants safely and to decommission the nuclear facilities when their licenses expire. I further do not believe that TVA is earmarking nearly enough money for its decommissioning fund, and the raiding of the fund negates the advantage of compounding interest.

Please notice the enclosed "Appendix A, TVA Watts Bar Unit 1 Decommissioning Cost Estimates Prepared for Greenpeace by David A. Blecker - MSB Energy Associates, Inc., August 10, 1995." According to this document, to decommission Watts Bar if it operates for 30 years could cost almost \$6 billion. That is for one reactor. Adding the five reactors already licensed clearly indicates that TVA is not financially qualified to safely operate Watts Bar.

Therefore, because of the aforementioned, and for many other safety concerns, I hereby humbly request that you deny TVA its nuclear fuel loading license and operating license for the Watts Bar Nuclear Plant.

Most sincerely,



Jeannine Honicker

Enclosures

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

John M. Hoskins
Vice President and Treasurer

September 28, 1995

Ms. Jeannine Honicker
362 Binkley Drive
Nashville, Tennessee 37211

Dear Ms. Honicker

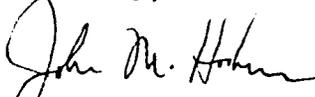
This letter is written in response to your request for information on TVA's decommissioning fund on September 26.

TVA maintains a decommissioning fund that will be used to clean up all the areas exposed to radioactivity once the operating license of a nuclear plant expires. This fund currently has a balance of \$261 million. Next year TVA will make further contributions to this fund.

TVA sold the \$210 million of investments in this fund in 1993 due to market conditions that created an unusual opportunity for a significant gain in these securities. TVA used the proceeds of this sale for the power program. This fund was replenished in 1994 and 1995.

If TVA had maintained the original investment portfolio, it would currently have a balance of \$245 million. All of TVA's decommissioning investments have been in high quality fixed income investments.

Sincerely,



John M. Hoskins

DRAFT

FIGURE T3-10. TVA's Nuclear System

Nuclear in Fiscal Year	Summer Net Capacity (MW)	EAF (%)	Heat Rate (Btu/kWh)	Fuel Cost (\$/MWh)	Total O&M (\$/kW)	Total A&I (\$/kW)
1994 (Actual)	3,282	65.6	10,140 ¹	11.0 ²	90.7	29.8 ³
2005	5,517	67	10,475	5.4	113.6	19.1

¹ Sequoyah 2 heat rate given is typical of all nuclear units.

² In 1994 TVA took steps to write off sunk interest charges on excess fuel inventory. This will result in future fuel expenses that are significantly lower but are more in line with market costs.

³ Capital expenditures for SON 1, SON 2, and BFN 2 plus central office TVAN only.

TVA expects an increase in availability factor for its nuclear system due to plant upgrades. Fuel costs are projected to drop significantly following the write-off of interest charges on excess fuel inventory in 1994.

reactors, such as those at Browns Ferry, are not as susceptible to vessel aging as pressurized water reactors; second, these units have been brought up to current standards. TVA will follow closely the proposed Nuclear Regulatory Commission rule making on license extensions, but TVA anticipates these facilities will be available over the Energy Vision 2020 study period.

TVA has established a nuclear decommissioning fund for all of its operating nuclear reactors. Investments of power funds have been made since 1982 to provide for the accumulation of funds for decommissioning nuclear plants. By September 1993, the lowest interest rate environment in 20 years resulted in a situation where the market value of the decommissioning investments was significantly higher than their book value of \$210 million. TVA elected to exercise the flexibility of the internal fund, and sold the investments through a competitive bid for \$373 million.

TVA elected to return the proceeds to the decommissioning fund over a three year period beginning in fiscal year 1994. At the end of fiscal year 1994 the fund had \$150 million. Plans

are to add an additional \$100 million by the end of fiscal year 1995 and an additional \$123 million by the end of fiscal year 1996.

TVA's policy is to collect funds for decommissioning through rates based on a constant dollar amount adjusted for inflation over the life of the operating license of a nuclear plant. This policy is based on the theory that all ratepayers that benefit from the electric production of a nuclear plant should share equally in the cost of decommissioning. If TVA front-loaded the collection of the nuclear plant decommissioning funds, this would put an undue burden on the ratepayers receiving power generated during the early years of operation of the nuclear plant. On the other hand, if not enough funds were collected throughout the life of the plant, the ratepayers receiving power at the end of the operating license would have an unfair decommissioning burden.

Decommissioning expense has been recovered from ratepayers annually based on the present value of amounts not provided through earnings on the fund. In fiscal year 1990, these

FIGURE T3-11. Projected Availability of Power Through Interchanges

YEAR	BLOCK 1		BLOCK 2		BLOCK 3	
	Quantity (MW)	Price \$/MWh	Quantity (MW)	Price \$/MWh	Quantity (MW)	Price \$/MWh
1995	250	23	250	27	1800	40
2000	300	27	300	32	1500	56
2005	0	N/A	300	39	1500	75
2010	0	N/A	0	N/A	1100	106
2015	0	N/A	0	N/A	1000	135
2020	0	N/A	0	N/A	1000	165

This figure shows the amount of power expected to be available through the interchange system through 2000. For each year, power is shown to be available in blocks with varying cost.

DRAFT

collections amounted to \$18 million. TVA temporarily suspended decommissioning collections from customers after operating license life extensions were obtained for Browns Ferry and Sequoyah. The temporary suspension was made in an effort not to front-load decommissioning collections. Cashing in the gain on the market value of the fund in 1993 has resulted in a reduction of the annual decommissioning expense collection through rates to \$13 million currently based on a projected long-term return of 8 percent. If alternative investments with a higher rate of return could be achieved, the annual collection could be lowered further. Collections for the decommissioning fund will resume in fiscal year 1995.

INTERCHANGES WITH NEIGHBORING UTILITIES

TVA has various types of interchange arrangements with neighboring electric systems that allow TVA and these utilities to buy, sell, and exchange power at times when it is mutually beneficial to do so. TVA anticipates that there will be some quantities of non-firm spot market power available, even during peak periods, for the future. Spot market power is power that is available for purchase on the open market, usually surplus power that may be available at any given time from a generating utility. "Non-firm" implies that TVA will not pay capacity charges for the power, and other utilities will not guarantee that it is available.

For planning purposes, TVA has assumed the quantities and price shown in *Figure T3-11*. These blocks are representative of purchase power from neighboring utilities. Depending on the economic loading of the power system, these blocks can be used to offset more expensive internal generating resources.

TVA also anticipates that it will be able to make off-system sales because of differences in timing of system peaks between TVA and neighboring utilities. Over the Energy Vision 2020 study period, these interchange purchases and sales are anticipated to be roughly in balance.

TRANSMISSION SYSTEM

TVA's transmission system serves an area of more than 80,000 square miles, serving a population of approximately 7.6 million. The system includes approximately 16,000 miles of transmission line, including 9,800 miles of 161,000 volt lines and 2,400 miles of 500,000 volt lines.

The system is used to transmit power to 160 distributors of TVA power. These distributors include 50 electric cooperatives, 107 municipal electric systems, and 3 county-operated systems. TVA also directly serves over 60 large industries and Federal installations. In addition, the transmission system is connected directly with 13 neighboring utilities. These interconnections allow TVA to buy power from and sell power to other utilities and to wheel electricity from one utility to another using TVA's power transmission system.

Figure T3-12 lists the electric utilities with which TVA has exchange agreements and the number of interconnections TVA has with each.

TVA is a member of the Southeastern Electric Reliability Council, a voluntary industry oversight organization dedicated to promoting electric system reliability by identifying and enforcing good engineering and operating practices. The Southeastern Electric Reliability Council is a subgroup of the North American Electric Reliability Council, which provides oversight for the entire North American grid. Through these arrangements, TVA has access to emergency backup power.

FIGURE T3-12. Interchange with Neighboring Utilities

Neighboring Utilities with Transmission Ties	Interconnections
Associated Electric Cooperative Incorporated	1
Appalachian Power Company	7
Big Rivers Electric Cooperative ¹	7
Carolina Power & Light	1
Central Illinois Public Service	1
East Kentucky Power Cooperative	6
Electric Energy, Inc. (DOE Paducah)	8
Energy Services (Arkansas Power & Light and Mississippi Power & Light Co.)	6
Kentucky Utilities Company	8
Louisville Gas & Electric Company	1
Nantahala Power & Light Company	1
Southern Company (Alabama Power and Georgia Power)	9
Union Electric	1
TOTAL	57

¹ Delivery points for power purchased by Big Rivers from the Southeastern Power Administration.

TVA has the capability to exchange power with 13 neighboring utilities which allows power to be bought, sold, or wheeled to meet utility needs.

362 Binkley Dr.
Nashville, Tn. 37211
October 20, 1995

Mr. John M. Hoskins, Vice President & Treasurer
Tennessee Valley Authority
400 West Summitt Hill Rd.
Knoxville, Tn. 37902-1499

Dear Mr. Hoskins:

Thank you for your letter of September 28, 1995 responding to my request for information concerning TVA's decommissioning fund. I am afraid the letter raises further questions.

I notice in TVA's "Energy Vision 2020" (Draft, volume 2, dated 7/95, page T3.8) the following:

"TVA has established a nuclear decommissioning fund for all of its operating nuclear reactors. Investments of power funds have been made since 1982 to provide for the accumulation of funds for decommissioning nuclear plants. By September 1993, the lowest interest rate environment in 20 years resulted in a situation where the market value of the decommissioning investment was significantly higher than their book value of \$210 million. TVA elected to exercise the flexibility of the internal fund, and sold the investments through a competitive bid for \$373 million.

"TVA elected to return the proceeds to the decommissioning fund over a three year period beginning in fiscal year 1994. At the end of fiscal year 1994, the fund had \$150 million. Plans are to add an additional \$100 million by the end of fiscal year 1995, and an additional \$123 million by the end of fiscal year 1996."

Your letter stated:

"TVA sold the \$210 million of investments in this fund in 1993 due to market conditions that created an unusual opportunity for a significant gain in these securities. TVA used the proceeds of this sale for the

page 2

power program. This fund was replenished in 1994 and 1995.

"If TVA had maintained the original investment portfolio, it would currently have a balance of \$245 million. All of TVA's decommissioning investments have been in high quality fixed income investments."

Why does The Energy Vision 2020 document say \$373 million and your letter says \$210 million?

If the fund or funds had to be sold to realize the appreciation, why were the proceeds not immediately reinvested as good management of the decommissioning fund would dictate, instead of being put in the power program? If it was sold and immediately reinvested, what would be the value of the fund today?

How did you arrive at the conclusion of your letter that the fund would be worth only \$245 million if it had been left alone, and why is the balance currently \$261 million?

If in fact the fund was worth only \$210 million, who bought it for \$373 million? Was the \$210 million the amount of TVA money that had been invested since 1982 that had grown to \$373 million, or was the current value \$210 million and by competitive bid some entity paid TVA \$373 million? Who would have made such a bad financial move, and why would they do it? Specifically, who did purchase it?

If in fact the decommissioning fund was invested in high quality fixed income investments and had grown to a value of \$373 million when it was sold in 1993, as the Energy Vision says, how much would it have been worth at the end of fiscal year 1996 versus how much it will be worth with the repayment plan as outlined in Energy Vision 2020?

Are you still following the plan outlined in Energy Vision 2020, or have you modified that repayment schedule?

Did you inform the NRC of your plans to empty the decommissioning fund in 1993 and add the proceeds to the

Page 3

power program? Did they give you a written authorization to do this?

How is this fund going to be adequate to decommission three units at Brown's Ferry and two units at Sequoyah? How much more per year will you add to include the decommissioning costs of Watts Bar?

What is the formula that you used to determine how much you will need to decommission each unit? When do you anticipate decommissioning each unit? What are your plans for disposing of the radioactive waste that is accumulating at each reactor site, both in and out of the spent fuel pool, when the time comes to decommission each unit? In effect, the whole plant will be waste, so just how do you plan to dispose of it and clean up the entire site?

Enclosed is Appendix A from MSB Energy Associates report entitled TVA Watts Bar Unit 1 Decommissioning Cost Estimates. How do your guidelines, formulas, calculations, and assumptions compare with theirs?

Sincerely,



Jeannine Honicker

Encl:

C: Dr. Shirley Jackson, Chairperson, NRC
Mr. Peter S. Tam, Sr. Project Mgr., NRR, NRC
Mr. J. D. Lee, Esquire
Mr. Clifford Honicker
Ms. Jackie Kittrell, Esquire
Ms. Helen deHaven, Esquire
Representative Bob Clement
Senator Fred Thompson
Senator Bill Frist
TVA Board of Directors
et al

APPENDIX A

TVA Watts Bar Unit 1 Decommissioning Cost Estimates

Prepared for Greenpeace
by David A. Blecker - MSB Energy Associates, Inc.
August 10, 1995

Summary:

A review of current literature and cases leads to the following estimate of Watts Bar Unit 1 (WB1) decommissioning costs (expressed in 1994 dollars for a 1996 shutdown):

Minimum Cost: \$475 million
Maximum Cost: \$665 million

These estimates do not include contingency factors for unknown and unquantifiable events. Contingency factors are designed to include such events as labor problems, weather stoppages, equipment/tool problems, regulatory changes and procedural changes. In New York, the Shoreham decommissioning study added a 40.7% contingency factor and in 1987, the California Energy Commission ordered a 50% contingency factor for the Diablo Canyon decommissioning. If a 50% contingency factor is added to the WB1 decommissioning cost estimate, the costs increase to:

Minimum Cost: \$713 million
Maximum Cost: \$996 million

An year by year estimate of the decommissioning costs that would be incurred if TVA delays shutting down WB1 are shown on the attached table.

These numbers were derived using three methods described below.

Method 1 uses a simple linear regression solely as a function of time based on an analysis of 157 nuclear decommissioning cost estimates. Its formula is given by:

$$\text{Cost (\$/kW)} = 71.92 + (18.27 * \text{year})$$

Method 2 uses also uses a linear regression but adds variables for time, plant type (PWR or BWR), sister units and plant size. The following regression equation was used:

$$\text{Cost (\$/kW)} = 256.75 + (20.43 * \text{year}) - 38.39 - 57.16 - (0.1538 * \text{MW capacity})$$

Method 3 is based on the arithmetic average of 14 nuclear decommission cost estimates and is given by the expression:

$$\text{Cost (\$/kW)} = 465 \text{ per kW}$$

Assumptions:

Typical NRC operating permit license lifetime equals 40 years however no nuclear plant has ever reached its allowed end-of license period. The oldest operating reactor in the U.S. is Big Rock Point 1 in Michigan at 30 years. Fifteen reactors have been shut down early with economic factors most often cited as the predominant cause. For planning purposes, 30 years is the recommended "energy producing life" for operating nuclear reactors.

The numbers presented herein assume TVA would start Watts Bar 1, and then shut it down in 1996 as its true costs become apparent. For an early shutdown like this, Methods 1 and 2 are the appropriate values to use. If the shutdown occurs later in time, then Method 3 which includes the effects of inflation and a real escalation rate should be used.

If TVA fuels Watts Bar 1, will they incur decommissioning costs?

Yes, any fuel load-out and associated system testing will force TVA to incur decommissioning costs.

If WB1 is fueled and decommissioning costs will be incurred, why not just let the plant run and pay for it later?

The cost to decommission a nuclear plant increases with the amount of time the plant has been fueled and operating. If Watts Bar 1, is fueled when planned, it will incur some decommission costs even if TVA decides to shut it down before commercial operation. But the longer it remains fueled and is subject to low- and high-power testing, the more expensive it will be to decommission the unit. This is a result of several factors: 1) Hot plant operation consumes fuel which in turn generates high and low level radioactive wastes. 2) Neutron bombardment (a byproduct of fission) of the containment structure causes the structure's metals and concrete to become radioactive, and 3) Low levels of tritium are produced from neutron bombardment of hydrogen in the primary cooling system resulting in a contamination of the primary cooling loop components.

Studies have indicated that the escalation rate of decommissioning cost estimates has run as high as three to 9 percent over the rate of general inflation. This means that each year TVA waits to decommission WB1, the expected costs to decommission the plant will rise exponentially. To demonstrate the effect of an escalation rate in this range, consider that the value of an investment made today will double in only 10 years if it is earning seven percent annually.

Two factors should be clear:

- 1) It will be less expensive to shut down Watts Bar 1 if it has not been fueled
- 2) Even is it is fueled and tested, it will still be significantly less expensive to shut it down sooner rather than later.

Won't TVA's payments to its nuclear decommissioning fund cover those costs?

A preliminary review of TVA's financial statements indicate it is highly unlikely that TVA is accurately funding decommissioning accounts. The TVA 1994 Annual Report lists a fund balance of \$264 million. Additionally, the TVA's Annual Report of Public Electric Utilities states that the decommissioning provision for Brown's Ferry is \$190 million/unit and \$150 million for each Sequoyah unit (1990 dollars). If TVA's WB1 decommissioning estimates are similar, they will clearly encounter severe financial problems at the plant's end-of-life.

Why is decommissioning cost estimation important?

Accurately accounting for nuclear decommissioning costs is important for several reasons. First and foremost is so that TVA can establish and properly fund decommissioning accounts now to ensure the required funds are available when they are needed. Failure to do so may result in huge rate increases for TVA customers or Federal bailouts at the time of decommissioning. The second reason is so that electricity costs and rates accurately reflect the full cost of generating electricity from nuclear power.

Data sources:

- State of New Hampshire, Nuclear Decommissioning Finance Committee, Docket No. 93-01. Prepared testimony of Bruce Biewald and William W. Dougherty on behalf of the Office of Consumer Advocate. September 14 1994.
- The Energy Journal. Volume 12, Nuclear Decommissioning Issue. 1991.
- EIA-412. TVA. Annual Report of Public Electric Utilities. 1993.

Appendix A

WATTS BAR UNIT 1 DECOMMISSIONING COST ESTIMATES							
Unit Size	1270	MW			Real Escalation:	2.00%	
InService	1996				Contingency Factor:	50.00%	
Inflation	4.0%						
		(Real 1994 \$)		(Real 1994 \$)		(Nominal 1994 \$)	
OP Year	CY	Method 1 - base	+ contingency	Method 2	+ contingency	Method 3	+ contingency
0	1996	\$ 555,420,831	\$ 833,131,246	\$ 475,412,825	\$ 713,119,237	\$ 664,543,931	\$ 996,815,896
1	1997	\$ 578,624,760	\$ 867,937,140	\$ 501,354,353	\$ 752,031,529	\$ 704,948,202	\$ 1,057,422,303
2	1998	\$ 601,828,688	\$ 902,743,033	\$ 527,295,881	\$ 790,943,821	\$ 747,809,052	\$ 1,121,713,579
3	1999	\$ 625,032,617	\$ 937,548,926	\$ 553,237,409	\$ 829,856,113	\$ 793,275,843	\$ 1,189,913,764
4	2000	\$ 648,236,546	\$ 972,354,819	\$ 579,178,937	\$ 868,768,405	\$ 841,507,014	\$ 1,262,260,521
5	2001	\$ 671,440,474	\$ 1,007,160,712	\$ 605,120,465	\$ 907,680,697	\$ 892,670,640	\$ 1,339,005,961
6	2002	\$ 694,644,403	\$ 1,041,966,605	\$ 631,061,993	\$ 946,592,989	\$ 946,945,015	\$ 1,420,417,523
7	2003	\$ 717,848,332	\$ 1,076,772,498	\$ 657,003,521	\$ 985,505,281	\$ 1,004,519,272	\$ 1,506,778,909
8	2004	\$ 741,052,261	\$ 1,111,578,391	\$ 682,945,049	\$ 1,024,417,573	\$ 1,065,594,044	\$ 1,598,391,066
9	2005	\$ 764,256,189	\$ 1,146,384,284	\$ 708,886,577	\$ 1,063,329,865	\$ 1,130,382,162	\$ 1,695,573,243
10	2006	\$ 787,460,118	\$ 1,181,190,177	\$ 734,828,105	\$ 1,102,242,157	\$ 1,199,109,397	\$ 1,798,664,096
11	2007	\$ 810,664,047	\$ 1,215,996,070	\$ 760,769,633	\$ 1,141,154,449	\$ 1,272,015,249	\$ 1,908,022,873
12	2008	\$ 833,867,975	\$ 1,250,801,963	\$ 786,711,161	\$ 1,180,066,741	\$ 1,349,353,776	\$ 2,024,030,664
13	2009	\$ 857,071,904	\$ 1,285,607,856	\$ 812,652,689	\$ 1,218,979,033	\$ 1,431,394,486	\$ 2,147,091,728
14	2010	\$ 880,275,833	\$ 1,320,413,749	\$ 838,594,217	\$ 1,257,891,325	\$ 1,518,423,270	\$ 2,277,634,905
15	2011	\$ 903,479,761	\$ 1,355,219,642	\$ 864,535,745	\$ 1,296,803,617	\$ 1,610,743,405	\$ 2,416,115,108
16	2012	\$ 926,683,690	\$ 1,390,025,535	\$ 890,477,273	\$ 1,335,715,909	\$ 1,708,676,604	\$ 2,563,014,906
17	2013	\$ 949,887,619	\$ 1,424,831,428	\$ 916,418,801	\$ 1,374,628,201	\$ 1,812,564,142	\$ 2,718,846,212
18	2014	\$ 973,091,548	\$ 1,459,637,321	\$ 942,360,329	\$ 1,413,540,493	\$ 1,922,768,041	\$ 2,884,152,062
19	2015	\$ 996,295,476	\$ 1,494,443,214	\$ 968,301,857	\$ 1,452,452,785	\$ 2,039,672,338	\$ 3,059,508,508
20	2016	\$ 1,019,499,405	\$ 1,529,249,107	\$ 994,243,385	\$ 1,491,365,077	\$ 2,163,684,417	\$ 3,245,526,625
21	2017	\$ 1,042,703,334	\$ 1,564,055,001	\$ 1,020,184,913	\$ 1,530,277,369	\$ 2,295,236,429	\$ 3,442,854,644
22	2018	\$ 1,065,907,262	\$ 1,598,860,894	\$ 1,046,126,441	\$ 1,569,189,661	\$ 2,434,786,804	\$ 3,652,180,206
23	2019	\$ 1,089,111,191	\$ 1,633,666,787	\$ 1,072,067,969	\$ 1,608,101,953	\$ 2,582,821,842	\$ 3,874,232,762
24	2020	\$ 1,112,315,120	\$ 1,668,472,680	\$ 1,098,009,497	\$ 1,647,014,245	\$ 2,739,857,410	\$ 4,109,786,114
25	2021	\$ 1,135,519,048	\$ 1,703,278,573	\$ 1,123,951,025	\$ 1,685,926,537	\$ 2,906,440,740	\$ 4,359,661,110
26	2022	\$ 1,158,722,977	\$ 1,738,084,466	\$ 1,149,892,553	\$ 1,724,838,829	\$ 3,083,152,337	\$ 4,624,728,506
27	2023	\$ 1,181,926,906	\$ 1,772,890,359	\$ 1,175,834,081	\$ 1,763,751,121	\$ 3,270,607,999	\$ 4,905,911,999
28	2024	\$ 1,205,130,835	\$ 1,807,696,252	\$ 1,201,775,609	\$ 1,802,663,413	\$ 3,469,460,966	\$ 5,204,191,448
29	2025	\$ 1,228,334,763	\$ 1,842,502,145	\$ 1,227,717,137	\$ 1,841,575,705	\$ 3,680,404,192	\$ 5,520,606,288
30	2026	\$ 1,251,538,692	\$ 1,877,308,038	\$ 1,253,658,665	\$ 1,880,487,997	\$ 3,904,172,767	\$ 5,856,259,151

NOTES:

Method 1: Simple regression.

Method 2: Multi-variable regression.

Method 3: 1993 arithmetic average.

All costs expressed in 1994 dollars

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-95-0933

LOGGING DATE: Oct 27 95

ACTION OFFICE: EDO

Ref. EDO 778

AUTHOR: DOLPH HONICKER
AFFILIATION: TENNESSEE

Russell, NRR
Cys: Taylor

ADDRESSEE: JOHN HOSKINS

Milhoan
Thompson
Blaha

LETTER DATE: Oct 22 95

FILE CODE: SEC-2-10
Paperiello
Ebnetter

SUBJECT: UNDER THE FOIA, REQUEST ALL DOCS DEALING WITH THE
SELLING OF TVA'S NUCLEAR PLANT DECOMMISSIONING FUND
IN 1993

Cyr

ACTION: Appropriate

DISTRIBUTION:

SPECIAL HANDLING: NONE

CONSTITUENT:

NOTES:

DATE DUE:

SIGNATURE: .
AFFILIATION:

DATE SIGNED:

THE TENNESSEAN

1100 BROADWAY
NASHVILLE, TENNESSEE 37203

"The World In Five Minutes"
DOLPH HONICKER

October 22, 1995

John M. Hoskins, Vice President and Treasurer
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tn. 37902-1499

Dear Mr. Hoskins:

Under the Freedom of Information Act, I request all documents dealing with the selling of TVA's nuclear plant decommissioning fund in 1993.

In a September 28, 1995 letter to my wife, Jeannine Honicker, you state:

1. TVA maintains a decommissioning fund that will be used to clean up all the areas exposed to radioactivity once the operating license of a nuclear plant expires.
2. This fund currently has a balance of \$261 million.
3. TVA sold the \$210 million of investments in this fund in 1993 due to market conditions that created an unusual opportunity for a significant gain in these securities.
4. TVA used the proceeds for the power program.
5. This fund was replenished in 1994 and 1995.
6. Next year TVA will make further contributions ...
7. You fail to state the specific dollar amount for which these investments were sold, stating only that the securities brought TVA a "significant gain." But then you note: "If TVA had maintained the original investment portfolio, it would currently have a balance of \$245 million."
8. All of TVA's decommissioning investments have been in high quality fixed income investments.

Now, sir, you are vice president and treasurer, but your numbers don't jibe with the numbers in TVA's *Energy Vision 2020* (draft, vol. 2, dated 7/95, pg. T3.8). You say these

"high quality fixed income investments" for TVA's decommissioning program would be worth \$245 million if held today. But TVA's 2020 report plainly states the investments were sold "through a competitive bid for \$373 million."

9. You say the decommissioning fund was replenished in 1994 and 1995, currently has a balance of \$261 million and that TVA will make "further contributions" next year.

After plowing the \$373 million profits into the power program, 2020 says, "TVA elected to return the proceeds to the decommissioning fund over a three-year period beginning in fiscal year 1994. At the end of fiscal year 1994, the fund had \$150 million. Plans are to add an additional \$100 million by the end of fiscal year 1995, and an additional \$123 million by the end of fiscal year 1996."

I hope you can understand how puzzled I become when (a) I try to reconcile your numbers with those in the 2020 report and (b) wonder why you as vice president and treasurer did not immediately reinvest that \$373 million in 1993 to build up the decommissioning fund further. If the \$373 million were invested at 8% compounded over a 2-year period, the decommissioning fund - if my math is correct - would have \$435,067,600, instead of its 1996 \$373 million value.

I specifically request documents showing who bought these securities, book-valued at \$210 million, for \$373 million, and why the proceeds went into the power fund instead of being reinvested in the decommissioning fund, which, according to non-TVA experts, falls far short of meeting TVA's needs if Browns Ferry or Sequoyah should have a rapid reactor disassembly forcing either to be decommissioned.

I request further that all copying fees be waived.

Sincerely,



Dolph Honicker

c: Dr. Shirley Jackson, Chair, NRC
Frank Sutherland
J.D. Lee, Esq.
Jackie Kittrel, Esq.
Helen deHaven, Esq.
Rep. Bob Clement
Sen. Fred Thompson
Sen. Bill Frist
Rep. Bart Gordon
Rep. Zack Wamp
Rep. Harold Ford
Ann Harris
Danielle Droitsch
Beth Zilbert
Steven Smith
Craven Crowell