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**Re: Comments on Draft NUREG/CR-5884,
"Revised Analyses of Decommissioning for the
Reference Pressurized Water Reactor Power Station"
58 Fed. Reg. 54,385 (Oct. 21, 1993)**

Dear Mr. Meyer:

On October 21, 1993, the Nuclear Regulatory Commission ("NRC") published in the Federal Register a notice of the availability of, and opportunity for public comment on, draft NUREG/CR-5884, "Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station." 58 Fed. Reg. 54,385 (1993). The draft report, prepared by Battelle Pacific Northwest Laboratory ("PNL"), documents PNL's recent review and update of earlier PNL studies of technology, safety, and cost issues associated with the decommissioning of a large pressurized water reactor ("PWR") nuclear power plant. The period for comment on draft NUREG/CR-5884 was extended through February 15, 1994. 58 Fed. Reg. 66,386 (1993).

On behalf of the Utility Decommissioning Group ("Group"),^{1/} we submit the following comments on draft NUREG/CR-5884.

^{1/} The members of the Utility Decommissioning Group are Duke Power Company; Florida Power and Light Company; Northeast Utilities; Texas Utilities Electric Company; and Virginia Electric and Power Company. Each Group member company owns or operates one or more nuclear power plants licensed by the NRC and subject to NRC regulation.

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Comments on Draft NUREG/CR-5884

1. **The NRC Should Reiterate That the Certification Amount in 10 C.F.R. § 50.75 Is Not a Cost Estimate But Rather a Minimum Level of Funding Deemed Appropriate to Provide Reasonable Assurance of Utility-Licensee Capabilities to Pay for Decommissioning to Ensure Protection of the Public Health and Safety**

To avoid confusion as to the regulatory significance of the updated PNL study, the NRC should reiterate the purpose of the certification amounts in the decommissioning rule (10 C.F.R. § 50.75(c)(1)) and the distinction between a cost estimate and a certification amount. As the Commission explained in the Statement of Considerations accompanying the 1988 rule:

the amount listed [in the regulation] as the prescribed [certification] amount does not represent the actual cost of decommissioning for specific reactors but rather is a reference level established to assure that licensees demonstrate adequate financial responsibility . . . thus providing adequate assurance . . . that the facility would not become a risk to public health and safety when it is decommissioned.

53 Fed. Reg. 24,018, 24,030 (1988).

While the study may provide a more accurate (i.e., updated) prediction of decommissioning costs, differences between the old and new estimates do not necessarily implicate the validity of the existing certification amounts. As explained by the Commission, the certification approach is only the "first step" in providing reasonable assurance of availability of funds for decommissioning. The second step occurs five years prior to end-of-life, when licensees must submit a site-specific estimate of the cost of decommissioning. 53 Fed. Reg. at 24,030-31. The Commission determined that "[m]ore detailed consideration by NRC early in life beyond the certification is not considered necessary because of the [two-step process] discussed above." 53 Fed. Reg. at 24,031. Clearly, the Commission did not intend to require the development, or NRC review, of a detailed cost estimate until near the end of reactor life.

In view of the purpose of the certification amounts, as explained above, the revised PNL cost estimate does not necessarily

require revision of the certification amounts in 10 C.F.R. § 50.75. In fact, since the purpose of certification is to provide reasonable assurance of availability of funds, an NRC decision to retain a minimum certification amount that may be somewhat higher than an amount supported by the PNL study would not undercut the purpose of the rule.

2. The NRC Should Clarify Its Intended Use of NUREG/CR-5884

The NRC should explain how the revised PNL study will be used and should consider whether the intended uses are appropriate. Draft NUREG/CR-5884 states that the study

will be used to provide much of the basis information needed by the NRC Staff to perform their reviews of the adequacy and reasonableness of the licensee submittals, and will be used to provide the basis for potential revisions to the funding certification amounts to be specified in 10 CFR 50.75(c).

Draft NUREG/CR-5884 at xv (emphasis added).

The NRC should explain what "licensee submittals" will be reviewed using this information. Licensees of operating plants have already submitted certification letters in accordance with 10 C.F.R. §§ 50.33(k) and 50.75(b). No further licensee submittals would be necessary until the preliminary decommissioning plan is submitted approximately five years prior to the end of plant operation (10 C.F.R. § 50.75(f)). In fact, while site-specific decommissioning cost estimates must be submitted at that time, it is not clear that it would be appropriate to use the Trojan-specific analysis in draft NUREG/CR-5884 to review those site-specific estimates.

In considering whether there are appropriate applications for the study, the NRC should be mindful of the difference between certification amounts and cost estimates. The notice of availability for draft NUREG/CR-5884 explains that the report "should be viewed as a first step in developing a more parametric approach to estimating decommissioning costs" and solicits comments on the usefulness of the report in connection with the development of case-specific parametric analyses. 58 Fed. Reg. 66,386. At the same time, the notice states that the "results of these studies, including input from the public, will be used by the NRC staff as part of its effort to determine if revisions of the decommissioning regulations are warranted." 58 Fed. Reg. 66,386. As discussed

above, these two objectives are distinct and to some extent incompatible. While one objective of the study might be to add precision to cost-estimating techniques, such precision is not necessary in establishing minimum certification levels as used in the NRC regulatory framework for decommissioning.

3. The NRC Should Attempt to Reconcile the Apparent Discrepancy Between the PNL Cost Estimate and Recent Site-Specific Cost Estimates For Trojan and Other Plants

In view of the substantial discrepancy between the PNL estimate and recent site-specific estimates of the cost of the radiological portion of decommissioning for Trojan and other plants, the NRC should review the methods and assumptions employed by PNL. (In this regard, the notice of availability of draft NUREG/CR-5884 states that "[p]ublication of the reports does not necessarily constitute NRC approval or agreement with the information cited therein.") A recent site-specific study reportedly estimated the cost of radiological decommissioning at Trojan at \$226 million. This is over \$100 million more than the revised PNL estimate for the DECON option (\$124.6 million). See draft NUREG/CR-5884 at xix. The NRC should consider conducting a survey of recent site-specific estimates for PWRs, to establish a baseline for comparison with the PNL analysis, in order to identify the areas of divergence.

4. The NRC Should Address Several Potential Inconsistencies Between the Draft Study and Prior NRC Regulatory Positions or Assumptions Regarding Decommissioning

a. To Assure Clarity in the Purpose and Scope of the PNL Studies and Their Continued Validity for NRC Decommissioning Funding Planning Purposes, the NRC Should Identify More Clearly the Factors That Resulted in a Reduced Cost Estimate

The NRC should identify more clearly those factors that resulted in a cost estimate that is lower than the estimate used to support the 1988 decommissioning rule. "Major factors" considered in the cost estimate review are discussed on page 1.2 of draft NUREG/CR-5884, which states that "[t]he above factors have combined to . . . increase the costs of the viable decommissioning alternatives examined in this report" (emphasis added). Yet, the revised cost estimates reflected in Table ES.1 of the draft report appear to be lower, when adjusted for inflation, than the corresponding estimates used to support the 1988 rule. See NUREG/CR-0310, Addendum 4, July 1988, at 2.3. It would be helpful to include in the study an indication of whether each of the

various factors considered (e.g., waste disposal, services, waste packaging, salaries, transport) tended to increase or decrease the earlier cost estimate (i.e., a "side-by-side comparison" of the various components of the NUREG/CR-0310 and NUREG/CR-5884 cost estimates).

b. The Basis for the Redefined Phases of DECON, SAFSTOR, and ENTOMB Should Be Articulated

The definitions of DECON, SAFSTOR, and ENTOMB on pages 1.3 and 1.4 of draft NUREG/CR-5884 appear to create artificial separations of various stages of decommissioning, in a manner which could significantly affect the validity of the updated cost estimate. The NRC should explain the reasoning behind, or regulatory position which necessitates, the separation of these phases of decommissioning.

For example, the draft study assumes that the spent fuel pool must be emptied before decontamination and dismantlement can commence. The assumption appears inconsistent, for example, with NRC policy on decommissioning activities that can be undertaken prior to Decommissioning Plan approval and with decommissioning precedent set by prematurely shut down plants such as Shoreham and Yankee Rowe. As discussed further below, an assumption that various phases of decommissioning cannot proceed in parallel may unduly inflate the overall cost estimate.

c. The Spent-Fuel-Pool-Cooling Assumption May Be Overly Conservative, Which Could Undercut Any Generic Applicability of the Study

The draft study assumes fuel pool operation for five to seven years following plant shutdown. In support of this assumption, the NRC cites 10 CFR 961, App. E, which specifies that, in a standard DOE contract for spent fuel disposal, the minimum cooling period for "standard fuel" is five years.

Some Group member utilities have indicated that this assumption is invalid for their plants. One member, for example, has determined that its spent fuel pool could be emptied as early as two years following permanent shutdown, using such techniques as partial loading of dry storage casks. Other utilities that have similar capability will find this aspect of the PNL cost estimate inapplicable to their plants. (As the study recognizes elsewhere, for example, at a multi-unit site spent fuel could possibly be transferred to an adjacent unit's pool (p. 2.8).) The draft study determines that operation of a spent fuel pool during SAFSTOR would cost about \$4 million per year (p. 1.3) and that the 5-to-7-year

storage assumption "results in major differences from the earlier estimates of both cost and doses" (p. 2.2). Because of the significant contribution of this element to the overall cost estimate, such assumptions, if inapplicable to other plants, could undercut the utility of the study to support a generic determination of the adequacy of the minimum certification levels.

In addition, the draft report misinterprets the DOE contract provision as a requirement that fuel be stored in a pool for at least five years before being put in dry storage (p.xvi). This is an inappropriate application of the DOE standard contract provision. The NRC has studied in other contexts the necessary duration of fuel pool storage (e.g., in connection with the promulgation of Part 72). Rather than relying on the DOE provision, the NRC should consider such studies here, while allowing licensees sufficient flexibility to develop their own analyses and timetables for spent fuel disposition.

5. Several Aspects of the Updated Study Appear To Be Inconsistent With the Decommissioning Rule

Whether or not the NRC ultimately elects to use NUREG/CR-5884 as the basis for revision of the certification amount in 10 C.F.R. § 50.75, it should recognize that several aspects of the study appear to be inconsistent with the NRC's decommissioning rule or associated policies. The NRC should acknowledge that to the extent such aspects would be considered in the context of NRC decommissioning, certain regulatory or policy changes would need to be implemented. We do not comment here on the desirability of undertaking such regulatory revisions.

- **"pre-shutdown planning/engineering and regulatory reviews" as the first stage of decommissioning**

While NUREG/CR-0310 considered "pre-decommissioning engineering" costs as decommissioning costs, draft NUREG/CR-5884 indicates that additional pre-shutdown planning and regulatory reviews are now considered part of decommissioning and that related expenses, not considered in NUREG/CR-0310, have been included in the revised cost estimate (pp. xvii, 3.4). The NRC should state whether this first phase of decommissioning as defined in the draft report is consistent with the NRC's definition of decommissioning. If not, this aspect of the revised cost estimate should be revisited. If so, the Commission should reconsider the need for special guidance on "de minimis" decommissioning fund withdrawals prior to Plan approval. (See Draft Policy Statement on Use of Decommissioning Trust Funds Before Decommissioning Plan Approval, 59 Fed. Reg. 5216 (1994).) Funds obviously will be expended in

developing a proposed Decommissioning Plan and other NRC submittals associated with plant shutdown and decommissioning, prior to Plan approval. If these pre-shutdown and post-shutdown planning and regulatory activities are part of decommissioning, licensees should be able to undertake such activities, and withdraw decommissioning funds to support such activities, without prior NRC review or approval.

- **300-year SAFSTOR**

The draft report suggests that 300-year ENTOMB is being considered as an additional decommissioning option. Under this option, no radiation survey would be required at the end of the SAFSTOR period in order to obtain license termination.

While this option may merit further consideration, it is not consistent with existing decommissioning regulations. For example, 10 C.F.R. § 50.82 provides that a decommissioning alternative will be acceptable to the NRC "if it provides for completion of decommissioning within 60 years" and that an alternative which provides for completion of decommissioning beyond 60 years will be considered "only when necessary to protect the public health and safety." 10 C.F.R. § 50.82(b)(1)(i). In addition, the NRC's decommissioning regulations require formulation, execution, and approval of a final radiation survey prior to license termination. See, e.g., 10 C.F.R. § 50.82(b)(3), (f). The NRC should make clear that PNL's analysis of this alternative, and the corresponding cost estimate, is hypothetical in the sense that it is not an available option under the current regulatory framework (i.e., rulemaking would be required to facilitate its use by licensees).

- **spent fuel storage-related costs**

The study treats as decommissioning costs 10% of costs incurred during the 5-to-7 year post-shutdown spent-fuel-cooling period (draft NUREG/CR-5884 at 2.3, 3.12). This analysis does not appear to be entirely consistent with the NRC's decommissioning rule. The NRC's definition of decommissioning activities specifically excludes the removal and disposal of spent fuel, which are considered operational activities. 53 Fed. Reg. at 24,019. The study apparently assumes that 10% of the costs incurred during this fuel-cooling period would be incurred despite the presence of fuel in the pool and therefore are legitimately considered decommissioning expenses. The basis for this allocation between "operations" and "decommissioning" is unclear and, in any event, would seem to have little regulatory significance. These issues should be addressed as part of the NRC's ongoing assessment of

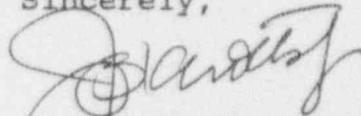
whether spent fuel storage and disposal costs should be included in decommissioning costs. See 58 Fed. Reg. 34,947, 34,948 (June 30, 1993).

**6. The Treatment of Property Taxes and Insurance
in the Revised Adjustment Formula Should Be Clarified**

If the NRC chooses to revise the adjustment formula in 10 C.F.R. § 50.75(c)(2), in the manner described on pages 3.60 and 3.61 of the draft report, it should clarify its treatment of property tax and nuclear insurance costs. If the point is that insurance and property tax costs following cessation of operations will not be ordinarily subject to inflation but will be lower than during operations, then this should be spelled out.

We appreciate the opportunity to comment on these matters of importance to the decommissioning process. We look forward to discussing these matters further as the NRC's review of its decommissioning cost estimate studies continues.

Sincerely,



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