



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

ACRSR-1557

PDR

February 17, 1994

Mr. James M. Taylor
Executive Director for Operations
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Taylor:

SUBJECT: THREE ISSUES RELATING TO THE 10 CFR PART 52 DESIGN
CERTIFICATION PROCESS FOR ALWRs

During the 406th meeting of the Advisory Committee on Reactor Safeguards, February 10-11, 1994, we discussed three issues that relate to the 10 CFR Part 52 design certification process for Advanced Light Water Reactors (ALWRs): (1) the staff's implementation of Reliability Assurance Program (RAP), (2) the staff's proposed use of "starred" Tier 2 Certified Design Material (CDM), and (3) Technical Specification requirements for onsite power sources for Evolutionary Light Water Reactors (ELWRs). We are commenting on these matters at this time because we believe that they need timely senior staff management attention. We had the benefit of the documents referenced.

ALWR Reliability Assurance Program

During our January 6-7, 1994 meeting, we heard a staff presentation on the RAP that is being required as a part of the design certification of ALWRs. The RAP requires both a design phase and an operational phase reliability assurance program (DRAP and ORAP). In addition, we reviewed your memorandum of August 2, 1993, in response to Commissioner Remick's questions on this subject. We also understand that OGC has concerns regarding the need for the DRAP and ORAP.

In our letter to you dated October 15, 1992, concerning "Proposed Guidance for Implementation of the Maintenance Rule," we noted that the RAP being required of ALWR COL holders ". . . will involve the establishment of a third kind of maintenance program (in addition to the maintenance programs required by the Maintenance Rule and the License Renewal Rule)." We suggested that consistent staff guidance was needed on the elements of an acceptable program that will satisfy these three sets of requirements. We have subsequently learned that a similar situation exists in the relationship between RAP and the quality assurance requirements of Appendix B to 10 CFR Part 50.

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While we agree that PRA insights with respect to the reliability of risk significant structures, systems and components (SSCs) should be a part of maintenance and quality assurance programs for ALWRs, we continue to question the need for a separate RAP. We believe that senior staff management should perform a high level review of the need for the RAP. The objective of such a review should be to determine if it is possible to integrate those unique requirements of RAP that have a valid safety basis into the implementation of existing programs required for ALWRs (the Maintenance Rule, the License Renewal Rule, and Appendix B to 10 CFR Part 50).

The following aspects of RAP are of particular concern to us:

- The staff appears to believe that risk-significant SSCs should be given some sort of "special consideration" during the detailed design and procurement phases of an ALWR plant. It is not clear to us how the design engineering organization of a COL holder will be able to demonstrate that it has given "special consideration" to the procurement of risk-significant SSCs.
- The staff has not made it clear how the COL holder will develop reliability monitoring programs that will demonstrate that risk-significant SSCs are operated and maintained consistent with the PRA assumptions during the operational life of the plant. Demonstration of the reliability of risk-significant ALWR SSCs in any meaningful manner is clearly not feasible.

ALWR "Starred" Tier 2 Material

The staff has recently told us of its plan to designate certain Tier 2 CDM in the certification of the General Electric Nuclear Energy ABWR, and presumably in the certification of other ALWRs, as material which could not be changed by a COL holder under the 10 CFR 50.59 - like process, but would require prior review and approval by the staff. This will, in effect, create a three tier design certification process. Although there may be a valid need for this kind of restriction in certain cases, we recommend that senior staff management review each application of such "starred" Tier 2 CDM to ensure that the process is not being used in an arbitrary and capricious manner by the staff. In our view, the existing 10 CFR 50.59 - like process that a COL holder must use in order to change Tier 2 material generally provides the needed check and balance on changes to Tier 2 material.

ELWR Technical Specification Requirements for Onsite Power Sources

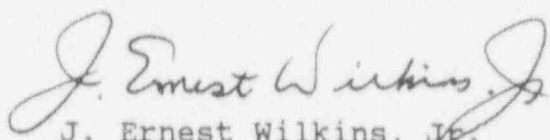
The staff informed us during our ABB-CE System 80+ Subcommittee meeting of December 8, 1993, that it is still considering Technical Specification requirements for onsite power sources for ELWRs. (A

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similar, but somewhat different, issue exists with respect to the onsite power sources for the "passive" LWRs.) We have been interested for some time in the question of what credit will be given for the ELWR Alternate AC (AAC) source when one of the 1E Emergency Diesel Generators (EDGs) is out of service. Unlike the 1E EDGs, the AAC sources in the ELWR plant designs are not seismically qualified nor are they located within a structure hardened against the effects of tornados or hurricanes. This is particularly an important issue for the ABB-CE System 80+, where the onsite power sources consist of two 1E EDGs and a single AAC. If one of the 1E EDGs is out of service for maintenance, loss of offsite power (LOOP) would make the unit vulnerable to the single failure of the remaining 1E EDG under design basis accident conditions. Unless credit is given for the AAC (which may be damaged as a result of a seismic event or tornado or hurricane that caused the LOOP), the unit would have to be shut down whenever extended maintenance is performed on either of the 1E EDGs during power operation.

It appears to us that staff resolution of this matter is long overdue and that senior staff management attention to this issue is needed. Further, we believe that the Technical Specification Requirements for onsite power sources for ELWRs should be based on appropriate probabilistic risk considerations.

Sincerely,



J. Ernest Wilkins, Jr.
Chairman

References:

1. Memorandum dated August 2, 1993, from James M. Taylor, NRC Executive Director for Operations, to Commissioner Ramick, Subject: SECY-93-087: Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor Designs
2. Report dated October 15, 1992 from David A. Ward, Chairman, ACRS to James M. Taylor, NRC Executive Director for Operations, Subject: Proposed Guidance for Implementation of the Maintenance Rule, 10 CFR 50.65
3. U.S. Nuclear Regulatory Commission, "Advance Copy of Safety Evaluation Report Related to the Certification of the Advanced Boiling-Water Reactor Design," December 1993