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POLICY ISSUE

December 11, 1990

SECY-90-401

For: The Commission (NEGATIVE CONSENT)

From: James M. Taylor
Executive Director for Operations

Subject: DRAFT SAFETY EVALUATION REPORTS FOR CHAPTERS 6, 7, 8, 9, 12, AND 13 OF THE ELECTRIC POWER RESEARCH INSTITUTE'S ADVANCED LIGHT WATER REACTOR REQUIREMENTS DOCUMENT FOR EVOLUTIONARY REACTOR PLANT DESIGNS

Purpose: To inform the Commission of the staff's intent to issue the draft safety evaluation reports (DSERs) discussing the results of the staff's review of Chapters 6, 7, 8, 9, 12 and 13 of the Electric Power Research Institute's (EPRI's) Advanced Light Water Reactor (ALWR) Utility Requirements Document (Requirements Document) for evolutionary reactor plant designs.

Background: EPRI is preparing a compendium of technical requirements, referred to as the Advanced Light Water Reactor (ALWR) Utility Requirements Document. These requirements are applicable to the design of future ALWR power plants.

The Requirements Document consists of three volumes. Volume I, "ALWR Policy and Summary of Top-Tier Requirements" is a management-level synopsis of the Requirements Document, including the design objectives and philosophy, the overall physical configuration and features of a future nuclear plant design, and the steps necessary to take the proposed ALWR design criteria beyond the conceptual design state to a completed, functioning nuclear power plant. Volume II consists of 13 chapters and contains utility design requirements for an evolutionary nuclear power plant [up to approximately 1350 megawatt-electric (MWe)]. Volume III contains utility design requirements for nuclear plants for which passive features will be used in their designs (approximately 600 MWe).

The staff is preparing DSERs to discuss the results of its review of the original version of the Requirements Document for evolutionary designs. These chapters have been submitted by EPRI during the time period between June 1986 and October 1989.

NOTE: TO BE MADE PUBLICLY AVAILABLE WHEN THE FINAL SRM IS MADE AVAILABLE

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In September 1987, the staff issued the first DSER in this series which addressed the Requirements Document "Executive Summary" and Chapter 1, "Overall Requirements," regarding the overall objectives and requirements of the ALWR program for evolutionary plant designs. This DSER was modified in February 1988. Chapter 2, "Power Generation Systems," was evaluated in the second DSER, which was issued in February 1988. The third DSER, issued in May 1988, covered Chapter 3, "Reactor Coolant System and Reactor Non-Safety Auxiliary Systems." The fourth DSER, issued in June 1988, covered Chapter 4, "Reactor Systems." The fifth DSER, issued in February 1990, covered Chapter 5, "Engineered Safety Systems."

Discussion:

The staff has continued its review and has developed its DSERs pertaining to the following chapters of the ALWR Requirements Document for evolutionary reactor plant designs: Chapters 6, "Building Design and Arrangements," 7, "Fueling and Refueling Systems," 8, "Plant Cooling Water Systems," 9, "Site Support Systems," 12, "Radioactive Waste Processing Systems," and 13, "Main Turbine-Generator Systems."

In the staff requirements memorandum (SRM) of December 15, 1989, pertaining to SECY 89-334, the Commission directed that "The DSERs on the EPRI Requirements Document for both the evolutionary and the passive plant designs should be submitted to the ACRS for review and comment and to the Commission for information and for review and approval of policy issues for which the Commission has not previously decided." This direction is included as an element of the process described in SECY 90-065 regarding resources and schedules for evolutionary and passive ALWRs. In accordance with this directive, enclosed are the DSERs on Chapters 6, 7, 8, 9, 12, and 13 of the EPRI ALWR Requirements Document for evolutionary reactor plant designs. During its review of Chapters 6, 7, 8, 9, 12, and 13 of the Requirements Document for evolutionary reactor plant designs, the staff has not identified any issues that involve policy questions for the technical areas discussed in these chapters. However, certain technical issues still have to be resolved before the staff can complete its review of these chapters. These issues are discussed in detail in the enclosed reports (see Section 1.4 of each report for a summary of the technical issues applicable to each chapter).

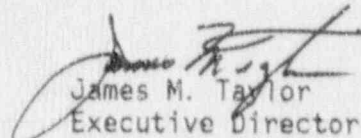
In addition, the staff is developing DSERs on Chapters 10 and 11, and Appendix A to Chapter 1 of the EPRI ALWR Requirements Document. Upon completion of its review of responses to outstanding requests for additional information, the staff will forward its DSERs to the Commission in accordance with the process outlined in SECY 90-065 which includes the guidance in the Commission's SRM of December 15, 1989.

On September 7, 1990, EPRI submitted the rollup document on the design criteria for evolutionary plants. After EPRI has submitted responses to the enclosed DSERs, the staff will issue a final SER to discuss its conclusions regarding its review of EPRI's responses and the rollup document submitted on September 7, 1990. The enclosed DSERs do not address the rollup document submitted on September 7, 1990.

Conclusions: The staff concludes that the enclosed DSERs on Chapters 6, 7, 8, 9, 12, and 13 of the EPRI ALWR Requirements Document for evolutionary reactor designs should be forwarded to EPRI to inform EPRI of the staff's findings to date and to identify outstanding technical issues needing resolution concerning these chapters. EPRI can then incorporate the resolutions to these issues into the final version of the rollup document for evolutionary reactor designs and use these resolutions where applicable in the development of the final ALWR Requirements Document for the passive designs.

The staff will issue the enclosed DSERs on Chapters 6, 7, 8, 9, 12, and 13 of the EPRI ALWR Requirements Document for evolutionary reactor plant designs in 10 working days of the date of this paper unless otherwise instructed by the Commission. At that time, these documents will be placed in the NRC Public Document Room.

Coordination: The Office of the General Counsel has reviewed this paper and has no legal objection.


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for Operations

Enclosures:
Draft Safety Evaluations
Chapters 6, 7, 8, 9, 12
and 13 - Commissioners, SECY
and OGC only.

SECY NOTE: In the absence of instructions to the contrary, SECY will notify the staff on Wednesday, December 26, 1990, that the Commission, by negative consent, assents to the action proposed in this paper.

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