



OFFICE OF THE  
COMMISSIONER

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

July 13, 1989

MEMORANDUM FOR: Samuel J. Chilk  
Secretary

FROM: James R. Curtiss *John R. Curtiss*  
Commissioner

SUBJECT: SECY-89-197 -- "ISSUANCE OF DRAFT SER FOR  
POWER REACTOR INHERENTLY SAFE MODULE (PRISM)"

In the subject SECY paper, the staff has advised the Commission that it intends to issue a draft Safety Evaluation Report (SER) on the Power Reactor Inherently Safe Module (PRISM) reactor unless directed otherwise by the Commission within two weeks of the date that the subject SECY paper was submitted to the Commission.

There are a number of concerns that I have about the course of action that the staff has proposed and, accordingly, would ask that the staff respond to the questions, set forth below, before issuance of the draft SER.

#### BACKGROUND

The Commission directed the staff in 1987 to obtain Commission guidance on the complex issues associated with advanced reactor designs, including standardization, the treatment of severe accidents, and containment issues, by submitting papers on these topics to the Commission for our consideration, in advance of the preparation of SERs on these designs (See Memorandum from Lando W. Zech, Jr., to Victor Stello, Jr., Executive Director for Operations, "Plans for Review of DOE Sponsored Advanced Reactor Concepts" (COMKC-87-1), July 9, 1987).

In SECY-88-203, "Key Licensing Issues Associated with DOE Sponsored Advanced Reactor Designs" (July 15, 1988), the staff presented the criteria that it proposed be adopted by the Commission for use in the review of individual advanced reactor designs. The ACRS, in turn, in commenting on this SECY paper, endorsed the so-called "top down" approach that the staff was recommending, observing that --

"[I]t is appropriate to confront and attempt to resolve the most important safety and licensing issues in a

general and direct way, rather than only by reacting to design proposals." (Letter from William Kerr, Chairman, Advisory Committee on Reactor Safeguards, to Lando W. Zech, Jr., July 20, 1988).

On August 18, 1988, the Executive Director for Operations recommended that Commission action on SECY-88-203 be withheld pending further clarification of DOE's position on the MHTGR containment issue. Following an exchange of communications between DOE and the NRC on this issue, SECY-88-203 was formally withdrawn from Commission consideration on November 14, 1988.

As a consequence of these events, it appears to me that the Commission, having directed the staff to recommend generic criteria to be applied to the review of advanced reactor designs for the Commission's consideration and approval, now finds itself in the position of having to evaluate these individual advanced reactor designs on a case-by-case basis, with no generically-established, Commission-approved criteria on the key safety issues -- an approach that the Commission explicitly rejected when it was first proposed by the staff in May of 1987.

#### QUESTIONS

Because the approach now being recommended by the staff in the subject SECY paper for the resolution of advanced reactor safety issues departs from earlier Commission directives, I would like the staff to respond to the following questions prior to the issuance of the draft PRISM SER:

1. With SECY-88-203 now withdrawn from Commission consideration, how would the staff propose that the Commission proceed in establishing a generic Commission policy on safety issues for advanced reactors, in a manner consistent with the Commission's earlier directives on this subject?
2. SECY-88-203 was withdrawn because of a concern over DOE's approach to containment for the NPR/MHTGR. If, as it appears, DOE should decide to require a containment on the NPR/MHTGR for policy reasons, what bearing does that decision have on the approach that the staff would recommend on the MHTGR containment issue for safety reasons? Are these two approaches irreconcilable from a safety standpoint, particularly in view of the fact that the approach in SECY-88-203 does not foreclose the possibility of requiring a conventional containment

structure?

3. What progress has been made in resolving the MHTGR containment issue with the Department of Energy? If this issue is not resolved, how would the staff propose that it be addressed by the Commission in a manner that can be applied generically to all advanced reactor designs?
4. Aside from the containment issue, the staff proposed generic criteria in SECY-88-203 to address a number of other issues, including accident selection, siting source term calculation and use, and adequacy of offsite emergency planning. Are these issues directly and inextricably related to the containment question or could the Commission proceed independently with the establishment of generic positions on these issues?
5. Chapter 3 of the proposed draft PRISM SER, entitled "Review Approach and Criteria", sets forth the general and specific licensing criteria employed by the staff in evaluating the PRISM design. How do these criteria differ from what was proposed in SECY-88-203?
6. Chapter 1 of the draft MHTGR SER, entitled "Conformance with Criteria and Policies", sets forth the general and specific licensing criteria employed by the staff in evaluating the MHTGR design. How do these criteria differ from what was proposed in SECY-88-203? How do they differ from the criteria used in evaluating the PRISM design?
7. In commenting on SECY-88-203, the Advisory Committee on Reactor Safeguards noted that the staff had very little to say on the issue of operation and staffing, observing that this was a "serious oversight." Is the issue of operation and staffing a matter that lends itself to generic resolution, in a manner similar to that proposed for other generic issues addressed in SECY-88-203?

cc: Chairman Carr  
Commissioner Roberts  
Commissioner Rogers