

ARGONNE NATIONAL LABORATORY

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June 1, 1981



Dr. William Kerr
 Dept. of Nuclear Engineering
 Phoenix Laboratory - North Campus
 University of Michigan
 Ann Arbor, MI 48109

Dear Dr. Kerr

Subject: Instrumentation for Detection of Inadequate Core Cooling

At the conclusion of the ACRS Electrical Systems Subcommittee meeting on May 28, 1981, you requested comments from the ACRS consultants. My comments are as follows:

The NRC schedule which requires installation of instrumentation for detection of inadequate core cooling is optimistic. The NRC staff submitted the following schedule:

STAFF REVIEW SCHEDULE FOR NUREG-0737 SECTION II.F.2

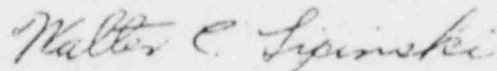
<u>Milestone</u>	<u>Date</u>
Licensee Submittal - Design Description and Supporting Analyses	January 1, 1981
Generic Questions and Positions Developed	April 1, 1981
Questions and Positions Transmitted to Licensees	July 1, 1981
Licensee Submittal - Response to Staff Questions and Positions	September 1, 1981
Generic SERs and Model Technical Specifications Issued	December 1, 1981
Installation	January 1, 1982
Licensee Submittal - Qualification of the System for Operation	March 1, 1982
Issue Technical Specifications and Plant Specific Approvals Implementation	May 1, 1982
Review Complete (Plant Specific SERs Issued)	July 1, 1982

The above schedule shows that installations are to be completed by January 1, 1982, that the NRC staff will complete its review by July 1, 1982, and the systems will then become operational.

It would be preferable to have installations completed at several operating reactors for each of the proposed systems, to collect operating data to verify satisfactory performance, and to have NRC issue Generic SERs and Model Technical Specifications.

The presentations made at the May 28, 1981 ACRS subcommittee meeting did not cover the man-machine interface assuming component or system failures. If certain measurements are at most duplicated to satisfy the single failure criteria, how will the operator react to conflicting information if a failure occurs in one out of two redundant measurements? Will the operator have other sources of information available to resolve a conflict? A systematic Failure Modes and Effects Analysis (FMEA) should help identify system design deficiencies. The FMEA output can also be used to prepare operating procedures which will help the operator in the event of component or system failures.

Sincerely,



Walter C. Lipinski
Senior Electrical Engineer
Reactor Analysis and Safety Division

WCL/at

cc: R. Savio, ACRS