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

DEC 19 1980

MEMORANDUM FOR: Chairman John Ahearne

THRU: William J. Dircks ~~(Signed) William J. Dircks~~,
Executive Director for Operations

FROM: Robert B. Minogue, Director
Office of Nuclear Regulatory Research

SUBJECT: ATWS CALCULATIONS

On November 10, 1980, you requested that the Systems and Reliability Research Division (SARR) review and comment on the ATWS calculations presented to the Commission by J. Lellouche of EPRI and W. Minners of NRR. We committed to do so by December 12. A summary of their findings follows:

- The EPRI calculations of Reactor Protection System unavailability are incomplete and over-optimistic. The NRR treatment of the number of tests that should be credited in such calculations is a better estimate.
- Both EPRI and NRR treatments of the "rectification" of the Kahl failure are legitimate applications of statistical methods.
- EPRI has a valid point in suggesting that the staff is unnecessarily conservative in its treatment of the opportunities to fix or learn from precursor events.
- Both EPRI and NRR analyses are misleading in the levels of confidence they attribute to their probability estimates. Though statistically correct, such measures of uncertainty ignore inaccuracies in the implicit assumptions within the model. These may be quite large.

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- EPRI is not correct in asserting that the addition of more pressurizer safety values in PWRs would necessarily increase public risk.

A more detailed presentation of the SARR review of the ATWS calculations is attached.

Original Signed By

Robert B. Minogue, Director
Office of Nuclear Regulatory Research

Enclosure: As stated

cc: H. Denton	Commissioner Hendrie
T. Murley	Commissioner Gilinsky
D. Ross	Commissioner Bradford
R. Bernero	SECY ←
W. Minners	PE
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