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P. A. Morris, Director
Division of Reactor Licensing

DAVIS-BESSE - DOCKET NO. 50-346

The enclosed review is submitted for inclusion in your report
to the ACRS.

Original signed by
E. G. Case

E. G. Case, Director
Division of Reactor Standards

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Enclosure:
Review - Davis Besse

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DATE ▶	6/23/70	6/23/70	6/23/70			

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ECCS REVIEW FOR DAVIS-BESSE

Emergency Core Cooling System

The emergency core cooling system (ECCS) for Davis-Besse has been analyzed using a modified version of the FLASH-1 code. This code describes the reactor coolant system by the use of two control volumes for the primary loops and one for the pressurizer. The system is grouped into the two control volumes on the basis of temperature distribution. Resistances to flow are calculated by dividing the reactor coolant system into 24 regions and calculating the volume-weighted flow resistance for a given rupture location based on normal flow resistances. The model incorporates a variable velocity steam bubble rise model.

Recent results obtained with the use of the multi-node SATAN code by Westinghouse for their Indian Point 2 evaluations and by INE with their multi-node RELAP code have raised questions concerning the ability to reliably predict the thermal-hydraulic response of a reactor core during blowdown following a large cold-leg rupture with the analytical methods presently being used. In view of these concerns we intend to require the applicant to provide additional evidence, obtained with the use of suitable multi-node analytical techniques, to verify that the ECCS system is capable of limiting

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core temperatures to acceptable levels. We will require this verification to be provided prior to irrevocable commitments relative to construction of the emergency core cooling system.

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