

JAN 16 1986

PDR

MEMORANDUM FOR: Karl V. Seyfrit, Chief  
Reactor Operations Analysis Branch  
Office for Analysis and Evaluation  
of Operational Data

AEOD/E602

FROM: Robert G. Freeman, Engineer  
Reactor Systems Section 2  
Reactor Operations Analysis Branch  
Office for Analysis and Evaluation  
of Operational Data

SUBJECT: ENGINEERING EVALUATION REPORT: UNEXPECTED CRITICALITY DUE  
TO INCORRECT CALCULATION AND FAILURE TO FOLLOW PROCEDURES

Enclosed is an AEOD Engineering Evaluation report on the Summer-1 inadvertent criticality event for your consideration. The event was attributed to a number of causes. First, the licensed operator conducting the startup failed to adhere to applicable procedures in that criticality was not anticipated during control rod bank withdrawal and an awareness of plant conditions was not maintained at all times. Secondly, there was a lack of adequate guidance in the procedures used to calculate the estimated critical rod position (ECRP) and reference critical data (RCD) which resulted in a ECRP calculational error of 128 rod bank steps. Finally, there were procedural inadequacies in the licensee's administration of the plant's on-the-job training program which allowed an operator trainee to attempt to perform a reactor startup without receiving the proper instruction in the basic skills and knowledge needed to accomplish this task.

Uncontrolled rod bank withdrawal from a subcritical core condition is an analyzed accident in Summer's safety analysis report, and it is concluded that adequate core protection was maintained during this event. However, the Summer event and related operating experience have shown that licensee operator training programs may need to be reviewed in order to minimize the potential for premature criticality events. An industrial organization has issued a report

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covering some of the recent premature criticality events. Thus, no further action by this office is deemed necessary.

*Robert G. Freeman*

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Enclosure:  
As stated

cc w/enclosure:  
D. Burke, R II  
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J. Pellet, R IV  
C. Rossi, IE

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