

MAR 17 1994

MEMORANDUM FOR: Jack E. Rosenthal, Chief  
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Division of Safety Programs  
Office for Analysis and Evaluation  
of Operational Data

FROM: Sanford L. Israel  
Reactor Systems Section W and B&W  
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SUBJECT: REVIEW OF MISPOSITIONED EQUIPMENT

Enclosed for your information and use is a technical review report on mispositioned equipment. The safety importance of this issue is the unavailability of safety-related equipment when needed to mitigate an accident. This study examined over 190 mispositioned equipment events for the period 1990 to 1993. Most of the events concerned mispositioned valves and about 15 percent of them involved multiple components. The personnel errors associated with these situations varied widely from improvisation in the absence of adequate procedures to apparent false sign-off on check lists. About half of the events were cited in NRC inspection reports and about one-third were identified as violations. Some of the violations had fines from \$25,000 to \$150,000.

Regulatory Guide 1.47 addresses automatic status indication for safety systems and TMI Action Plan Item I.C.6 addresses independent verification of alignment when returning a system from maintenance or testing. This guidance appears adequate to address the issue, but its implementation is deficient from time to time. A rough analysis of the human error probabilities and the potential system unavailabilities associated with the data indicates that the safety impact is below what was previously analyzed in probabilistic risk assessments. In addition, the NRC inspectors monitor configuration control at the plants using inspection modules and are accustomed to citing violations. Consequently, no new initiatives appear to be warranted at this time.

Original signed by

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