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

JAN 13 1982

MEMORANDUM FOR: Richard H. Vollmer, Director
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THRU: Victor Benaroya, Chief
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SUBJECT: INTERACTION BETWEEN FIRE SUPPRESSION AND SAFETY SYSTEMS

Recent events at Ginna and Dresden have demonstrated the potential for adverse interactions between fire suppression systems and safety systems:

1. At Ginna on November 14, 1981, power was lost to the fire detection system. When power was restored, several fire suppression systems were activated and sprayed water on safety systems. Some of the safety systems malfunctioned.

2. At Dresden 3 on November 11, 1981, an automatic fire suppression system activated and sprayed water on safety systems. Several pumps and a valve did not operate or show abnormal indications. The cause of the suppression systems activation is unknown, but it is thought to be leaking steam.

You requested our response to two questions regarding these events:

Question 1 Do these call for any further actions by us or IE?

We were promptly notified of the Ginna event by the RM. At his request and our own initiative, we have been following the actions taken by the licensee. We will prepare an evaluation report when all the ramifications are known and resolved. We are not aware of any IE actions as a result of this event.

We were not notified of the Dresden 3 event until Doug Pickett (ORAB) sent us the information. No one has requested our evaluation of this event. ORAB is preparing a memo to Denton suggesting that such events be evaluated.

Question 2 Are these events symptomatic of design or procedural deficiencies?

Yes, our consideration of these events have identified several deficiencies, attributable to both the licensees and the NRC:

1. Apparently, the design of the Ginna fire detection panel was inadequate; the emergency power supply for the panel was inadequate. The interaction between fire suppression systems and safety systems obviously was not evaluated. Their internal procedures and quality assurance program did not identify the deficiencies.

2. The design of the Dresden fire suppression system did not consider the interaction of fire suppression systems and safety systems and their administrative controls did not require adequate consideration of maintenance work of fire suppression systems. (We have been informally advised that a similar event took place at Dresden 2 and that the actuation of the fire suppression system was caused by welding in the area. We do not know if the actuation was caused by heat or smoke.)

3. We do not have an established procedure to inform our staff of these events promptly, to evaluate and to decide which events should be followed by DE personnel, and which should be the subject of a notification to all licensees. At the moment, we evaluate these events on an ad hoc basis.

4. In some cases, we evaluate these events to decide whether to revise our guidelines to reduce the probability of similar problems in the future. However, we have no procedure for revising the guidelines. For example, as a result of the North Anna 2 fire, we were told to proceed through proper channels to make the proper revision to the guidelines. Due to other priorities, lack of manpower, and the lack of an established procedure for revising our guidelines, we have not proceeded.

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