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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

March 7, 1980

Docket No. 50-309

Maine Yankee Atomic Power Company
ATTN: Mr. Robert H. Groce
Senior Engineer - Licensing
25 Research Drive
Westborough, Massachusetts 01581

Gentlemen:

This Information Notice is provided as an early notification of a possibly significant matter. It is expected that recipients will distribute this Notice to their operating personnel and will review the information for possible applicability to their facilities. No specific response is requested at this time. However, we anticipate that further NRC evaluations will result in issuance of an Addendum to IE Bulletin 79-27 in the near future which will recommend or request specific applicant or licensee actions. If you have questions regarding the matter, please contact the Director of the NRC Region I office.

Sincerely,

James M. Allan
JHG Boyce H. Grier
Director

Enclosures:

1. IE Information Notice No. 80-10 with Enclosure
2. List of Recently Issued IE Information Notices

Contact: R. A. Feil
(215-337-5345)

cc w/encls:

E. Wood, Plant Superintendent
E. W. Thurlow, President

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ENCLOSURE 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

SSINS No.: 6870
Accession No.:
8002280640

IE Information Notice No. 80-10
Date: March 7, 1980
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PARTIAL LOSS OF NON-NUCLEAR INSTRUMENT SYSTEM POWER SUPPLY DURING OPERATION

Description of Circumstances:

This notice contains information regarding Crystal River Unit 3 response to a loss of non-nuclear instrumentation (NNI) as a consequence of loss of the +24 volt power supply to the NNI.

At 2:23 p.m. on February 26 with Crystal River Unit 3 at 100% power, the +24 volt power supply to the NNI was lost, due to a short to ground. This initiated a sequence of events (detailed in the enclosure) wherein the PORV opened and stayed open as a direct result of the NNI power supply loss. HPI initiated as a result of depressurization through the open PORV, and with approximately 70% of NNI inoperable or inaccurate, the operator correctly decided that there was insufficient information available to justify terminating HPI. Therefore, the pressurizer was pumped solid, one safety valve lifted, and flow through the safety valve was sufficient to rupture the RC Drain Tank rupture disk, spilling approximately forty-three thousand gallons of primary water into containment.

The Crystal River 3 event is closely related to the November 10, 1979 event at Oconee Unit 3 wherein the inverter supplying power to the Integrated Control System (ICS) and to parts of the NNI failed. That event was the subject of IE Information Notice 79-29 (November 16, 1979) which was followed by IE Bulletin 79-27 (November 30, 1979).

The CR-3 event involved loss of only part of the power available from an inverter, rather than the inverter itself, since the +24v supply is only one of several power supplies drawing power from one inverter. The effects are very similar, however, in that the ICS lost part of its input signals in both events.

The +24 volt power supply short to ground has tentatively been identified by the licensee to have occurred between knife edge connectors of a Bailey Control Company Voltage Buffer Card. The voltage buffer card was misaligned in its receptacle, and adjacent connectors carrying +24v and "common" were bent such that they contacted one another. This short circuit cleared itself during subsequent re-energizing of the power supply by burning through the foil on a printed circuit card. Subsequent review by the licensee identified a second voltage buffer card which was also misaligned but had not caused a short circuit.

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The specific circuit cards which were misaligned carried part number 6624609L1. The connectors on these cards are slightly thinner and appear to have a somewhat different angle than those found on similar cards elsewhere in the NNI which carry part numbers 6624608A1 or 6624609A1. The 6624609LI cards appear to be more subject to misalignment.

The specific shorted voltage buffer card provided the signal to the NNI "x" saturation meter.

Licensees which utilize Bailey Control Company Voltage Buffer Cards are requested to carefully inspect the cards for possible misalignment and take corrective actions if misalignments are identified. Specific instructions for carrying out these inspections and providing any other information which may be required to define appropriate corrective action is being prepared by Bailey Control Company for transmittal to purchasers of this equipment by March 11, 1980.

Initial screening of IE Bulletin No. 79-27 responses indicates a range of responses regarding depth and scope of review.

IE Bulletin No. 79-27 was intended to cause licensees to investigate loss of individual power supplies as well as total loss of an inverter or vital bus. An addendum to IE Bulletin No. 79-27 is planned to be issued in the near future to reflect the CR-3 event.

This Information Notice is provided to inform licensees of a possibly significant matter. It is expected that recipients will disseminate the information to all operational personnel working at their licensed facilities. (A meeting was held with B&W licensees in NRC Headquarters on March 5, 1980 to review the event at Crystal River and to discuss proposed corrective actions. Responses to specific questions have been requested of the B&W licensees.) If you have questions regarding this matter, please contact the Director of the appropriate NRC Regional Office.

No written response to this Information Notice is required.

Enclosure:
Sequence of Events

