

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

October 30, 1985

IE INFORMATION NOTICE NO. 85-83: POTENTIAL FAILURES OF GENERAL ELECTRIC
PK-2 TEST BLOCKS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose:

This information notice is to alert recipients of a potentially significant problem involving fractures of PK-2 test block terminal posts that could lead to inoperability of essential electrical equipment. It is expected that recipients will review this information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The Tennessee Valley Authority (TVA) reported to General Electric (GE) and the NRC that the Sequoyah Nuclear Power Plant experienced fracture failure of terminal posts on some PK-2 test blocks during routine testing of a circuit that was not safety related. TVA subsequently tested PK-2 blocks at the Watts Bar Nuclear Plants and found that terminal post fractures could be induced, in some cases, by wiggling by hand. No failures were identified by TVA on PK-2 safety-related applications. GE is investigating to determine the root cause of the failures. However, because of the broad usage of the test blocks, GE has notified the NRC that GE is unable to determine all of the possible PK-2 class IE installations and therefore is unable to assure specific notification of the problem to each utility.

Discussion:

Failure of PK-2 test blocks could occur either during testing or at other times. Failure during circuitry testing could result in the inoperability of essential electrical equipment. In this case, the loss of the electrical equipment would be detected during the testing. The possibility also exists for the fracture failure to occur at the completion of the circuit testing or as the result of bumping during other maintenance. Such an occurrence would

result in an open circuit and the unavailability of the associated electrical equipment could go undetected in certain applications. Though the failures noted by TVA were not safety related, the usage of PK-2 test blocks includes safety related equipment such as emergency diesel generator relay boards. In addition to the possible loss of safety related equipment there is a potential personnel safety concern if an open circuit is developed on a current transformer circuit during testing.

General Electric has recommended that, in addition to visual inspection, a force of about five pounds in any direction perpendicular to the terminal posts can be applied to detect incipient failures.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.


Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: James C. Stewart, IE
(301) 492-9061

Attachment: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED
 IE INFORMATION NOTICES

| Information Notice No. | Subject | Date of Issue | Issued to |
|------------------------|---|---------------|--|
| 85-82 | Diesel Generator Differential Protection Relay Not Seismically Qualified | 10/18/85 | All power reactor facilities holding an OL or CP |
| 85-81 | Problems Resulting In Erroneously High Reading With Panasonic 800 Series Thermoluminescent Dosimeters | 10/17/85 | All power reactor facilities holding an OL or CP and certain material and fuel cycle licensees |
| 85-80 | Timely Declaration Of An Emergency Class Implementation Of An Emergency Plan, And Emergency Notifications | 10/15/85 | All power reactor facilities holding an OL or CP |
| 85-17 Sup. 1 | Possible Sticking Of ASCO Solenoid Valves. | 10/1/85 | All power reactor facilities holding an OL or CP |
| 85-79 | Inadequate Communications Between Maintenance, Operations, And Security Personnel | 9/30/85 | All power reactor facilities holding an OL or CP; research and nonpower reactor facilities; fuel fabrication and processing facilities |
| 85-78 | Event Notification | 9/23/85 | All power reactor facilities holding an OL or CP |
| 85-77 | Possible Loss Of Emergency Notification System Due To Loss Of AC Power | 9/20/85 | All power reactor facilities holding an OL or CP |
| 85-76 | Recent Water Hammer Events | 9/19/85 | All power reactor facilities holding an OL or CP |

OL = Operating License
 CP = Construction Permit