

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

August 28, 1998

NRC INFORMATION NOTICE 98-34: CONFIGURATION CONTROL ERRORS

Addressees

All holders of operating licenses for nuclear power reactors, except for those who have ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to recent inspection findings related to configuration control of safety-related equipment. Although the examples discussed in this information notice are related to the emergency diesel generator (EDG) system, the potential exists for similar problems to occur in other systems. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

Recent inspections conducted by NRC inspectors have found a number of configuration control issues at various sites. The relevant findings associated with these concerns are discussed below.

Mispositioned EDG Output Breaker Control Switch

During a routine plant walkdown at H. B. Robinson Nuclear Station, an inspector noted that the EDG output breaker control switch, located on the local EDG generator control panel, was in the PULL-OUT position, rather than the normal NEUTRAL position (Inspection Reports 50-261/97-09 and 50-261/97-10 [Accessions 9710100035 and 9711190153]). There were no alarms present at the EDG control panel or at the control room indicating the abnormal switch position. In the PULL-OUT position, the EDG output breaker was incapable of performing its design closing function, thus making the EDG inoperable.

The output breaker control switch is a four-position, spring return to normal, T-handle switch. When manipulated to the TRIP or CLOSE position, the switch is designed to spring return to the NEUTRAL position upon release of the handle. By moving the switch to the TRIP position and then pulling the handle outward from the switch face and moving it counter-clockwise, the

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switch can be placed in the PULL-OUT position. The licensee postulated that the switch may have been mispositioned as a result of an inadvertent bumping of the handle. There were some maintenance-related activities conducted in the EDG room preceding the discovery of the mispositioned switch. The switch had been manipulated during a scheduled surveillance test approximately two weeks before to the discovery of the mispositioning. However, procedural controls were not in place to confirm proper switch position following these manipulations. The switch was not checked during periodic operator rounds, although the switch affected the operability of the EDG.

Mispositioned Voltage Regulator Potentiometers

In 1993, at H. B. Robinson, both EDGs were rendered inoperable during painting activities. During these activities, the voltage regulator potentiometers for both EDGs were erroneously adjusted to approximately 440 volts from the required 480 volts when painters bumped into them (Inspection Report 50-261/93-35 [Accession 9401040383]). As in the case above, there were no alarms indicating the inappropriate settings, and the potentiometers were not checked during periodic operator rounds.

Mispositioned EDG Fuel Oil Transfer Switches

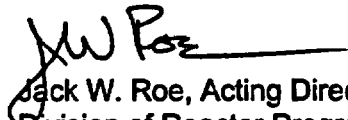
At Watts Bar Nuclear Plant, during a routine tour of the EDG building, an inspector discovered that the fuel oil transfer pump control switches for an EDG were in the off, instead of the required automatic position (Inspection Report 50-390/97010 [Accession 9802040123]). The control switches had been manipulated earlier, during a required surveillance test of the fuel oil transfer pumps. Further review showed that the test method used by the operators was not in accordance with procedures, which may have contributed to the switches being left in the off position. With the switches in the off position, the automatic fill capability to the EDG day tank would not have been accomplished following an EDG start, resulting in the inoperability of the EDG. There were no audible alarms indicating the abnormal switch position, but there were indicating lights at the local panel. However, the switch positions were not periodically verified during operator rounds.

Discussion

The configuration control errors discussed in this information notice resulted in mispositioned components that were not annunciated to alert the operators to their abnormal position, yet they could render the EDG inoperable. Further, the verification of the component's configuration was not specifically prescribed in the checklist for the non-licensed operator rounds. The corrective actions taken by the licensees as a result of the problems discussed above, included installing a protective barrier to preclude inadvertent bumps to switches; better procedural guidance on switch manipulations and post-surveillance-testing restoration verification, and inclusion of safety-related switches in the non-licensed operator rounds to positively verify position. Additionally, the licensees reviewed other safety-related switches to determine if other similar unmonitored control switches existed.

The preceding examples highlight the need for continued attention to configuration control for components that may render a system inoperable, but that are not provided with alarms. Further, it illustrates configuration control vulnerabilities that were not identified by non-licensed operator plant tours, because the components were not specifically listed in their verification checklists.

This information notice requires no specific action or written response. However, recipients are reminded that they are required to consider industry-wide operating experience (including NRC information notices) where practical, when setting goals and performing periodic evaluations under Section 50.65, "Requirement for monitoring the effectiveness of maintenance at nuclear power plants," to Part 50 of Title 10 of the Code of Federal Regulations.) If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.


Jack W. Roe, Acting Director
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98-32	Problems Associated with Post-Fire Safe-Shutdown Circuit Analyses	8/26/98	All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor
98-31	Fire Protection System Design Deficiencies and Common-Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Project Unit 2	8/26/98	All holders of operating licenses for nuclear power reactors, except those licensees that have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
98-29	Predicted increase in Fuel Rod Cladding Oxidation	8/3/98	All holders of operating licenses for nuclear power reactors, except those licensees who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
98-28	Development of Systematic Sample Plan for Operator Licensing Examinations	8/3/98	All holders of operating licenses for nuclear power plants

OL = Operating License
CP = Construction Permit

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[Original signed by]
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