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

June 29, 1992

NRC INFORMATION NOTICE 92-47: INTENTIONAL BYPASSING OF AUTOMATIC ACTUATION OF PLANT PROTECTIVE FEATURES

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert licensees to the importance of having formal criteria and training regarding limitations on bypassing plant protective features. 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

On December 8, 1991, the Florida Power Corporation's Crystal River Nuclear Station, Unit 3, experienced a slow loss of reactor coolant system (RCS) pressure at 10 percent power during startup, because a pressurizer spray valve failed in a partially open position. The operators did not promptly determine the cause of the pressure decrease, in part, because they were misled by an erroneous spray valve closed position indication. Believing the pressure decrease to result from an increasing steam demand, the operators subsequently withdrew control rods several times in an attempt to maintain RCS temperature as steam flow was increased in preparation for loading the generator. However, the RCS pressure continued to decrease, and the reactor tripped on low pressure. Approximately 2 minutes later, the "ES A and B Not Bypassed" alarms annunciated. These alarms indicate that the high pressure injection (HPI) system and other engineered safeguards (ES) functions are not blocked, although they may be blocked during normal plant cooldown. Approximately 1 minute later, a control room operator inappropriately actuated the ES bypass switches for the A and B HPI system. Approximately 6 minutes later, when a sufficient number of actuation logic bistables tripped to actuate the system if it had not been bypassed, the Acting Operations Superintendent questioned the Shift Supervisor about the advisability of bypassing the ES, and the ES was then unbypassed at which time the high pressure injection and other systems activated. Operators then established manual control of the high

pressure injection system to maintain RCS pressure above 1500 psig. The operators did not determine the cause of the decrease in RCS pressure until after the spray line isolation valve was closed about an hour later.

Discussion

One of the significant lessons of the Three Mile Island, Unit 2, (TMI-2) accident was that the core damage resulted from operators manually terminating safety injection based on an inaccurate diagnosis of plant conditions. In 1979, the NRC issued a series of Bulletins requesting licensees to review operating procedures and training to ensure that operators do not override automatic ESF actuation without carefully reviewing plant conditions. After the accident at TMI-2, licensees made many enhancements to emergency operating procedures to improve the operator's control of safety functions and engineered safety features.

At Crystal River, the licensee's staff lacked formal guidance delineating limitations on bypassing the automatic actuation of engineered safeguards functions. This lack of guidance may have contributed to having high pressure injection bypassed with the plant in a degraded condition for approximately 6 minutes without understanding the cause of the decrease in RCS pressure. One of the licensee's corrective actions was to develop administrative guidance on when it is appropriate to bypass the automatic actuation of engineered safeguards functions. This guidance has been incorporated into plant procedures.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical contact: Thomas Koshy, NRR
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Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
92-46	Thermo-Lag Fire Barrier Material Special Review Team Final Report Findings, Current Fire Endurance Tests, and Ampacity Calculation Errors	06/23/92	All holders of OLs or CPs for nuclear power reactors.
92-45	Incorrect Relay Used in Emergency Diesel Generator Output Breaker Control Circuitry	06/22/92	All holders of OLs or CPs for nuclear power reactors.
92-44	Problems with Westinghouse DS-206 and DSL-206 Type Circuit Breakers	06/18/92	All holders of OLs or CPs for nuclear power reactors.
92-43	Defective Molded Phenolic Armature Carriers Found on Elmwood Contactors	06/09/92	All holders of OLs or CPs for nuclear power reactors.
92-42	Fraudulent Bolts in Seismically Designed Walls	06/01/92	All holders of OLs or CPs for nuclear power reactors.
92-41	Consideration of the Stem Rejection Load in Calculation of Required Valve Thrust	05/29/92	All holders of OLs or CPs for nuclear power reactors.
92-40	Inadequate Testing of Emergency Bus Undervoltage Logic Circuitry	05/27/92	All holders of OLs or CPs for nuclear power reactors.
92-39	Unplanned Return to Criticality during Reactor Shutdown	05/13/92	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit