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SUBJECT: Forwards 1992 annual rept on primary & relief valve challenges,per TS 6.9.1.2.4.

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1992 ANNUAL REPORT - PRIMARY SAFETY AND RELIEF VALVE CHALLENGES

Dear Sir:

Carolina Power & Light Company (CP&L) hereby submits the 1992 Annual Report on Primary and Relief Valve Challenges as required by Technical Specification 6.9.1.2.4.

If you have any questions concerning this submittal, please contact my staff.

Very truly yours,

William J. Chambers
for RHC
R. H. Chambers
General Manager
H. B. Robinson S.E. Plant

SAB/sgk

Enclosure

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1992 ANNUAL REPORT - PRIMARY SAFETY AND RELIEF VALVE CHALLENGES

EVENT: Challenge to a Primary Relief Valve

DATE: August 22, 1992

ACR: 92-309

DESCRIPTION: Pressurizer Power Operated Relief Valve (PORV) PCV-455C cycled seven (7) times to reduce Reactor Coolant System pressure. The events occurred over two (2) different shifts that spanned an eleven (11) hour period. The unit was in the hot shutdown condition following a loss of off-site power (loss of the Startup Transformer). The Reactor Coolant System was being maintained in a natural circulation condition with power to the emergency safeguards busses being supplied by the emergency diesel generators. The loss of off-site power caused a loss of the plant's non-vital power. Without any forced Reactor Coolant System flow, the Reactor Coolant System pressure had to be maintained manually. A limited amount of Pressurizer Heaters (150 KW) was available via backfeed to a non-vital bus in accordance with plant procedure EPP-21. There were several manual operator actions that required the attention of the shift crew to ensure that the plant was stabilized. The Pressurizer Pressure controller PC-444J was left in automatic to control the Reactor Coolant System pressure. When the pressure exceeded the nominal setpoint of the controller, the functions within the controller caused the output signal to be driven up to the point of cycling the Pressurizer PORV PCV-455C to reduce the Reactor Coolant System pressure. This sequence was repeated during the natural circulation condition until manual control was taken to reduce the Reactor Coolant System pressure to a range that was maintained below the controller nominal setpoint. The Reactor Coolant System pressure was maintained at this reduced range until a Reactor Coolant Pump could be started to provide forced Reactor Coolant System flow.

An evaluation for this event has determined the following root cause and recommended corrective actions for the actuations:

1. Training and Qualification

The licensed operators lacked the specific knowledge for the operation of the Pressurizer Pressure Controller PC-444J.

Training needs to be provided to each licensed operator under the conditions present during the recovery of this transient. Particular attention should be placed on the operation of Pressurizer Pressure Controller PC-444J and how its operation is affected when forced Reactor Coolant System flow is not available.

EVENT: Challenge to a Primary Relief Valve

DATE: October 31, 1992

TIME: 1920 hours

ACR: 92-389

DESCRIPTION: Pressurizer Power Operated Relief Valve (PORV) PCV-456 cycled to relieve a pressure transient in the Reactor Coolant System. The unit was operating at 100% power with pre-existing problems under evaluation that had caused Heater Drain System flow oscillations. A plant transient was experienced that resulted in a reduction in feedwater capability. Immediate operator action was taken to reduce the turbine load or plant system demand to match the existing feedwater capability. During the turbine load reduction, several equipment malfunctions were experienced that resulted in the cycling of the Pressurizer PORV PCV-456. The Heater Drain Tank Level Control Valve LCV-1530A closed causing the reduction in feedwater flow capability. During the manual turbine load reduction, the manipulation of the manual turbine EH controls resulted in a rapid turbine load change from 650 to 300 MWe. The Steam Dump System modulation controls malfunctioned, resulting in large steam demand actuations in the Tave mode. When manual operator action was taken to transfer the Steam Dump System to the Steam Pressure mode, the Reactor Coolant System Pressure increased rapidly due to the steam dump valves closing. Pressurizer Pressure Controller PC-444J had saturated low during the Steam Dump actuations and was not able to respond quickly to the resulting pressure transient. The pressure transient resulted in the cycling of PCV-456 to reduce the Reactor Coolant System pressure. Manual operator actions were taken to unsaturate Pressurizer Pressure Controller PC-444J and return the pressure control to its normal automatic mode.

An evaluation for this event has determined the following root causes for the actuation:

1. Steam Dump Modulation Would Not Operate

Maintenance personnel performed the necessary troubleshooting of the Steam Dump System and identified problems associated with the system operation. Hagan box TC-408F was found to have a blown fuse, Relays TC-408J1-X and TC-408J2-X were found to be defective. All of the above components were repaired or replaced and the Steam Dump System was left operating satisfactorily.

2. PC-444J Saturated Low

The Pressurizer Pressure Controller has a history of saturating when a large pressure transient is encountered on the plant. This response has been discussed with the Technical Support personnel to ensure that this is the proper response for this Hagan controller. A work request was initiated with the concurrence of Technical Support to have Maintenance personnel check the controller for the proper response.

3. EH Controls Caused A Large Rapid Unit Load Reduction

A work request was initiated for Maintenance personnel to investigate the EH System to ensure that all of the controls are properly set up and the proper response is being obtained.

4. LCV-1530A Not Operating Properly

LCV-1530A was found to have an undersized instrument air regulator for the valve operation and debris in the valve controller which caused the valve to not properly respond to the system demand. MOD-1093 replaced this valve during an earlier outage and a DCN to this modification was initiated to replace the instrument air regulator and place an in-line filter in the air line to preclude any debris from entering the valve controller.