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United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Response to Notice of Violation

Gentlemen:

This letter provides the Perry Nuclear Power Plant response to the Notice of Violation contained within NRC Inspection Report 50-440/94013, dated October 28, 1994. The inspection report documented the results of the special announced inspection conducted August 19 through October 7, 1994. The response to the Notice of Violation is provided by Attachment 1.

If you have questions or require additional information, please contact Mr. James D. Kloosterman, Manager - Regulatory Affairs, at (216) 280-5833.

Very truly yours,

Robert A. Stratman

CRE:sc

Attachment

cc: NRC Project Manager
NRC Region III
NRC Resident Inspector

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

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RESPONSE TO NOTICE OF VIOLATION

1. **Violation 94013-01(DRP)**

Restatement of the Violation

Technical Specification 6.8.1.a, requires that written procedures be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide (RG) 1.33, Revision 2, February 1978. Reg 1.33, Appendix A, Item 4.a recommends instructions for changing modes of operation of the Nuclear Steam Supply System (Vessel and Recirculation System).

Perry System Operating Instruction SOI-B33, "Reactor Recirculation System," Section 4.2, "HPU (hydraulic power unit) A(B) Startup," requires that the RCIRC (recirculation) LOOP A(B) FLOW CONTROL slide switch be operated to obtain 0% SERVO ERROR prior to taking the RCIRC FCV (flow control valve) MOTION INHIBIT RESET switch to A(B).

Contrary to the above, on September 22, 1994, the RCIRC LOOP A(B) FLOW CONTROL slide switch was not operated to obtain 0% SERVO ERROR prior to taking the RCIRC FCV MOTION INHIBIT RESET switch to A(B).

Acceptance of Violation

Cleveland Electric Illuminating Company accepts the violation as written.

Introduction

On September 22, 1994, at 0105, a Local Power Range Monitor (LPRM) assigned to Average Power Range Monitor (APRM) A failed upscale resulting in APRM A indicating 107 percent reactor power. The Automatic Flow Demand Limiter (AFDL) became the controlling signal to the Reactor Recirculation System (B33) Flow Control Valves (FCVs), and the signal caused the FCVs to begin closing to reduce reactor power. A reactor operator manually locked the FCVs by shutting down the FCV Hydraulic Power Units (HPUs) in accordance with plant procedures. Reactor Recirculation flow had been decreased from 90.7 to 84.5 million pounds/hour and reactor power had decreased from 100 to 96.3 percent.

At 0109, APRM A was removed from service. The failed LPRM input to APRM A was bypassed and at 0119, APRM A was returned to service. Recovery efforts were then focussed on returning the B33 HPUs to service in accordance with System Operating Instruction (SOI-B33), "Reactor Recirculation System (Unit 1)."

A reactor operator (RO #1) was given responsibility for B33 HPU restoration by the senior reactor operator (SRO). It was determined that the appropriate procedural guidance necessary to accomplish the restoration was contained in SOI-B33, section 4.2, "HPU Startup." While RO #1 was performing the back panel steps of starting the HPUs, a second reactor operator (RO #2) began to look ahead in the SOI to identify main control panel steps that would be performed once the HPUs were running.

A series of miscommunications and a transposition error (correct action performed on an incorrect component) by RO #2 resulted in the FCVs moving open toward their "pre-event" position when resetting of the Cavitation/FCV Runback logic was attempted. RO #2 realized that the FCVs were moving and shut down the B33 HPUs. Reactor power momentarily increased to 101.1 percent of rated core thermal power due to FCV movement. Further restoration from the event was uneventful and in accordance with plant procedures.

Reason for the Violation

The primary reason for the violation is lack of command and control. SOI-B33, section 4.2, required activities to be performed at two locations (main control panel and back panels). RO #1 proceeded to the back panels and performed the required steps at that location. After the performance of these initial steps, section 4.2 then makes provisions for resetting the Cavitation/FCV Runback logic if Limiter Error is not 0 percent. Based on previous experience, RO #2 concluded that SOI-B33, section 7.8, "Resetting RCIRC Flow Control Cavitation Runback," performance was appropriate. During the performance of section 7.8, RO #2 inadvertently operated switch 1B33-S112 (RCIRC FCV MOTION INHIBIT RESET) instead of switch 1B33-S111 (CAVITATION/FCV LIMIT RCIRC RESET) as required by the SOI. This transposition error allowed the FCVs to move open toward their "pre-event" position and resulted in the premature power increase.

SOI-B33 section 7.8 did not contain any steps that would have nulled the FCV servo errors or reset the motion inhibit logic, and did not contain any steps which, if performed correctly, could have had any detrimental effect on the restoration effort. However, performance of this section was not required because the system did not experience a Cavitation/FCV runback, but had experienced only a flow bias signal from the AFDL circuitry to decrease power.

RO #2 had a mindset that section 7.8 was required and that the RCIRC FCV MOTION INHIBIT RESET switch (which was backlit on the panel) was the reset switch addressed by section 7.8. There were four barriers intended to prevent this type of error. These barriers are procedure adherence, use of self checking, supervision, and training. Procedure adherence and use of self checking failed because they were not used. RO #2 had the procedure in hand and was reading it prior to performance of each step. However, due to the mindset, when it came time to manipulate the CAVITATION/FCV LIMIT RCIRC RESET switch in section 7.8, RO #2 did not read the switch label plate thus bypassing these two barriers.

The third barrier (supervision) was bypassed due to a lack of command and control of the situation. It was imperative that the SRO ensure in advance that adequate procedural guidance was provided to ensure the correct actions would be taken. This did not occur because the SRO was unclear as to why RO #2 was performing section 7.8 and failed to clarify the situation prior to allowing RO #2 to proceed. The lack of command and control on the part of the SRO is considered the primary factor causing this event.

The fourth barrier (training) was bypassed/not used when, in the mind of RO #2, two similar conditions, power reduction due to AFDL control and Cavitation/FCV runback, were either reversed or thought to require the same actions for restoration. Both events are provided in training in the simulator at about the same frequency, and training is not considered to be a significant contributing factor to this event.

An additional contributor to this event was the poor quality of communications that occurred. Although the SRO communicated with RO #1 and RO #2, very little communication occurred between the two ROs. It is expected that when two individuals are working to restore the same system that they will communicate and coordinate their actions. This did not occur.

Corrective Action Taken and Results Achieved

The SRO was disciplined and counseled as to the importance of maintaining command and control of operations activities. RO #2 was temporarily relieved of reactor operator duties. All three crew members involved in the event were debriefed, coached and counseled. Additional guidance on management expectations concerning "command and control" has been provided to all operating crews. A Human Performance Enhancement System (HPES) investigation was performed to determine the root cause and contributing factors of the event. SOI-B33, sections 4.2 and 7.8 were reviewed and determined to provide appropriate guidance for HPU Startup and Resetting Recirculation Flow Control Cavitation Runback.

Actions to Avoid Further Violations

RO #2 completed a personal corrective action plan before returning to reactor operator duties. All licensed operators will review this event to benefit from the lessons learned by December 20, 1994. Additionally, Reactor Recirculation System specific classroom and simulator training is being conducted for all operations crews in the current requalification cycle which will be completed December 16, 1994.

Date When Full Compliance Will be Achieved

Full compliance was achieved on September 22, 1994, at approximately 0206 when HPU startup was achieved in accordance with SOI-B33, section 4.2.