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 RECIP. NAME RECIPIENT AFFILIATION  
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SUBJECT: Responds to NRC 870908 ltr re violations noted in Insp Rept  
 50-400/87-31. Corrective actions: instrument air dryer valve  
 lineup put in correct configuration & Clearance Procedure  
 AP-020 revised & will be reviewed w/personnel.

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Carolina Power & Light Company

HARRIS NUCLEAR PROJECT

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SEP 23 1987

File Number: SHF/10-13510E  
Letter Number: HO-870487 (0)

NRC-581

Document Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555

Gentlemen:

In reference to your letter of September 8, 1987, referring to I.E. Report RII: 50-400/87-31, the attached is Carolina Power & Light Company's reply to violation "A" identified in Enclosure 1.

It is considered that the corrective actions taken are satisfactory for resolution of the item.

Thank you for your consideration in this matter.

Very truly yours,

R. A. Watson  
Vice President  
Harris Nuclear Project

RAW:dj

Attachment

cc: Messrs. B. C. Buckley (NRC)  
G. Maxwell (NRC-SHNPP)  
Dr. J. Nelson Grace (NRC)

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Attachment to CP&L Letter of Response to NRC I.E. Report RII:  
50-400/87-31 Violation "A"

Reported Violation:

- A. Technical Specification 6.8.1.a requires that written procedures be implemented covering the procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978. Administrative Procedures are identified in Appendix "A" of the Regulatory Guide. Administrative Procedure AP-020 "Clearance Procedure" (Rev. 1), requires in step 5.1 that clearance personnel specify the correct operational position of valves when returning a system to service.

Contrary to the above, on August 4, 1987, AP-020 was not implemented, in that clearance personnel failed to correctly specify the position of an air system valve, 1IA-852, while attempting to return the system to a normal valve lineup. As a result, valve 1IA-852 was shut, isolating the air supply for a feedwater flow control valve which caused a secondary system transient, ultimately leading to a reactor and turbine trip.

This is a Severity Level IV violation (Supplement 1).

Denial or Admission and Reason for The Violation:

The violation is correct as stated.

The plant was operating at 100 percent reactor power in Mode 1, Power Operation, on August 4, 1987. Instrument Air Dryer 1A was out of service for repairs. Instrument Air Dryer 1B was bypassed at approximately 1715 hours to replace the desiccant. Work was completed on the Dryer 1B and at approximately 2150 hours the clearance on the Dryer was removed. The restoration alignment on the clearance for placing Dryer 1B back into service was incorrect. When the valves were repositioned in accordance with the clearance restoration lineup the Instrument Air Compressors were isolated from the air system.

The air isolation caused air pressure to decay and caused air operated valves to go to "fail safe" positions. In particular, the Main Feedwater Regulating Valves to drift shut and the Heater Drain Level Control Valves to divert drain flow to the condenser. Heater Drain Pumps 1A and 1B tripped and a manual turbine runback was initiated. This was followed by a trip of Main Feedwater Pump 1A which initiated an automatic turbine runback.



The loss of instrument air resulted in a decrease in Steam Generator water levels. The turbine runback resulted in shrink in steam generator levels and resulted in a reactor trip at 2154 hours due to Steam Generator Feedwater steam/flow mismatch with low steam generator water levels.

The cause of the violation was personnel error in preparing the valve lineup to restore Instrument Air Dryer 1B to service. The operator preparing the restoration section of the clearance inadvertently listed the position of valve 1IA-852 (Air Dryer Outlet) as 'shut' rather than 'open'. This operator had reviewed the procedure and system arrangement and was aware of the proper valve positions. He made a transposition error when recording valve positions on the clearance form and did not notice his mistake. Furthermore, the restoration lineup was not independently checked.

The operator removing the clearance noted that Instrument Air Dryer 1A was under clearance and that removing the clearance on Instrument Air Dryer 1B would result in a situation in which the bypass valve and outlet valve were shut. He assumed that Dryer 1A had a similar clearance and that the resulting lineup would allow him to energize the Air Dryer and start up the system per plant procedure.

#### Corrective Steps Taken and Results Achieved:

The valve lineup for Instrument Air Dryer 1B was put into the correct configuration. Instrument Air was restored at approximately 2154 hours, moments before the plant trip, but the action was too late to prevent the trip because secondary plant oscillations were in progress. The plant was stabilized in Mode 3, Hot Standby, with Steam Generator water levels restored with the Auxiliary Feedwater System. Plant response to the trip was normal with all plant systems responding as required.

The Instrument Air System is not safety related and is not required to function in design basis accidents. No safety consequences resulted from this event other than a challenge to the Reactor Protection system and the Engineering Safety Features Actuation system.

#### Corrective Steps Taken to Avoid Further Noncompliance:

Clearance procedure AP-020 has been revised. The revision requires an independent review and signoff for the clearance lineup preparation and an independent review and signoff of the restoration lineup.

The revised Clearance procedure will be reviewed with appropriate operations personnel stressing the need for proper valve lineup, accuracy, and understanding the effect on system operation.

Date When Full Compliance Was Achieved:

Full compliance will be achieved upon review of revised Clearance procedure with appropriate operations personnel, currently projected for October 5, 1987.