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SUBJECT: Forwards response to violations noted in Insp Rept
 50-400/94-21. Corrective actions: general review of other
 decay heat removal sys for potential cross-connect issues
 performed per ESR 94-00273.

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NOTES: Application for permit renewal filed. 05000400

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PO Box 165
New Hill NC 27562

William R. Robinson
Vice President
Harris Nuclear Plant

DEC 19 1994

File: HO-941111

Serial: HNP-94-096
10 CFR 2.201

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

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

Attached is Carolina Power & Light Company's reply to the Notice of Violation described in the enclosure of your letter dated November 17, 1994.

Questions regarding this matter may be referred to Mr. D. C. McCarthy at (919) 362-2100.

Sincerely,

W. R. Robinson

MGW:syh

Attachment

- c: Mr. S. D. Ebnetter (NRC-RII)
- Mr. S. A. Elrod (NRC-SHNPP)
- Mr. N. B. Le (NRR)

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**REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION REPORT NO. 50-400/94-21**

Reported Violation A:

10 CFR 50, Appendix B, Criterion III, requires that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

FSAR section 9.2.1, Service Water System states that the service water system is designed to provide a heat sink for essential loads assuming a single active failure in conjunction with a loss of offsite power. Essential loads referenced in Table 9.2.1-1 of the FSAR included the charging pump oil coolers.

Technical Specification 3.7.4 states that at least two independent emergency service water loops shall be operable.

Contrary to the above, between plant startup in January 1987 and July 18, 1994, measures were not established to translate correctly the requirements of FSAR section 9.2.1 and Technical Specification 3.7.4 into system configuration specifications for the emergency service water system. Specifically, the emergency service water system loops were not independent in that a single active failure of auxiliary reservoir return valve 1SW-270 to open coincident with a safety injection signal and a loss of offsite power would cause backflow from loop A to loop B through the "A" train emergency diesel generator jacket water heat exchanger which could result in inadequate cooling of all three charging safety injection pumps.

This is a Severity Level III violation (Supplement I).

Denial or Admission:

The violation is admitted.

Reason for the Violation:

Failure of the A-train Emergency Service Water (ESW) return valve to the auxiliary reservoir (1SW-270) to automatically open, coincident with a safety injection signal and a loss of offsite power, would result in inadequate cooling of the Charging/Safety Injection Pumps (CSIP) oil coolers. This could cause failure of both CSIPs. This scenario was created by an unrecognized backflow situation in the ESW system which ultimately resulted in the loss of system independence.

This specific valve failure was apparently not evaluated in the original design single failure analysis due to the higher level, redundant-train type of analysis which focused on the availability of one of the two cross-connected loops in case of a single failure loss of the other. It did not identify the interaction between the two loops. Subsequent design reviews also

focused on passive failures and check valve failures. The specific single failure review done for the GL 89-13 response did evaluate the failure of 1SW-270 (and 1SW-271) to open, but reached the same conclusion as the previous reviews.

Corrective Steps Taken and Results Achieved:

The CSIP cooler cross-train valves were closed on July 18, 1994, eliminating the cross connection of the ESW headers, and thus eliminating this single failure scenario. Associated ESW system flow diagrams CAR 2165-G-047 and CPL 2165-S-0547 were revised to reflect these changes per Engineering Service Request (ESR) 94-00290. Additionally, system operating procedure OP-139 and surveillance tests OST-1214, 1215, and 1015 were revised to reflect the current, revised position of the CSIP cooling water inlet and outlet isolation valves.

Hydraulic analyses using the ESW system flow model were performed for various failure modes (Calculations SW-0076 and SW-0078, dated October 20, 1994). No other failures requiring a configuration change to the plant were discovered.

A general review of other decay heat removal systems (Residual Heat Removal, Safety Injection, Auxiliary Feedwater, and Component Cooling Water) for potential cross-connect issues was performed per ESR 94-00273. No consequential concerns were identified.

The ESW single failure analysis was reperformed by Plant Change Request (PCR) 7409 to reflect the revised valve lineup which resulted from the 1SW-270 scenario. No additional consequential concerns were identified.

A self assessment Service Water System Operational Performance Inspection, as described in CP&L to NRC letter HNP-94-085, dated November 3, 1994, was completed December 15, 1994. The final assessment report will be issued by January 31, 1995.

Corrective Steps Taken to Prevent Further Violations:

Harris Engineering Support Section personnel are being briefed on the violations associated with the ESW system and on understanding the entire scope of assignments and regulatory basis for work. This action is scheduled for completion by December 31, 1994.

Formal single failure training and guidance will be provided to appropriate engineering personnel by March 31, 1995.

Date When Full Compliance Will Be Achieved:

Full compliance will be achieved by March 31, 1995, upon completion of the remaining corrective steps stated above.

Reported Violation B:

10 CFR 50.9, Completeness and Accuracy of Information, requires, in part, that information provided to the Commission by a licensee shall be complete and accurate in all material respects.

Contrary to the above, Carolina Power and Light Company (CP&L) failed to provide complete and accurate information in their June 17, 1991 letter to the NRC. Specifically, the initial activities, testing, and continuing program to which CP&L committed in their January 26, 1991 response to Generic Letter 89-13 were not completed on May 20, 1991, as CP&L had stated in their June 17, 1994 letter. The activity not completed was the failure to obtain final management review and approval of the single failure review of the service water systems. This information was material to the NRC's understanding of CP&L's actions to ensure operability of safety-related service water systems.

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

Denial or Admission:

The violation is admitted.

Reason for the Violation:

On July 18, 1990, the NRC issued Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The Generic Letter established extensive recommended actions in five major areas relative to: 1) biofouling surveillance and control, 2) heat exchanger testing, 3) routine inspection and maintenance of piping and components, 4) confirmation of system licensing basis, and 5) confirmation of the adequacy of system maintenance practices, operating and emergency procedures, and training. The initial recommended actions were to have been completed prior to plant startup following the first refueling outage beginning nine months or more after the date of the letter, with NRC notification within 30 days following implementation.

Carolina Power & Light Company responded on January 26, 1990, indicating, with certain clarifications, our intent to comply with the requirements of GL 89-13. An extensive set of Action Items were generated and assigned to multi-discipline, multi-organization individuals. The system single failure review was ultimately assigned to the corporate Nuclear Engineering Department (NED) as a part of the confirmation of system licensing basis issue. The single failure review was noted as complete on a closeout memorandum dated May 7, 1991, even though the memorandum itself noted the need to clean up editorial comments. The Action Item was subsequently closed onsite, based on the memorandum, even though there was no evidence of final NED management review and approval. This item, along with the others committed in the January 26, 1990 letter, was reported as completed to the NRC by CP&L letter dated June 17, 1991.



The cause of the cited violation was the failure of the Action Item closeout process to recognize the difference between completion of initial work activities associated with the single failure review and formal administrative closeout of a licensing basis study. During a subsequent review of the entire GL 89-13 for additional Action Item completion/closeout issues, additional examples of activities that had not been completed as stated in our June 17, 1991, closeout letter were discovered. The examples (deferral of "B" Charging/Safety Injection Pump oil cooler test, establishing a retesting frequency that did not meet the generic letter, and failure to conduct procedure and training reviews for the Component Cooling Water and Essential Services Chilled Water Systems) were discussed during the enforcement conference and noted in the Notice of Violation letter. These examples are indicative of a programmatic breakdown in the GL 89-13 issue management and closeout processes. A clear single point of accountability with appropriate expectations was not established for the service water program.

Corrective Steps Taken and Results Achieved:

The ESW single failure review was reperformed and formally approved on October 20, 1994 (PCR-7409). The Component Cooling Water and Essential Services Chilled Water Systems' single failure reviews are in progress and are scheduled to complete by January 31, 1995. No additional consequential issues have been identified to date.

Generic Letter 89-13 is being reconstituted. A single point of accountability with clear expectations has been established, and an action plan outlining our actions associated with the generic letter is in place. A program document is being developed as part of the overall action plan. The action plan has been discussed with the Resident Inspector's Office.

A self assessment Service Water System Operational Performance Inspection, as described in CP&L to NRC letter HNP-94-085, dated November 3, 1994, was completed December 15, 1994. The final assessment report will be issued by January 31, 1995.

Corrective Steps Taken to Prevent Further Violations:

Although not put in place to correct this specific problem, a new Engineering Service Request (ESR) process has been established under the Plant Programs part of the Plant Operating Manual (PLP-650, approved September 1, 1994). The ESR process provides a methodical and disciplined approach to resolving plant issues assigned to NED. A single failure evaluation such as the one completed for GL 89-13 would now be formally signed out and vaulted upon completion.

Procedure AP-028, "Correspondence Validation," is being created. This procedure will link with the existing correspondence verification and processing procedures, and will clearly specify both expectations and documentation requirements necessary to adequately close out Action Items and commitments associated with responses to the NRC and other regulatory bodies. This procedure will be approved and implemented by January 31, 1995.

Date When Full Compliance Will Be Achieved:

Full compliance will be achieved by January 31, 1995 upon completion of the remaining corrective steps stated above.