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SUBJECT: Responds to violations noted in Insp Rept 50-261/90-30.  
 Corrective actions: valve repaired by replacing clapper arm &  
 Maint Procedure PM-300 will be revised to incorporate insp  
 instructions for travel stop area.

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**Carolina Power & Light Company**

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**FEB 28 1991**

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H. B. ROBINSON STEAM ELECTRIC PLANT  
DOCKET NO. 50-261  
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NRC INSPECTION REPORT NO. 50-261/90-30 REPLY TO A NOTICE OF VIOLATION

Gentlemen:

Carolina Power and Light Company (CP&L) provides this reply to the Notice of Violation identified by NRC Inspection Report No. 50-261/90-30.

Severity Level IV Violation (RII-90-30-04)

Technical Specification 6.5.1.1.a requires written procedures be established for the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Items 9.a and 9.b of Appendix A requires maintenance be performed in accordance with written procedures appropriate to the circumstances and requires preventive maintenance schedules for inspection of equipment. Preventive Maintenance Procedure PM-300 provides for the inspection of the RHR Pump Discharge Valves 753 A and 753 B.

Contrary to the above, adequate procedures for the inspection of the RHR Discharge Check Valves 753 A & B were not established, in that, during inspection of these valves on November 24, 1990, PM-300 neither required the condition of the travel stop be evaluated nor documented. A worn travel stop contributed to a December 24, 1990, failure of valve 753 B.

I. Reason For The Violation

Carolina Power and Light Company (CP&L) accepts the violation, but does not concur with the statement in the body of the Inspection Report that a worn travel stop was a "known failure mode" for this type valve. Following the identification of the worn travel stop a detailed investigation was conducted which included review of the Electric Power Research Institute (EPRI) "Application Guidelines for Check Valves in Nuclear Power Plants", EPRI NP-5479, to determine if it identifies this failure mechanism. This document is the most complete study of check valves known and is considered to be the standard on check valves for the industry. Chapter 6 of this document is "Summary of Problem Areas of Check Valve Performance". This chapter contains no reference to a problem of a worn travel stop causing a stuck open valve for this type valve. The Managed Valve Maintenance Program (MVMP) check valve program is built around this EPRI document and it was referenced during the creation of the program including the writing of the procedures.

Industry Communications from the NRC and INPO were also reviewed for evidence of a failure of this type, but none were found for this type valve.

In addition, the vendor's Engineering Department was contacted and the vendor's Technical Manuals were reviewed without identifying any instructions or special inspection requirements related to a worn travel stop.

Carolina Power & Light was not aware of, and has been unable to find any evidence that a worn travel stop in this type valve is a "known failure mode". Therefore, it is CP&L's position that at the time of valve inspection on November 24, 1990, there was no information available that indicated a need to inspect the travel stop. During our investigation of this issue, it was noted that Preventive Maintenance Procedure PM-300 "Aloyco Swing Check Valve Inspection" requires enhancement for reasons other than those specified in the Notice of Violation. Specifically, procedure PM-300 contains acceptance criteria for Disc Stud to Clapper Arm radial clearance of 0.094. This clearance was changed from 0.062 to 0.094 in November 1990, with concurrence from Crane-Aloyco, however, following the valve failure in December 1990, the Crane-Aloyco Technical Representative stated that the 0.085 radial clearance measured at that time was excessive. Secondly, procedure PM-300 requires a measurement to be taken between the Disc Nut and the Disc Nut Washer but does not provide any acceptance criteria for this dimension. Both the radial and axial clearances were said to be excessive by the Technical Representative.

In that a worn travel stop appears to have contributed to this valve failure, a step will now be added to the procedure to visually inspect the travel stop for damage, and the acceptance criteria issues identified above will be addressed. A visual inspection will be performed of the travel stop. Due to the valve geometry, no Ultrasonic Test (UT) or quantitative measurement of this area is possible.

II. Corrective Steps That Have Been Taken And Results Achieved

CP&L is revising procedure PM-300 as discussed above. Additionally, the valve has been repaired by replacement of the Clapper Arm and weld repair of the worn travel stop area and has been satisfactorily tested for return to service.

III. Corrective Steps That Will Be Taken To Avoid Further Violations

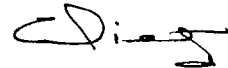
Given the new knowledge of this type of check valve failure mode, Maintenance Procedure PM-300 will be revised to incorporate specific inspection instructions for the travel stop area. This addition will enhance the visual inspection instructions. The procedure will also be revised to address the Disc Stud to Clapper Arm radial and axial clearance acceptance criteria.

IV. Date Full Compliance Will Be Achieved

Revision of PM-300 to incorporate appropriate inspection and acceptance criteria will be completed by June 30, 1991.

Should you have any questions regarding this submittal, please contact Mr. J. D. Kloosterman at (803) 383-1491.

Very truly yours,



Charles R. Dietz  
Manager  
Robinson Nuclear Project Department

DHB:kgs

cc: Mr. S. D. Ebnetter  
Mr. L. W. Garner  
INPO