CP&L

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Carolina Power & Light Company
Robinson Nuclear Plant
PO Box 790
Hartsville SC 29551

Robinson File No.: 13510E
Serial: RNP/94-1952

DEC 27 1994

Director, Office of Enforcement
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
NRC INSPECTION REPORT NO. 50-261/94-23
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

This provides the Carolina Power & Light (CP&L) Company reply to the Notice of Violation identified in NRC Inspection Report 50-261/94-23, which was transmitted by letter dated November 28, 1994. The Notice of Violation and Proposed Imposition of Civil Penalty involves the failure to maintain the pressurizer cooldown rate within the Technical Specification Section 3.1.2.3 limit of 200 degrees Fahrenheit per hour. Additional violations identified in the Inspection Report that are not assessed a civil penalty involve (1) the failure to establish containment integrity in accordance with Technical Specification Section 3.6.1 from August 6, 1994, until August 29, 1994, and (2) the failure to promptly change a plant procedure to control certain containment isolation valves.

As requested in the letter transmitting the Notice of Violation and Proposed Imposition of Civil Penalty, the enclosure restates each violation, followed by our reply. Also, enclosed is our check in the amount of $100,000 for payment of the Civil Penalty.

Should you have any questions regarding this matter, please contact Mr. R. M. Krich at (803) 857-1802.

Very truly yours,

C S Hinnant

C. S. Hinnant
Vice President

RDC:rdc
Enclosures
c: Mr. S. D. Ebneter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. W. T. Orders, USNRC Senior Resident Inspector, HBRSEP

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Affidavit

C. S. Hinnant, having been first duly sworn, did dispose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

C S Hinnant

C. S. Hinnant

Sondra W. Rhodes

Notary (Seal)

My Commission Expires: My Commission Expires
March 27, 1999

REPLY TO A NOTICE OF VIOLATION

I. Violation Assessed a Civil Penalty

Technical Specification 3.1.2.3 limits the maximum pressurizer cooldown rate to 200 degrees Fahrenheit per hour.

Technical Specification 6.5.1.1.1.a, requires that written procedures be established, implemented, and maintained covering applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978. Appendix "A" of Regulatory Guide 1.33, recommends General Plant Operating Procedures.

General Procedure, GP-007, Plant Cooldown From Hot Shutdown to Cold Shutdown, Precaution and Limitation 3 specifies that the maximum pressurizer cooldown rate shall not exceed 200 degrees Fahrenheit per hour.

Contrary to the above, on February 26, 1994, the pressurizer cooldown rate exceeded 200 degrees Fahrenheit per hour when operators were collapsing the pressurizer bubble in accordance with GP-005. Pressurizer water space, steam space, and surge line cooldown rates all exceeded the Technical Specification limit with maximum cooldown rate observed approaching 240 degrees Fahrenheit per hour. Subsequent reviews indicated that pressurizer cooldown rates were exceeded 16 times since 1980.

1. Admission or Denial

Carolina Power & Light (CP&L) agrees that the violation occurred as described.

2. The Reasons for the Violation

This violation was caused by personnel error. Assumptions had erroneously been made in the past by the plant staff in that compliance with Technical Specifications (TS) Section 3.1.2.3 heatup and cooldown rates for the pressurizer would be bounded by compliance with the Reactor Vessel heatup and cooldown rate limits. The incorrect assumptions were exacerbated by General Procedure (GP)-007, "Plant Cooldown From Hot Shutdown to Cold Shutdown," revision 32, being inadequate. This procedure contained a precaution that the pressurizer cooldown rate shall not exceed 200 degrees F per hour, and referenced TS Section 3.1.2.3. However, the procedure has never provided direction to specifically monitor and log the pressurizer heatup and cooldown rates. Additionally, failure to adequately evaluate similar Operating Experience information from an event at the Sharon Harris Nuclear Power Plant resulted in this condition not being identified and corrected previously.

3. The Corrective Steps That Have Been Taken and the Results Achieved

A detailed, quantitative analysis was performed by the reactor vendor that confirmed and documented that exceeding the pressurizer cooldown rate has not adversely affected the structural integrity of the pressurizer and that continued operation is acceptable. Furthermore, the design life of the pressurizer is unaffected by these transients. This analysis, which was provided to the NRC by our letter dated October 28, 1994, included other similar transients, identified through an historical records search, that had occurred during past unit operations. The record search determined that cooldown "operations" could be characterized by two historical periods. During the period from May 1971 (i.e., initial plant startup) to December 1980, the methodology for plant cooldown was to take the Reactor Coolant System (RCS) water solid at a coolant temperature above 200 degrees F. This reduced the temperature difference between the coolant in the RCS and in the pressurizer. The potential for exceeding the pressurizer TS cooldown rate limits under these conditions was minimal. For this time period, one instance of the pressurizer temperature increasing more than 100 degrees F in one hour was identified. No occurrences of pressurizer temperature decreasing more than 200 degrees F in one hour were identified in the available data.

Thirteen reactor cooldowns which occurred between 1980 and August 1989, were analyzed during which conditions and operating practices could have resulted in exceeding pressurizer TS heatup and cooldown rate limits. During this time period, cooldowns were performed with a steam bubble in the pressurizer for RCS coolant temperatures below 200 degrees F; however, temperature recordings were suspended when RCS coolant temperature reached 200 degrees F. This period included seven times where the pressurizer was taken water solid for which data was not available; therefore, based on the absence of data, these seven cooldowns were considered for analysis purposes to have exceeded the pressurizer TS cooldown rate limit.

Plant computer data was available for more recent cooldowns (i.e., August 29, 1989, to February 26, 1994). The data for these cooldowns were reviewed to identify any transients where the 200 degrees F per hour cooldown or 100 degrees F per hour heatup rate TS limits were exceeded in the pressurizer. The results of this review identified 16 cooldown and eight heatup excursions which exceeded the TS temperature change rate limits for the pressurizer. The results of the analyses confirmed that the stresses incurred in the pressurizer were within acceptable limits, and that the structural integrity of the system was not adversely affected. The analysis confirmed that continued operation of the pressurizer is acceptable. Furthermore, the design life of the pressurizer is unaffected by these transients.

4. The Corrective Steps That Will Be Taken to Avoid Further Violations

Procedure GP-007 has been revised to specifically log pressurizer temperatures to ensure TS compliance, and operating crews have been informed of this change as part of the most recent licensed operator requalification training cycle. Additionally, TS Section 3 has been reviewed to determine if any other Limiting Conditions for Operations have not been adequately addressed by procedure. No similar instances were found.

Selected Operating Experience information from 1988 to the present will be re-reviewed and evaluated for applicability. This review is expected to be complete prior to the next refueling outage, currently scheduled for April 1994.

Additionally, plant operating crews were counseled on the need to question past understandings and practices regarding TS compliance.

5. The Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

II. Violations Not Assessed a Civil Penalty

Violation A:

Technical Specification 3.6.1 requires that containment integrity be established whenever the reactor is not in cold shutdown condition.

Technical Specification 6.5.1.1.1.a requires that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978. Appendix "A" of Regulatory Guide 1.33, recommends General Plant Operating Procedures.

General Procedure, GP-005, Power Operation, requires valves MS-19, MS-19A, MS-21, MS-28, MS-30, MS-37, MS-37A, and MS-39 (Before and After Seat Drain Valves) to be closed during plant startup.

Contrary to the above, from August 6, 1994, until August 29, 1994, while operating at power, containment integrity was not properly established and GP-005 was not implemented during plant startup in that the MSIV Before and After Seat Drain Valves, six of which are containment isolation valves, were open instead of closed.

1. Admission or Denial

CP&L agrees that the violation occurred as described.

2. The Reasons for the Violation

This event was caused by personnel error. The results of our investigation revealed that a total of fifteen main steam line drain line isolation valves, normally referred to as "above and below seat drain valves," had been manipulated when the reactor was in the hot shutdown condition. On August 6, 1994, six of these valves were to be closed to establish containment integrity during the performance of procedure GP-005, "Power Operation." Prior to that time, with the reactor in the hot shutdown condition and the Main Steam Isolation Valves (MSIVs) closed, the MSIV drain line isolation valves had been throttled open, as authorized by procedure GP-002, "Cold Shutdown to Hot Subcritical at No Load Tavg," to allow for Reactor Coolant System (RCS) temperature control. To achieve temperature control, the root isolation valve (i.e., the containment isolation valve) for the two MSIV drain lines for each MSIV must be opened; one additional valve for each above seat MSIV root isolation valve must be opened; and, the last downstream isolation valve for each above and below seat MSIV drain line is throttled. All of these actions are taken by the direction of the control room. Adjusting temperature in this manner is routinely directed by a licensed Control Operator in the control room via communication to an Auxiliary Operator (AO) in the field.

A breakdown in communication and improper work practices during plant startup activities contributed to nine of the valves not being returned to their closed position. On August 6, 1994, during performance of GP-005, the Senior Control Operator (SCO) in the control room directed an SCO in the field to isolate the MSIV drain line valves. The SCO in the field did not realize that this direction was specifically for performance of plant startup activities in accordance with GP-005. Therefore, under the impression that the valves were being manipulated for RCS temperature control only, the SCO in the field directed two AOs to complete this task while he observed. Since the other nine root isolation valves, including the six containment isolation valves, are normally open when using the above and below seat drain valves for temperature control, these valves were not closed at that time. Subsequently, due to a lapse in attention to detail, the SCO who had been in the field improperly documented on the official copy of procedure GP-005 that all fifteen of the valves had been verified closed, when in fact, the six containment isolation valves had not been returned to the closed position as required.

3. The Corrective Steps That Have Been Taken and the Results Achieved

Upon discovery of this condition, the mispositioned valves were placed in the closed position. A safety analysis was then completed that determined that the rest of the containment isolation configuration with respect to manually closed isolation valves, met license requirements and license bases documentation. Expectations for documenting equipment manipulations conducted in the field have been reinforced. Appropriate disciplinary action was taken with the SCO that signed for all fifteen valves being closed.

4. The Corrective Steps That Will Be Taken to Avoid Further Violations

An evaluation of RCS temperature control practices during hot shutdown conditions has been conducted. This evaluation concludes that the preferred method of RCS temperature control is by utilization of the above and below seat drain valves. The design of the valves and associated piping exceed the maximum temperature and pressure conditions of the steam system. As such, the specific valve design (i.e., globe) is considered appropriate for throttling steam applications, and the valve seat and disc material provide superior erosion resistance during severe service duty. Use of these valves and associated piping for this application is appropriate and remains within the design bases of the plant. To ensure plant configuration is appropriately maintained when using these valves for temperature control, operating procedures are being revised to provide an appropriate temperature band and instructions on how to maintain temperature with the MSIVs closed. Further corrective actions are discussed in Violation B.

5. The Date When Full Compliance Will be Achieved

Full compliance will be achieved with the procedure revisions by January 6, 1995.

Violation B:

10 CFR 50, Appendix B, Criterion XVI, requires that measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, as of September 2, 1994, conditions adverse to quality were not promptly corrected, in that changes to plant documents to control certain containment isolation valves had not been promptly made. Specifically, 38 containment isolation valves listed in the Containment Isolation Generic Issues Document (GID), completed in January 1994, and a proposed revision to OP-923, Containment Integrity, were not being controlled as containment isolation valves.

1. Admission or Denial

   CP&L acknowledges the violation.

2. The Reasons for the Violation

   This violation was caused by lack of a formal process for review and acceptance of the Containment Isolation Generic Issue Document (GID) by plant personnel. The GIDs and Design Basis Documents (DBDs) were initially considered to be only for use by design engineering personnel; therefore, reviews by other plant personnel were not deemed necessary nor performed. Plant personnel outside of the engineering organization were generally not knowledgeable about the content of the DBDs and GIDs, nor their usage. Proposed plant document changes that were identified during the development of the GID were not included in a formal tracking system to ensure that they were revised appropriately.

3. The Corrective Steps That Have Been Taken and the Results Achieved

   Changes to Operating Procedure (OP)-923 have been implemented to identify the Main Steam Isolation Valves drain line valves (MSIVs) MS-19, MS-21, MS-28, MS-30, MS-37, and MS-39 as containment isolation valves.

   A review of the Containment Isolation GID was performed, and concerns were identified with regard to the GID not being consistent with the licensing basis of the plant. As a result of this review, the GID has been withdrawn from use.

4. The Corrective Steps That Will be Taken to Avoid Further Violations

A procedure will be implemented that will: (1) ensure that plant personnel other than the Design and System Engineering staff perform formal reviews of the non-validated DBDs and GIDs for possible impact upon other plant documentation; (2) generate action items based upon the results of these reviews; and, (3) ensure that all action items are resolved and implemented in affected plant documentation as needed.

During the first quarter of 1995, the configuration of containment isolation penetrations will be re-evaluated and analyzed on a penetration-by-penetration basis. The plant configuration will be modified and plant procedures revised if appropriate. Subsequent to this, the GID will be reconstituted to reflect the results of this effort.

5. The Date When Full Compliance Will Be Achieved

Full compliance will be achieved with the implementation of procedural DBD/GID revision processes by January 31, 1995.