



Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
POST OFFICE BOX 790
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MAR 14 1985

Robinson File No: 13510E

Serial: RNP/85-471

Dr. J. N. Grace
Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30323

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
REGION II INSPECTION REPORT 85-06

Dear Dr. Grace:

Carolina Power and Light Company (CP&L) has received and reviewed the subject report and provides the following response.

A. Severity Level IV Violation (RII-85-06-01-SL4)

H. B. Robinson Technical Specifications, paragraph 3.3.1, require that piping associated with the safety injection pumps, residual heat removal pumps, and residual heat exchangers be operable for reactor criticality. NRC IE Bulletin 79-02, Revision 1, Supplement 1, defines pipe supports with concrete expansion anchor safety factors less than 2 as inoperable.

Contrary to the above, prior to startup from the Steam Generator Replacement Outage, the licensee had erroneously used a concrete expansion anchor safety factor of 1, considered the above noted systems operable, started up the reactor, and was critical at about 50 percent power. Upon notification of the Bulletin criteria, the licensee determined the above noted piping and eight associated pipe supports to be inoperable due to concrete expansion anchor safety factors that did not comply with the above noted IEB 79-02 operability definition. The reactor was subsequently shut down by the licensee. Subsequent licensee evaluation resulted in 44 additional inoperable pipe supports on piping required by Technical Specifications to be operable for reactor criticality.

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Response

1. Admission or Denial of the Alleged Violation

CP&L acknowledges the alleged violation.

2. Reason for the Violation

Closeout work associated with IE Bulletin IEB 79-14 had been performed during 1983 and 1984. Analytical work associated with these closeout activities identified 662 seismic restraint points which required corrective action (modification) to meet the requirements of IEB 79-14 and associated IE Bulletins of which IEB 79-02 was one.

Corrective action associated with the 662 seismic restraint points was started during the 1984 Steam Generator Replacement Outage (SGRO). Due to the schedule impact of these modifications on the SGRO, criteria were established which allowed interim operation with seismic restraints whose designs did not fully meet the IEB 79-02 requirements for expansion anchor bolts. The criteria were based on the expansion anchor bolts and structural steel having a minimum safety factor of 1.0 compared to the ultimate capacities as allowed by codes and manufacturer's allowables. Based on the criteria established, 132 structures were declared operable for interim operation, and modifications were not performed on those structures prior to the end of the SGRO.

On January 15, 1985, after discussions with NRC personnel, it was realized that the interim criteria established did not include the requirements for restraint operability included in IEB 79-02, Revision 1, Supplement 1, dated August 20, 1979. This was omitted due to an oversight by the personnel establishing the interim operation criteria. Review of the 132 structures against the IE Bulletin 79-02, Revision 1, Supplement 1 criteria revealed that a number of structures did not meet this criteria and were therefore, by definition, inoperable. The inoperable structures resulted in the inability to analytically qualify the associated piping under the seismic criteria of the FSAR.

3. Corrective Steps Which Have Been Taken

The unit was shut down on January 16, 1985.

Interim operation criteria were reestablished which included the requirements of the IE Bulletin 79-02, Revision 1, Supplement 1. Each of the 132 structures not modified was reviewed against the new criteria. Results of this review indicated that 95 of the 132 structures did not meet the criteria.

Additionally, the reviews performed to determine compliance with the newly established criteria revealed that a number of structures did not meet the criteria for interim operation applied prior to the end of the Steam Generator Replacement Outage. Specifically, 90 structures (a subset of the 95 identified not meeting the new criteria) did not have safety factors greater than or equal to 1.0 or did not meet all the criteria for being a seismic restraint. This deviation was determined to be caused by the use of engineering judgements based on limited analytical information which, in most cases, were non-conservative. Lack of information was due to the failure of the engineering organization to complete necessary analyses required to support the judgements made.

One additional structure previously identified as not requiring modification was reevaluated as requiring modification, bringing the total number of structures not meeting at least the interim operational criteria to 96.

Modifications were performed on the 96 structures not meeting the interim criteria (78 were modified to meet actual design values, 18 were modified to meet the interim criteria). Prior to returning to power, all but 39 of the structures met the original design criteria. These 39 structures meet the interim criteria but will require additional modification. Some structures are being modified now where operations permit.

4. Corrective Steps Which Will be Taken

Modifications to the remaining 39 structures, which are not permitted by plant operation, will be completed during the next refueling outage.

5. Date When Full Compliance Will be Achieved

The structures met operability requirements or interim operability requirements prior to returning the unit to service on February 10, 1985. The remaining structures will be modified prior to power operation following the next refueling outage.

B. Severity Level V Violation (RII-85-06-02-SL5)

10CFR50, Appendix B, Criterion V requires that activities affecting quality be accomplished in accordance with instructions, procedures or drawings.

1. EBASCO Services, Incorporated Procedure No. 79-14/C-3, Revision 3, Seismic Restraint Analysis and Design, paragraph 6.6 requires that "new loads" documented by the Mechanical Stress Analysis Department be used for restraint modification design.

2. EBASCO Services, Incorporated "Procedure for Inspection and Testing of Existing Concrete Expansion Anchor Bolts," Revision 4, Table 4 requires reduction of the capacity of 1 1/4" diameter concrete expansion anchors that are less than 7 1/2" from a concrete edge.

Contrary to the above:

1. Maximum new loads were not used for the baseplate and concrete expansion anchor design for safety-related seismic restraint MS-1C-1062 modification.
2. A reduction of the capacity of 1 1/4" diameter concrete expansion anchors that were designed to be less than 7 1/2" from a concrete edge was not documented on the design calculation for safety-related seismic restraint SI-20-2310.

Response

1. Admission or Denial of the Alleged Violation

CP&L acknowledges the alleged violation.

2. Reason for Alleged Violation

The cause of the violation was failure to follow procedures by the EBASCO Services personnel performing the respective calculations.

Item 1 of the violation relates to the incorrect load being used in the design of a seismic restraint MS-1C-1062. Item 2 of the violation was due to the failure of the analyst/engineer to adequately document the conservative approach used in the design calculation associated with restraint SI-20-2310.

3. Corrective Steps Which Have Been Taken

The calculations associated with restraints MS-1C-1062 and SI-20-2310 were repeated using the correct loads and criteria. Both calculations revealed that the restraints were technically adequate.

A technical review and documentation audit were performed by the CP&L Nuclear Engineering and Licensing Department and Corporate Quality Assurance Department. Results of their sampling indicate that there are numerous documentation inadequacies; however, the calculations are technically adequate.

4. Corrective Steps Which Will be Taken

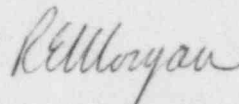
Each final pipe stress analysis and restraint analysis will be checked for adequacy of documentation.

5. Date When Full Compliance Will be Achieved

The above corrective action will be completed prior to Bulletin closeout which will be completed prior to power operation following the next refueling.

If you have any questions concerning this response, please contact Mr. David C. Stadler at (803) 383-4524, Extension 363.

Very truly yours,



R. E. Morgan
General Manager
H. B. Robinson S. E. Plant