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Carolina Power & Light Company

Brunswick Steam Electric Plant

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
REPLY TO NOTICE OF VIOLATION AND NOTICE OF DEVIATION

Gentlemen:

The Brunswick Steam Electric Plant has received NRC Inspection Report 50-325/92-04 and 50-324/92-04 and finds that it does not contain information of a proprietary nature. This report included a Notice of Violation and a Notice of Deviation.

Enclosed is Carolina Power & Light Company's response to that Notice of Violation and Deviation.

Yours very truly,

J. W. Spencer, General Manager
Brunswick Nuclear Project

SFT/

Enclosure

cc: Mr. S. D. Ebneter
Mr. R. H. Lo
BSEP NRC Resident Office

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ENCLOSURE

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REPLY TO NOTICE OF VIOLATION AND
NOTICE OF DEVIATION

VIOLATION:

During an NRC inspection conducted on February 17 - March 27, 1992, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action, " 10 CFR Part 2, Appendix C, (1992), the Violation is listed below:

> 10 CFR 50.59 requires that changes to the facility as described in the safety analysis report be reviewed for determination that an unreviewed safety question does not exist.
>
> ASME Boiler and Pressure Vessel Code, Section XI, IWA 5000 requires that a system pressure test be conducted following replacement of pressure boundary parts.
>
> Contrary to the above, on January 5, 1992, the temporary replacement of Residual Heat Removal Service Water Pump 1B with blank flanges was not reviewed to determine if an unreviewed safety question existed nor was a system pressure test performed.
>
> This is a Severity Level IV violation (Supplement I).

RESPONSE TO VIOLATION:

Admission or Denial of Violation:

Carolina Power & Light Company admits to this violation.

Reason for the Violation:

On December 31, 1991, the B Loop of the Residual Heat Removal Service Water (RHRSW) system was placed under clearance to support repair of the Unit 1 1B RHRSW pump. Due to RHRSW system design, work on one of the two pumps comprising the B loop, requires a clearance that makes both pumps inoperable. This condition required a seven day Technical Specification Limiting Condition of Operation (LCO).

On day four of the seven day LCO, the decision was made to remove the 1B RHRSW pump casing to facilitate the repair. Because the time required for removal, repair, and reinstallation of the pump casing would exceed the seven day LCO, a plan was developed to isolate the 1B RHRSW pump piping from the redundant pump (1D RHRSW pump) in order to declare the redundant pump operable and extend the LCO to thirty-one days as allowed by Technical Specifications. Blanking off the 1B RHRSW pump suction and discharge piping was determined to be the appropriate approach to accommodating pump isolation. A plan was developed to blank off the suction and discharge piping by use of blind flanges. During planning of the blind flange installation activity, the determination was made to evaluate the seismic concerns associated with removal of a seismic anchor (i.e., the pump casing itself) and acceptability of using non-Q flanges. On January 5, 1992, Engineering Evaluation (EER) 92-004 was approved confirming the system met Short Term Structural Integrity (STSI) requirements and the acceptability of the flanges. On January 6 1992, the blind flanges were installed, the redundant pump was declared operable, and the seven day LCO extended to a thirty-one day LCO.

On January 6, 1992, after extending the seven day LCO but prior to the end of the original seven day LCO, the NRC resident inspector raised concerns regarding the need for pressure boundary testing to ensure the adequacy of the temporary condition created by the installation of the blind flanges and a safety evaluation verifying acceptability of the temporary change. Based on the resident inspector's queries, the decision was made to conduct a pressure boundary test in accordance with ASME Section XI requirements. The test was completed satisfactorily within the original seven day LCO period. In addition, an Adverse Condition Report (ACR) 92-016 was initiated on January 9, 1992 to address the programmatic aspects of this activity which allowed a temporary condition to exist without performance of a safety evaluation.

The violation occurred for the following reasons:

1. Engineering personnel prepared and approved an Engineering Evaluation (EER) in support of a planned change which was established to provide system operability. The evaluation did not include the required safety evaluation. The following summary of causes was the basis for this action:

    a. The Nuclear Engineering Department (NED) prepared a Short Term Structural Integrity (STSI) EER without a safety evaluation based on the mindset used for "as found" conditions. "As found" STSI conditions do not require safety evaluations per NSAC-125 guidance. Although the STSI evaluation which was performed did verify the acceptability of the involved piping supports as meeting STSI requirements, the evaluation did not address the installation of the blind flanges as a planned temporary condition.

The following factors influenced the preparation of the evaluation performed:

- Engineering Evaluation Procedure, ENP-12, does not specifically require a safety evaluation for STSI conditions which are planned changes or for short-term/temporary conditions which are deviations from the Final Safety Analysis Report, design, drawings, code or quality requirements.

- NED did not follow ENP-12 guidance and classify the EER as a temporary condition even though it included justification for the use of a non-Q flange.

- NED involved personnel did not have a complete and adequate understanding of what constitutes a planned temporary change versus "as found" STSI conditions and the appropriate safety evaluation requirements.

- The Technical Support (on-site engineering) involved personnel provided insufficient direction via written communication by directing NED to perform a "seismic study" and to evaluate the acceptability of using non-Q flanges. Technical Support personnel did not request NED to perform a complete evaluation of the acceptability of the planned temporary change. Though additional verbal discussions occurred between NED and Technical Support personnel, NED, being familiar with structural assessments, perceived their assignment as addressing structural issues only.

The following factors influenced the review and approval of the evaluation performed:

- Although Technical Support questioned NED on the need for a safety evaluation, NED's justification was accepted due to Technical Support's unfamiliarity with the generic safety evaluation performed for STSI conditions. During the course of this communication, NED stated that individual safety evaluations for STSI conditions were not required per plant procedure. This basis was incorrect as the safety evaluation can only be waived for "as found" STSI conditions, and the installation of the blind flanges was a planned change.

- The Technical Support personnel involved did not have a complete and adequate understanding of what constitutes a planned temporary change versus "as found" STSI conditions and the appropriate safety evaluation requirements.

2. The Maintenance planner responsible for developing the work instruction did not recognize that the installation of the blind flanges would create a temporary condition or that an "in-process test" (i.e., test required to restore system operability prior to completion of a maintenance activity) was required prior to returning the system to operability. The following summary of causes was the basis for this action:

   a. The "Nature of Trouble" discussion contained in the Work Request Job Order (WRJO) did not indicate to the planner that the system would be returned to service.

      While Maintenance procedure, 0MMM-003, Corrective Maintenance (Automated Maintenance Management System), provides guidance for preparation of WRJO repair instructions for "temporary repairs", the procedure does not provide the necessary guidance to the planner regarding "temporary changes" or situations requiring "in-process testing".

   b. The Post Maintenance Testing Requirement (PMTR) process assigns the responsibility for the determination of post maintenance testing requirements to the planners; however, a planner's work background and training do not adequately prepare a planner for making determinations as complex and varying as Inservice Inspection (ISI) and Code testing requirements.

      While the existing PMTR process provides controls for testing following completion of maintenance, the process is not designed to accommodate "in-process testing".

   c. Maintenance and Engineering personnel were insufficiently aware of the impact of using temporary blind flanges on system operability. This condition was exacerbated by a long standing practice of considering the installation of blind flanges on the Residual Heat Removal Service Water system pumps as an "in-process" maintenance activity not representing a change to the facility.

   d. An earlier review of the Institute of Nuclear Power Operation Good Practice on Temporary Modifications (which identified requirements for installation of temporary blind flanges), did not identify the need for appropriate process and procedure changes regarding the use of blind flanges.

Corrective Steps Which Have Been Taken and Results Achieved:

The following corrective actions have been taken:

1. The original STSI evaluation has been revised to include a safety evaluation which addresses the impact of the temporary installation of the blind flanges on the operability of the Residual Heat Removal System. Additionally, the safety evaluation determined that the activity did not constitute an unreviewed safety question.

2. As an interim measure, a Management directive has been established requiring a Technical Support ISI group review of WRJOs initiated against ISI Class 1, 2, 3 or S (Special - encompasses ISI augmented inspection items) equipment to ensure appropriate ISI testing requirements are specified. Based on this review, appropriate changes can be made to the PMTRs prior to work execution.

3. Appropriate Maintenance, Operations, NED, and Technical Support personnel have been informed of the need to be sensitive to those work activities which establish temporary conditions and the need for ensuring appropriate evaluation and testing.

Corrective Actions That Will Be Taken To Avoid Further Violations:

The following corrective actions will be taken to avoid further violation:

1. Engineering Evaluation Procedure, ENP-12, is expected to be revised by June 30, 1992 to require a safety evaluation of all planned temporary changes whether those changes constitute an STSI or other condition.

2. Evaluation of the effectiveness in existing Technical Support and NED training programs and identification of the potential deficiencies which contributed to a failure to identify the installation of blind flanges as a temporary condition requiring a safety evaluation and completion of the actions necessary to correct the deficiencies will occur by September 30, 1992.

3. 0MMM-003, Corrective Maintenance (Automated Maintenance Management System), will be revised by July 31, 1992 to require ISI review of WRJOs initiated against ISI Class 1, 2, 3 or S (Special - encompasses ISI augmented inspection items) equipment to ensure appropriate ISI testing requirements are specified. This revision will also provide clearer expectations of planner actions associated with work instruction preparation and directions for planning and testing of temporary changes, including blind flange installations.

4. A Staff Assistance Team has been tasked to develop a PMTR matrix in conjunction with Operations and Technical Support for issue in November, 1992. The matrix will define PMTR responsibility as related to applicable site organizations. This matrix will be included within a PMTR plant procedure. The PMTR plant procedure will provide guidelines for selection of testing requirements and a flow chart for PMTR performance. This procedure is expected to be completed by November 30, 1992.

5. A performance based planner/analyst training program including training to address temporary changes and associated "in-process testing" requirements will be implemented by December 31, 1992.

6. An evaluation of the adequacy of those plant processes (i.e., clearance procedure, installation of mechanical and electrical jumpers, WRJC, etc.) which create temporary conditions will be performed by October 1, 1992. Special consideration will be given to consolidating the current processes associated with temporary conditions and ensuring 10CFR 50.59 requirements for performance of safety evaluations are met.

. A review of the event with the Site Work Force Control Group representatives will be performed by September 30, 1992 to ensure a higher sensitivity to temporary conditions and associated testing requirements during the screening and scheduling of work activities.

Date When Full Compliance Will Be Achieved:

Based on the interim measures which elevate plant personnel's awareness of temporary conditions requiring evaluations and "in-process testing", and require ISI review of all ISI related WRJOs prior to work execution, Carolina Power and Light believes that compliance has been achieved. To ensure continued compliance those additional corrective actions delineated herein will be completed by December 31, 1992.

DEVIATION:

During an NRC inspection conducted on February 17 - March 27, 1992, a deviation of written commitment was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action", 10 CFR Part 2, Appendix C, (1992), the deviation is listed below:

> Notice of Violation dated March 12, 1991 required a written statement ("Reply to a Notice of Violation") including corrective steps that will be taken to avoid further violations and the date when full compliance will be achieved.
>
> The associated Reply to a Notice of Violation dated April 11, 1991 stated that "Improved guidance with respect to determination and conduct of Post Maintenance Testing Requirements will be developed by August 19, 1991."
>
> Contrary to the above, improved guidance with respect to determination and conduct of Post Maintenance Testing Requirements was not developed by August 19, 1991 in that these actions had not been completed by March 12, 1992.

RESPONSE TO DEVIATION:

Admission or Denial of Deviation:

Carolina Power & Light Company admits to this deviation.

Reason for the Deviation:

The magnitude of the effort required to improve the Post Maintenance Testing Requirement (PMTR) process was much greater than anticipated.

Corrective Steps Which Have Been Taken and Results Achieved:

As an interim measure, a Management directive has been issued requiring Technical Support Inservice Inspection (ISI) group review of Work Request Job Orders (WRJOs) initiated against ISI Class 1, 2, 3 or S (Special - encompasses ISI augmented inspection items) equipment to ensure technical accuracy. Based on this review, appropriate changes can be made to the PMTRs prior to work execution.

Corrective Actions That Will Be Taken To Avoid Further Violations:

A Staff Assistance Team has been tasked to develop a PMTR matrix in conjunction with Operations and Technical Support for issue in November, 1992. The matrix will define PMTR responsibility as related to applicable site organizations. This matrix will be included within a PMTR plant procedure. The PMTR plant procedure will provide guidelines for selection of testing requirements and a flow chart for PMTR performance.

0MMM-003, Corrective Maintenance (Automated Maintenance Management System), will be revised to require ISI review of WRJOs initiated against ISI Class 1, 2, 3 or S (Special - encompasses ISI augmented inspection items) equipment to ensure technical accuracy. This revision will also provide clearer expectations of planner actions associated with work instruction preparation and directions for planning and testing of temporary changes, including blind flange installations.

Date When Corrective Actions Will Be Complete:

The PMTR plant procedure is expected to be completed by November 30, 1992. The revision to 0MMM-003 is expected to be completed by July 31, 1992.