



Carolina Power & Light Company

Brunswick Steam Electric Plant

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April 8, 1988

FILE: B09-13510C

SERIAL: BSEP/88-0394

U.S. Nuclear Regulatory Commission

ATTN: Document Control Desk

Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

LICENSE NOS. DPR-71 AND DPR-62

RESPONSE TO INFRACTIONS OF NRC REQUIREMENTS

Gentlemen:

The Brunswick Steam Electric Plant (BSEP) has received I&E Inspection Report 50-325/88-06 and 50-324/88-06 and finds that it does not contain information of a proprietary nature.

This report identified an item that appears to be in noncompliance with NRC requirements. Enclosed please find Carolina Power & Light Company's response to this violation.

Very truly yours,

C. R. Dietz, General Manager  
Brunswick Steam Electric Plant

MJP/srg

Enclosure

cc: Dr. J. N. Grace (NRC RII)  
Mr. E. D. Sylvester (NRR)  
BSEP NRC Resident Office

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## VIOLATION

Technical Specification (TS) 4.0.5.a.2 requires that inservice testing of ASME code class valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR50, Section 50.55a(g), except where specific written relief has been granted by the commission pursuant to 10CFR50, Section 50.55a(g)(6)(i). (The applicable addenda for Brunswick is the winter 1981 addenda.)

TS 6.8.1 requires establishment, implementation, and maintenance of written procedures for performance of test activities, such as the valve testing specified by ASME, Section XI. Implicit in the establishment of the procedures is that they must contain steps and criteria to assure conformance with the ASME test requirements. Implicit in implementing and maintaining the procedures is assuring that personnel follow the procedures and that they be alert to identify and promptly correct procedural deficiencies.

Contrary to the above, instances were identified in which the applicable ASME test requirements (W81 addenda) were not met, procedures did not contain steps or criteria which would assure conformance of testing to the ASME requirements, personnel failed to perform the ASME valve testing in accordance with the test procedures, and knowledgeable personnel who used the procedures did not promptly identify and correct deficiencies in the procedures. Further, the Commission had apparently not granted the licensee relief to deviate from the related ASME requirements. The subject instances are described below:

1. Licensee procedure PT-11.3 (rev. 12), used between November 1984 and January 1986, specifies the ASME, Section XI, stroke time testing method for air-operated valves incorrectly. Based on test data, the error results in omission of about 70% of the actual stroke time.

(Previous revisions may have also contained the error.) As of January 1988, other licensee procedures for stroke timing air-operated valves contained a similar error.

2. Data from stroke time tests performed using PT-11.3 indicate that test personnel performed the timing correctly in many instances and thus violated the procedure requirements.
3. Although the test data and statements by test personnel indicated that many test personnel knew the correct method for stroke timing the valves in PT-11.3, the test personnel failed to identify and obtain correction of the procedural error. The error existed for at least three years and was also found in other procedures.

4. ASME, Section XI, and licensee procedure ENP-16.1 specify criteria requiring stroke time testing frequency to be increased to monthly (from quarterly) when large increases in stroke time have been experienced. Licensee records indicate that such large increases in stroke time occurred when procedure PT-11.3 was performed on April 27 and July 28, 1987, but that test frequency was not increased.
5. The licensee has no procedural criteria for identifying and reporting abnormal or erratic valve actions, such as abnormal changes in stroke time. Abnormal changes in stroke time, which occurred while performing PT-11.3 during 1986 and 1987, were not identified or evaluated as such.

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

#### RESPONSE TO EXAMPLES 1, 2, AND 3 OF VIOLATION

##### I. Admission or Denial of the Alleged Violation

Carolina Power & Light Company acknowledges Examples 1, 2, and 3 of the violation occurred as described.

##### II. Reason for the Violation

When specific instructions for valve stroke timing were incorporated into the test procedures in 1984, the author of the procedures incorrectly believed that plant valves utilized the same indicator logic (both lights lit in midposition). This condition is true for motor-operated valves; however, it does not apply to air-operated valves. The discrepancy in the procedure regarding the relatively few air-operated valves was not recognized during technical reviews of the procedure prior to implementation or during its subsequent use. Solenoid-operated valves have the same logic as air-operated valves; however, this cannot be distinguished by the operator as a result of the relatively short valve stroke times involved. Numerous periodic test (PT) procedures contained identical notes regarding valve stroke timing where the intent of the note was the same regardless of indicator light logic.

Valve stroke time is measured from the time the valve control switch is turned to the time that full open or full closed indication is received. The operators performing the subject tests overlooked the discrepancy between the note and the indicator logic for the few unusual valves. A contributing factor to this oversight is that the note was contained in the purpose section of the procedure versus in the procedural steps where it could have been easier to detect the discrepancy. In one instance, the operator did time the valve per the note; however, he failed to properly identify or take corrective action regarding the error in the procedure.

### III. Corrective Steps Which Have Been Taken and the Results Achieved

Periodic test procedures have been revised to specify the method for stroke time testing air-operated valves.

### IV. Corrective Steps Which Will be Taken to Avoid Further Violations and When Full Compliance Will be Achieved

By May 30, 1988, PT procedures for solenoid-operated valves will be appropriately revised to specify the proper method for stroke time testing. By July 14, 1988, this event will be reviewed with appropriate Operations personnel to discuss the importance of verbatim procedure compliance and identifying as well as taking correct steps regarding errors in procedures.

## RESPONSE TO EXAMPLE 4 OF VIOLATION

### I. Admission or Denial of the Alleged Violation

Carolina Power & Light Company denies, in part, this portion of the violation as stated.

Contrary to the violation as stated, the tests performed on April 27, 1987, and July 28, 1987, did have their testing frequency increased. The test performed on April 27, 1987, showed an increase exceeding 50% for valves F004, F019, and F020 from the previous test run on January 25, 1987. Attachment 5 of ENP-16.1 was issued April 29, 1987, to increase the testing frequency for these valves. PT-11.3 was performed on May 21, 1987, with the following results: F004, 2.78 sec.; F019, 3.38 sec.; F020, 2.79 sec. The procedure was performed again on June 20, 1987, with the following results: F003, 2.31 sec.; F004, 2.41 sec.; F019, 3.02 sec.; F020, 2.49 sec. The regular testing frequency of these valves was reestablished on June 22, 1987.

The test performed on July 28, 1987, showed a increase exceeding 50% for valve F020 from the previous test run on June 20, 1987. Attachment 5 of ENP-16.1 was issued July 30, 1987, to increase the testing frequency for this valve. The procedure was performed again on August 20, 1987, with a time of 2.57 seconds. On August 21, 1987, the regular testing frequency of the valve was reestablished.

### II. Reason for the Violation as Admitted

A review has determined the test frequency of PT-11.3 was not increased as a result of the August 7, 1986, test. On July 15, 1986, Operations requested that PT-11.3 be performed on a weekly basis until further notice. In addition, they requested Attachment 5 of ENP-16.1 be initiated to ensure testing was performed and tracked by the plant Surveillance Test Scheduling System (STSS). The test performance on August 7, 1986,

represented the last requested weekly testing, and on August 8, 1986, Operations requested the valves be rescheduled at their normal testing frequency.

The abnormally short stroke times recorded in the July 30, 1986, test ensured any subsequent test would result in a stroke time increase which exceeded 50%. The short stroke times were a result of a procedural deficiency with PT-11.3 which now has been corrected (see response to Example 5 of the violation).

The data from the August 7, 1986, test was reviewed by the ISI group and determined to have represented normal stroke times for the valves. As this requested weekly testing represented an unusual situation, it was not clearly recognized that full requirements of ENP-16.1 were applicable. However, it is now recognized that the data should have been graphed and despite the normal stroke times, monthly testing should have been initiated.

The violation was a result of not recognizing the full requirements of ENP-16.1 applied regardless of the reason for testing and a deficiency in the periodic test procedure.

### III. The Corrective Steps Which Have Been Taken and the Results Achieved

Periodic test procedures which require stroking of air-operated valves have been reviewed and revised to correct the procedure deficiency. Personnel responsible for graphing stroke times have been made aware of this violation to ensure the problem is not repeated.

### IV. The Corrective Steps Which Will be Taken to Avoid Further Violations and When Full Compliance Will be Achieved

ENP-16.1 will be revised by May 31, 1988, to clearly indicate that the procedural requirements apply regardless of the purpose for testing. In addition, following revision of ENP-16.1, a training session will be held for ISI personnel to discuss the procedure clarifications. This will be completed by June 3, 1988.

## RESPONSE TO EXAMPLE 5 OF VIOLATION

### I. Admission or Denial of the Alleged Violation

Carolina Power & Light Company acknowledges the violation occurred as stated.

## II. Reason for the Violation

ASME, Section XI (code), provides no guidance as to corrective action to be taken when unusual data is noted other than "Any abnormality or erratic action shall be reported." The ISI group felt this requirement was being complied with by recording the unusual data on the valve graph.

Since the code only addressed corrective action for stroke times which increased more than the applicable percentage from the previous test, ENP-16.1 was structured to comply with that requirement.

## III. The Corrective Steps Which Have Been Taken and the Results Achieved

It had been previously recognized that the code lacked detailed guidance in assessing abnormal short stroke times. For this reason, relief request VR-02 was submitted to the NRC on October 1986.

## IV. The Corrective Steps Which Will be Taken to Avoid Further Violations and When Full Compliance Will be Achieved

When approved, relief request VR-02 will establish reference stroke time and an alert range for each valve. A stroke time that increases/decreases by  $\pm 25\%/50\%$ , dependent on reference value, will cause the valve to be placed on an increased testing frequency. Numeric limits will be established by an Engineering Evaluation Report by May 20, 1988, to define abnormal or erratic data. In addition, ENP-16.1 will be revised by June 3, 1988, to implement the numeric limits and the criteria stated in the relief request.