UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO ASME CODE CASE N-532

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

The Technical Specifications for the Brunswick Steam Electric Plant, Units 1 and 2 (BSEP), state that the inservice inspection and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The 1980 Edition, Winter 1981 Addenda, of Section XI is the applicable edition of the ASME Code for BSEP Second 10-year inservice inspection (ISI) Interval. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed therein and subject to Commission approval.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose

alternative requirements that are determined to be authorized by law; will not endanger life, property, or the common defense and security; and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

In a letter dated November 30, 1995, Carolina Power & Light Company (the licensee) proposed a request for relief regarding the implementation of ASME Code Case N-532, "Alternate Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000 Section XI, Division 1," for the BSEP.

2.0 EVALUATION

2.1 Licensee's Request

The licensee requested approval pursuant to 10 CFR 50.55a(a)(3) for use of Code Case N-532 as an alternative to the ASME B&PV Code requirements for preparation and submittal of its inservice summary report, Forms NIS-1, and its repair/replacement certification record, Form NIS-2, for the remainder of the second 10-year inservice inspection interval or until such time as Code Case N-532 is incorporated into U.S.NRC Regulatory Guide 1.147. The licensee indicated that the use of this ASME Code Case would allow alternative requirements for the certification of repairs and/or replacements provided that:

1. The Owner's Repair/Replacement Program identifies the use of this Code Case.
2. A Repair/Replacement Plan shall be prepared in accordance with IWA-4140 of the 1992 Edition of the ASME Code, Section XI and shall be given a unique identification number.
3. Upon completion of all required activities associated with the Repair/Replacement Plan, the owner shall prepare a Repair/Replacement Certification Record, Form NIS-2A.
4. Form NIS-2A shall be presented to the Authorized Nuclear Inspector for certification.
5. The completed Form NIS-2A shall be maintained by the owner.
6. The owner shall maintain an index of Repair/Replacement Plans in accordance with IWA-6340. The index shall identify the identification number required by (2) above and the inspection interval and period during which each repair or replacement was completed.

The licensee also indicated that the Code Case would allow alternative requirements for preparation and submittal of the Inservice Summary Report, Form NIS-1, provided that:

1. An Owner's Activity Report Form OAR-1 is prepared and certified upon completion of each refueling outage.
2. Each Form OAR-1 prepared during an inspection period shall be submitted following the end of the inspection period and contains the following information:

a. Abstract of applicable examinations and tests with the information and format of Table 1 shown in Code Case N-532.
b. A listing of item(s) with flaws or relevant conditions that required evaluation to determine acceptability for continued service, whether or not the flaw or relevant condition was discovered during a scheduled examination or test. The listing shall provide the information in the format of Table 2 shown in Code Case N-532.
c. Abstract for repairs, replacements and corrective measures performed, which were required due to an item containing a flaw or relevant condition that exceeded IWB-3000, IWC-3000, IWD-3000, IWE-3000, IWF-3000, or IWL-3000 acceptance criteria; even though the discovery of the flaw or relevant condition that necessitated the repair, replacement or corrective measure, may not have resulted from an examination or test required by the ASME Code, Section XI, Division 1. If acceptance criteria for a particular item is not specified in this Division, the provision of IWA-3100(b) shall be used to determine which repairs, replacements, and corrective measures are required to be included in the abstract. This abstract shall provide the information in the format of Table 3 shown in Code Case N-532.

2.2 ASME Code Section XI Second Interval Requirements

The 1980 Edition through Winter 1981 Addenda, of ASME B&PV Code Section XI, is the Code of record for the BSEP during the second 10-year inservice inspection interval. The preparation and submittal requirements in IWA-6220 and IWA-6230 of Section XI require that examinations, tests, replacements and repairs conducted since the preceding summary report be filed with the enforcement and regulatory authorities within 90 days of the completion of the inservice inspection conducted during a refueling outage. Additionally, the licensee uses the alternative requirements from previously endorsed ASME Code Case N-308, "Documentation of Repairs and Replacements of Components in Nuclear Power Plants," to document on Form NIS-2 that a repair or replacement has been performed.

The information provided by the licensee in support of the use of the alternatives to Code requirements contained in Code Case N-532 has been evaluated and the basis for disposition is documented below.

2.3 Proposed Alternative Testing

The licensee proposed to use the alternative contained in Code Case N-532.

2.4 Licensee's Basis for Request

The Code Case was approved by the ASME Code Committee on December 12, 1994, but has not as yet been incorporated in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability ASME Section XX Division 1." The licensee specifically states the following as the basis for the request:

"Approval to implement Code Case N-532 will significantly reduce man-hours currently being spent to submit the inservice summary report for Class 1

and 2 pressure retaining components and their supports after each refueling outage. The alternative requirements specified by the ASME Code Case N-532 will provide an acceptable level of quality and safety."

The licensee further states:

"Implementation of Code Case N-532 will still require an Owner's Activity Report (Form OAR-1) be prepared and certified by an [Authorized Nuclear] Inspector upon completion of each refueling outage. However, submittal of each Owner's Activity Report (Form OAR-1) will only be required at the end of the inspection period. In addition, it will no longer be necessary to submit the large quantity of supporting information with the Inservice Summary Report required by the 1980 Edition (with Addenda through Winter 1981) of the ASME Code, Section XI. Decreasing the frequency of filing of these reports (from after each refueling outage to once at the end of the inspection period) and not submitting the supporting information no longer considered relevant by the ASME Committee will not decrease the level of quality or safety at the Brunswick Plant. The performance of the examinations, tests, replacement, and repair activities required by the ASME Section XI will not be affected by approval of CP&L's use of Code Case N-532. In addition, records documenting the above activities will still be maintained for the service lifetime of the component or systems as required by IWA-1400 and will be available to the enforcement and regulatory authorities for review."

2.5 Evaluation

Code Requirement: ASME Section XI, Paragraph IWA-6220, requires that the licensee prepare reports using NIS-1, "Owner's Report for Inservice Inspections." ASME Code Case N-308, as previously approved, allows the use of NIS-2, "Owner's Report for Repair or Replacements" for documenting repair and replacement activities. Section XI, Paragraph IWA-6230, requires that these reports be filed with the enforcement and regulatory authorities having jurisdiction at the plant site within 90 days of the completion of the inservice inspection conducted during each refueling outage.

Staff Evaluation: The use of Form NIS-1, "Owner's Report For Inservice Inspections," and Form NIS-2, "Owner's Report for Repairs or Replacements," and submittal of the 90-day Summary Report are Code requirements. The alternatives contained in Code Case N-532 allow the licensee to submit these records in an abstract format on Form NIS-2A, "Repair/Replacement Certification Record," and Form OAR-1, "Owner's Activity Report," following the completion of an inspection period.

Based on its review of the ASME Code, including previously approved Code Cases, the staff has determined that the alternative to the requirements associated with the documentation of inservice examinations and repairs/replacements and the subsequent submittal of Forms NIS-1 and NIS-2 within 90 days following a refueling outage will provide an acceptable level of quality and safety. It is noted that repair and replacement documentation reviews and approvals by the Authorized Nuclear Inspector continue to be required by this Code Case and that the licensee is required to establish a

Repair/Replacement Plan in accordance with IWA-6340 of the 1992 Edition of Section XI.

In addition, the licensee has implemented Inspection Program B of the Code. Under this program, examination schedules are satisfied on a per period basis. Considering the milestones associated with Inspection Program B, it can be concluded that the submittal of the results of examinations and an abstract of repairs/replacements on a periodic basis is a reasonable alternative. Further, the staff believes that the use of forms contained in Code Case N-532, that provide a summary of the status of repairs/replacements and a more detailed status of examinations by period and interval, is an improvement over report forms currently required by the Code. For example, Form AOR-1 includes the status of examinations credited for a period and percent credited to date, for the interval, by Examination Category. This type of information provides the regulatory authorities a more comprehensive report on the status of the inservice inspection program and the safety of the examined equipment and components.

Based on the above, the staff believes that use of the alternatives to Code requirements contained in Code Case N-532 will continue to provide an acceptable level of quality and safety for the BSEP.

3.0 CONCLUSION

The staff has evaluated the information provided by the licensee in support of its request for relief. The staff concludes that compliance with the proposed alternative would provide an acceptable level of quality and safety. Accordingly, the licensee's proposed alternative to use Code Case N-532 is authorized for the Brunswick Steam Electric Plant, Units 1 and 2, pursuant to 10 CFR 50.55a(a)(3)(i), provided that all requirements of Code Case N-532 are satisfied. Use of Code Case N-532 is authorized until such time as the Code Case is published in a future revision of Regulatory Guide 1.147. At that time, if the licensee intends to continue to implement this Code case, the licensee is to follow all provisions in Code Case N-532, with limitations issued in Regulatory Guide 1.147, if any.

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