

Carolina Power & Light Company
P.O. Box 10429
Southport, NC 28461-0429

AUG 21 1995

SERIAL: BSEP 95-0379

U. S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 5--324/LICENSE NOS. DPR-71 AND DPR-62
ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI
REQUEST FOR APPROVAL TO USE CODE CASE N-416-1

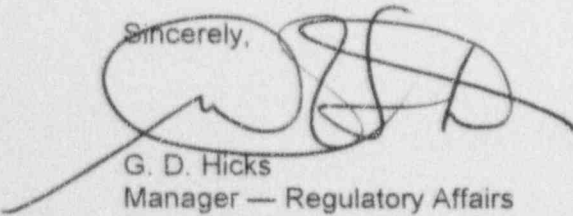
Gentlemen:

In accordance with 10 CFR 50.55a(a)(3), Carolina Power & Light (CP&L) Company requests approval for the Brunswick Steam Electric Plant, Units 1 and 2 to use an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code hydrostatic testing requirements for welded repairs and installation of replacement items by welding. The requested alternative is delineated in ASME Code Case N-416-1, "Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2, and 3 Section XI, Division 1," which was approved by the ASME on February 15, 1994, but has not yet been incorporated into Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability ASME Section XI Division 1." CP&L requests authorization to use Code Case N-416-1 with the provision that surface examinations are performed on the root (pass) layer of butt and socket welds on the pressure retaining boundary of Class 3 components when the surface examination method is used in accordance with Section III of the ASME Code. The basis for this request is provided in Enclosure 1.

Approval of ASME Code Case N-416-1 for use at the Brunswick Plant is requested by December 15, 1995 in order that planning for the upcoming Unit 2 Reload 11 outage may proceed with this consideration. The Unit 2 Reload 11 outage is presently scheduled to begin on February 2, 1996.

Please refer any questions regarding this submittal to Mr. George Honma at (910) 457-2741.

Sincerely,



G. D. Hicks
Manager — Regulatory Affairs
Brunswick Nuclear Plant

WRM/wrm

Enclosures

9508280102 950821
PDR ADOCK 05000324
P PDR

A047
11

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II
Mr. D. C. Trimble, NRR Project Manager - Brunswick Units 1 and 2
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick Units 1 and 2
The Honorable H. Wells, Chairman - North Carolina Utilities Commission
Mr. Billy Walker, Assistant Director - Boiler & Pressure Vessel Division

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 5--324/LICENSE NOS. DPR-71 AND DPR-62
ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI
REQUEST FOR APPROVAL TO USE CODE CASE N-416-1

In accordance with 10 CFR 50.55a(a)(3), Carolina Power & Light (CP&L) Company requests approval for the Brunswick Steam Electric Plant, Units 1 and 2 to use an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code hydrostatic pressure testing requirements for welded repairs and installation of replacement items by welding. The requested alternative is delineated in ASME Code Case N-416-1, "Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2, and 3 Section XI, Division 1," which was approved by the ASME on February 15, 1994, but has not yet been incorporated into Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability ASME Section XI Division 1."

The Code Case allows a system leakage test to be performed in lieu of the hydrostatic pressure test, as required by IWA-4000 of the ASME Code, Section XI, for welded repairs or installation of replacement items by welding provided that:

1. Non-destructive examination (NDE) is performed in accordance with the methods and acceptance criteria of the applicable subsection of the 1992 Edition of Section III,
2. Prior to or immediately upon return to service, a visual examination (VT-2) is performed in conjunction with the system leakage test, using the 1992 Edition of the ASME Code, Section XI, in accordance with paragraph IWA-5000, at nominal operating pressure and temperature, and
3. Use of the Code Case is documented on an NiS-2 Form.

By letter dated October 5, 1994, CP&L previously requested NRC approval, in accordance with 10 CFR 50.55a(a)(3), to use ASME Code Case N-416-1 as an alternative to the ASME Boiler and Pressure Vessel Code testing requirements for welded repairs and installation of replacement items by welding for the following plant systems:

- Main Steam System,
- Standby Liquid Control System.

This request was subsequently approved by the Nuclear Regulatory Commission in a letter dated January 3, 1995. Approval for the use of ASME Code Case N-416-1 was authorized until such time as this code case is published in a future revision of USNRC Regulatory Guide 1.147. The Company now desires to use this alternative for all applicable welded repairs and installation of replacement items by welding. Therefore, CP&L requests that the NRC grant approval to use the alternative provisions of ASME Code Case N-416-1 for welded repairs and the installation of replacement items by welding for the remainder of the second ten-year inservice testing interval or until such time as the Code Case is incorporated into Regulatory Guide 1.147. Similar approvals have been granted for the Surry Power Station, Units 1 and 2 by NRC letter dated October 14, 1994; the Perry Nuclear Power Plant by NRC letter dated February 10, 1995; and the H. B. Robinson Steam Electric Plant, Unit 2 by NRC letter dated May 11, 1995. Justification for this request is provided below.

If required hydrostatic testing following welded repairs and installation of replacement items by welding is impractical, it is currently necessary to defer the testing as allowed by Code Case N-416 or to request relief from ASME Code required tests. Impracticality of testing may be the result of various situations, ranging from boundary valve isolation problems to incorporation of components within the hydrostatic test boundary. Since hydrostatic test pressures are higher than nominal operating pressures, hydrostatic pressure testing frequently requires significant effort to set-up and perform. The need to use special equipment (e.g., temporary attachment of test pumps and gauges) and the need for individual valve lineups, can cause the testing to become the critical path activity during outages.

Piping components are designed for a number of different loadings that are postulated to occur under the various modes of plant operation. Hydrostatic testing only subjects the piping components to a small increase in pressure over the design pressure and, therefore, does not present a significant challenge to pressure boundary integrity. Accordingly, hydrostatic pressure testing is primarily regarded as a means to enhance leakage detection during the examination of components under pressure, rather than solely as a measure to determine the structural integrity of the components.

Additionally, hydrostatic testing is often impractical to perform following repair or replacement activities. Experience has demonstrated that leaks are not being discovered as a result of hydrostatic test pressures propagating a preexisting through-wall flaw. Typically, when leaks are identified, they occur at flanges, packing, seals, etc., whether at hydrostatic test pressure or normal operating pressure.

In some cases, welded repairs and installation of replacement items by welding are unexpected and are often identified only during the performance of in-service inspections. In such cases, it is necessary to request ASME Code relief on an expedited basis to avoid startup delays or exceeding limiting conditions of operation.

ASME Code Case N-416-1 provides increased testing flexibility and can considerably reduce, or eliminate relief requests associated with welded repairs or installation of replacement items by welding. This is accomplished while maintaining an acceptable level of quality and safety.

Use of hydrostatic test deferrals, which are presently allowed in the current ASME Code Case N-416 for Class 2 components, are not an appropriate solution because the test must be eventually performed, and it is the performance of the test itself that is burdensome.

Endorsement of ASME Code Case N-498, "Alternate Rules for 10 Year Hydrostatic Pressure Testing for Class 1 and 2 Systems Section XI, Division 1," by the NRC in Regulatory Guide 1.147 has eliminated the requirement to perform the 10-year hydrostatic pressure testing for Class 1 and 2 systems, except for those hydrostatic tests which were deferred pursuant to ASME Code Case N-416. The approval of ASME Code Case N-416-1 will eliminate the need to perform any unnecessary hydrostatic pressure tests during the next Unit 2 refueling outage (Reload 11) and will result in substantial cost savings and reduced radiation exposure over the life of both Brunswick Unit 1 and Unit 2. Approval of this request is in accordance with 10 CFR 50.55a(a)(3) because compliance with the ASME Code, Section XI, IWA-4000 requirements would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety. The alternative system leakage test and inspection requirements specified by ASME Code Case N-416-1 provide an acceptable level of quality and safety.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
NRC DOCKET NOS. 50-325 AND 50-324
OPERATING LICENSE NOS. DPR-71 AND DPR-62
ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI
REQUEST FOR APPROVAL TO USE CODE CASE N-416-1

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
1. When using ASME Code Case N-416-1, surface examinations will be performed on the root (pass) layer of butt and socket welds on the pressure retaining boundary of Class 3 components when the surface examination method is used in accordance with Section III of the ASME Code.	N/A