

# Carolina Power & Light Company

Nuclear Services Department  
411 Fayetteville Street Mall - P.O. Box 1551  
Raleigh, North Carolina 27602

[FEB 26 1992

SERIAL: NLS-92-046

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1  
DOCKET NO. 50-325/LICENSE NO. DPR-71  
ASME CODE RELIEF REQUEST - INSERVICE INSPECTION PROGRAM  
MAIN STEAM RELIEF VALVE PRESSURE TEST

Gentlemen:

The purpose of this letter is to request relief from the ASME Code, Section XI, in accordance with 10 CFR 50.55a(g)(6)(i), for the Brunswick Steam Electric Plant, Unit 1. The ASME Code relief is needed to support a plant modification to replace the existing main feedwater containment isolation check valves.

A plant modification to replace the existing main feedwater containment isolation check valves will be performed (during the Unit 1 refueling outage) to correct the continuing local leak rate failures being experienced with the valves. To support the modification, a portion of the discharge piping for the F013H main steam safety/relief valve will be temporarily removed and subsequently re-installed. The ASME Code, Section XI, Subparagraph IWD-5223(f) requires a pneumatic test (at a pressure of 90 percent of the pipe submergence head of water) for the relief valve piping that discharges into the containment suppression pool. The requested relief applies to the main steam relief valve discharge piping that connects between safety/relief valve F013H and the containment suppression pool. The proposed alternate testing (volumetric weld examination) will provide adequate assurance of the integrity of the affected piping.

The detailed relief request is provided in Enclosure 1. Approval of this relief request is needed by September 1, 1992 in support of the Brunswick Unit 1 refueling outage scheduled to begin September 12, 1992. A similar request for the Brunswick Steam Electric Plant, Unit 2 was submitted by CP&L letter dated August 15, 1991 (Serial: NLS-91-198) and was approved by NRC letter dated October 29, 1991.

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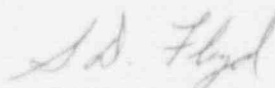
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Please refer any questions regarding this submittal to Mr. W. R. Murray  
at (919) 546-4661.

Yours very truly,



S. D. Floyd  
Manager  
Nuclear Licensing Section

WRM/wrm (b1r8relf.wpf)

Enclosure

cc: Mr. S. D. Ebner  
Mr. N. B. Le  
Mr. R. L. Prevatte

## ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1  
NRC DOCKET NO. 50-325  
OPERATING LICENSE NO. DPR-71  
ASME CODE RELIEF REQUEST - INSERVICE INSPECTION PROGRAM  
MAIN STEAM RELIEF VALVE PRESSURE TEST

### I. APPLICABLE COMPONENTS

This relief request applies to the main steam relief valve discharge piping that runs between safety/relief valve F013H and the containment suppression pool. A portion of the piping between safety/relief valve F013H and the containment suppression pool will be removed and subsequently re-installed (during the Unit 1 refueling outage as part of a plant modification replacing the existing feedwater check valves.

### II. IMPRACTICAL TEST REQUIREMENT

The Technical Specifications for the Brunswick Steam Electric Plant, Unit 1 state that inservice inspection of ASME Code Class 1, 2, and 3 components shall be performed in accordance with the requirements of the applicable edition and addenda of the ASME Code, Section XI except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The Section XI Code edition and addenda applicable to the Brunswick Steam Electric Plant, Unit 1 are the 1980 Edition with Addenda through the Winter 1981.

The ASME Code, Section XI, IWA-4000 provides requirements for repairs to pressure retaining components. IWA-4400(a) requires the performance of a system hydrostatic test in accordance with IWA-5000 following welding repairs. IWA-5214(a) and IWA-5214(b) require the pressure test requirements comply with IWD-5223 for Class 3 components. IWD-5223(f) requires a pneumatic test (at a pressure of 90 percent of the pipe submergence head of water) for safety or relief valve piping which discharges into the containment pressure suppression pool in lieu of a system hydrostatic test.

### III. BASIS FOR RELIEF

A plant modification to replace the existing main feedwater containment isolation check valves (will be) performed to correct the continuing local leak rate test failures being experienced with the valves. To support the modification, a portion of the discharge piping for the F013H main steam safety/relief valve (will be) temporarily removed and subsequently re-installed, as shown in the attached

isometric drawing from the plant modification package. The affected discharge piping is located in the drywell portion of the primary containment.

As described above, subparagraph IWD-5223(f) of the ASME Code, Section XI requires a pneumatic test at a pressure of 90 percent of the pipe submergence head of water (i.e., 2.8 psi). The centerline of the tee-quencher for the relief valve discharge piping is 7.25 feet below the high water level in the containment suppression pool. Therefore, the test pressure corresponding to 90 percent of the pipe submergence head of water, as required by the ASME Code, Section XI, subparagraph IWD-5223(f), is 2.8 psi.

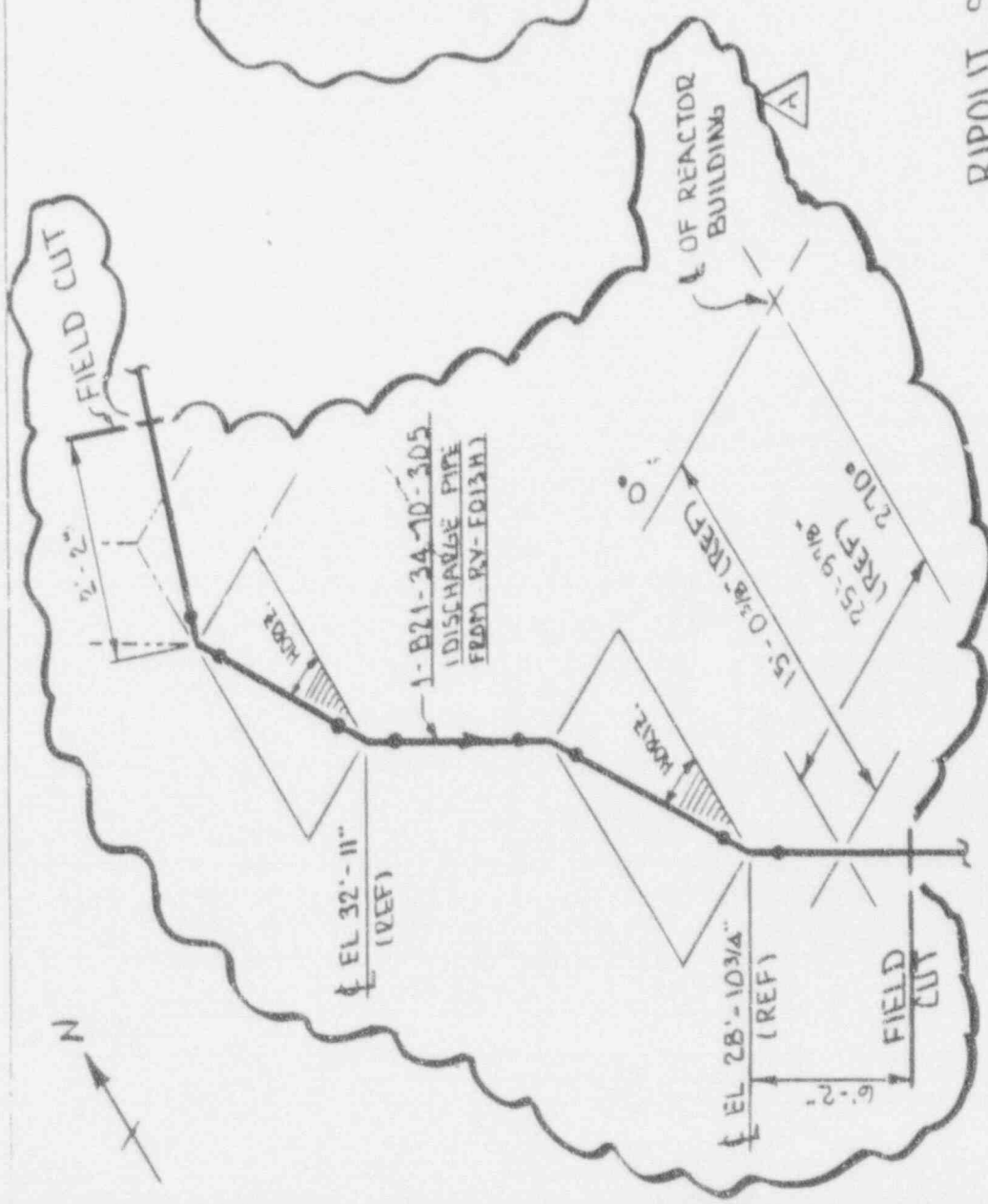
Implementation of the modification is currently being scheduled after performance of a chemical decontamination of the recirculation system piping. Nevertheless, approximately 0.3 man-rem of personnel radiation exposure savings can be realized by not performing the pneumatic test in accordance with IWD-5223(f).

Performance of the pneumatic pressure test will require disassembly of the F013H safety/relief valve in order to pressure the piping to the 2.8 psi test pressure and perform the examination. The design pressure and temperature for the piping is 450 psig and 560 degrees F. The test pressure required by IWD-5223(f) (i.e., 2.8 psi) is significantly lower than the design pressure of the piping and the operating pressure typically experienced by the piping; therefore, the Company does not believe the IWD-5223(f) test provides assurance of the integrity of the piping commensurate with the personnel exposure associated with performance of the test. Based on the estimated personnel radiation exposure to perform this test, as well as the potential for inadvertently damaging the F013H safety/relief valve, the Company believes the test requirement is impractical and requests relief in accordance with 10 CFR 50.55a(g).

#### IV. ALTERNATE TESTING

The field welds will be examined to the most stringent optional requirement of the ASME Code, Section III, Class 3 (i.e., using RT examination). Based on the alternate testing, it is highly improbable that a weld that passes a volumetric examination will leak at a test pressure of 2.8 psi (a test pressure of 90 percent of the pipe submergence head of water).

LINE NO. 1-B21-34-10-305



**NOTE:**

CUT PIPING AT FIELD CUTS AND REMOVE SECTION OF PIPING BETWEEN CUTS. RETAIN PIPING FOR REINSTALLATION AFTER ACCESS TO CHECK VALVE IS NO LONGER REQUIRED. REINSTALLATION OF PIPING IS TO BE ACCOMPLISHED IN ACCORDANCE WITH INFORMATION PROVIDED ON SKETCH SK-M-91-054-2010

CONSTRUCTIONS INFORMATION



**RIPOUT SKETCH**

CONSTRUCTIONS INFORMATION



WORK THIS SKETCH WITH SK-M-91-054-2010



REV	DATE	DESCRIPTION	DESIGNED BY	CHECKED BY	DATE
A		APPROVED FOR PM 91-054			
PROFESSIONAL ENGINEER					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT					
CPAL					
PLANT BRIDGES/NUC. PROJ. - UNIT 1					
SOLE NAME					
TITLE MAIN STEAM RELIEF VALVE					
DISCHARGE - KELLOGG 150					
1-B21-2					
PLANT	NO.	REV	DATE	SHEET	NO.
	1-FP-60662				
SKETCH NO.	M-91-054-2009				
					1 of 1