CP&L

Carolina Power & Light Company

P. O. Box 1551 • Raleigh, N. C. 27602

SEP 28 1988

SERIAL: NLS-88-236

M. A. McDUFFIE
Senior Vice President
Nuclear Generation

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
RESPONSE TO NRC BULLETIN 88-08

Gentlemen:

Carolina Power & Light Company hereby submits information requested by NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems," for the Brunswick Steam Electric Plant, Units 1 and 2 (BSEP). This bulletin requested that licensees review their reactor coolant systems to identify any connected, unisolable piping that could be subjected to temperature distributions, which would result in unacceptable thermal stresses, and take action, where such piping is identified, to ensure that piping will not be subjected to unacceptable thermal stresses. The BSEP response to the specific action requested by this bulletin is attached.

If you have any questions concerning this response or require additional information, please contact Mr. L. I. Loflin.

Yours very truly,

M. A. McDuffie

JHE/lah (5470JHE)

Attachment

cc: Dr. J. Nelson Grace
Mr. W. H. Ruland
Mr. B. C. Buckley

M. A. McDuffie, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Ruby R. Morgan
Notary (Seal)

My commission expires: 11/27/89

RUBY R. MORGAN NOTARY PUBLIC WAKE COUNTY, N. C.

JE16 1/1

ACTION 1

Review systems connected to the RCS to determine whether unisolable sections of piping connected to the RCS can be subjected to stresses from temperature stratification or temperature oscillations that could be induced by leaking valves and that were not evaluated in the design analysis of the piping. For those addressees who determine that there are no unisolable sections of piping that can be subjected to such stresses, no additional actions are requested except for the report required below.

BSEP RESPONSE

Carolina Power & Light Company has completed an evaluation of the systems connected to the RCS at BSEP and determined that there are no unisolable piping systems that have the potential for inducing unacceptable thermal stresses as defined in NRC Bulletin 88-08.

In a boiling water reactor like BSEP, the high pressure systems connecting to the RCS are the Reactor Core Isolation Cooling (RCIC) System, the High Pressure Coolant Injection (HPCI) System, the Standby Liquid Control (SLC) System, the Reactor Water Cleanup (RWCU) System, and the Feedwater (FW) System. In addition, during certain modes of normal operation, the Residual Heat Removal (RHR) System and the Core Spray (CS) System have the potential to inject relatively cold water into the RCS.

HPCI

The HPCI System is at a higher pressure than the RCS when the HPCI System is in operation. However, during normal plant operation, the HPCI System is operated infrequently, primarily for surveillance testing. Because leakage from the HPCI System to the RCS can only occur when the HPCI System is operating and HPCI System operation is infrequent, the thermal fatigue stresses induced by any leakage would be insignificant.

RCIC

Like the HPCI System, the RCIC System is at a higher pressure than the RCS when the RCIC System is in operation. Also like the HPCI System, the RCIC System is operated infrequently and the thermal fatigue stresses induced by potential leakage are insignificant.

SLC

The SLC System operates at a higher pressure than the RCS pressure, and, thus, has the capability to inject cold water to the reactor. Like the HPCI System and the RCIC System, the system is only operated infrequently. In addition, the system is isolated from the RCS by explosive type (squib) valves. Due to the positive isolation characteristics of these valves and the infrequent nature of system operation, the SLC System is not a source of thermal fatigue stress.

RWCU

The RWCU System is in continuous operation during all phases of reactor operation. Additionally, the system is designed to process water with a minimum heat loss in that the water is reheated prior to injection to the FW System. No unanticipated thermal fatigue stresses are introduced in this system.

FW

The FW System is in continuous operation during normal reactor operation. In addition, the FW System is reheated prior to injection to the reactor. The system is designed for the temperature transients encountered. No unanticipated thermal fatigue stresses are introduced in this system.

CS and RHR

Both the CS System and the RHR System operate at pressures less than normal RCS pressure. The only time these systems could leak cold water to the RCS is when RCS pressure is below system pump shutoff head. Because this situation is relatively infrequent, thermal fatigue stress is not a problem in these systems.

Based on the above analysis, BSEP has no unisolable sections of piping that will be subjected to excessive thermal fatigue stresses as defined in NRC Bulletin 88-08. Accordingly, no further action is required.