



Carolina Power & Light Company

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Brunswick Steam Electric Plant
P. O. Box 10429
Soutnport, N. C. 28461-0429

July 19, 1988

FILE: B09-13510H
SERIAL: BSEP/88-0736

Dr. J. Nelson Grace, Director
U. S. Nuclear Regulatory Commission
Suite 2900
101 Marietta Street N. W.
Atlanta, Ga 30323

BRUNSWICK STEAM ELECTRIC PLANT UNIT 2
DOCKET NO. 50-324
LICENSE NO. DPR-62
REQUEST FOR ENFORCEMENT DISCRETION

Dear Dr. Grace:

This letter provides the written followup of a request made during a telephone conversation at 1015 hours on July 19 between members of your staff and Mr. C. R. Dietz concerning enforcement discretion for Technical Specification 3.5.1.

On July 5, 1988, the Unit 2 HPCI System was placed under a Limiting Condition for Operation (LCO) due to a potential design problem identified on the HPCI injection valve, E41-F006. This LCO requires that the HPCI System be restored to operable status within 14 days or that the unit be shut down within the next 12 hours. Enforcement discretion is requested to allow Unit 2 to continue power operation with unit shutdown commencing by 2400 hours on July 22 with the requirement that the unit will be in hot shutdown by 0800 hours on July 23.

This request is being made to support a critical electrical load situation on the Southeast grid in general and record setting peaks currently being experienced and projected to continue on the CP&L system. Selected power reduction to commercial customers has been utilized to meet system demands during these peak periods. In addition, this discretion will allow more concentrated management oversight for the startup on Unit 1 and the subsequent shutdown of Unit 2 if they are not occurring simultaneously.

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While investigating a failure of the Unit 1 HPCI steam inlet valve, 1-E41-F001, which occurred on July 1, 1988, it was determined on July 5 that the F006 valve for both units did not meet its design criteria. One of the design bases for the HPCI System is to start without AC power. A design review of the station batteries has determined that they are designed to ensure that DC bus voltage does not decrease to less than 210 volts. Using 210 volts as the input voltage to the F006 valve motor, it has been determined that sufficient torque may not be available to ensure that the valve would open. Conditions which mitigate the consequences of this apparent design inadequacy are as follows:

Actual battery load testing under conditions more stringent than design indicate that sufficient battery voltage would be available to allow opening the valve without AC power.

The design basis for the emergency diesel generators assures that AC power will be available to the battery chargers, thus assuring sufficient voltage for valve operation.

These injection valves are located in the outboard main steam line isolation valve (MSIV) enclosure. It was also determined through analysis that the DC motors on these valves (F006 on each unit) may not be sufficiently sized to ensure that the valves would operate in concert with a high energy line break within the MSIV enclosure following the initial valve opening and closing operation. The elevated temperatures which would be seen by the valve motor and the incoming power cable to the motor would cause a higher resistance, thus a reduction in the current available for valve operation. This increase in component resistance places the operation of the valve outside its design requirements.

As a result of this condition, initial opening of the F006 valve will occur per design, as elevated temperatures are not present; however, following reactor vessel level recovery and a subsequent closing signal to the F006, increased resistance will not allow the valve to close sufficiently to achieve the torque switch cutoff. This would cause the motor to stall and eventually fail. It should be noted that the valve will close sufficiently to provide the primary containment function. Conditions which mitigate the consequences of this apparent design inadequacy are as follows:

The F006 will open on an initiation signal and allow the HPCI System to inject.

The estimated probability of a break in the MSIV enclosure during the requested four-day allowance is $8.3E-7$.

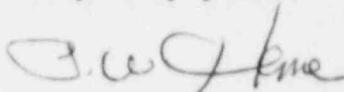
This design inadequacy is only applicable during a required HPCI initiation concurrent with a high energy line break within the MSIV enclosure.

The F006 will close when required to provide the primary containment function.

Plant procedure Operating Guideline 10 provides criteria for determining that no significant leakage exists within the MSIV enclosure. This criteria includes monitoring exhaust air temperature, MSIV enclosure floor and equipment drain leakage, Reactor Building ventilation activity, and verification that the high temperature alarm within the enclosure is not annunciating (175 degrees setpoint). These parameters are currently within the expected nominal values.

CP&L has performed an evaluation (Engineering Evaluation Report 88-0340) of the design deficiencies associated with the F006 valve and has provided copies to members of your staff. This evaluation provides additional detail and calculations (beginning on page 10) which support this request for enforcement discretion. Informal training sessions have been provided to licensed operators over the past several days. Formal training, to include identified problems and affects on plant normal and emergency operation, will be conducted prior to relieving the shift using the engineering evaluation report and other material as deemed appropriate. In addition, the MSIV enclosure will be monitored for leakage on a "once-per-shift" periodicity. Identified increases will be evaluated and appropriate action will be taken.

Very truly yours,



Patrick W. Howe
Vice President - Brunswick Nuclear Project

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cc: USNRC Document Control Desk
Mr. B. C. Buckley
BSEP NRC Resident Office