



Carolina Power & Light Company

April 26, 1991

SERIAL: NLS-91-118
10CFR50.90

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
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE
REACTOR WATER CLEANUP SYSTEM DIFFERENTIAL FLOW ISOLATION INSTRUMENT

Gentlemen:

Carolina Power & Light Company hereby requests a temporary NRR Waiver of Compliance for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. This letter is a follow-up to discussions with the NRR Project Manager on April 26, 1991 at the Brunswick Plant site. Carolina Power & Light Company is in the process of preparing an emergency license amendment request to revise the reactor water cleanup system differential flow isolation actuation trip setpoint and allowable setpoint values.

The proposed waiver applies to the reactor water cleanup system differential flow isolation actuation instrument trip setpoint specified in Technical Specification 3.3.2-2, Item 2.a. Due to the application of a revised instrument setpoint methodology, the instrument trip and allowable setpoints specified in the Technical Specifications must be increased from "less than or equal to 53 gallons per minute" to "less than or equal to 125 gallons per minute" in order to account for instrument uncertainties; the actual, field instrument setpoint will remain the same. The proposed waiver temporarily increases the instrument setpoint limit in order to allow sufficient time for the preparation, submittal, and review of an emergency license amendment request to permanently revise the setpoint.

The detailed basis for the proposed waiver is provided in Enclosure 1. The basis provided in Enclosure 1 references a proprietary General Electric (GE) Report GE-NE-901-011-0391, a copy which is provided as Enclosure 2. An affidavit for withholding the GE report from public disclosure is provided as Enclosure 3.

On the basis of the information provided herein, Carolina Power & Light Company requests this temporary waiver until such time as the NRC is able to review and approve an emergency license amendment request. In order to avoid the delay of the start-up of Brunswick Units 1 and 2, CP&L requests that this waiver of compliance be granted prior to 1200 on April 28, 1991. Carolina Power & Light Company will submit the subject license amendment request by May 3, 1991. The Plant Nuclear Safety Committee has reviewed and recommended approval of this request.

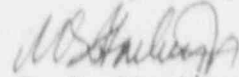
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Please refer any questions regarding this submittal to Mr. K. J. Ahern at
(919) 457-2404.

Yours very truly,



R. B. Starkey
Vice President
Brunswick Nuclear Project

RBS/WRM/wrm

Enclosure

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

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
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BASIS FOR WAIVER OF COMPLIANCE

TECHNICAL SPECIFICATION REQUIREMENTS

Technical Specification 3.3.2 requires that isolation actuation instrumentation shown in Table 3.3.2-1 be operable with trip setpoints set consistent with the values specified in Table 3.3.2-2. Technical Specification Table 3.3.2-1 requires the reactor water cleanup system isolation actuation instrument for the differential flow function be operable when the unit is in Operational Conditions 1, 2, or 3. Technical Specification Table 3.3.2-2 requires the trip setpoint for the reactor water cleanup system isolation actuation instrument be set at less than or equal to 53 gallons per minute. If a setpoint cannot be established as required by Technical Specifications, the instrument must be declared inoperable. The action required for an inoperable reactor water cleanup system differential flow instrument is to isolate the reactor water cleanup system. Technical Specification 3.0.4 prohibits passage into higher Operational Conditions while relying on the requirements of Action Statements. Brunswick Plant Technical Specification 3.3.2 does not include an exception to Technical Specification 3.0.4.

A Waiver of Compliance is requested for Technical Specification Table 3.3.2-2 Item 2.a to increase the reactor water cleanup system differential flow isolation instrument trip setpoint from "less than or equal to 53 gpm" to "less than or equal to 125 gpm." Without issuance of this waiver of compliance, neither Brunswick unit is permitted to start up (i.e., change Operational Conditions) since an exception to Technical Specification 3.0.4 is not provided in Technical Specification 3.3.2. Start up of a Brunswick unit is currently scheduled to commence at approximately 1200 on April 28, 1991.

SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES

General Electric Company was requested to evaluate an increased allowable leakage limit for the reactor water cleanup system differential flow isolation function. The General Electric response was provided in report GE-NE-901-011-0391 (copy attached). General Electric has indicated the sole design basis for the differential flow isolation function is to limit the release of radioactivity to maintain offsite and control room whole body and inhalation doses within the limits of 10 CFR 100 and 10 CFR 20. The General Electric model is based on a 300 gpm leak un-isolated for 30 days using conservative source term values. The model demonstrates that offsite and control room dose limits are not exceeded. Therefore, based on the results of the General Electric model and analysis, an increase in the reactor water cleanup system differential flow limit above the 53 gpm limit is justifiable.

JUSTIFICATION FOR REQUEST

The potential for the reactor water cleanup system differential flow leak detection instrument to allow system leakage in excess of the Technical Specification limit without system isolation was identified. As a result, an engineering evaluation of the instrument calibration scaling factors was performed. The recently completed calculations use a revised instrument loop accuracy/setpoint methodology based on the latest ISA recommended practices.

Use of this methodology results in the existing differential flow instrument loop inaccuracy being too large to assure system isolation prior to exceeding the 53 gpm limit specified by Technical Specifications. For Operational Condition 1 operation, leaks of up to 94 gpm could exist prior to isolation. The leak rate prior to isolation would increase further in Operational Conditions 2 and 3 up to a bounding leak of 112 gpm in the extreme case where reactor pressure vessel start-up level control is performed by dumping through the reactor water cleanup system without reactor water cleanup system pump operation.

The instrument trip setpoint specified in the Technical Specifications must be increased from "less than or equal to 53 gallons per minute" to account for these instrument uncertainties. In order to bound the limiting analysis case discussed above, a setpoint limit of "less than or equal to 125 gpm" is proposed. Adoption of this increased Technical Specification limit results in no physical setpoint change in the plant. Based on this, CP&L believes that the reactor water cleanup system is operable and fully capable of performing its intended safety function.

Based on this sequence of events described above, CP&L could not have reasonably foreseen or avoided the need for this temporary waiver of compliance.

EXISTING ALTERNATIVE ACTIONS

The following existing alternative methods of monitoring for reactor water cleanup system leakage will enhance the probability that small leaks will be identified early enough to prevent significant propagation:

1. Operating Instruction OI-3.4, Attachment 3, the Auxiliary Operator Daily Check Sheet requires that the 20' and 50' elevations of the reactor building be checked for any type of leakage and that leaks be reported to the control room and radwaste operations once per shift (a shift is 12 hours, 2 shifts per day).
2. Operating Instruction OI-3.1, Attachment 1, the Control Operator's Daily Surveillance Report requires that the reactor water cleanup system differential flow instrumentation be channel checked once every 24 hours. Indications deviating from the expected range result in investigation for actual leaks or instrument problems.
3. Radwaste operations performs a daily (once per 24 hours) check of the floor and equipment drain sump pump cumulative timers.
4. The reactor building floor drain and equipment drain sump pump-out and fill-rate timers initiate control room annunciators. The individual annunciator procedures require that an investigation of the leak source be performed in accordance with plant procedure OI-04, Radwaste Water Leakage Control. The procedure provides guidance for location of the leaks and requires that either reduction or satisfactory evaluation of those leaks be accomplished within 24 hours for all leaks in excess of 40 gpm for floor sumps or 20 gpm for equipment sumps.

SIGNIFICANT HAZARDS ANALYSIS

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. Carolina Power & Light Company has reviewed this proposed temporary waiver of compliance and determined that its adoption would not involve a significant hazards consideration. The basis for this determination follows:

1. The proposed waiver does not involve a significant increase in the probability or consequences of an accident previously evaluated. The sole design basis function for the reactor water cleanup system differential flow isolation function is to assure compliance with the offsite and control room dose limitations imposed by 10 CFR 100 and 10 CFR 20. The differential flow isolation function is not intended for protection of reactor pressure vessel water levels or for limiting the reactor building environment for environmental qualification purposes.

The proposed change to the reactor water cleanup system differential flow isolation function will not affect any initiating mechanism for a previously evaluated accident; therefore, the proposed change will not significantly increase the probability of a design basis accident nor will the proposed change significantly increase the probability of malfunction of any safety related equipment during the requested extension.

The proposed waiver will not significantly increase the consequences of the previously analyzed reactor water cleanup system accident. The proposed change to increase the differential flow isolation setpoint from "less than or equal to 53 gpm" to "less than or equal to 125 gpm" may result in a slight increase in offsite and control room doses. However, the consequences of a reactor water cleanup system leak isolation based on the existing 53 gpm setpoint versus the consequences of a reactor water cleanup system leak isolation based on the proposed 125 gpm setpoint in comparison to the design basis consequences of a 300 gpm un-isolated leak for 30 days is not significant. Therefore, the Company has determined that the proposed setpoint revision will have an acceptable effect on the overall safety of the plant.

2. The proposed waiver does not create the possibility of a new or different kind of accident from any accident previously evaluated. Only the primary containment isolation system components of the reactor water cleanup system perform a safety function. The isolation function will continue to exist and perform its intended safety function of limiting offsite and control room doses within the limits of 10 CFR 100 and 10 CFR 20. Therefore, the proposed waiver will not create the possibility of a new or different kind of accident from any accident previously evaluated.
3. The proposed waiver does not involve a significant reduction in the margin of safety. The proposed change to increase the differential flow isolation setpoint from "less than or equal to 53 gpm" to "less than or equal to 125 gpm" will result in a slight increase in offsite and control room doses. However, the consequences of a reactor water cleanup system leak isolation based on the existing 53 gpm setpoint versus the consequences of a reactor water cleanup system leak isolation based on the proposed 125 gpm setpoint in comparison to the design basis consequences of a 300 gpm un-isolated leak for 30 days is not significant. Therefore, the Company has determined that the proposed setpoint revision will have an acceptable effect on the overall safety of the plant.

Based on this reasoning, CP&L believes the proposed waiver does not involve a significant reduction in the margin of safety.

ENVIRONMENTAL EVALUATION

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. Carolina Power & Light Company has reviewed this request and determined that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no

environmental impact statement or environmental assessment needs to be prepared in connection with granting of the temporary waiver of compliance. The basis for this determination follows:

1. As demonstrated in the above significant hazards analysis, the proposed waiver does not involve a significant hazards consideration.
2. The proposed waiver does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. The proposed waiver does not introduce any new equipment nor does it require any existing equipment or systems to perform a different type of function than they are currently designed to perform. The sole design basis function for the reactor water cleanup system differential flow isolation function is to assure compliance with the offsite and control room dose limitations imposed by 10 CFR 100 and 10 CFR 20. General Electric Company was requested to evaluate an increased allowable leakage limit for the reactor water cleanup system differential flow isolation function. The General Electric response was provided in report GE-NE-901-011-0391. The General Electric model is based on a 300 gpm leak un-isolated for 30 days using conservative source term values. The analysis demonstrates that offsite and control room dose limits are not exceeded. Other indications of a line break in the reactor water cleanup system exist, such as area temperature monitoring, which will ensure timely isolation of the reactor water cleanup system in the event of a line break. Therefore, based on the results of the General Electric model and analysis and the alternate means of timely reactor water cleanup system isolation, it is evident that an increase in the reactor water cleanup system differential flow allowable limit from 53 gpm to 125 gpm will not significantly increase the types or amounts of any effluents that may be released offsite.
3. The proposed waiver does not result in an increase in individual or cumulative occupational radiation exposure. No additional surveillances or testing results from the waiver. As stated above, General Electric Report GE-NE-901-011-0391 demonstrates that control room dose limits are not exceeded even assuming a 300 gpm leak which is un-isolated for 30 days. In addition, other indications of a line break in the reactor water cleanup system exist, such as area temperature monitoring, which will ensure timely isolation of the reactor water cleanup system in the event of a line break. No additional surveillances or testing results from the waiver. Therefore, based on the results of the General Electric model and analysis, an increase in the reactor water cleanup system differential flow allowable limit from 53 gpm to 125 gpm will not significantly increase individual or cumulative occupational radiation exposure.

ENCLOSURE 2

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GENERAL ELECTRIC
REPORT GE-NE-901-011-0391