



Carolina Power & Light Company

SERIAL: NLS-84-229

MAY 31 1984

Director of Nuclear Reactor Regulation
Attention: Mr. D. B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
ENVIRONMENTAL QUALIFICATION OF SAFETY-RELATED ELECTRICAL EQUIPMENT

Dear Mr. Vassallo:

Carolina Power & Light Company (CP&L) has reviewed your letter dated May 7, 1984 requesting additional information concerning environmental qualification (EQ) of safety-related electrical equipment at the Brunswick Steam Electric Plant, Units 1 and 2. The information requested was included in CP&L's previous submittals; therefore, the information is not being duplicated in the enclosed responses, but will be referenced and summarized.

We believe the enclosed information will satisfy your concern and allow completion of the Safety Evaluation Report for the Brunswick Plant. If you have any questions concerning this information, please contact Sherwood R. Zimmerman at (919) 836-6242.

Yours very truly,

SR Zimmerman for
A. B. Cutter - Vice President
Nuclear Engineering & Licensing

WRM/ccc (126WRM)

Enclosure

cc: Mr. D. O. Myers (NRC-BSEP)
Mr. J. P. O'Reilly (NRC-R11)
Mr. M. Grotenhuis (NRC)

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ENCLOSURE
NLS-84-229

RESPONSE TO REQUEST FOR INFORMATION
ENVIRONMENTAL QUALIFICATION OF SAFETY-RELATED ELECTRICAL EQUIPMENT

NRC Question 1

Submit all applicable JCOs that are currently being relied upon and certify the following for each JCO associated with equipment that is assumed to fail:

No significant degradation of any safety function or misleading information to the operator as a result of failure of equipment under the accident environment resulting from a design-basis event will occur.

CP&L Response

All justifications for continued operation (JCOs) which are currently relied upon have been previously submitted to the NRC Staff. Our letter of March 23, 1984 (Serial No. NLS-84-129) provided the minutes of our February 2, 1984 meeting with the Staff. Section V of that letter is an index of JCOs and their dates of submittal by Franklin Technical Evaluation Report (TER) item number. Additionally, our letter of April 25, 1984 (Serial No. NLS-84-126) contained, as Attachment 2, a list of all Brunswick-2 items requiring JCOs beyond the current outage and referenced the applicable JCO by the above index number.

Carolina Power & Light Company would like to note that these JCOs have been submitted because of a lack of definitive documentation of qualification, not because the equipment is assumed to fail.

NRC Question 2

Certify that in performing the review of the methodology to identify equipment within the scope of 10 CFR 50.49(b)(2) that the following steps have been addressed:

- a. A list was generated of safety-related electric equipment as defined in paragraph (b)(1) of 10 CFR 50.49 required to remain functional during or following design-basis Loss of Coolant Accident (LOCA) or High Energy Line Break (HELB) Accidents. The LOCA/HELB accidents are the only design-basis accidents which result in significantly adverse environments to electrical equipment which is required for safe shutdown or accident mitigation. The list was based on reviews of the Final Safety Analysis Report (FSAR), Technical Specifications, Emergency Operating Procedures, Piping and Instrumentation Diagrams (P&IDs), and electrical distribution diagrams;
- b. The elementary wiring diagrams of the safety-related electrical equipment identified in Step a were reviewed to identify any auxiliary devices electrically connected directly into the control

or power circuitry of the safety-related equipment (e.g., automatic trips) whose failure due to postulated environmental conditions could prevent required operation of the safety-related equipment and;

- c. The operation of the safety-related systems and equipment were reviewed to identify any directly mechanically connected auxiliary system with electrical components which are necessary for the required operation of the safety-related equipments (e.g., cooling water or lubricating systems). This involved the review of P&IDs, component technical manuals, and/or systems descriptions in the FSAR.
- d. Nonsafety-related electrical circuits indirectly associated with the electrical equipment identified in Step a by common power supply or physical proximity were considered by a review of the electrical design including the use of applicable industry standards (e.g., IEEE, NEMA, ANSI, UL, and NEC) and the use of properly coordinated protective relays, circuit breakers, and fuses for electrical fault protection.

CP&L Response

A description of the CP&L methodology for creation of the "Master List" is included as Section II of our May 20, 1983 submittal. As previously discussed with the Staff, we believe that this description addresses all of your points of concern.

This description, as well as our position on the 10 CFR 50.49(b)(3) equipment, has also been submitted as Section III of our letter of March 23, 1984 transmitting the minutes of our February 2, 1984 meeting with the Staff.

Carolina Power & Light Company believes, on the strength of the referenced submittals, that we have addressed your concerns in these areas.

NRC Question 3

Provide certification that all design basis events which could potentially result in a harsh environment, including flooding outside containment, were addressed in identifying safety-related electrical equipment within the scope of 10 CFR 50.49(b)(1).

CP&L Response

As discussed in Item 2 above, identification of electrical equipment within the scope of 10 CFR 50.49(b)(1) at Brunswick was based on the functional requirements to ensure: 1) the integrity of the reactor coolant boundary 2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and 3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures. The identified electrical equipment was evaluated against DOR Guideline requirements to establish environmental qualification of this equipment. Conditions for qualifying the above-identified equipment were developed using the respective environmental parameters of their locations.

As stated in our Section III of our May 20, 1983 submittal, flooding outside of containment as a result of a HELB is not a concern at Brunswick.

NRC Question 4

Certify that the electrical equipment within the scope of 10 CFR 50.49(b)(3) is all R.G. 1.97 Category 1 and 2 equipment or that justification has been provided for any such equipment not included in the environmental qualification program.

CP&L Response

Our position on the 10 CFR 50.49(b)(3) equipment, has been submitted as Section III of our letter of March 23, 1984 transmitting the minutes of our February 1, 1984 meeting with the Staff.

Carolina Power & Light Company believes, on the strength of the referenced submittals, that we have addressed your concerns in these areas.