CP&L
Carolina Power & Light Company

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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
PRIMARY CONTAINMENT ISOLATION SYSTEM
RESPONSE TO REQUEST FOR ADDTIONAL INFORMATION

Gentlemen:

On October 12, 1989, during the monthly status meeting with the Brunswick Project Manager, CP&L was provided a number of questions pertaining to the September 20, 1989 license amendment request regarding the Primary Containment Isolation System. Enclosure 1 contains the Company's responses to six of the seven questions. The information required for the response to Question 3, regarding RWCU Isolation - Δ Flow High, will take longer to compile. It is expected that this information can be provided by the end of December 1989 or early January 1990.

Please refer any questions regarding this submittal to Mr. M. R. Oates at (919) 546-6063.

Yours very truly,

Leonard I. Loflin
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LIL/MAT

Enclosure

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ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
PRIMARY CONTAINMENT ISOLATION SYSTEM

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Question 1

Proposed Change Number 3 - Subpart A: Please provide a better description of each change and the basis for it. Action statements are being changed for some valve groups (1.a.1 and 5.a). A new valve group is being identified and action statements are being changed (2.a, 2.b, and 2.c).

Response

Currently, Valve Groups actuated by an isolation signal are specified under the trip function regardless of whether the actuated Valve Groups are associated with that isolation function. As an example, Valve Groups 2, 6, and 8 are listed under both trip functions 1.a.1, Primary Containment Isolation, and 5.a, Shutdown Cooling System Isolation, even though Valve Groups 2 and 6 are associated with primary containment isolation and Valve Group 8 with shutdown cooling system isolation. As a result, the Technical Specifications are not consistent in specifying the correct action if the operability requirements are not met. In the above case, Item 1.a.1 requires Action 20 for Valve Groups 2, 6, and 8 whereas Item 5.a specifies Action 27 for these same groups. Action 20, as specified by Item 1.a.1, is appropriate for Valve Groups 2 and 6 because both are associated with primary containment. Action 27, specified in Item 5.a, is appropriate for Valve Group 8 since it is associated with shutdown cooling system isolation. The nature of the action specified by Action 27 would not compensate for the inoperability of the Valve Group 2 and 6 instrumentation and, as such, is inappropriate for that condition.

Similar changes are necessary for Items 2.a, 2.b, and 2.c. These items address the operability requirements for the secondary containment isolation system instrumentation, however, the secondary containment isolation dampers are not identified as a valve group operated by the items. This change adds footnote (1) which references the secondary containment isolation dampers. The specified Action 23 is correct for the secondary containment isolation dampers, however, it is not for Valve Groups 2, 3, and 6 which are not related to secondary containment. The correct actions for these valve groups are specified by the primary containment isolation section for Valve Groups 2 and 6 and the reactor water cleanup system isolation system section for Valve Group 3. These sections are specifically provided for these isolation functions and contain the appropriate actions.

The proposed changes will make the information provided more complete and accurate. It does not reflect a change in the design or operation of the instrumentation.

Question 2

Proposed Change Number 4 - General: Isolation system response times, in general, are discussed in the basis for the changes. Load sequencing times of valve power sources are not discussed. Is it correct to assume that there is no load sequencing for the valves covered by the Technical Specifications? Please discuss. In addition, assumptions were given for AC powered valves. Please describe what assumptions are used for DC powered valves.

Response

The electrically operated primary containment isolation valves are powered from either AC or DC motor control centers which are not subject to load sequencing. Power is immediately available to these valves whenever a source of onsite or offsite power is present. The accident analysis assumes a maximum response time for isolation of a containment penetration by the isolation system. Because of the single failure criteria, the response time must be based upon the slower of the inboard and outboard valves in order to be conservative. Where one of these isolation valves is AC powered, the system response time takes into account the time required for the emergency diesel generators to start and supply power to the AC valve. This allowance is not necessary for penetrations which employ only fail close, DC, or air operated valves as their operation does not depend on AC power being available.

Question 3

Proposed Change Number 4 - RWCU Isolation Δ Flow High: Please confirm that the isolation time for RWCU under high differential flow conditions is bounded by the high energy line break accident analysis. Please address the following times: instrument response time and value; AC/DC valve closure time and value; diesel generator start time and value; time delay timer time and value; loading sequence delay time and value; and total RWCU isolation time and value.

Response

To be provided at a later date.

Question 4

Current Item 4.b.4 in Table 3.3.2-3 specifies an "NA" for response time. Shouldn't this value be $\leq$ 30 minutes as stated in UFSAR Table 7.3.1-3, PCIS Group 5?

Response

UFSAR Table 7.3.1-3 specifies the setpoints for the isolation instrumentation. It specifies a setpoint of ≤ 30 minutes for the RCIC steam tunnel temperature time delay relay. This design requirement is specified as an operability requirement under Item 4.b.11 in Table 3.3.2-2 of the Technical Specifications. This table is where setpoint requirements are addressed by the Technical Specifications.

Technical Specification Table 3.3.2-3 specifies the overall response for isolation instrumentation. A response time requirement is necessary for isolation signals which are depended upon to initiate the protective actions for the worst case, bounding breaks. An instrumentation response slower than these response time design limits would result in environmental conditions in excess of the environmental qualification envelope. For these isolation signals a response time requirement is needed because its value is critical in ensuring the design basis event does not exceed the bounding envelope.

The RCIC steam line tunnel high temperature instrumentation does not have a response time limit because its operation is not depended upon to mitigate the worst case high energy line break event. It is only depended on for providing protection against small RCIC line breaks which are not bounding. Since the environmental qualification profiles for these breaks are enveloped by other breaks, the response time of the instrumentation is not critical to the acceptable performance of the system. There is sufficient margin from the bounding profiles that a response time limit is not necessary to assure proper operation of the instrumentation isolation function. Evidence for this is provided by the 30 minute time delay designed into the system. Verification of the setpoint of this relay is addressed by Item 4.b.11 in Table 3.3.2-2. The magnitude of this time delay is so great (1800 seconds) that any variation in the instrumentation response time is immaterial. Therefore, an overall response time test for the instrumentation is not necessary.

Question 5

Proposed TS page 3/4 6-20 has multiple "margin bars" showing changes. It appears from the text that only one change is being make (revise "Condition" to "Operational condition") and this would support only one "margin bar." Please address the discrepancy.

Response

The word "CONDITION" currently appears in three places in Technical Specification 3.6.5.2, each of which was changed to "OPERATIONAL CONDITION." The three revision bars identify these changes.

Question 6

Proposed Change 5 - Isolation Valves: Please provide a comparison of valves listed in current TS Table 3.6.3-1 with the listing of valves covered by the new procedure. If valves are listed in the TS and not the procedure, justify

the deletion. If valves are listed in the procedure and not the TS Table, explain the discrepancy. In addition, please confirm that the current TS Table valves' isolation times are contained in the new procedure and are the same numerical values. If differences exist, please explain and justify.

Response

The current Technical Specifications lists only automatic isolation valves with stroke time requirements. Technical Specification Interpretation 85-01 expands the applicability of Technical specification Section 3.6.3 to include the list of the primary containment isolation valves contained in existing Plant Procedure SD-12. The new plant procedure will specify both the valves in existing Technical Specification Table 3.6.3-1 and those in existing plant procedure SD-12. It will also specify the same isolation times as currently specified by the Technical Specifications. The list of valves and requirements specified by the new procedure, therefore, will be the same as that currently specified by the Technical Specifications as expanded by the Technical Specification Interpretation.

Question 7

Proposed Change 5 - Isolation Dampers: Same questions as contained in Question 6 but for TS Table 3.6.5.2-1 instead of TS Table 3.6.3-1.

Response

The new procedure will contain the same list of secondary containment dampers and stroke times as currently contained in the Technical Specifications so there will be no change from the current requirements.