

NRR-PMDAPEm Resource

From: Saba, Farideh
Sent: Thursday, August 09, 2012 6:51 PM
To: Murray, William R. (Bill)
Subject: REQUEST FOR ADDITIONAL INFORMATION FOR BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 CYCLE 19 CORE OPERATING REPORT (TAC NO. ME8321)
Attachments: ME8321_BR1_RAI for Cycle 19 COLR.docx
Importance: High

Bill,

By letter dated March 30, 2012 (Agencywide Documents Access and Management System Accession No. ML121000138), Carolina Power and Light Company (the licensee), submitted the Core Operating Limits Report for Brunswick Steam Electric Plant, Unit 1 Cycle 19 in accordance with Brunswick Unit 1 Technical Specification 5.6.5.d. The Nuclear Regulatory Commission staff has reviewed the licensee's submittal and identified areas where additional information is needed to complete its review. The request for additional information is provided as an attachment to this email.

Please provide responses to these RAIs within 30 days of this email.

Thanks,

Farideh

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Recipients:
"Murray, William R. (Bill)" <Bill.Murray2@pgnmail.com>
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REQUEST FOR ADDITIONAL INFORMATION

CAROLINA POWER AND LIGHT COMPANY

RELATING TO CORE OPERATING LIMITS REPORT (COLR)

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 CYCLE 19

TAC NO. ME8321

The NRC staff has reviewed Brunswick Steam Electric Plant (BSEP), Unit 1 Cycle 19 Core Operating Limits Report (COLR) and observed areas to be clarified by the Carolina Power and Light Company.

1. With respect to the section number in accordance with the Generic Letter 88-16 guidance, please provide clarification and justification given as follows:
 - (1) there are no section numbers specified in the entire COLR report;
 - (2) there are no specific Technical Specification (TS) section numbers for all the cycle-specific parameter listed in the TS 5.6.5.a.
 - (3) References section should be listed corresponding to the approved methodologies listed in TS 5.6.5.b to support cycle-specific parameters listed in TS 5.6.5.a.
2. With respect to the average planar linear heat generating rate (APLHGR) Limits, footnotes 17, 18, and 19 in Table 18 provide that: (1) the ATRIUM-10 and ATRIUM 10XM MAPFAC_p and MAPFAC_f multipliers have a constant value of 1.0 under all conditions; (2) ATRIUM-10 maximum APLHGR (MAPLHGR) limits must be adjusted by 0.85 multiplier when in single-loop operation (SLO). SLO not permitted for FHOOS, TBVOOS or MSIVOOS; and (3) ATRIUM 10X MAPLHGR limits must be adjusted by a 0.8 multiplier when in SLO. SLO not permitted for FHOOS, TBVOOS or MSIVOOS.

Please provide: (1) approved methodologies to support the statements in the footnotes 17, 18, and 19 in Table 18; and (2) justifications that the analytical results are conservative comparing with the available test results.

3. With respect to minimum critical power ratio (MCPR) Limits, the MCPR limits presented in Tables 5 through 11 support any two-loop operation safety limit MCPR (SLMCPR) value ≤ 1.11 and any SLO SLMCPR value ≤ 1.12 .

Please provide: (1) a list of approved methodologies used in this application; (2) justification that 0.01 adder is conservative; and (3) description of the real applications of the data listed in Tables 5 through 11 to the daily reactor operations such as NSS insertion times versus TSSS insertion times and the instrumentations operators rely for the safety operations corresponding to the emergency operating procedures (EOPs) requirements.

4. With respect to LHGR Limits, steady-state $LHGR_{ss}$ limits are provided for AREVA fuel (Table 12). These steady-state $LHGR_{ss}$ limits must be modified with a core power (Tables 13-16) and core flow (Table 17) dependency.

Provide a detailed description of how the numbers in the Tables applied to the daily plant operations based on the applied LHGR limit determined by the equation of the applied LHGR limit = $LHGR_{ss} \times (LHGRFAC_p, LHGRFAC_f)_{min}$.

5. With respect to PBDA Setpoints, BSEP Unit 1 has implemented Boiling Water Reactor Owners Group Long Term Stability Solution Option III (OPRM) with the methodology described in Reference 23. To address the generic DIVOM curve issue, the relative change in CPR as a function of the calculated HCOM were performed with the RAMONA5-FA code in accordance with Reference 26.

Please provide: (1) clarification that the least limiting $MCPR_f$ limit will provide adequate protection against violation of the SLMCPR during a postulated reactor instability; (2) verification of the application of Reference 26 to DIVOM slope calculation with a 10% penalty; and (3) justification that the proposed PBDA Setpoints are conservative.