

August 7, 2000

MEMORANDUM TO: James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Robert M. Pulsifer, Project Manager, Section 2 */RAI/*
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SEABROOK STATION, UNIT NO. 1 - DRAFT REQUEST FOR
ADDITIONAL INFORMATION, REACTOR COOLANT SYSTEM FLOW
MEASUREMENT (TAC NO. MA9301)

The attached draft request for additional information (RAI) was transmitted by facsimile to Jeff Sobotka of North Atlantic Energy Service Corporation (the licensee) in support of a conference call on August 3, 2000. Review of the RAI would allow the licensee to determine and agree upon a schedule to respond to the RAI if necessary. This memorandum and the attachment do not convey a formal request for information or represent an the staff's position.

Docket No. 50-443

Attachment: RAI

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Attachment: RAI

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REQUEST FOR ADDITIONAL INFORMATION
SEABROOK STATION LAR 00-04
REACTOR COOLANT SYSTEM FLOW MEASUREMENT

1. In Section 4.3 of WCAP-15404, why is the entire section proprietary? Why are the values of baseline calorimetric flow (BCF) and baseline elbow tap flow coefficient (B) proprietary?
2. Section 6.2 states that Reference 2 states the total number of tube plugged through the first seven cycles was 74 tubes. However, Ref. 2 is an ASME publication. What is the correct reference?
3. Section 6.4 states that the BE hydraulic corrections are also listed on Table 6-4. However, there is no Table 6-4. Is it Table 6-1?
4. Section 6.4 of WCAP-15404 describes the removal of RTD Bypass System prior to Cycle 3, and its effect on the elbow tap flow measurements for MOC 4 and later cycles. Section I, "Introduction and Safety Assessment for Proposed Change," of the June 20, 2000, letter, states that the calculated flow uncertainty is based in part on the inclusion of the effects of RTD Bypass Manifold Elimination.
 - Why does the RTD bypass removal not affect Cycle 3 elbow tap flow measurement?
 - Describe how the RTD bypass manifold elimination affect the flow measurement uncertainty, and how this is accounted for in the uncertainty analysis described in Appendix A, especially, Tables A-4 and A-5.
6. Section 6.5 attributes states that, the measured calorimetric flows after Cycle 2 being significantly below the BE flow trend to the implementing LLLP, but states that about 0.5% of this difference may be due to one RTD in each hot leg being installed in a non-optimum location, causing a small bias in the hot leg temperature measurement. It states that an allowance for this streaming bias is included in the setpoint analysis described in WCAP-13466, Rev. 1. Explain how the effect of RTD non-optimum location is accounted for in the setpoint analysis.
7. Section 7.2 states that the uncertainty calculations are essentially the same as those performed previously for Seabrook (documented in WCAP-13181) with the differences lie in the assumption of normalization of the elbow taps to previously performed RCS flow calorimetric measurements (BOC 1 and BOC 2) which requires inclusion of additional uncertainties in the determination of the indicated RCS flow uncertainty.

Describe how the additional uncertainty values to account for absence of current normalization of elbow taps are derived, and accounted for in the uncertainty analysis in Tables A-4 and A-5.
8. TS changes on SR 4.2.5.2 would (1) delete the prescriptive "precision heat balance measurement" without mentioning the elbow tap measurement method, and (2) not require RCS flow measurement until 72 hours of exceeding 90% RTP.

- The TS change should be more restrictive, such as adding “by an approved method of RCS measurement,” or referencing WCAP-15404.
 - What is the basis for not measuring RCS flow until after 72 hour of exceeding 90% RTP? How long would it take for the plant to reach 95% RTP from 90%? Note: WOG STS (NUREG-1431) only allows 24 hours delay.
 - Why is it that no changes are made on the BASES 3/4. 2.5 in light of the proposed changes in the flow measurement method and time delay?
9. Where in the Seabrook docket is the RCS flow measurement uncertainty value documented?
10. Provide the following document:
- North Atlantic Energy Service Corporation Letter CE-00-002, Feb. 16, 2000. (Ref. 1)
 - WCAP-13466, Rev. 1, “Bases Document for Westinghouse Setpoint Methodology for Protection System, 24 Month Cycle Evaluation, Seabrook Station, “ July 1998. (Ref. 3)
 - WCAP-13181 for flow uncertainty calculations. (Section 7.2)