North Atlantic

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The Northeast Utilities System

January 7, 2002

Docket No. 50-443
NYN-02001

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Seabrook Station
"Request For Additional Information For
License Amendment Request 01-04"

North Atlantic Energy Service Corporation (North Atlantic) was requested by the Nuclear Regulatory Commission (NRC) to provide additional clarifying information regarding License Amendment Request (LAR) 01-04 "Reactor Containment Integrated Leakage Rate Test (ILRT) Interval Extension" during a telephone conference conducted on December 27, 2001. Specifically, the NRC requested responses to five requests for additional information that were identified by the NRC as generic industry issues regarding ILRT frequency extension applications. The North Atlantic responses to the subject requests are enclosed.

Should you have any questions concerning this response, please contact Mr. James M. Peschel, Manager - Regulatory Programs, at (603) 773-7194.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Ted C. Feigenbaum
Executive Vice President
and Chief Nuclear Officer

A017

cc: H. J. Miller, NRC Region I Administrator
G.F. Wunder, NRC Project Manager, Project Directorate I-2
G.T. Dentel, NRC Senior Resident Inspector

STATE OF NEW HAMPSHIRE

Rockingham, ss. DATE 1/07/02

Then personally appeared before me, the above-named Ted C. Feigenbaum, being duly sworn, did state that he is the Executive Vice President and Chief Nuclear Officer of the North Atlantic Energy Service Corporation, that he is duly authorized to execute and file the foregoing information in the name and on the behalf of North Atlantic Energy Service Corporation and that the statements therein are true and accurate to the best of his knowledge and belief.

Marilyn R. Sullivan

Marilyn R. Sullivan, Notary Public
My Commission Expires: March 19, 2002

Enclosure to NYN-02001

Response to NRC Request for Additional Information

Because the containment inservice inspection (ISI) requirements of Title 10, Code of Federal Regulations, Section 50.55a, and leak rate testing requirements of Option B of Appendix J complement each other in ensuring the leak-tightness and structural integrity of the containment, the staff needs the following information to complete its review of the license amendment request.

Request No. 1:

Please provide a description of the ISI methods that provide assurance in the absence of an ILRT for 15 years, the containment structural and leak-tight integrity will be maintained.

Response:

North Atlantic has developed a comprehensive Containment Inservice Inspection program for Class MC and CC components in accordance with the requirements of Subsections IWA, IWE and IWL of the 1995 Edition (with the 1996 Addenda) of Section XI of the ASME Boiler and Pressure Vessel Code (Section XI) to periodically monitor the condition of the primary containment building. In general, the areas and items subject to examination include the accessible pressure retaining containment surface areas, including structural attachments, penetrations, seals, gaskets, moisture barriers, pressure-retaining bolting, and Class MC Supports. These examinations are accomplished utilizing methods such as General Visual Examinations, VT-1, VT-3, Volumetric Examinations, and Appendix J leakage tests.

Examination of containment concrete under subsection IWL is performed every 5 years as required by IWL-2410. The first containment concrete examination conducted under Subsection IWL was in October 2000. Subsection IWL requires a VT-3C visual examination of all areas and a VT-1C visual examination of suspect areas. Results of visual examination of containment concrete met VT-3C requirements. No suspect areas requiring VT-1C examination were identified.

As required by 10 CFR 50.55a(g)(6)(ii)(B)(1), licensees were required to complete the first period of the first inspection interval of Subsection IWE examinations by September 9, 2001. Seabrook completed these required examinations by the September 9, 2001 due date as required. Subsequent examinations will be conducted each inspection period as required by Subsection IWE.

Request No. 2:

IWE-1240 requires licensees to identify the surfaces requiring augmented examinations. Please provide the locations of the containment liner surfaces which Seabrook Station has identified as requiring augmented examination and a summary of the findings of the examinations performed.

Response:

During examination of the containment liner in accordance with Subsection IWE, Seabrook identified six (6) areas requiring augmented examination. These areas exist between the interface of the containment liner and the moisture barrier at the lowest elevation of containment. The coating in these areas were flaking and blistering. The areas were mechanically cleaned and volumetrically examined (UT) for evidence of liner wall loss. No wall loss was detected. These areas were re-coated and are subject to examination each inspection period for three consecutive periods as required by IWE-2420(c).

Request No. 3:

For the examination of seal and gaskets, and examination and testing of bolts associated with the primary containment pressure boundary (Examination Categories E-D and E-G), Seabrook Station had requested relief from the requirements of the Code. As an alternative, Seabrook Station plans to examine them during the leak rate testing of the primary containment. With the flexibility provided in Option B of Appendix J for Type B and Type C testing (as per Nuclear Energy Institute 94-01 and Regulatory Guide 1.163), and the extension requested in this amendment for Type A testing, please provide your schedule for examination and testing of seals, gaskets, and bolts that provide assurance regarding the integrity of the containment pressure boundary.

Response:

As previously identified by letter (NYN-01044) dated August 2, 2001, North Atlantic identified that it submitted and obtained NRC approval (TAC No. MA8780 dated August 18, 2000) of two relief requests (CRR-1, Examination Requirements for Class MC Seals and Gaskets and CRR-2, Torque or Tension Test Requirements for Class MC) that rely on Appendix J testing to satisfy certain containment inservice inspection requirements of Subsection IWE of the Code. It was identified that the basis for approval of the subject relief requests was unaffected by the proposed extension to the ILRT Interval. CRR-1 and CRR-2 both rely only on Type B tests to satisfy the alternative examination requirements.

Seabrook Station has implemented a performance based containment leakage test program in accordance with the guidelines contained in Regulatory Guide (RG) 1.163 "Performance-Based Containment Leak Test Program," dated September 1995 as required by Technical Specification 6.15 "Containment Leakage Rate Testing Program." RG 1.163 identified that NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 0, provides methods acceptable to the NRC Staff for complying with the provisions of Option B of Appendix J. NEI 94-01 specifies the testing frequencies for Type B tested penetrations in section 10.2.1 and 10.2.2. The extended test interval for Type B penetrations (except containment airlocks) is a maximum of once per 120 months. The test frequency for containment airlocks, and airlock shaft seals, electrical penetrations, and view port seals shall be

tested at a frequency of once per 30 + 7.5 months. The Type B testing at the above-specified frequencies will provide reasonable assurance of containment leak tight integrity.

Request No. 4:

The stainless steel bellows have been found to be susceptible to trans-granular stress corrosion cracking, and the leakages through them are not readily detectable by Type B testing (see Information Notice 92-20). If applicable, please provide information regarding inspection and testing of the bellows at Seabrook Station, and how such behavior has been factored into the risk assessment.

Response:

Seabrook Station has one containment penetration that incorporates a flexible steel bellows assembly as described in NRC Information Notice 92-20 "Inadequate Local Leak Rate Testing." This bellows is installed at the Fuel Transfer Tube containment penetration (X-62). The subject stainless steel bellows (SA-240) is a two ply unit with testable connections on either end to permit local leakage rate testing. Prior to Type B testing, airflow is established through the bellows assembly to ensure that the entire bellows is exposed to local leakage rate test pressure in accordance with applicable penetration leak test procedure.

Request No. 5:

Inspections of some reinforced and steel containment have found degradation of the un-inspectable (embedded) side of the drywell steel shell and steel liner of the primary containment. These degradations cannot be found by visual (i.e., VT-3 or VT-1) examination unless they are through the thickness of the shell or liner; or 100% of the un-inspectable surfaces are periodically examined by ultrasonic testing. Please provide information addressing how potential leakages under high pressures during core-damage accidents are factored in to the risk assessment related to the extension of the ILRT.

Response:

Degradations of the liner would likely not be found by ILRT unless they were virtually through-wall failures. Thus, extension of ILRT would not impact the likelihood of detecting this type of failure mechanism. In addition, failure of the containment liner is included implicitly in Engineering Evaluation EE-01-008, Revision 1 "PRA Evaluation: Risk Impact of Extending the Frequency of Containment Integrated Leak Rate Testing from 10 Years to 16 Years." The subject evaluation was forwarded to the NRC by letter (NYN-01083) dated November 2, 2001. The base case analysis identified three containment leakage classes of containment isolation failure (see Table 2 of EE-01-008). These include containment failure modes such as liner breach of various sizes corresponding to the three leakage classes. In addition, a sensitivity study (see Appendix A of EE-01-008) uses the EPRI release category definitions. Release categories Class 3a and Class 3b also specifically include containment liner failure.