North Atlantic

North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874
(603) 474-9521

The Northeast Utilities System

July 31, 2001
Docket No. 50-443

NYN-01071

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

Seabrook Station
Response to Request for Additional Information Regarding
License Amendment Request 01-01,
"Changes to Electrical Power Systems –A.C. Sources Technical Specifications"

North Atlantic Energy Service Corporation (North Atlantic) submits herein as Enclosure 1 its response to a Request for Additional Information regarding License Amendment Request 01-01. The request results from a teleconference conducted on May 8, 2001 between V. Nerses, C. Holden, and O. Chopra of the NRC Staff and J. Sobotka, J. Peschel, R. White, et. al. of North Atlantic whereby the NRC requested North Atlantic to provide additional information to address specific questions on the proposed changes to the Emergency Diesel Technical Specifications. Enclosure 2 summarizes commitments made in this response.

Should you have any questions regarding this letter, 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

cc: H. J. Miller, NRC Regional Administrator
G. T. Wunder, NRC Project Manager, Project Directorate 1-2
NRC Senior Resident Inspector

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ENCLOSURE 1 TO NYN-01071

Response to Request for Additional Information Regarding
License Amendment Request 01-01

The following provides North Atlantic Energy Service Corporation's (North Atlantic) response to the NRC Staff's request for additional information (RAI) regarding License Amendment Request (LAR) 01-01.

RAI 1: Reducing multiple 18 month starts from standby conditions and allowing restarts from hot conditions.
Provide a description of the sequence of how North Atlantic currently performs the 18 month EDG surveillances including North Atlantic's forced cooling practices. In addition, provide a description of the sequence of the 18 month EDG surveillances that will be conducted under the proposed change of allowing two of the three surveillances to be conducted from hot conditions.

Response: Technical Specification (TS) surveillance requirements 4.8.1.1.2.f.4, f.5 & f.6 currently require emergency diesel generator (EDG) starts from standby conditions. North Atlantic considers standby conditions to be the engine at keep warm temperatures because the jacket water and lube oil keep warm systems are in continuous operation to support the required starting times and to minimize engine wear and tear (reference LAR-91-010 & License Amendment 13). LAR-01-01 requested a change to permit the EDG starts for T/S 4.8.1.1.2.f.4 & .5 to be performed at or near operating temperature instead of at standby conditions. The EDG start for TS 4.8.1.1.2.f.6 would still be performed at standby conditions. A fast start from standby conditions will also be performed every 184 days based on the revised T/S 4.8.1.1.2.e.

The current EDG surveillance test procedures perform the EDG Safety Injection (SI) start for TS 4.8.1.1.2.f.5 first, the loss of offsite power (LOOP) start for TS 4.8.1.1.2.f.4 second and the LOOP / SI start for TS 4.8.1.1.2.f.6 third. Between the f.5 and f.4 starts, and between the f.4 and f.6 starts, accelerated cooling is used to expeditiously cool the engine from operating temperature to standby conditions. After EDG shutdown, the EDG room supply and exhaust fans are operated to accelerate cooldown. The operating procedures indicate that the cooldown time is approximately 2 hours. With the TS revision proposed by LAR-01-01, the LOOP/SI start for TS 4.8.1.1.2.f.6 would be performed first from standby conditions. The LOOP start for TS 4.8.1.1.2.f.4 and SI start for TS 4.8.1.1.2.f.5 would be performed after, from at or near normal operating temperature. Accelerated cooling will therefore, not be needed between tests. The LOOP/SI start was selected to be the standby condition start because its permanently connected and auto-connected emergency loads are larger than the LOOP start and loading test for TS 4.8.1.1.2.f.4 and the TS 4.8.1.1.2.f.5 SI start is an unloaded test. Fast starts from standby conditions will still be performed every 184 days per revised TS 4.8.1.1.2.e.

North Atlantic believes that operating temperature (hot) fast starts result in less engine wear and tear as compared to starts from standby conditions. An LOOP/SI test start (f.6) performed from standby conditions represents an as-found condition since the EDG are normally maintained at standby temperatures. Performing subsequent LOOP (f.4) and SI (f.5) test starts from standby conditions provides no additional benefit since they would not be truly as-found tests because of the previous LOOP/SI (f.6) start. Eliminating the accelerated cooldown also benefits outage planning and scheduling by shortening the duration of the EDG outage testing.

RAI 2: Provide information from the EDG vendor for operating at a lower load band.
LAR 01-01 proposes a revision to TS 4.8.1.1.2a.6) to widen the EDG load band by reducing the lower load limit from 5600 kW to 4500 kW for monthly surveillance testing. Provide additional bases to support the contention that operating at the proposed reduced load, the EDG reaches stable operating temperatures.

Response: The EDG vendor, Fairbanks Morse (FM), has identified the load range of approximately 75% to 85% as optimal for engine performance and minimization of wear. The load range of 85% to 110% was identified as being most stressful on engine components, specifically mechanical load stress and thermal stress. FM provided this information during a July 11, 2001 presentation at the Nuclear Owners Group. Included herein is a letter from FM stating that operation within a load band of 4500 kW to 5600 kW is acceptable and operation at these lower than 100% ratings is less stressful and better for the engine. Additionally, North Atlantic has historical operating data that indicates EDG cooling systems automatically function at loads as low as 3000 kW to maintain stable operating temperatures.

RAI 3: Elimination of full load rejection test.
Provide information from the EDG vendor why elimination of the full load rejection test is of minimal benefit considering the potential for reduced EDG reliability.

Response: A full load rejection test is not a requirement of the EDG vendor, Fairbanks Morse (FM) for qualification of an engine governor system. FM states that the test is not a good indicator of governor performance. The emergency safety features (ESF) testing that sequences various isochronous loads to the engine verifies governor operation that is more specific to plant operation than the full load rejection test. Though the test may provide information relative to voltage regulator performance North Atlantic asserts that surveillance testing, particularly for the EDG, should be and is an insitu test and therefore more rigorous tests which subject components beyond conditions that such components would be normally subjected to during actual operating conditions, such as the full load rejection test, are unnecessary and counterproductive to component reliability.

RAI 4: Technical Specification (TS) Bases Changes.
LAR 01-01 did not contain TS Bases changes. Will bases changes be submitted? In addition, agree to define in the bases our trending of EDG voltage and frequency time on each start based on improved TS (ITS) Bases.

Response: North Atlantic is currently developing bases changes to address the TS changes proposed in LAR 01-01. These bases changes will be submitted to the NRC for issuance upon approval. As part of the Bases changes North Atlantic will define its trending of EDG voltage and frequency time on each start.

RAI 5: Auto-connected loads increasing above 6100 kW.
Provide a statement in the response to the RAI that a supplement to LAR 01-01 will be submitted to revise TS 4.8.1.1.2.f.7.b to state "Should auto-connected loads increase equal to or greater than 6100 kW;".

Response: TS 4.8.1.1.2.f.7.b will be revised to state "Should auto-connected loads increase equal to or greater than 6100 kW;". The revision will be submitted as a supplement to LAR 01-01.

GOODRICH

Fairbanks Morse Engine
Goodrich Corporation
701 White Avenue
Beloit, WI 53511-5492
Tel: 608 364 8424
Fax: 608 364 8417
ted.stevenson@goodrich.com

June 28, 2001

NAESCO
Seabrook Station
PO Box 300
Seabrook, NH 03874

Attention: Mike Collins

Subject: Seabrook
Liscencing Information

Gentlemen,

In response to your 5/11/01 fax relative to genset liscencing concerns, please be advised the following:

1) Operation within a band of 4500 KW to 5600 KW is acceptable. Operation at these lower than 100% ratings is less stressful and better for the engine.

2) Deletion of full load rejection test is acceptable. FM has no requirement for this test. Also, the test is not a good indicator of governor performance but does provide information relative to voltage regulator performance.

If you have any questions or require additional information, please contact the writer at 608-364-8424.

Very Truly Yours,

Ted Stevenson
Manager, Nuclear Parts Sales

ENCLOSURE 2 TO NYN-01071

North Atlantic is making the following commitments in this response.

- North Atlantic will develop bases changes to address TS Changes in LAR 01-01. These bases changes will define trending of EDG Voltage and frequency time on each start.

- North Atlantic will submit a revision to LAR 01-01 to revise TS 4.8.1.1S.f.7b to state "Should auto-connected loads increase equal to or greater than 6100 kW;"