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Ted C. Feigenbaum  
Senior Vice President and  
Chief Nuclear Officer

NYN- 93037

March 3, 1993

United States Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Document Control Desk

- References:
- (a) Facility Operating License No. NPF-86, Docket No. 50-443
  - (b) USNRC Bulletin No. 90-01, Supplement 1, dated December 22, 1992, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount"
  - (c) NHY Letter NYN-90139 dated July 17, 19. Response to NRC Bulletin No. 90-01, 'Loss of Fill-Oil in Transmitters Manufactured by Rosemount'

Subject: Response to NRC Bulletin No. 90-01, Supplement 1, (TAC M85441)

Gentlemen:

The NRC, in Bulletin 90-01, requested licensees to take certain actions and submit information regarding Rosemount transmitters. The Bulletin was issued because certain models of Rosemount transmitters had failed due to loss of sensor fill oil. In Reference (c), New Hampshire Yankee (NHY), the predecessor company to North Atlantic Energy Service Corporation (North Atlantic) stated that the performance of all Rosemount Model 1153 (Series B and D) and Model 1154 transmitters manufactured prior to July 11, 1989 and used at Seabrook Station would be tracked, and appropriate reports would be made. In response to the original bulletin, an enhanced surveillance program for Rosemount transmitters was implemented in May 1990.

NRC Bulletin 90-01, Supplement 1 requested licensees to take additional actions and submit information regarding certain models of Rosemount transmitters. In response to Supplement 1, North Atlantic has reviewed its enhanced surveillance program, implemented in response to the original bulletin. This review determined that our enhanced surveillance program meets or exceeds the criteria specified by Supplement 1 to the bulletin. The program has also demonstrated its effectiveness in actual practice. Since 1990, the program has identified three Rosemount transmitters, which were subsequently confirmed by the manufacturer to have experienced loss of sensor fill-oil. The program identified these transmitters as suspect; and they were replaced prior to the occurrence of any in-service failure.

Since the enhanced surveillance program is effectively meeting its objective and implements the requested actions of NRC Bulletin 90-01, Supplement 1, North Atlantic does not intend to replace any Rosemount Model 1153, Series B or D or Model 1154 transmitter currently installed or in spare stock at Seabrook Station.

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North Atlantic concludes that the actions requested by NRC Bulletin 90-01, Supplement 1 are being implemented at Seabrook Station. The enclosure to this letter provides detailed information on the enhanced surveillance program. Should you have any questions on this matter, please contact Mr. James M. Peschel, Regulatory Compliance Manager at (603) 474-9521 extension 3772.

Very truly yours,



Ted C. Feigenbaum

TCF:GK/act

Enclosure

cc: Mr. Thomas T. Martin  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
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475 Allendale Road  
King of Prussia, PA 19406

Mr. Albert W. De Agazio, Sr. Project Manager  
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STATE OF NEW HAMPSHIRE

Rockingham, ss.

March 3, 1993

Then personally appeared before me, the above-named Ted C. Feigenbaum, being duly sworn, did state that he is Senior 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 to the best of his knowledge and belief.

Tracy A. DeCredico

Tracy A. DeCredico, Notary Public

My Commission Expires: October 3, 1995

North Atlantic  
March 3, 1993

ENCLOSURE TO NYN-93037

SPECIFIC RESPONSES TO THE REQUESTED ACTIONS  
OF NRC BULLETIN 90-01, SUPPLEMENT 1

SPECIFIC RESPONSES TO THE REQUESTED ACTIONS  
OF NRC BULLETIN 90-01, SUPPLEMENT 1

NRC-REQUESTED ACTION No. 1:

Review plant records and identify any Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that are used or may be used in the future in either safety-related systems or systems installed in accordance with 10 CFR 50.62 (the ATWS rule).

NORTH ATLANTIC RESPONSE:

North Atlantic has reviewed Seabrook Station records and verified that all Rosemount Model 1153 (Series B and D) and Model 1154 transmitters manufactured before July 11, 1989, that are used in either safety-related systems or systems installed in accordance with 10 CFR 50.62 (the ATWS rule) are being monitored by the enhanced surveillance program. Any Rosemount Model 1153 (Series B or D) or Model 1154 transmitter manufactured before July 11, 1989, that is installed in the future either in a safety-related system or a system installed in accordance with 10 CFR 50.62 will be monitored by the enhanced surveillance program.

NRC-REQUESTED ACTION No. 1a:

Expeditionously replace, or monitor for the life of the transmitter on a monthly basis using an enhanced surveillance monitoring program, any transmitters that have a normal operating pressure greater than 1500 psi and that are installed in reactor protection trip systems, ESF actuation systems or ATWS systems. Action for those transmitters that have not met the Rosemount psi-month threshold criterion should be expedited. At their discretion, licensees may monitor using an enhanced surveillance program at least once every refueling cycle, but not exceeding 24 months, transmitters in this category if the appropriate psi-month threshold criterion recommended by Rosemount has been reached, and the monitoring interval is justified based upon transmitter performance in service and its specific safety function. The justification should show that a sufficiently high level of reliability for the function is provided by the redundancy or diversity of applicable instrumentation and control systems, commensurate with the importance of the function, when considered in conjunction with the overall performance of the reactor protection trip system, ESF actuation systems, or ATWS system. Provide to the NRC a copy of the licensee justification to extend the enhanced surveillance program beyond the monthly test interval for transmitters that have reached the appropriate psi-month threshold criterion recommended by Rosemount.

NORTH ATLANTIC RESPONSE:

North Atlantic does not intend to replace any Rosemount Model 1153, Series B and D and Model 1154 transmitter currently installed or in spare stock at Seabrook Station. In lieu of replacement, an enhanced surveillance program has been implemented at Seabrook Station. The enhanced surveillance program requirements are such that each Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitter installed in a reactor protection trip system, ESF actuation system or ATWS mitigation system and subjected to normal operating pressure greater than 1500 psi will be systematically monitored for the installed life of each transmitter. Systematic monitoring includes trending of calibration and operational data, and performance of channel checks at least monthly. The program

specifies the corrective action to be taken in the event that a transmitter displays behavior indicative of sensor oil-loss.

#### NRC-REQUESTED ACTION No. 1b:

Replace, or monitor for the life of the transmitter on a quarterly basis using an enhanced surveillance monitoring program, any transmitters that have a normal operating pressure greater than 1500 psi and that are used in safety-related applications but are not installed in reactor protection trip systems, ESF actuation systems, or ATWS systems. At their discretion, licensees may monitor using an enhanced surveillance program at least once every refueling cycle, but not exceeding 24 months, transmitters in this category if the appropriate psi-month threshold criterion recommended by Rosemount has been reached, and the monitoring interval is justified based upon transmitter performance in service and its specific function. Provide to the NRC a copy of the licensee justification to extend the enhanced surveillance program beyond the quarterly test interval for transmitters that have reached the appropriate psi-month threshold criterion recommended by Rosemount.

#### NORTH ATLANTIC RESPONSE:

The enhanced surveillance program requirements are such that each Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitter installed in a safety-related system (other than a reactor protection trip system, ESF actuation system, or ATWS mitigation system) and subjected to normal operating pressure greater than 1500 psi will be systematically monitored. Systematic monitoring includes the actions described in the response to Item 1.a. (above), except that the scheduled, preventive actions will be performed at least quarterly.

#### NRC-REQUESTED ACTION No. 1c:

[For PWRS] Replace, or monitor at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance program until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount, any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi and that are installed in reactor protection trip systems, ESF actuation systems, or ATWS systems.

#### NRC-REQUESTED ACTION No. 1d:

Replace, or monitor at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance monitoring program until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount, any transmitters used in safety-related systems that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi, and that are not installed in reactor protection trip systems, ESF actuation systems, or ATWS systems.

#### NORTH ATLANTIC RESPONSE TO NRC-REQUESTED ACTIONS 1c AND 1d:

The enhanced surveillance program requirements are such that each Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitter installed in a safety-related system and subjected to normal operating pressure greater than 500 psi but less than

or equal to 1500 psi will be systematically monitored until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount. Systematic monitoring includes the actions described in the response to Item 1.a. (above), except that preventive actions will be performed at least once every refueling cycle, with a maximum interval not exceeding 24 months.

#### NRC-REQUESTED ACTION No. 1e:

At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi that have reached the appropriate psi-month threshold criterion recommended by Rosemount (60,000 psi-months or 130,000 psi-months depending on the range code of the transmitter). A high degree of confidence should be maintained for detecting failure of these transmitters caused by a loss of fill-oil and a high degree of reliability should be maintained for the function consistent with its safety significance.

#### NRC-REQUESTED ACTION No. 1f:

At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure less than or equal to 500 psi. A high degree of confidence should be maintained for detecting failure of these transmitters caused by a loss of fill-oil and a high degree of reliability should be maintained for the function consistent with its safety significance.

#### NORTH ATLANTIC RESPONSE TO NRC-REQUESTED ACTIONS 1e and 1f:

North Atlantic does not currently plan to exclude from the enhanced surveillance program any transmitters in the categories described by NRC-requested actions 1e and 1f.

#### NRC-REQUESTED ACTION No. 2:

Evaluate the enhanced surveillance monitoring program to ensure that the program provides measurement data with an accuracy range consistent with that needed for comparison with manufacturer drift data criteria for determining degradation caused by a loss of fill-oil.

#### NORTH ATLANTIC RESPONSE:

North Atlantic has reviewed the enhanced surveillance program for Rosemount transmitters which has been implemented since May 1990. North Atlantic has concluded that the program meets or exceeds the requested Supplement 1 criteria. The accuracy of transmitter calibrations and the repeatability of measurements taken by on-line monitoring equipment is consistent with that required to make a meaningful comparison to Rosemount's drift criteria in determining transmitter degradation caused by loss of sensor fill-oil.

In practice, the program has demonstrated its effectiveness in identifying transmitters which had experienced loss of sensor fill-oil. Since its inception, the program has identified three Rosemount transmitters which were subsequently confirmed by the manufacturer to have suffered loss of sensor fill-oil. The program identified these transmitters as suspect prior to any in-service failure.