North Atlantic

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

The Northeast Utilities System

May 14, 1997

Docket No. 50-443
NYN-97049

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

Seabrook Station
Environmental Protection Plan Nonroutine Reports

The Seabrook Station Environmental Protection Plan (EPP) requires that important events that indicate or could result in significant environmental impact causally related to plant operation be reported to the NRC within 24 hours followed by a written report in accordance EPP Section 5.4.2 (Nonroutine Reports). Paragraph 1 below describes events that North Atlantic reported to the National Marine Fisheries Service (NMFS) which, upon review, we believe should also have been reported to the NRC. In addition, Section 3.2 of the EPP requires North Atlantic to notify the NRC of proposed changes to the NPDES permit by providing a copy of the proposed change. That same section also requires that North Atlantic provide a copy of any approved change to the NPDES permit. Paragraph 2 below describes a change to the NPDES permit that we now believe should have been reported to the NRC.

1. On April 21, 1997, North Atlantic provided official written notification to the National Marine Fisheries Service (NMFS) that, by June 15, 1997, it would file a small take exemption permit application in accordance with Section 101 of the Marine Mammal Protection Act and 50 CFR 216.104. The exemption permit is necessary due to the incidental impingement of seals and seal parts in the plant's cooling water system intakes. The decision to file such an application was made as a result of the increased rate of seal taking over the last several years. At least twenty-seven seals have been impinged since the plant began operation. In parallel with the permit application, North Atlantic is investigating alternative means of deterring or mitigating seals from entering the cooling water system through the offshore intakes. The NRC Resident Inspector has been briefed on this issue.

2. On January 13, 1995, North Atlantic submitted a letter to the EPA requesting their approval to initiate the use of methoxypropylamine (MPA) as a secondary chemistry control agent at Seabrook Station. This request was made because Seabrook Station's NPDES Permit (Part I.A.1.o) did not identify MPA as an approved chemical. North Atlantic requested that the EPA approve the water discharge of MPA at a maximum discharge concentration of 0.5 ppm. The EPA and New Hampshire Department of Environmental Services (NHDES) approved the requested use of MPA on April 13, 1995 and April 21, 1995 respectively.

1/1
C001

North Atlantic made a 24-hour report to the NRC on April 25, 1997 describing the non-compliance with the reporting requirements of the EPP.

The enclosure to this letter lists and provides the letter reports associated with each of the above events.

Should you have any questions regarding this information, please contact Mr. Terry L. Harpster, Director of Licensing Services, at (603) 773-7765

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer

cc: H. J. Miller, Regional Administrator
A. W. De Agazio, Sr. Project Manager
Mr. John B. Macdonald, NRC Senior Resident Inspector

ENCLOSURE TO NYN-97049

1. North Atlantic notifications to the National Marine Fisheries Service regarding the impingement of harbor seals:

NYE-95014 North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated June 27, 1995

NYE-95020 North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated August 24, 1995

NYE-95022 North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated September 22, 1995

NYE-96018* North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated August 13, 1996

NYE-96024* North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated September 30, 1996

NYE-96030* North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated November 30, 1996

NYE-97001 North Atlantic Energy Service Corporation to National Marine Fisheries Service, dated January 11, 1997

* Provided to the NRC in the 1996 Annual Environmental Operating Report, NYN-97042, on April 30, 1997.

Oral notification of seal impingements was made during 1993-1994. Written notifications began in 1995.

2. North Atlantic's request for a change to its NPDES permit and the associated EPA and NHDES approvals:

Letter NYE-95002, North Atlantic Energy Service Corporation to Environmental Protection Agency, dated January 13, 1995, Request to Use Methoxypropylamine at Seabrook Station

Letter, EPA to North Atlantic Energy Service Corporation, dated April 13, 1995, Proposed Use of Methoxypropylamine, NAESC, Seabrook Station NPDES Permit NH 002033 NHDES to North Atlantic Energy, EPA to North Atlantic Energy Service Corporation, dated April 13, 1995, Proposed Use of Methoxypropylamine, NAESC, Seabrook Station NPDES Permit NH 0020338.

Letter, NHDES to North Atlantic Energy Service Corporation dated April 21, 1995, North Atlantic Energy Service Corporation (NAESCO) NPDES/State Surface Water Discharge Permit No. NH 0020338

North Atlantic

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

The Northeast Utilities System

NYE- 95014

June 27, 1995

Mr. Eric Nelson
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 02173

Reference (a) National Marine Fisheries Service Letter dated January 5, 1995, Mr. Chris Mantzaris (NMFS) to R. Jeb DeLoach (North Atlantic)

(b) North Atlantic Letter NYE-95009, dated May 5, 1995, "Impingement Monitoring at Seabrook Station," Mr. B. L. Drawbridge (North Atlantic) to Mr. E. K. McSweeney (EPA)

Subject: Impingement of a Seal at Seabrook Station on June 23, 1995

Dear Mr. Nelson:

North Atlantic Energy Service Corporation (North Atlantic) hereby reports the impingement of a dead harbor seal on the cooling water system at Seabrook Station on Friday, June 23, 1995. This report is made in response to the National Marine Fisheries Service letter dated January 5, 1995, [Reference (a)] requesting that North Atlantic report seal impingements.

On the day of the seal impingement, Mr. Ron Sher, of our staff, provided notification to you. In addition, Mr. Sher notified Mr. Greg Early of the New England Aquarium, by voice mail, that the seal was being stored in a freezer at Seabrook Station's Science & Nature Center and was available for recovery and analysis. New England Aquarium personnel have subsequently made arrangements to pick up the seal on June 28.

The attached impingement report (Attachment 1) and two photographs (Attachment 2) are enclosed pursuant to the data requested in Reference (a).

If you require additional information, please contact Mr. James M. Peschel, Regulatory Compliance Manager at (603) 474-9521, extension 3772.

Very truly yours,

Bruce L. Drawbridge For
Executive Director - Nuclear Production

BLD/RAS:sm
Attachments

cc: Ted C. Feigenbaum
Senior Vice President and
Chief Nuclear Officer
North Atlantic Energy Service
PO Box 300
Seabrook, NH 03874

Mr. Greg Early
New England Aquarium
Resource and Rehabilitation
Central Wharf
Boston, MA 02910

ATTACHMENT 1 to NYE-95014

SEABROOK STATION SEAL IMPINGEMENT REPORT

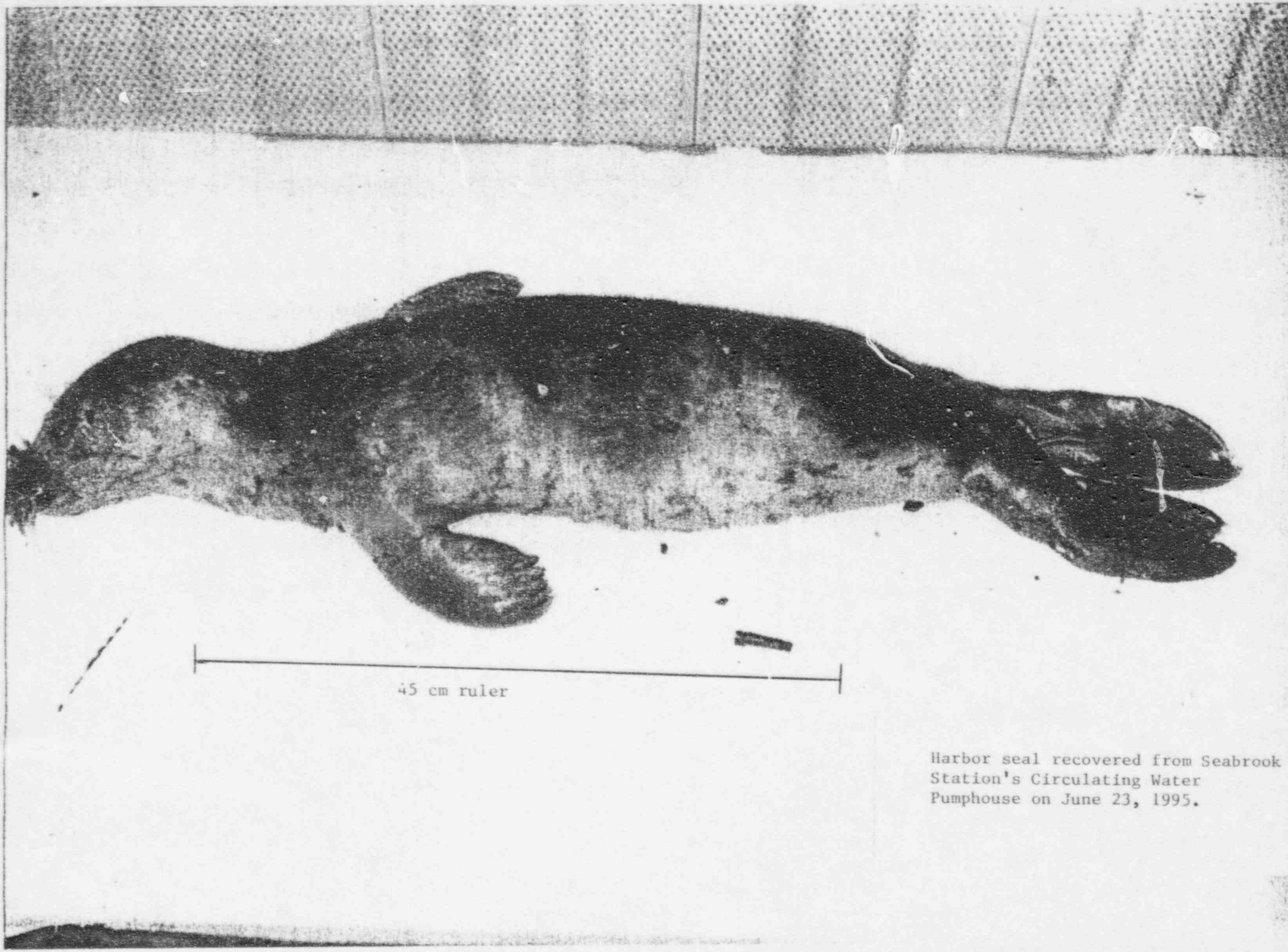
Site of Impingement:	Seabrook Station Circulating Water Pumphouse screen wash trench
Time/Date Impingement was Observed:	8:45 a.m./ June 23, 1995
Species Identification:	Harbor seal
Description/Condition of Seal:	Seal appeared to be a young-of-the-year. There was no evidence of decay. The body of the seal appeared to be thin. Weight: approximately 30 pounds. Length: 100 cm.
Observer/Reporter:	Ronald A. Sher, Senior Scientist
Last Seal Observed:	One seal skull was recovered from screen wash debris on May 23, 1995. An intact adult seal was observed in the Service Water Pumphouse on November 7, 1994. Four seal skulls were recovered from screen wash debris (November 30, 1994 to March 14, 1995) . These incidents were reported in the above-reference letter [Reference (b)].
Recent Fish Impingement:	Pollock, which seals feed upon, were observed in screen wash debris in early June 1995. Prior to June, only four pollock had been observed in 1995 impingement debris. The pollock, ranging from 20-25, cm were observed as follows:

Week of	Number of Pollock
5/07/95	0
5/14/95	0
5/21/95	0
5/28/95	0
6/04/95	6
6/11/95	51
6/18/95	70

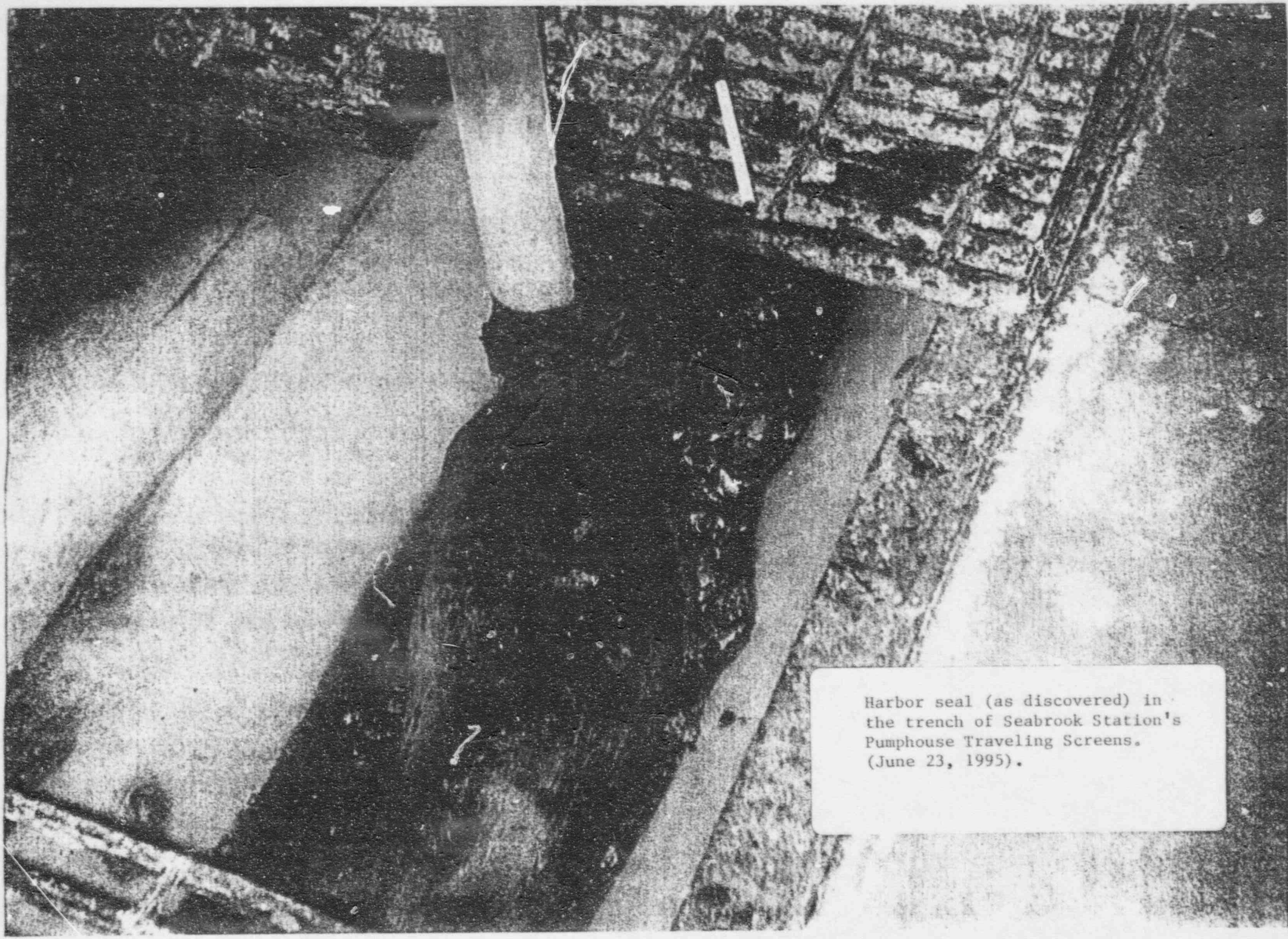
Water Temperature at Time of Impingement:	49° F
Plant Power Level at Time of Impingement:	Seabrook Station was at zero percent power (since Sunday, June 18, 1995). However, all three of the plants circulating water pumps were in operation).

North Atlantic
June 27, 1995

ATTACHMENT 2 to NYE-95014



Harbor seal recovered from Seabrook Station's Circulating Water Pumphouse on June 23, 1995.



Harbor seal (as discovered) in the trench of Seabrook Station's Pumphouse Traveling Screens. (June 23, 1995).

North Atlantic

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

The Northeast Utilities System

NYE- 95020

August 24, 1995

Mr. Eric Nelson
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 02173

References: (a) National Marine Fisheries Service Letter dated January 5, 1995, Mr. Chris Mantzaris (NMFS) to R. Jeb DeLoach (North Atlantic)

(b) North Atlantic Letter NYE-95014, dated June 27, 1995, "Impingement of a Seal at Seabrook Station on June 23, 1995," Mr. B. L. Drawbridge (North Atlantic) to Mr. Eric Nelson (NMFS)

Subject: Impingement of a Seal at Seabrook Station - August 1995

Dear Mr. Nelson:

North Atlantic Energy Service Corporation (North Atlantic) hereby reports the impingement of a dead harbor seal in the cooling water system at Seabrook Station on Wednesday, August 16, 1995. Mr. James Peschel of our staff, provided a telephone notification to you of this impingement event on the same day. This report is made in response to the National Marine Fisheries Service letter dated January 5, 1995, [Reference (a)] requesting that North Atlantic report seal impingements.

The seal was observed floating in Seabrook Station's Circulating Water Pumphouse Forebay, which is approximately 20 feet below the operating floor of the pumphouse. It has not been possible to recover the seal from this location. We would expect that as this seal decays, pieces of it will be recovered from screen wash debris. This situation is consistent with a seal that was identified in November 1994, which we were also not able to recover.

The attached impingement report (Attachment 1) is enclosed pursuant to the data requested in Reference (a). If you require additional information, please contact Mr. James M. Peschel, Regulatory Compliance Manager at (603) 474-9521, extension 3772.

Very truly yours,

Bruce L. Drawbridge
Executive Director -
Nuclear Production

BLD/RAS:sm
Attachments

cc: Ted C. Feigenbaum
Senior Vice President and
Chief Nuclear Officer
North Atlantic Energy Service
PO Box 300
Seabrook, NH 03874

ATTACHMENT 1

SEABROOK STATION SEAL IMPINGEMENT REPORT

Site of Impingement:	Seabrook Station Circulating Water Pumphouse Forebay.
Date Impingement was Observed:	August 16, 1995
Species Identification:	Harbor seal
Description/Condition of Seal:	Seal appeared to be an adult. The seal appeared to be at least four feet long, and in an early stage of decay.
Observer/Reporter:	Ronald A. Sher, Senior Scientist
Last Seal Observed:	Young-of-the-year seal recovered from screen wash debris. Reported to NMFS by telephone and North Atlantic Letter NYE-95014 [Reference (b)].
Recent Fish Impingement:	Fish impingement at the time of the seal impingement were minimal.
Water Temperature at Time of Impingement:	53°F
Plant Power Level at Time of Impingement:	Seabrook Station operating at 100 percent power.

North Atlantic

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

The Northeast Utilities System

NYE-95022

September 22 , 1995

Mr. Eric Nelson
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 02173

References: (a) National Marine Fisheries Service Letter dated January 5, 1995, Mr. Chris Mantzaris (NMFS) to R. Jeb DeLoach (North Atlantic)

(b) North Atlantic Letter NYE-95020, dated August 24, 1995, "Impingement of a Seal at Seabrook Station - August 1995," Mr. B. L. Drawbridge (North Atlantic) to Mr. Eric Nelson (NMFS)

Subject: Impingement of a Seal at Seabrook Station - September 1995

Dear Mr. Nelson:

North Atlantic Energy Service Corporation (North Atlantic) hereby reports the impingement of a dead harbor seal in the cooling water system at Seabrook Station on Thursday, September 21, 1995. Mr. Ronald A. Sher of our staff, provided a telephone notification to Ms. Kim Thounhurst (NMFS) of this impingement event on the same day. This report is made in response to the National Marine Fisheries Service letter dated January 5, 1995, [Reference (a)] requesting that North Atlantic report seal impingements.

The seal was observed floating in Seabrook Station's Service Water Pumphouse Forebay, which is approximately 20 feet below the operating floor of the pumphouse. It has not been possible to recover the seal from this location. We would expect that as this seal decays, pieces of it will be recovered from screen wash debris. This situation is consistent with seals that were identified in November 1994 and August 1995 which we were also not able to recover. On August 24, 1995 North Atlantic reported the impingement of the aforementioned seal [Reference (b)].

The attached impingement report (Attachment 1) is enclosed pursuant to the data requested in Reference (a). If you require additional information, please contact Mr. James M. Peschel, Regulatory Compliance Manager at (603) 474-9521, extension 3772.

Very truly yours,

Bruce L. Drawbridge
Executive Director -
Nuclear Production

BLD/RAS:sm

Attachments

cc: Ted C. Feigenbaum
Senior Vice President and
Chief Nuclear Officer
North Atlantic Energy Service
PO Box 300
Seabrook, NH 03874

North Atlantic
September 22, 1995

ATTACHMENT 1 TO NYE-95022

ATTACHMENT 1

SEABROOK STATION SEAL IMPINGEMENT REPORT

Site of Impingement:	Seabrook Station Service Water Pumphouse Forebay.
Date Impingement was Observed:	September 21, 1995
Species Identification:	Harbor seal
Description/Condition of Seal:	Seal appeared to be a small adult. The seal appeared to be about 3½ feet long, and in an early stage of decay.
Observer/Reporter:	Ronald A. Sher, Senior Scientist
Last Seal Observed:	Adult seal identified in Circulating Water Pumphouse Forebay and unable to be recovered. Reported to NMFS by telephone and North Atlantic Letter NYE-95020 [Reference (b)].
Recent Fish Impingement:	Fish impingement at the time of the seal impingement were minimal.
Water Temperature at Time of Impingement:	60° F
Plant Power Level at Time of Impingement:	Seabrook Station operating at 100 percent power.

North Atlantic

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

The Northeast Utilities System

January 6, 1997
NYE-97001

Mr. Daniel Morris
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 02173

Seabrook Station
Seal Impingement -- December 1996

North Atlantic Energy Service Corporation (North Atlantic) hereby reports the impingement of a seal at Seabrook Station. The seal was identified in Seabrook Station's Service Water Cooling System on December 31, 1996 and recovered the same day. North Atlantic notified the National Marine Fisheries Service of this impingement incident by telephone[1]. The New England Aquarium was also notified of this seal impingement in order to schedule a necropsy in the near future.

This report is made in response to the National Marine Fisheries Service letter dated January 5, 1995[2], recommending that North Atlantic report seal impingement incidents. The attached seal impingement incident report is enclosed as requested.

If you require additional information, please contact Ronald A. Sher, Senior Scientist (603) 773-7729.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Bruce L. Drawbridge
Executive Director - Services
and Senior Site Officer

---

1 Notification of Seal Impingement Incident, Telephone Conversation Between R. Sher (North Atlantic) and D. Morris (NMFS) on January 2, 1997

2 National Marine Fisheries Service letter dated January 5, 1995, Mr. Chris Mantzaris (NMFS) to R. Jeb DeLoach (North Atlantic)

SEABROOK STATION
SEAL IMPINGEMENT INCIDENT REPORT
ONE SEAL -- DECEMBER 31, 1996

Site of Impingement:	Seabrook Station Service Water System Forebay
Date Seal was Identified and Recovered:	December 31, 1996
Species Identification:	Believed to be a harbor seal
Description/Condition of Seals:	Seal appears to be an adult weighing more than one hundred pounds. The seal was intact, however, it was partially decayed at the time of recovery. Some damage occurred to the animal during recovery efforts using a grappling hook.
Reporter:	Ronald A. Sher, Senior Scientist
Recent Seal Observations:	Three intact seals were recovered on October 20, 1996. An incident report was submitted to the NMFS[3]. The New England Aquarium was notified about these three seals, which are currently stored at Seabrook Station, in an effort to schedule necropsies in the near future.
Recent Fish Impingement:	Limited numbers of fish were impinged at the approximate time of this seal impingement incident.
Cooling Water Intake Temperature at Time of Impingements:	44°F
Plant Power Level at Time of Impingements:	Seabrook Station operating at 100 percent power.

---

[3] North Atlantic letter NYE-96030, dated November 21, 1996, "Impingement of Three Seals," Mr. B. L. Drawbridge (North Atlantic) to Mr. Eric Hutchins (NMFS)

cc (with Enclosure)

TECHNICAL ADVISORY COMMITTEE:

Dr. Edward Schmidt
NH Dept. Of Environmental Services
Water Supply & Pollution Control Div.
6 Hazen Drive
Concord, NH 03302

Mr. Jeffrey Andrews
NH Dept. Of Environmental Services
Water Supply & Pollution Control Division
6 Hazen Drive
Concord, NH 03302

Mr. Robert Estabrook
NH Dept. Of Environmental Services
Water Supply & Pollution Control Division
6 Hazen Drive
Concord, NH 03302

Mr. John Nelson
NH Fish and Game Department
37 Concord Road
Durham, NH 03824

Mr. Bruce Smith
NH Fish and Game Department
37 Concord Road
Durham, NH 03824

Mr. Nicholas Prodany
Massachusetts State Program Unit
Environmental Protection Agency
John F. Kennedy Building
Boston, MA 02203

Mr. Frederick Gay
New Hampshire NPDES Permit Coordinator
New Hampshire State Program Unit
Environmental Protection Agency
John F. Kennedy Building
Boston, MA 02203

Mr. Jack Paar
Environmental Protection Agency
60 Westview Street
Lexington, MA 02173

Mr. Eric Hutchins
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 01930

SEABROOK ECOLOGICAL ADVISORY COMMITTEE:

Dr. John Tietjen, Chairman
134 Palisade Avenue
Leonia, NJ 07605

Dr. W. Huntting Howell
12 James Farm
Lee, NH 03824

Dr. Saul Saila
317 Switch Road
Hope Valley, RI 02832

Dr. Bernard J. McAlice
Darling Marine Center
University of Maine
Clarks Cove Road
Walpole, ME 04573

Dr. Robert Wilce
Department of Biology
221 Morrill Science Center
University of Massachusetts
Amherst, MA 01003

NORMANDEAU ASSOCIATES

Ms. Marcia Bowen
Normandeau Associates, Inc.
82 Main Street
Yarmouth, ME 04096

NEW ENGLAND AQUARIUM

Mr. Greg Early
New England Aquarium Resource and Rehabilitation
Central Wharf
Boston, MA 02910

North Atlantic

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

The Northeast Utilities System

NYE- 95002

January 13, 1995

Environmental Protection Agency
Region I
John F. Kennedy Federal Building
Boston, MA 02203-2211

Attention: Mr. Edward K. McSweeney, Chief
Wastewater Management Branch

Reference: Seabrook Station NPDES Permit NH0020338

Subject: Request to Use Methoxypropylamine at Seabrook Station

Dear Mr. McSweeney:

North Atlantic Energy Service Corporation (North Atlantic) hereby requests EPA approval to initiate the use of methoxypropylamine (MPA) as a secondary chemistry control agent at Seabrook Station pursuant to Part I, Section A.1.o. of the referenced NPDES Permit.

Currently North Atlantic utilizes ethanolamine (ETA) in conjunction with hydrazine as the secondary chemistry control agents. Hydrazine and ETA are currently approved for water discharge at a maximum discharge concentration of 0.5 ppm as specified in Part I, Section A.1.o. of the referenced NPDES Permit. This combination of additives has proven effective in reducing final feedwater iron concentration to 3-4 ppb. This range is below the 5 ppb guideline recommended by the Electric Power Research Institute (EPRI), but still above North Atlantic's target of 1 ppb to help ensure reliable operations and enhance steam generator integrity. The EPRI Advanced Amine Application Guidelines and computer simulation using the EPRI supplied Aminmod computer code show that the use of MPA in conjunction with ETA and a reduced hydrazine application will yield further improvements in secondary chemistry. Several utilities throughout the United States presently use MPA with excellent results. Secondary chemistry control is a primary concern in Pressurized Water Reactors (PWR) with the goal of minimizing the buildup of corrosion products and maximizing the long term reliability of equipment, particularly the Steam Generators.

The current NPDES Permit does not identify MPA as an approved chemical in Part I, Section A.1.o. This section of the NPDES Permit requires written approval by the Regional Administrator and Director or their designees for chemical substitutions. This section also requires that proposed substitutions be demonstrated to have an aquatic toxicity less than or equal to the approved chemicals. Accordingly, North Atlantic hereby requests that the EPA approve the water discharge of MPA at a maximum discharge concentration of 0.5 ppm. In support of this request, North Atlantic has enclosed the Material Safety Data Sheets (MSDS) for MPA. The toxicity data provided herein for MPA demonstrates that MPA has a lesser toxicity than Hydrazine (Reference NPDES Fact Sheet for Hydrazine toxicity).

Should you have any questions regarding this letter, please contact Mr. James M. Peschel, Regulatory Compliance Manager, at (603) 474-9521 extension 3772.

Very truly yours,

R. Jeb DeLoach
Director - Special Projects

RJD:TGP/act

Enclosure

cc: Mr. Ted C. Feigenbaum
Senior Vice President and
Chief Nuclear Officer
North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874

Mr. T. E. Landry
Permit Compliance Section
Environmental Protection Agency
John F. Kennedy Building
Boston, MA 02203

Dr. Edward Schmidt
Department of Environmental Services
Water Supply & Pollution Control
6 Hazen Drive
Concord, NH 03302

North Atlantic
January 13, 1995

ENCLOSURE TO NYE-95002

MATERIAL SAFETY DATA SHEET

CALGON CORPORATION

P.O. Box 1346
Pittsburgh, PA 15230-1346

24 Hour Emergency Telephone–(412)777-8000

Section 1. PRODUCT IDENTIFICATION

PRODUCT NAME: **Pre-Tect 2000**

CHEMICAL DESCRIPTION: Aqueous amine solution
PRODUCT CLASS: Corrosion inhibitor
MSDS CODE: 0747-02-06-90

Section 2. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

Chemical Name	CAS Number	% by Weight	OSHA PEL	ACGIH TLV
Methoxypropylamine (MPA)	5332-73-0	60	None established	None established

Section 3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********

DANGER!
May cause severe eye and skin damage.
May be harmful if swallowed.
May cause allergic skin reaction.
May cause respiratory tract irritation.
Combustible liquid and vapor.

****

PRIMARY ROUTES OF ENTRY: Eye and skin contact, inhalation, ingestion, skin absorption

TARGET ORGANS: Eye, skin, mucous membranes

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing skin or lung disorders may be more susceptible to irritation.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: This product would be expected to cause severe eye irritation on contact and possibly permanent injury.

MATERIAL SAFETY DATA SHEET

SKIN CONTACT: This product would be expected to cause severe skin irritation on contact and possibly skin burns. The vapors may also be irritating to the skin. Allergic dermatitis has been known to occur in some cases after repeated exposure to methoxypropylamine. This product would not be expected to be absorbed in harmful amounts.

INGESTION: Ingestion may cause moderate to severe gastric irritation including nausea, vomiting, and severe pain. Ulceration or perforation of the gastrointestinal tract may also occur.

INHALATION: Inhalation overexposure to mist or vapor may cause nasal and bronchial irritation and nausea, dizziness, and lightheadedness. Repeated inhalation can result in lung injury.

SUBCHRONIC, CHRONIC:
Repeated skin contact with methoxypropylamine may cause a persistent irritation or dermatitis.
Repeated inhalation of methoxypropylamine may cause lung damage.

CARCINOGENICITY:

NTP:
No ingredients listed in this section

IARC:
No ingredients listed in this section

OSHA:
No ingredients listed in this section

Section 4. FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical aid immediately.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical aid immediately. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Give large quantities of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid.

Section 5. FIRE-FIGHTING MEASURES

FLASH POINT: 130°F
This product is a combustible liquid.

LOWER FLAMMABLE LIMIT: Not available UPPER FLAMMABLE LIMIT: Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use dry chemical, "alcohol" foam, carbon dioxide, or water spray.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential. Use water to keep fire-exposed containers cool.

FIRE & EXPLOSION HAZARDS: Product vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Product emits toxic gases under fire conditions.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, ammonia, and/or nitrogen oxides.

NFPA RATINGS: Health = 3 Flammability = 2 Reactivity = 0 Special Hazard = None

Hazard rating scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Section 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Ventilate area of spill. Remove all sources of ignition. Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent and place into suitable container.

Section 7. HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or clothing.
Avoid breathing vapor or mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Keep container closed when not in use.

STORAGE: Keep away from heat and flame.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Chemical splash goggles and face shield
SKIN PROTECTION: Chemical resistant gloves and protective clothing
RESPIRATORY PROTECTION: If airborne concentrations become irritating, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Local exhaust ventilation may be required in addition to general room ventilation to maintain airborne concentrations below irritation levels.

WORK PRACTICES: Eye wash station and safety shower should be accessible in the immediate area of use.

MATERIAL SAFETY DATA SHEET

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 241°F (for MPA)

SOLUBILITY IN WATER: Complete

VAPOR PRESSURE: 20 mmHg @ 86°F (for MPA)

SPECIFIC GRAVITY: 0.950 - 0.970

VAPOR DENSITY (air = 1): 3.07 (for MPA)

pH: 10.4 - 11.6 (1% solution)

% VOLATILE BY WEIGHT: 100

FREEZING POINT: Not available

APPEARANCE AND ODOR: Clear, colorless to slightly amber, non-viscous liquid with amine odor.

Section 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Keep away from heat and flame.

INCOMPATIBILITY: Strong oxidizers and acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, ammonia, and/or nitrogen oxides.

Section 11. TOXICOLOGICAL INFORMATION

ON PRODUCT:
See the following information on the main ingredient.

ON INGREDIENTS:

Chemical Name	Oral LD_{50} (rat)	Dermal LD_{50} (rabbit)	Inhalation LC_{50} (rat)
Methoxypropylamine (MPA)	750 mg/kg	2600 mg/kg	9.8 mg/l/4H

Section 12. ECOLOGICAL INFORMATION

ON PRODUCT:
Aquatic toxicity data:
96 hr LC_{50} (fathead minnow): > 1000 ppm
96 hr LC_{50} (bluegill sunfish): > 1000 ppm
48 hr LC_{50} (Daphnia magna): 694 ppm

MATERIAL SAFETY DATA SHEET

Section 13. DISPOSAL CONSIDERATIONS

RCRA STATUS: Discarded product, as sold, would be considered a RCRA Hazardous Waste because it exhibits the characteristics of ignitability and corrosivity. The EPA Hazardous Waste Numbers are D001 and D002.

DISPOSAL: Dispose of in accordance with local, state and federal regulations.

Section 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Class/Division: 3
Proper Shipping Name: Flammable liquid, corrosive, n.o.s. (contains Methoxypropylamine)
Label: Flammable liquid, Corrosive
Packing Group: III
ID Number: UN 2924

Section 15. REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous
TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.
CERCLA reportable quantity of EPA hazardous substances in product:

Chemical Name	RQ
"No ingredients listed in this section"	

Product RQ: Not applicable (Notify EPA of product spills exceeding this amount.)

SARA TITLE III:

Section 302 Extremely Hazardous Substances:

Chemical Name	CAS #	RQ	TPQ
"No ingredients listed in this section"			

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[yes]	[no]	[yes]	[no]	[no]

Section 313 Toxic Chemicals:

Chemical Name	CAS #	% by Weight
"No ingredients listed in this section"		

MATERIAL SAFETY DATA SHEET

Section 16. OTHER INFORMATION

HMIS RATINGS: Health = 3 Flammability = 2 Reactivity = 0
Personal Protective Equipment = X (to be specified by user depending on use conditions)

Hazard rating scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

MSDS REVISION SUMMARY: Supersedes MSDS issued on 8/17/93. The MSDS has been changed in Sections 3 and 12.

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, CALGON CORPORATION MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

PREPARED BY: P.J. Maloney

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 19 95

R. Jeb DeLoach, Director
Special Projects
North Atlantic Energy Service Corporation
P. O. Box 300
Seabrook, New Hampshire 03874

Re: Proposed Use of Methoxypropylamine
N.A.E.S.C., Seabrook Station, NPDES Permit NH0020338

Dear Mr. DeLoach:

This letter is in response to your letter of January 13, 1995 requesting the use of methoxypropylamine (MPA) in conjunction with ethanolamine (ETA) and a reduced application of hydrazine at Seabrook Station.

You have correctly interpreted your responsibilities under Part I, Section A.1.o. for notification of a change in the station wastewater discharge chemistry and for notification of the use of chemicals not identified in the permit effluent limitations section of the permit or in the permit application.

EPA has reviewed the aquatic toxicity data included in the Material Safety Data Sheets (MSDS) for MPA, which were submitted with your January 13, letter. EPA concurs that MPA has a lesser toxicity than hydrazine, which along with ETA are currently approved as corrosion inhibitors in the secondary steam cycle system. Also EPA has reviewed the list of power/industrial plants [correspondence: R. Sher (Seabrook Station) to N. Prodany (EPA), 03/27/95] throughout the United States that currently are and/or have been using MPA in their utility system to improve secondary chemistry control.

Based on this information, EPA does not expect the water discharge of MPA at a maximum discharge concentration of 0.5 ppm to significantly impact the aquatic community or public health. Therefore, the use of methoxypropylamine (MPA) as proposed becomes effective immediately.

Should you have any questions, please contact Dr. N. W. Prodany of my staff at 617-565-3587.

Sincerely,

Edward K. McSweeney, Chief
Wastewater Management Branch

cc: G.Potamis-EPA
J.Andrews-NHDES
K.Dow-YAEC

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
603-271-3503 FAX 603-271-2867
TDD Access: Relay NH 1-800-735-2964

April 21, 1995

R. Jeb DeLoach
Director-Special Projects
North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874

Subject: North Atlantic Energy Service Corporation (NAESCO)
NPDES/State Surface Water Discharge Permit No. NH0020338

Dear Mr. DeLoach:

Reference is made to your letter to Mr. Edward K. McSweeney of the U.S. Environmental Protection Agency (EPA) dated January 13, 1995. In your letter you request approval for the use of methoxypropylamine (MPA) as a secondary chemistry control agent at Seabrook Station pursuant to Part I.A.1.o of your NPDES/State surface water discharge permit. Reference is also made to a letter to you from Mr. Edward K. McSweeney of EPA dated April 13, 1995 in which EPA approved the request.

Upon review of the information provided in your letter as well as Part I.A.1.o. of your permit, the Department of Environmental Services concurs with EPA and approves the use of up to 0.5 mg/l of MPA in conjunction with the ethanolamine and the reduced application of hydrazine (both previously approved) for secondary chemistry control. Accordingly, MPA is added to the list of chemicals approved for use at Seabrook Station that are listed on page 9 of 26 of your State discharge permit.

If you have any questions relative to this matter, do not hesitate to call Jeff Andrews of my staff at 271-2457.

Sincerely,

Raymond P. Carter

Raymond P. Carter, P.E., Administrator
Water Quality/Permits & Compliance Bureau

RPC/jga47

cc: N.P. Prodany, Ph.D., EPA-Boston

AIR RESOURCES DIV.
64 No. Main Street
Caller Box 2033
Concord, N.H. 03302-2033
Tel. 603-271-1370
Fax 603-271-1381

WASTE MANAGEMENT DIV.
6 Hazen Drive
Concord, N.H. 03301
Tel. 603-271-2900
Fax 603-271-2456

WATER RESOURCES DIV.
64 No. Main Street
P.O. Box 2008
Concord, N.H. 03302-2008
Tel. 603-271-3406
Fax 603-271-6588

WATER SUPPLY & POLLUTION CONTROL DIV.
P.O. Box 95
Concord, N.H. 03302-0095
Tel. 603-271-3503
Fax 603-271-2181