U. S. NUCLEAR REGULATORY COMMISSION
REGION I

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Licensee: North Atlantic Energy Service Corporation
Post Office Box 300
Seabrook, New Hampshire 03874

Facility: Seabrook Station

Dates: November 7, 1994 - January 7, 1995

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Approved By: John F Rogge 2/7/95
John Rogge, Chief Date
Reactor Projects Section 4B, DRP

Inspection Summary: This inspection report documents the safety inspections conducted during day shift and back shift hours. The inspections assessed station performance in the areas of plant operations, maintenance, engineering, plant support, and safety assessment/quality verification. Some initiative inspections included a review of the on-line maintenance practices, control room environment, and transmitter trending program. A reactive inspection of a technical specification violation involving the control rod deviation monitor was reviewed.

Results: No violations were identified. A licensee identified violation concerning the rod deviation monitor, as described in licensee event report 50-443/94-18, was identified and is a non-cited violation. See the executive summary for a general assessment of licensee performance.

EXECUTIVE SUMMARY

SEABROOK STATION
NRC INSPECTION REPORT NO. 50-443/94-30

Plant Operations: Operators conducted routine operational activities in a deliberate manner. Classroom and simulator training on the lessons learned from a May 7, 1994, Salem Unit 1 reactor trip/SI event, were observed. The application of industry "lessons learned" was considered a strength. A nuclear systems operator completed a tour of containment in a professional manner. An alarm free main control board was achieved by increased operator and management attention to resolve all nuisance alarms. However, operators failed to respond properly to a control rod deviation monitor alarm, which violated the technical specifications (TS). No adverse safety consequence resulted due to the TS violation.

Maintenance: Maintenance technicians performed well during an electrical maintenance activity concerning the spent fuel pool, and an instrumentation and controls activity to replace a reactor coolant flow transmitter. Some problems arose during the work activities where management expectations were not met. A review of on-line maintenance practices found no problems. A formal guideline is being developed along with implementing procedures to control on-line maintenance. Surveillance test data were properly reviewed against the acceptance criteria.

Engineering: Engineering personnel provided good assistance to the plant staff concerning safety injection pump hold-down bolt torque value, early detection and changeout of a faulty reactor coolant loop flow instrument, excellent system engineer involvement in the generator exciter grounding issue, and a thorough analysis of isolating two main steam dump valves while at power. The technical support transmitter trending program was considered an asset.

Plant Support: Health physics technicians provided excellent support for three containment inspections during the period, especially during investigation of increasing hydrogen indications in containment. Security personnel responded promptly to the event at the south gate when a panel truck crashed through a locked gate. The guards expeditiously determined that no security threat existed. Excellent performance was noted by NRC inspectors during the Full Participation Emergency Preparedness Exercise with off-site agencies and local and state authorities.

Safety Assessment/Quality Verification: A licensee event report concerning degraded service water pump column bolts met the reporting requirements of 10 CFR 50.73.

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DETAILS

1.0 PLANT OPERATIONS (71707,92901,93702,92700)

1.1 Plant Activities

The plant operated at essentially 100% power through the end of this inspection period.

On December 7-8, 1994, North Atlantic participated in a Full Participation Emergency Preparedness Exercise with the States of New Hampshire and Maine, the Commonwealth of Massachusetts, and the emergency planning zone communities.

1.2 Routine Plant Operations

The inspector conducted daily control room tours, observed shift turnovers, attended the morning station manager's meeting, and monitored plan-of-the-day meetings. He checked and confirmed that operational activities were being performed according to technical specification requirements. Tours were conducted in the primary auxiliary building, the emergency diesel generator rooms, the residual heat removal vaults, the turbine building, the fuel storage building, and the service water pumphouse. Some improperly secured carbon dioxide fire extinguishers were reported to the fire protection supervisor for corrective action. A detached danger tag, located on a breaker in a safety-related power distribution panel, was reported to the shift superintendent, who dispatched an operator to correct this condition. During the tours and attendance at the various meetings, the inspector noted an adequate implementation of operational controls over plant activities and an overall good performance, including cognizance of the current plant configuration by the operation's staff. Periodic meetings were held with the operations department manager to discuss routine operational and performance issues.

At an operator training session, the inspector observed a training instructor brief an operating crew on the "lessons learned" from the operator performance issues associated with the Salem Unit 1 reactor trip/safety injection event of May 7, 1994. The differences in plant design and expected equipment response between Seabrook and Salem Unit 1 were discussed. After a detailed briefing, the operations manager provided his perspective and expectations concerning operator performance. Subsequently, the event scenario was run on the plant simulator. During the plant manager's morning meeting, the operations manager discussed another event that occurred at Wolf Creek nuclear plant, where an inadvertent transfer of reactor coolant occurred between the pressurizer and the refueling water storage tank. These instances of applying industry "lessons learned" at Seabrook are considered a strength.

The inspector accompanied a nuclear systems operator (NSO) during a routine containment tour. During the pre-work health physics briefing, the inspector noted the presence of a manager conducting a supervisory walkdown program observation. The NSO mentioned that this was the first time he conducted a containment tour during power operations. The NSO followed the guidance of the operations department instruction 36, "Containment Tours," which provides detailed guidance on data collection and the tour route. The NSO closely

inspected for any potentially abnormal conditions. Proper adherence to the radiation work permit instructions was observed. No concerns were identified by the inspector. The containment tour performed during power operation was performed in a professional and thorough manner.

Operators remained cognizant of degraded plant equipment and coordinated with maintenance and technical support engineers to ensure that the effect of equipment degradation was fully understood and corrective actions initiated. For example, a load sharing difference between the two heater drain pumps was promptly detected, communicated to technical support, and resolved. Close monitoring of the severity of electrical grounds in the main generator field allowed operators to develop strategies to mitigate the consequences, such as removing one of the four rectifier banks from service and monitoring the ground voltage on an increased periodicity. Maintenance workers identified the source of the grounding from copper plating on the inner diameter of the plastic rectifier cooling water tubes. All cooling tubes were replaced and the ground problem was corrected. Operators closely tracked plant equipment problems that could potentially cause a plant transient.

1.3 Rod Deviation Monitor

On November 28, the licensee identified a missed technical specification surveillance (TS 4.1.3.1.1) that verifies the demanded and detected control rod positions every four hours when the rod deviation monitor is inoperable. Normally this surveillance is performed every 12 hours when the rod deviation monitor is in service. Due to several factors discussed below, the operating crew believed that the "Rod Deviation Monitor Inoperable" alarm, which came in, was not valid. The inspector interviewed the shift superintendent involved and various computer and reactor engineers, visually examined the rod block monitor computer screen, and attended a root cause determination meeting. On December 28, 1994, North Atlantic issued licensee event report (LER) 94-18 describing this condition pursuant to 10 CFR 50.73(a)(2)(i).

The licensee determined that the cause for the problem involved the lack of an alarm response procedure and a confusing computer screen display for the rod deviation monitor. The corrective actions included: developing an alarm response procedure, verifying that all other video alarm points also have an alarm response procedure, making software enhancements to improve the human factor aspects by providing a separate screen for the rod deviation monitor and rod insertion limit data, and clarifying the definition of "monitor" when used in TS. The inspector obtained a copy of station information report (SIR) 94-97, and as of January 26, 1995, the final evaluation was ongoing. Discussions with other operators revealed that some level of knowledge existed indicating that when the Rod Deviation Monitor Inoperable alarms, the augmented surveillance needs to be performed. The regulatory compliance manager stated that the training and operator performance aspects of this event are still being evaluated as contributing causes.

No safety consequence resulted due to the failure to implement the augmented surveillance, since no rod movement occurred. No deviation between demanded and detected rod position occurred. The inspector concluded that the operating crew did make a concerted effort to respond to the alarm, but

conflicting operational indications contributed to the decision to not perform the augmented surveillance. The failure to implement the requirements of TS 4.1.3.1.1 with the rod deviation monitor is a violation. The licensee identified this violation, implemented corrective actions in a timely manner and it did not result from recurring conditions for which corrective actions were previously taken. The event had low safety significance, and the licensee made the proper 10 CFR 50.73 report. Therefore, a violation is not being cited with enforcement discretion being exercised in accordance with the criteria of 10 CFR 2, Appendix C, VII.B.

1.4 Control Room Environment

During tours of the control room, the inspector observed that the licensee has achieved an alarm free main control board by resolving all nuisance video alarm system and control board alarms. A short term fix was used to resolve the pressurizer relief tank high pressure alarm, with a longer term modification planned for the next refueling outage. The inspector noted that this was the first time that an alarm free main control board has existed. Increased operator and management emphasis to resolve nuisance alarms reflects a proper safety focus.

Other opportunities for improving the control room environment exist such as minimizing main control board deficiencies. The work control group recently made a change to the plan-of-the-day report to include a list of which department had actions to complete to support the repair of main control board deficiencies. Of 21 total deficiencies, only two were actively being worked by the maintenance group. Two other deficiencies were designated as outage related. The 17 remaining deficiencies awaited actions from technical support, planning, engineering and/or procurement.

In a related matter, the operations department manager informed the inspector of an initiative to develop a process or program to define, identify, track, evaluate and resolve equipment and system operational "work arounds." An informal "work around" list maintained in the control room has approximately 15 conditions listed. A review of each condition determined that no immediate safety significant issue is involved. The operations department manager indicated that the goal is to identify and over time address each "work around" condition to minimize challenges to the operators and promote nuclear safety.

2.0 MAINTENANCE (61726,62703,92902)

2.1 Routine Maintenance and Field Observations

During this inspection period, the inspector witnessed maintenance activities in progress, completed field work and various component line-up and system configurations intended to support specific preventive and corrective maintenance activities. At times, the inspection was pre-planned to observe certain key maintenance activities, while in other cases, field work was observed during plant inspection tours. In all cases, workers and supervisors were interviewed to determine the adequacy of work controls and acceptance criteria used to determine successful work completion. The following

activities represent some maintenance and work control areas examined:

- 94W002988: Control Rod Step Counter E Replacement
- 94W003836: Reactor Coolant Flow Transmitter Replacement
- 94W003726: Field Ground Relay Replacement
- 94W002398: Spent Fuel Pool Lighting

Reactor Coolant Loop 2 Flow Transmitter (RC-FT-424) Replacement

The inspector selected this corrective maintenance activity for observation, due to the reactor trip avoidance aspect and the additional controls required, due to entering containment during power operations. The reactor coolant flow transmitter (RC-FT-424) provides an input signal to the reactor trip system. Each reactor coolant loop has three flow transmitters, which have a common reference leg on the high pressure side. Sections 3.2 and 4.1 of this report discuss the technical support and health physics aspects of this work activity.

During the pre-work briefing, an assigned quality control (QC) inspector identified that the transmitter valving sequence in the work request guidance block, conflicted with the approved procedural instructions and could have resulted in a reactor trip. The error in the work request guidance was corrected before the start of any actual work. The QC inspector initiated operations information report (OIR 94-245) to document and evaluate the error. A one-hour containment stay time was set due to an average containment temperature of 116°F. The inspector accompanied an instrumentation and controls (I&C) technician, supervisor and a health physics (HP) technician into containment to replace the transmitter. After entering containment and descending near the work area, it became evident that the appropriate set of containment lights had not been turned on. After exiting containment through the personnel airlock, the lights were turned on and the workers reentered containment. The inspector noted that the containment was classified as a high radiation area.

The I&C technicians followed the principles of the prescribed self-verification process (STAR) to ensure they had located the correct transmitter by observing the identification tags. A recommendation was made by technical support personnel at the pre-shift briefing to perform a hand-over-hand verification of the transmitter lines back to the root valves could not be performed because the verification would have required going in an area inside the biological shield. When electrically disconnecting the transmitter leads, the inspector questioned why an electrical voltage check was not performed, to verify the adequacy of the tagging order. The I&C technicians felt that even if the tagging order did not properly isolate the transmitter, the expected voltage level was 30 volts, which was not considered a personnel safety hazard. They did not believe that any equipment damage could occur if any grounding occurred, as a result of an incorrect tagging order. The I&C workers brought all necessary tools to replace the transmitter. When disconnecting the instrumentation tubing, the inspector identified a

deficiency involving the HP technician's anti-contamination clothing. He was holding a yellow polybag to catch any liquid. The front zipper became unzipped. The HP technician promptly fastened the zipper to avoid any skin contamination due to the splashing water.

When valving the new transmitter back into service, a leak developed at the transmitter manifold adapter. The manifold adapter from the original transmitter was installed and the leak stopped. The I&C supervisor noted that the manifold adapter could have been leak checked in the shop before installation. The supervisor issued a memorandum, dated December 15, 1994, to discuss the concept of performing shop leak checks at the next supervisors meeting. The new transmitter was placed into service without any problems. The quality control inspector observed this phase of the work activity because valving the transmitter into service had the highest potential to cause an inadvertent reactor trip.

The inspector held follow-up discussions with the plant staff concerning electrical voltage checks. Some members of management indicated that an electrical source check should always be performed, while maintenance workers felt that an electrical source check should only be performed when working on higher voltage applications that pose significant personnel safety hazards. A few consequential events occurred during the previous year where workers received electrical shocks. The inspector discussed with plant management their expectations concerning electrical source checks. The electrical department supervisor responded that the safety and health manual needed to be revised to specify clearly the policy for electrical source checks. The supervisor also indicated that electrical source checks have always been performed on larger current carrying components. The safety program clarification included more specific guidance such as performing a voltage check on all current carrying equipment operated at greater than 50 volts, which is consistent with Occupational Safety and Health Administration (OSHA) requirements. The inspector had no further questions or concerns in this area.

In summary, I&C technicians successfully replaced the reactor coolant flow transmitter, which was a reactor trip avoidance activity. Several minor instances occurred where portions of the work did not meet management's expectation of "do it right the first time" by using the STAR process and through better preplanning. The QC inspectors finding of the specific transmitter valving sequence prevented a potential reactor trip. Managements expectations concerning electrical source checks were clarified.

Spent Fuel Pool Lighting Repair

On December 20, electrical maintenance personnel commenced repair activities to resolve electrical grounding problems associated with the Spent Fuel Pool (SFP) lighting system. Several grounds have been detected on the lighting circuits, and these were traced to the SFP lights. Maintenance electricians, with assistance from support personnel for radiological controls, foreign material exclusion (FME), and plant utilities, performed the task under the direction of maintenance department supervisors. The work was controlled by station work order 94W002398 and radiation work permits (RWP) 94R469 and 94R2.

The inspector verified that the requirements of the work order and RWP were met by discussions with supervisory and non-supervisory personnel and by observations at the work site. Supervisory oversight was evident and ensured workers knew their assigned responsibilities.

During the process of pulling a lighting fixture out of the pool, an electrical cable tie wrap that held the cable in place had to be removed to allow the fixture to be worked on. When cut, the tie wrap broke into several pieces, which fell into the spent fuel pool. The tie wrap pieces fell into locations other than on the spent fuel. Station reactor engineering personnel verified that the locations of the foreign material were not a risk to safely storing the spent fuel in the pool. A decision whether the foreign material will be removed had not been made at the end of the inspection period. The inspector considered it a weakness, that despite the generally stringent FME controls, the tie wrap inadvertently fell into the spent fuel pool.

2.2 Surveillance Activities

The inspectors performed technical procedure reviews, witnessed in-progress surveillance testing, and reviewed completed surveillance packages and verified that the surveillance tests were performed in accordance with Technical Specifications, approved procedures, and NRC regulations.

The following surveillance tests were reviewed with portions witnessed by the inspector:

IX1640.316 Protection Cabinet #2 Steam Generator Steamline Pressure Operational Test

OX1431.04 Combined Intercept Valves Weekly Cycling Test

OX1436.02 Turbine Driven Emergency Feedwater Quarterly and 18-Month Surveillance Test, and Monthly Valve Alignment

RTS2.3 on Main Generator Exciter

Various radiation monitor calibrations

A properly approved procedure was in use, approval was obtained and prerequisites satisfied prior to beginning the test, test instrumentation was properly calibrated and used, radiological practices were adequate, technical specifications were satisfied, and personnel performing the tests were qualified and knowledgeable about the test procedure.

2.3 Temporary Instruction (TI) 2515/126: On-Line Maintenance

The inspector reviewed the Seabrook Station program for the removal of equipment from service for on-line scheduled maintenance. An NRC Temporary Inspection Procedure was used to evaluate the impact on the safety of the licensee's current practices and procedures.

The Seabrook Station Planning, Scheduling & Outage Manager issued a memorandum

to all station personnel, which described the "Draft" On-Line Maintenance Policy for the Northeast Utilities nuclear units. In the draft policy, the following activities were discussed:

- Voluntary entry into Technical Specification action statements for maintenance.
- Work activities on non-TS equipment that could directly or indirectly cause a plant trip.
- Work requiring major standby service equipment to be removed from service, such as condensate pumps, air removal pumps, generator stator water cooling pumps.

Seabrook Station Management Manual, Chapter 2, Policy, Section 18, Technical Specification Action Statements, directs that voluntary entry into TS action statements, to perform maintenance or testing, requires approval by the operations manager and the maintenance manager. The operations manager shall notify the station manager when this is done. The following list of activities is approved by the station manager for voluntary entry into TS action statements:

- Performance of 4KV switchgear circuit breaker and relay testing
- Circuit breaker swap-out with a pre-inspected circuit breaker
- Overcurrent and ground relay swap-out with pre-inspected relays
- Circuit breaker cell inspection
- Circuit breaker trip checks
- Motor inspections (non-intrusive) and megger tests
- Performance of safety-related station battery charger capacity test
- Performance of safety-related station battery 18-month surveillance testing, battery discharge test, and battery service test
- Performance of the solid state protection system 18-month rack calibrations is permitted, if only one channel is placed in the test at any one time
- Performing the surveillance activity for the portable cooling tower pump semi-annual diesel run
- Routine activities, such as changing roll paper, in various radiation monitors

The activities that are not approved by the station manager for voluntary entry into TS action statements or performance during power operations are:

- Major equipment overhauls, such as pump teardowns, motor overhauls, requiring the use of TS action statements or plant power reductions will only be performed during outages.

- High risk preventive maintenance on equipment or relays that can cause a plant trip, runback or setback will not be performed during power operation.

The inspector monitored daily maintenance activities for station compliance to the preceding guideline. The licensee routinely does not do maintenance on safety-related equipment while at power. The station is in the process of developing a set of implementing procedures to enable plant personnel to perform on-line maintenance activities. The maintenance department has recently added a second shift during week days to accomplish more routine on-line maintenance. The licensee has adopted risk assessment to outage planning and performance, as evidenced during the last outage. The previously learned risk-based outage management techniques are being used to develop new on-line maintenance implementing procedures. A review of the previous refueling outage schedule and periods of power operations identified no problems. The inspector concluded that a very conservative on-line maintenance policy existed and that implementing procedures are being developed to allow more on-line maintenance.

3.0 ENGINEERING (37551,92903,40500)

3.1 Improper Charging Pump Hold-Down Bolt Torque

During a biannual review of a charging/safety injection pump maintenance procedure at another nuclear facility, a procedure engineer discovered a discrepancy in vendor supplied information for the charging/safety injection pumps. The vendor technical manual stated that the pump hold-down bolt torque should be 80 foot-pounds and the vendor drawings indicated that the torque should be 450 foot-pounds. The specific pump was the model RL IJ centrifugal charging pumps supplied by the Pacific Pumps Division of Dresser Industries, Inc. Seabrook Station has these pumps installed as safety injection system pumps. The licensee reviewed all of the information concerning this problem and determined that the torque for the hold-down bolts was 80 foot-pounds and that the station vendor manual and vendor drawing were in agreement concerning this torque value. The inspector conducted an independent review of the documentation, inspected the pump, and made the same determination.

3.2 Transmitter Trending Program

As an initiative inspection, the inspector reviewed how the technical support staff identified, at a very early stage, the drifting of reactor coolant flow transmitter 1-RC-FT-424. Section 2.1 of this report discusses the transmitter replacement work activity. The technical support staff trends most transmitters weekly. Transmitter operating data is obtained by averaging the main plant computer data every eight hours. A detailed graph is maintained

for each trended transmitter during the operating cycle, which allows loop drifting to be detected at an early stage before an operability concern exists. For example, 1-RC-FT-424 data shows a slightly increasing trend from 98% flow to 98.4% flow (September to early November, 1994), then spiking to 99.5% flow in mid November before dropping below 97.8% in early December, 1994. At this point, operators declared 1-RC-FT-424 inoperable and placed the channel in a tripped condition, according to action 7 of technical specification table 3.3-1, "Reactor Trip System Instrumentation."

The early identification of the detector drifting allowed the licensee ample time to obtain and calibrate a replacement transmitter as a contingency. The inspector performed a selected review of transmitter data that is trended. No other anomalous conditions were noted. The system engineer mentioned that 1-RC-FT-424 was replaced during the last refueling outage (OR03). 1-RC-FT-424 is manufactured by TOBAR, model 32DP2112/64312/1.A2, serial number A86350013. The technical support staff initiated a review to try to determine the failure mechanism of the transmitter. The inspector concluded that the transmitter trending program performed by the technical support staff was a significant strength that allowed for the early identification of transmitter drifting problems.

3.3 Isolation of Main Steam Condenser Dump Valves

North Atlantic personnel determined that two main steam condenser dump valves (MS-PCV-3014 & MS-PCV-3019) were leaking sufficiently to cause a loss of thermal energy of about 40 megawatts-thermal per day. The inspector reviewed this activity to ensure the proper balance between reactor safety and megawatt optimization was maintained. Station engineering personnel determined that the two main steam condenser dump valves could be isolated. The required 10 CFR 50.59, "Changes, Tests and Experiments," evaluation determined that isolating these two main steam condenser dump valves did not pose an unreviewed safety question.

The purpose of the main steam condenser dump valves is to reduce the magnitude of reactor coolant system transients, following a large turbine load reduction or turbine trip. The steam dump valves perform this function by dumping up to 40% of rated turbine steam flow through twelve valves to the main condenser. The valves are controlled by a signal from the reactor coolant system average temperature (Tave). Each valve can handle approximately 3.5% of rated steam flow. The reduction in steam dumping capacity will reduce the margin to the setpoints of the secondary system atmospheric steam dump valves and the steam generator code safety valves. The two leaking main steam condenser dump valves were isolated by closing the associated downstream isolation valve. An operations department standing order, 94-18, directed that main steam condenser dump valves be unisolated in the event of a plant trip or cooldown.

The main steam condenser dump valves are not safety-related and are not taken credit for in the plant safety analysis. The location of the valves is in a non-seismic area of the plant. The inspector concluded that the 10 CFR 50.59 evaluation thoroughly addressed all aspects of this issue.

4.0 PLANT SUPPORT (71707,71750,82301,92904)

4.1 Radiological Controls

The inspector witnessed work practices within the radiologically controlled area (RCA), including three containment entries made during power operations. The HP briefings for each containment entry stressed good ALARA "as-low-as-reasonably achievable" principles. One containment entry was made to replace a reactor coolant flow transmitter as discussed in Section 2.1 of this report.

A second containment entry was made to investigate indications of a minor hydrogen leak. The pre-work briefing was attended by the shift superintendent, fire chief and an industrial safety inspector. A thorough description of the work areas was provided to ensure that ALARA principles were used during the performance of work. The industrial safety inspector gave a detailed briefing on the hazards of heat exhaustion, including symptoms and discussed how to prevent any problems that might be encountered.

When the hydrogen indication began to increase, operators started the containment on-line purge (COP) system to reduce the hydrogen level in the containment atmosphere to as low as possible. The permanently installed hydrogen detection instrumentation indicated the leakage was well below any explosive limit; however, station management deemed it necessary to identify the source and isolate the leak as a prudent measure. Several attempts to find the source of the leak with portable instrumentation were unsuccessful. At the end of the inspection period, the search for the source of the leak was still on-going. The station engineering department determined that a possible cause of the problem was that the instrumentation may be indicating other gases in containment as hydrogen, and this theory was under investigation when the inspection period closed.

During a third containment entry, the inspector accompanied a nuclear systems operator during a routine inspection tour. Good adherence to radiation work permit instructions and verbal health physics directions were observed.

4.2 Security

At approximately noon on December 12, 1994, a motor vehicle accident occurred at the junction of U.S. route 1 and N.H. route 107. A van type truck proceeding east on route 107 toward the intersection of route 1 sustained a brake failure that caused the truck to go through the intersection, across traffic flowing in a north - south direction. The truck collided with a passenger vehicle and continued east through the closed Seabrook Station south gate and continued into the owner-controlled area for approximately 200 yards before finally coming to a stop. No injuries were reported to the truck driver or the operator of the passenger vehicle. The distance to the station protected area from this location is approximately one mile. The Seabrook police responded to the scene and determined that the truck driver was a construction contractor from the local area. The Seabrook police officer called in a state highway enforcement officer who confirmed the brake failure on the truck. Both vehicles were towed from the scene and Seabrook Station personnel repaired the south gate.

The resident inspectors toured the scene after being informed of the event by the licensee, and determined that no threat to nuclear safety or the public occurred due to the accident.

4.3 Emergency Planning

Seabrook Station conducted a full participation (ingestion pathway) emergency preparedness exercise on December 7 & 8, 1994. The resident inspector observed the drill at the emergency operations facility as a member of the NRC inspection team that observed the licensee portion of the drill. The inspection findings have been reported in NRC inspection report 50/443-94-29. The preliminary inspection findings, as reported during a public meeting at the Seabrook town recreation building, were that overall performance by all participants was excellent. No exercise weaknesses were identified.

4.4 Housekeeping

The inspector observed plant material conditions throughout the inspection period that were generally good, most notably the emergency diesel generator rooms, vital switchgear rooms, and the reactor containment enclosure. The primary auxiliary building was found generally clean with no debris; however, the external surfaces of service water piping to the primary component cooling water heat exchangers and components in the general area are degrading with considerable rust. Plant management was aware of the rusting condition and had scheduled preservation activities.

5.0 SAFETY ASSESSMENT/QUALITY VERIFICATION (92700)

5.1 Licensee Event Reports

The inspector assessed the quality of the licensee event report (LER) submitted to the NRC pursuant to 10 CFR 50.73, considering also the guidance contained in NUREG 1022 and supplements. Specifically, the inspector reviewed the accuracy, completeness, description of cause, similar occurrences, and corrective actions developed to prevent recurrence. He considered the need for further information, evaluated the need for enforcement action, assessed possible generic implications, and determined whether the event warranted further onsite followup inspection.

LER 94-017: Service Water Cooling Tower Bolt Degradation

This event was previously inspected and evaluated in NRC inspection report 50-443/94-22. This LER reported a condition that was identified during inspection of the cooling tower basin by divers during refueling outage 3. Several column bolts were found degraded on SW pump 1SW-P-110A. North Atlantic personnel determined the cause of the bolt degradation to be "sensitized" microstructure caused by an improper solution annealing heat treatment. The sensitized bolts were original equipment supplied by the pump manufacturer, Johnston Pump Company. This issue raised concerns regarding the condition of other service water pump bolting and possible operability problems. The licensee commenced maintenance activities in October, 1994 to replace all suspect safety-related bolting material in all six service water

pumps. The licensee conducted a procurement document research and determined that the concern of improperly heat treated safety grade bolting was limited to the bolts supplied by Johnston Pump Company and used in the initial fabrication of the service water pumps. The corrective actions of Station Incident Report (SIR) 94-072 required a reevaluation of Johnston Pump Company's quality assurance program for obtaining and supplying ASME material. The purchasing department was tasked with locating and segregating all affected bolting. This will prevent future use of this bolting in any plant components.

The inspector determined that the licensee properly met the reporting requirement of 10 CFR 50.73. The vendor supply aspect of this issue remains as unresolved item 50-443/94-22-01. This LER is considered closed.

6.0 MEETINGS (71707)

Two resident inspectors were assigned to Seabrook Station throughout the period. They conducted backshift inspections on November 14 and 17, December 13 and 15, and deep backshift inspections on November 11, 13 and 25, and December 2. Miss Laurie Peluso, an NRC Region I specialist inspector, was on-site from December 12, 1994 to January 5, 1995, as part of an NRC training assignment.

Throughout the inspection, the inspectors held periodic meetings with station management to discuss inspection findings. At the conclusion of the inspection, the inspector held an exit meeting with the Executive Director of Nuclear Production and his staff to discuss the inspection findings and observations. No proprietary information was covered within the scope of the inspection. No written material regarding the inspection findings was given to the licensee during the inspection period.

Additionally, the following NRC staff members visited the site to tour the plant and hold discussions with the residents and station management personnel.

- November 16, Mr. Thomas T. Martin, NRC Region I Administrator
- November 17 and 18, Mr. Wayne Lanning, Deputy Director, DRP
- December 13, Mr. William Hehl, Director, DRSS
  Mr. Allen Blough, Acting Deputy Director, DRS
  Mr. Phillip McKee, Project Directorate, NRR
  Mr. Albert DeAgazio, Project Manager, NRR
- December 19, Mr. John Rogge, Section Chief, DRP 4B

Region-based inspectors conducted the following exit meetings during this inspection period.

- November 14 - 18, Engineering, two inspectors, IR 50-443/94-28

- December 7 - 8, Emergency Planning Graded Exercise, five inspectors, IR 50-443/94-29
- December 12 - 15, Radiation Controls, one inspector, IR 50-443/94-312