

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

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Facility: Seabrook Generating Station, Unit 1
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Seabrook, New Hampshire 03874
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EXECUTIVE SUMMARY

Seabrook Generating Station, Unit 1
NRC Inspection Report 50-443/99-04

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6 week period of resident and specialist inspection.

Operations:

- Routine operations were performed well (Section O1).
- The licensee initiated adequate actions to correct several insulation deficiencies and to provide additional cooling to ensure that the main steam pipe chases remained within their required temperature limits (Section O2.2).
- The operators maintained good control of key reactor shutdown parameters. The operators performed the reactor start-up well and the station provided good support to the operators during the start-up (Section O4).

Maintenance:

- The licensee properly identified and responded well to address elevated main turbine bearing vibration levels experienced during the plant startup activities on May 14, 1999. The planned actions to further reduce the main turbine bearing vibration levels appear appropriate (Section M1.1).
- The licensee properly identified and developed a plan to stop small seat leakage from one of the three pressurizer safety relief valves. The licensee's efforts to seat the valve were successful. The maintenance oversight group identified several deficiencies with the original on-line maintenance assessment, and the inspector noted a minor corrective action program deficiency in that the licensee did not promptly initiate an adverse condition report for the valve leakage problem (Section M1.2).
- The licensee properly identified, evaluated, and corrected a containment building level indication instrument drift problem (Section M1.3).

Engineering:

- The root cause analysis and proposed corrective actions for the "C" service water pump failure were adequate. Some planned corrective actions, which could have prevented this unexpected failure, had not been properly implemented. The "C" service water pump failure had minimal significance, and the inspector concluded that the failure to properly implement a planned corrective action was a violation of minor significance, and not subject to formal enforcement action. (Section E2.1).

Executive Summary (cont'd)

- The licensee's recent actions to address a long-standing material problem involving reactor coolant system in-leakage into the safety injection accumulators were appropriate (Section E2.3).

Plant Support:

- Routine radiological work practices and security controls were observed to be good (Sections R1.1, and S1.1).
- Surveillance tests, equipment inventories, communication and siren tests were performed as required by the Seabrook Station Radiological Emergency Plan (SSREP). No unusual operability trends were noted. However, the monthly pager test records indicated a poor response trend by the emergency response organization (ERO) staff. In response, senior management emphasized the ERO responsibilities to the staff and records indicated an improvement in this area in the first quarter of 1999 (Section P2).
- Based upon the review of recent licensee emergency plan changes, the inspector determined they did not decrease the effectiveness of the plan. However, the 50.54(q) documentation for two changes did not provide adequate information or reasoning for the change. The licensee initiated an adverse condition report to review their method for adequately documenting plan changes in a 50.54(q) review (Section P3).
- The inspector concluded that training for the ERO was effectively implemented and management oversight in late 1998 reestablished the importance of maintaining ERO training current (Section P5).
- The licensee conducted emergency response training and drills as required. However, a Non-Cited violation was identified based on the licensee not demonstrating timely activation of the facilities during off-hours as described in the SSREP and the Drill and Exercise Procedure (NCV 99-04-01). The violation was entered into the licensee's corrective action system (ACR 99-2477) and a satisfactory off-hours mobilization drill was conducted on June 9, 1999 to demonstrate activation in a timely manner (Section P5).
- No changes in emergency preparedness (EP) staff were noted since the previous inspection. A recent reorganization was completed in which the Manager, EP reports to the Manager, Environmental, Government and Community Relations. It was noted that during 1998, the lack of management oversight resulted in the ERO staff becoming complacent with respect to their EP responsibilities and training requirements. Corrective action was taken and no ERO member deficiencies were identified in the first quarter of 1999 (Section P6).
- Emergency preparedness concerns, issues or deficiencies were tracked and closed in a timely manner. It appeared that corrective actions taken by the licensee were effective in minimizing the potential for recurrence. The self-assessment program was conducted in

Executive Summary (cont'd)

accordance with program requirements and effectively identified problems, strengths and recommended corrective actions (Section P7).

- The inspector determined through document reviews and interviews that the audit reports had met the requirements specified in 10 CFR 50.54(t) and the reports clearly demonstrated the bases for the audit conclusions (Section P7).
- The inspector found the licensee's corrective actions, in response to the exercise weakness identified by the NRC in June 1998, to be adequate. Based on this review, **IFI 50-443/98-03-01** is closed (Section P8).

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ATTACHMENT 1

- Attachment 1 - Partial List of Persons Contacted
- Inspection Procedures Used
 - Items Opened, Closed, and Discussed
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Report Details

Summary of Plant Status

Refueling outage six (RFO6) was completed at the beginning of the inspection period, and the reactor start-up was performed on May 11. On May 18, the turbine was removed from service, and reactor power was reduced to 8% to troubleshoot and correct an elevated turbine bearing vibration condition. The turbine was returned to service and a reactor power increase was initiated on May 21. The facility was operated at approximately 100% power for the remainder of the period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, routine operations were performed in accordance with station procedures and plant evolutions were completed in a deliberate manner with clear communications and effective oversight by shift supervision. Control room logs accurately reflected plant activities and observed shift turnovers were comprehensive and thoroughly addressed questions posed by the oncoming crew. Control room operators displayed good questioning perspectives prior to releasing work activities for field implementation. The inspectors found that operators were knowledgeable of plant and system status.

O2 Operational Status of Facilities and Equipment

O2.1 Facility Tours (71707/62707)

The inspectors routinely conducted independent plant tours and walkdowns of selected portions of safety-related systems during the inspection report period. These activities consisted of the verification that system configurations, power supplies, process parameters, support system availability, and current system operational status were consistent with Technical Specification (TS) requirements and UFSAR descriptions. Additionally, system, component, and general area material conditions and housekeeping status were noted. The inspectors found that the plant conditions were acceptable, but identified some minor material, and housekeeping deficiencies that were appropriately addressed by the licensee.

O2.2 West Side Main Steam Pipe Chase Area Temperature

a. Inspection Scope

On May 19, the inspectors noted that the west side main steam pipe chase area temperature appeared high (118 °F) relative to the ambient temperature condition

(approximately 70 °F), and questioned the impact of the expected higher ambient temperature conditions during the latter part of the summer.

b. Observations and Findings

Technical Specification (TS) Section 3.4.7.10 and Table 3.7-3 limits the main steam pipe chase temperatures to 130°F to ensure that the safety-related components are not adversely affected by excessive temperature. The steam chases are cooled during normal operation by a non-safety related ventilation system, and monitored by an alarm circuit which alerts the operators if the main steam pipe chase temperature exceeds 127°F.

The operators performed system walkdowns but did not identify any problems or system leakage in the west side main steam chase. The technical services department performed a thermography inspection of the steam chase piping and components and identified several deficiencies involving missing or damaged insulation. The licensee promptly initiated an adverse condition report (ACR) to perform the necessary insulation repairs. Additionally, the licensee implemented temporary modification (TMOD) 98-20 to install additional exhaust fans external to the east and west pipe chase louvers to provide additional cooling.

c. Conclusion

The licensee initiated adequate actions to correct several insulation deficiencies, and to provide additional cooling to ensure that the main steam pipe chases remained within their required temperature limits during operation in a higher ambient temperature condition.

O4 Operator Knowledge and Performance

O4.1 Control of Reactor Shutdown Conditions and Mode Change Controls

The operators maintained good control of key plant shutdown parameters while changing plant modes in preparation for the reactor start-up. Operations and station management enforced strong mode change controls to ensure that required systems and equipment were properly restored prior to mode change. The inspectors reviewed documentation, observed testing, and performed field walkdowns, and confirmed that safety systems and components were available as required to support the Mode transitions.

O4.2 Reactor Start-Up Observations

The operators maintained good control of plant conditions during the reactor start-up on May 11, 1999. The inspector observed that procedural adherence, three-way communications, peer checking, and senior management oversight were properly implemented. Additionally, reactor engineers provided good support, and the operators closely monitored reactivity changes and safely approached criticality.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Elevated Main Turbine Bearing Vibration

a. Inspection Scope

On May 14, while at approximately 30% reactor power, the operators identified that the vibration levels for the main turbine bearings 11 and 12 were higher than expected. The levels remained elevated during the power ascension, and the licensee elected to remove the main turbine from service to correct the high bearing vibration levels. The main turbine is a non-safety related component, however, inspectors followed the licensee's response to this condition since the elevated vibration levels could have resulted in a reactor plant trip.

b. Observations and Findings

After removing the main turbine from service, the licensee, in conjunction with vendor assistance, performed an alignment of the turbine shaft line components, and also opened and inspected the #12 main turbine bearing. The licensee subsequently returned the main turbine to service, and the turbine bearing vibration levels had been reduced. The operators are continuing to monitor the vibration levels closely, and the licensee has additional plans to stiffen the alterex foundation housing, and to balance the generator rotating element to further reduce the vibration levels.

c. Conclusions

The licensee responded well to identify and address elevated main turbine bearing vibration levels. The planned actions to further reduce the main turbine bearing vibration levels appear appropriate.

M1.2 Pressurizer Safety Relief Valve (RC-V-115) Seat Leakage

a. Inspection Scope

The inspector evaluated the licensee's actions to stop seat leakage through the pressurizer (Pz) safety relief valve RC-V-115. The operators identified the seat leakage on May 5, while the plant was in Mode 3 at normal operating pressure and temperature. The inspector interviewed personnel, attended applicable meetings, and reviewed the online maintenance assessment for this evolution.

b. Observations and Findings

The Pz is provided with three safety valves; each valve is independently connected to the top of the Pz. The safety valves are designed to prevent the system pressure from

exceeding 110% of the allowed design pressure. Temperature, and acoustic sensors, which alarm in the control room, are provided to detect any seat leakage past these valves.

During the plant start-up from RFO6, the tail pipe temperature for valve RC-V 115, exceeded the alarm setpoint indicating seat leakage through the valve. The licensee concluded, based upon a system walkdown and review of operating data, that the leakage was small. The licensee developed a plan to gag the relief valve with a mechanical device for a period of up to two hours, and to apply an external force of 37 foot-pounds to seat the valve. An on-line maintenance assessment was performed to document and evaluate this activity. The inspector noted that maintenance oversight personnel reviewed the assessment and identified several deficiencies including: insufficient justification for conducting the activity, and an insufficient level of detail for controlling this activity. An ACR (99-2278) was issued to address these issues.

The inspector subsequently reviewed the on-line maintenance assessment, and noted that the licensee properly concluded that the installation of the gag rendered the valve inoperable, and also that the activity would be completed within approximately one hour and forty-five minutes. This was permitted by TS Section 3.4.2.2, which required the plant to be cooled down to less than 350°F within six hours, if any safety relief valve was inoperable for greater than 15 minutes. Further, the licensee's evaluation properly included contingency plans to promptly initiate a plant cooldown in the event that the valve remained inoperable for longer than the allowable two hour period.

The licensee was able to successfully seat the valve, and exit the TS action statement. The inspector identified that an ACR had not been initiated by the licensee to document the leaking relief valve as required by the corrective action program. The licensee initiated an ACR to resolve this.

c. Conclusion

The licensee properly identified and developed a plan to stop small seat leakage from one of the three pressurizer safety relief valves. The licensee's efforts to seat the valve were successful. The maintenance oversight group identified several deficiencies with the original on-line maintenance assessment. Also, the inspector noted a minor corrective action program deficiency in that the licensee did not promptly initiate an ACR for the valve leakage problem.

M1.3 Containment Building Level Indicating Transmitter Drift

a. Inspection Scope

On June 3, the operators noted that the "A" containment building level indicator was drifting, and declared the instrument inoperable. The inspector reviewed the licensee's actions to evaluate this condition, and to repair the instrument.

b. Observations and Findings

The containment building level indicating system provides a redundant post-accident monitoring function in accordance with Regulatory Guide 1.97. The licensee installed a recorder and determined that the amount of instrument error or drift was small (approximately 3% of the instrument span). The licensee reviewed the emergency operating procedures and determined that this amount of instrument drift would not cause any operator action absent a confirmatory signal from another post-accident monitoring instrument.

On June 9 the licensee performed troubleshooting, replaced an electronic component located in the cable spreading room, re-calibrated the circuit, and returned it to service. The instrument has been operating properly since that time. Additionally, the licensee identified that the signal cable from the level indicating transmitter to the process cabinets was not properly grounded, and may have contributed to the drift problem. The licensee plans to correct this ground deficiency.

c. Conclusions

The licensee properly identified, evaluated, and corrected a containment building level indicator drift problem.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Investigation of High Motor Amperage and Vibration on the "C" Service Water Pump

a. Inspection Scope

The inspector reviewed the response to a high motor amperage and high vibration condition that was identified on the "C" service water (SW) pump during routine surveillance testing on June 17. The inspector visually inspected the failed pump components, and reviewed the licensee's root cause and planned corrective actions.

b. Observations and Findings

The operators secured the "C" SW pump shortly after placing it in service due to high motor amperage (92 amps, normal is 75 amps), and increased vibration levels on the SW pump room floor. The "C" SW pump was secured before the "A" SW pump discharge valve had opened which resulted in a cooling tower actuation signal, and subsequent automatic transfer to the "A" SW train cooling tower pump. The operators entered the abnormal procedure for a degraded ultimate heat sink and verified that all components operated satisfactorily during the transfer.

The SW pumps provide the necessary cooling to several safety-related components during normal and accident conditions. The SW system consists of six pumps total; four

pumps take suction from the ocean, while the other two pumps take suction from the cooling tower basin. The SW system has installed redundancy since only one of the six SW pumps is needed to supply the necessary safety-related cooling loads. Therefore, the "C" SW pump failure had minimal impact on plant safety.

The licensee formed an event team, and developed several corrective actions following a "B" SW pump failure in August 1998 (discussed in NRC IR 98-06) to prevent subsequent SW pump failures. These actions included: replacement of the existing pumps, procurement of a new design pump shaft, and monitoring of pump shaft vibration levels. The licensee formed a new event team to investigate the "C" SW pump failure. A visual inspection of the "C" SW pump components identified a complete loss of the chromium oxide coating and damage to several of the thordon bearings. The new event team confirmed the previous root cause findings, related to the premature degradation of the chromium oxide coating, and also determined that the chrome oxide failure rate was related to the shaft exposure time in a sea water environment. The licensee estimated that the failure could be predicted following approximately 12,000 hours of pump operation and/or at approximately 12 to 24 months of sea water exposure.

The event team also identified that two of the planned corrective actions from the "B" SW pump failure, which could have prevented the "C" SW pump failure, had not been properly implemented. Specifically, the shaft vibration readings were not taken regularly for the "C" and "D" SW pumps, and the purchase order to procure the new pump shafts and replacement pumps was not timely. This delayed the replacement of the "C" SW pump prior to failure. The licensee initiated new corrective actions to ensure that the shaft vibration readings would be frequently monitored for all six SW cooling pumps, and to expedite replacement of the "D" SW and the "B" cooling tower pumps. These pumps have the longest run hours and/or exposure time to the sea water.

c. Conclusion

The root cause analysis and proposed corrective actions for the "C" service water pump failure were adequate. Some planned corrective actions, which could have prevented this unexpected failure, had not been properly implemented. The "C" service water pump failure had minimal significance, and the inspector concluded that the failure to properly implement a planned corrective action was a violation of minor significance, not subject to formal enforcement action.

E2.2 Year 2000 (Y2K) Review

The staff conducted an abbreviated review of Y2K activities and documentation using Temporary Instruction (TI) 2515/141, "Review of Year 2000 (Y2K) Readiness of Computer Systems at Nuclear Power Plants." The review addressed aspects of Y2K management planning, documentation, implementation planning, initial assessment, detailed assessment, remediation activities, Y2K testing and validation, notification activities, and contingency planning. The reviewers used NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness," and NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning," as the primary references for this review.

The results of this review will be combined with the results of other reviews in a summary report to be issued by July 31, 1999.

E2.3 Safety Injection System Check Valve Leakage

Small reactor coolant system leakage back into the safety injection (SI) accumulators has been a long-standing station material problem and was discussed in NRC Inspection Reports 97-08, and 97-04. In December 1998, the licensee formed a task team to develop a plan to resolve this problem. One of the identified actions was to replace the two inch check valve (SI-V-130) that isolates the "D" SI accumulator from the SI pump discharge header. The licensee replaced valve SI-V-130 during RFO6, and it appears that this action has stopped the back leakage into the SI accumulators. The inspector concluded that the licensee's recent actions to address this long-standing problem were appropriate.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments (71750)

During the period the inspectors frequently toured the radiologically controlled area (RCA) and observed radiological controls practices. The radiological control technicians were observed to be attentive, and provided high quality assistance to plant workers. Plant workers were observed to be following proper radiological work practices including use of dosimetry and protective equipment.

S1 Conduct of Security and Safeguards Activities

S1.1 General Comment (71707)

The inspectors observed security force performance during inspection activities. Protected area access controls were found to be properly implemented during random observations. Proper escort control of visitors was observed. Security officers were alert and attentive to their duties.

P2 Status of EP Facilities, Equipment, and Resources

a. Inspection Scope (82701)

The inspector reviewed 1997 and 1998 emergency facility equipment surveillance tests records, facility inventories and communication test records for regulatory compliance. Also, two siren tests were observed offsite and siren surveillance test records were reviewed for completeness and accuracy.

b. Observations and Findings

Emergency facility inventory records were complete, well organized, accessible and legible. Monthly communication tests were performed in which the Emergency Response Organization (ERO) electronic pagers were tested for functionality. During 1998, test records indicated a trend in which responders did not always respond and the EP staff was proactive in tracking down the problem. A self-assessment identified that in most cases the ERO problems were related to responders not taking their ERO duties seriously and lack of senior management oversight. (This was also noted in the emergency response training area, see Section P5). In December 1998, corporate management sent a letter to all ERO members describing their responsibilities and the penalties for not responding to their emergency response pagers. The inspector determined there was noted improvement for responding to pager tests conducted during the first quarter of 1999.

Since the licensee owns, tests and repairs all 120 offsite sirens, identified problems were immediately corrected and a retest was conducted to verify operability. Also, the siren maintenance manager performs monthly silence tests which verify operability, mobility and condition of each siren. The inspector reviewed the monthly offsite siren operability test records and found that 96% of all sirens tested within the Seabrook emergency planning zone, were found to be operable with 100% after repair and retest.

c. Conclusions

Surveillance tests, equipment inventories, communication and siren tests were performed as required by the Seabrook Station Radiological Emergency Plan (SSREP). No unusual operability trends were noted. However, the monthly pager test records indicated a poor response trend by the ERO staff. Senior management emphasized to the staff their ERO responsibilities and records indicated an improvement in this area in the first quarter of 1999.

P3 EP Procedures and Documentation

a. Inspection Scope (82701)

The inspector reviewed SSREP revisions 29, 30 and 31, as well as several changes the licensee had made to the implementing procedures contained in the Seabrook Station Emergency Response Manual. The purpose of this was to assess the impact on the effectiveness of the EP program. The inspector reviewed these changes in the NRC Regional office and followed up questions raised by this review with onsite inspection effort. This onsite inspection effort consisted of discussions with licensee personnel and review of licensee effectiveness determinations for the revisions.

b. Observations and Findings

The inspector assessed the 10 CFR 50.54(q) review (effectiveness review) process for SSREP changes and the annual Plan review process performed by the licensee. Based

upon the licensee's determination that the changes do not decrease the overall effectiveness of the Plan, no NRC approval is required, in accordance with 10 CFR 50.54(q). During an in-office review of recent SSREP changes, the inspector noted the deletion of two key "ERO" positions in the Emergency News Center (ENC): (1) a corporate spokesperson; and (2) rumor control. The inspector discussed the elimination of the "spokesperson" with the Manager, EP and found that the function was incorporated into the ENC Manager's (ENCM) position. During 1998, the licensee consolidated three separate ENC areas and combined it with the EOF. The ENCM will no longer be excessively challenged with managing three complexes; therefore, the ENCM duties will include conducting all the news briefings unless a senior manager is requested by the public.

The inspector noted that references to a "corporate spokesperson" remained in sections of the SSREP and the ENCM's duties were not accurately described. The licensee committed to reviewing their SSREP and drill and exercise procedures to ensure they accurately describe the role of the news manager and delete any references to the corporate spokesperson as part of the ERO. These changes will be assessed again when the licensee resubmits the changes for NRC review.

With regard to the elimination to perform the rumor control function, discussions with the licensee and review of the effectiveness determinations revealed that responsibility for the rumor control function had been shifted to the State of New Hampshire Office of Emergency Management (NHOEM) and the Massachusetts Emergency Management Agency (MEMA). This responsibility had previously been shared between the utility and the states. The revised SSREP does state that the state agencies will report rumor trends to NHOEM and MEMA representatives for inclusion in subsequent joint news briefings.

A review of the State of New Hampshire Radiological Emergency Plan showed that the NHOEM did list rumor control as a function performed at the Joint Telephone Information Center (JTIC). This facility was formerly adjoining the emergency operations facility. Revision 29 to the SSREP removed reference to the JTIC, but it showed space designated as the NHOEM incident field office, from where NHOEM would conduct rumor control activities.

The elimination of the licensee's commitment to perform rumor control from Revision 29 of the SSREP did constitute a decrease of commitment on the part of the licensee. However, the basis for that decrease in commitment lies in the agreement between the licensee and the State of New Hampshire for the State to assume the entire rumor control function. Because the function is still described within the State of New Hampshire Radiological Emergency Plan, the agreement and the licensee's revision does not constitute a decrease of effectiveness of the SSREP.

The purpose of a 50.54(q) review, such as the elimination of an ERO position, is to determine if it decreases the effectiveness and implementation of the emergency plan. The 50.54(q) review documentation should discuss the intent of the change, impact to the licensee's ability to respond, verify continued implementation of the plan, alternative

solutions and if it decreased the effectiveness of the Plan. The inspector reviewed the 50.54(q) documentation for both changes discussed above and found they did not provide adequate information or reasoning for the deletion of the positions. This resulted in a number of additional interviews, phone conversations and reviews of State Plans by the inspector. The licensee recognized the 50.54(q) reviews were weak and initiated an ACR regarding their method for adequately documenting plan changes in a 50.54(q) review.

c. Conclusions

The inspector determined that the SSREP changes did not decrease the effectiveness of the plan. However, the 50.54(q) documentation for two of those changes did not provide adequate information or reasoning for the change. The licensee initiated an ACR for reviewing their method for adequately documenting plan changes in a 50.54(q) review.

P5 Staff Training and Qualification in EP

a. Inspection Scope (82701)

The inspector reviewed EP training records, training procedures, and the SSREP's training requirements to evaluate the licensee's ERO training program.

b. Observations and Findings

The inspector determined through a review of training lesson plans, electronic requalification tests, training record reviews, and discussions with ERO members, that the required EP training was being conducted in accordance with the SSREP and applicable training procedures. Also, the training department maintains a database which was an effective tool for the EP staff for tracking training specific to ERO duties and for informing individuals and their managers of upcoming training commitments. The inspector selected a number of training records of the ERO and found their qualifications were current. In a 1998 self-assessment, the licensee identified that training was not being kept up-to-date due to weak management oversight and staff was not held accountable for allowing their training to lapse. Following senior management involvement, the 1999 training records indicated an improvement in this area.

The inspector verified that the required medical, radiation monitoring, and fire drills were being conducted as required. However, the inspector noted that the licensee had never conducted an off-hours exercise to demonstrate the timeliness of ERO response and implementation of the SSREP with a minimum staff. The licensee had conducted mobilization drills in 1994, 1997 and 1998 in which the staff reported in, signed in and then were released. The inspector reviewed the objectives for these drills and Objective II.1 stated, "demonstrate the ability to mobilize the station emergency response organization and to **activate station emergency response facilities** during off normal work hours (6:00 pm to 4:00 am)." "An unannounced mobilization drill will be conducted once every six years." However, the licensee did not "activate" the facilities during these

mobilization drills. Also, the Seabrook Emergency Drill and Exercise Manual states the goal for activation is 60 minutes once an emergency declaration was made.

The inspector reviewed the mobilization drill records and found that in 1994 and 1998, the licensee failed to meet the timeliness objective (without activation). The records for the remedial drills indicated some "key" positions were not filled for 55-59 minutes after declaration. The inspector questioned the licensee's capability for meeting their timeliness goal if they had activated.

10CFR50.47(b), paragraph 14, states that "Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills.....and Appendix E, states that drills will be conducted that could focus on onsite training objectives. The licensee's SSREP states that scenarios would include "Basic objectives and specific elements that are to be tested."

Based on 10 CFR 50.54(q) which states that "a licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in 50.47(b) and the requirements in Appendix E," this is considered a Severity Level IV violation. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ACR No. 99-2477 and the licensee conducted an off-hours mobilization drill in which to demonstrate both timeliness and activation on June 9, 1999. The licensee evaluated the response during this drill as acceptable.

c. Conclusion

The inspector concluded that training for the ERO was effectively implemented and management oversight in late 1998 re-established the importance of maintaining ERO training current.

The licensee conducted emergency response training and drills as required. However, a Non-Cited violation was identified based on the licensee not demonstrating timely activation of the facilities during off-hours as described in its SSREP and the Drill and Exercise Procedure (NCV 99-04-01). The violation was entered into the licensee's corrective action system and a satisfactory off-hours mobilization drill was conducted on June 9, 1999 to demonstrate activation in a timely manner.

P6 EP (Organization and Administration)

a. Inspection Scope (82701)

The inspector reviewed the licensee's EP group staffing, management and ERO personnel to determine if changes that had occurred since the last Seabrook program inspection (July 1995) had any adverse effects on the EP program. Also, the inspector

interviewed the mid-level and senior management to assess the adequacy of involvement and control.

b. Observations and Findings

There have not been any staff changes since the last program inspection which contributed to a strong oversight and ownership of the EP program. Within the last six months, one management position was added in which the Manager, Emergency Preparedness now reports to the Manager-Environmental, Government and Community Relations who reports to the Executive Vice-President and Chief Nuclear Officer.

Interviews with various managers and ERO members indicated that during 1998, the ERO became complacent with their EP duties and management was not proactive in ensuring the ERO met those responsibilities, despite an NRC exercise weakness, a failed mobilization drill, and a very critical quality assurance audit. As stated previously, in December, 1998 management established the guidelines and responsibilities of being an ERO member and added incentives for maintaining qualifications. Since that time, there appears to be a change of attitude with respect to the importance of the EP program as evidenced by subsequent drill critiques, communication tests and training records.

c. Conclusions

No changes in EP staff were noted since the previous inspection. A recent reorganization was completed in which the Manager, EP reports to the Manager, Environmental, Government and Community Relations. It was noted that during 1998, weak management oversight resulted in the ERO staff becoming complacent with respect to their EP responsibilities and training requirements. Corrective actions were taken and no ERO member deficiencies were identified in the first quarter of 1999.

P7 Quality Assurance (QA) in EP Activities

P7.1 Effectiveness of Licensee Controls in Identifying, Resolving and Preventing Problems

a. Inspection Scope (82701)

The inspector reviewed the licensee's corrective action systems, trending reports, and self-assessments to evaluate the effectiveness of the licensee's controls in identifying, resolving and preventing problems. The evaluation included a review of action items generated as a result of 1997, 1998 and 1999 emergency drills/exercise critiques, self-assessments and audit findings. In addition, self-assessments reports were reviewed from 1997-1999 and corrective actions associated with those self-assessments were evaluated.

b. Observations and Findings

Corrective Actions

The licensee utilizes two corrective action systems: (1) emergency preparedness action items list (EPAIL); and (2) site action item tracking and trending system (AITTS). The inspector reviewed the items listed in the EPAIL and noted it was comprehensive and contained corrective actions on drill and exercise comments, AITTS action items, plan and procedure changes and issues identified in the self-assessment program. The EPAIL is also utilized as a tracking tool for upcoming drills, inventories and surveillance tests. The EP Manager conducted weekly status meetings with the EP staff, trended corrective actions to determine their effectiveness and ensured items were adequately closed. A small sample of completed action items were reviewed and found to adequately address and correct the identified issues. The AITTS is used to track emergency preparedness adverse condition reports and regulatory related items. There were no overdue action items in the AITTS for the EP area.

Self-Assessments

The inspector reviewed EP Department Procedure 12, "EP Department Self-Assessment Program," which outlined program responsibilities, requirements and instructions for performing an adequate self-assessment program. There were nine self-assessments performed in 1998 and eight were scheduled for 1999. The inspector reviewed all the 1998 self-assessments and found them to examine operational effectiveness, performed internal root causes for significant weaknesses, evaluated industry experience and implemented practices to minimize weaknesses and maximize strengths in an effort to achieve standards of excellence. The reports also described causes for weaknesses and provided recommended actions to prevent problem recurrence.

c. Conclusions

Emergency preparedness concerns, issues or deficiencies were tracked and closed in a timely manner. It appeared corrective actions taken by the licensee were effective in minimizing the potential for recurrence. The self-assessment program was conducted in accordance with program requirements and effectively identified problems, strengths and recommended corrective actions.

P7.2 Review of EP Audit Activities

a. Inspection Scope (82701)

The inspector reviewed Audit Reports No. 97-A09-02 and 98-A09-01, of the SSER Program, conducted in 1997 and 1998, respectively. The inspector also reviewed audit plans, checklists and interviewed personnel from the Nuclear Oversight Department regarding the process for conducting a program audit.

b. Observations and Findings

Nuclear Oversight's annual reviews assessed the EP program for both onsite and offsite commitments. The reports contained both strengths, weaknesses, areas for improvements and where applicable, assigned adverse condition reports. Also, the audits were comprised of six to seven individuals; three of whom had EP knowledge and experience at other licensed facilities. The inspector determined that the audit reports had met the requirements specified in 10 CFR 50.54(t) and the reports clearly demonstrated the bases for the audit conclusions.

The inspector verified that offsite officials were sent copies of the audit report section pertaining to the licensee's interface with offsite agencies and that the reports were distributed to the appropriate licensee management.

c. Conclusions

The inspector determined through document reviews and interviews that the audit reports had met the requirements specified in 10 CFR 50.54(t) and the reports clearly demonstrated the bases for the audit conclusions.

P8 Miscellaneous EP Issues

a. Inspection Scope

The inspector performed an assessment of the corrective actions generated as a result of an exercise weakness identified in the 1998 biennial full-participation graded exercise. (IFI 50-443/98-03-01)

b. Observations and Findings

An exercise weakness was identified in the Technical Support Center (TSC) due to not aggressively pursuing assessment and mitigation strategies during the exercise. The inspector reviewed ACR #98-1743 and found the report to be comprehensive, self-critical and implemented the following changes for resolving the weakness:

1. Reduced the responder positions to four deep rather than six, to strengthen the quality of ERO position assignments and giving staff more opportunities to participate in an exercise/drill.
2. Positions in depth resulted in some personnel being uncomfortable and marginally proficient with their position duties. Position qualifications were re-evaluated and positions were rearranged accordingly.
3. Senior management re-enforced the proper attitudes, behaviors and responsibilities for ERO staff members.

The Seabrook resident inspector observed the performance of the TSC in an licensee exercise in February, 1999 and found the performance to be acceptable.

c. Conclusion

The inspector found the licensee's corrective actions in response to the exercise weakness identified by the NRC in June 1998, to be adequate. Based on this review, IFI 50-443/98-03-01 is closed.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management, following the conclusion of the emergency preparedness inspection on June 4, 1999, and following completion of the inspection period on July 1, 1999. The licensee acknowledged the findings presented.

X2 Management Meetings

Commissioner Merrifield toured Seabrook Station on June 8, 1999. At the conclusion of the tour, Commissioner Merrifield met with Site Management to discuss the results of his tour, and current regulatory issues.

The NRC Region I Administrator toured the Station on June 19, 1999. At the conclusion of his tour, he met with Site Management to discuss the results of his tour, and current Station issues.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Feigenbaum, Executive Vice-President, and Chief Nuclear Officer
W. Diprofio, Station Director
J. Grillo, Assistant Station Director
G. StPierre, Operations Manager
B. Seymour, Security Manager
T. Nichols, Technical Support Manager
D. Sherwin, Maintenance Manager
D. Tailleart, Emergency Preparedness Manager
A. M. Cailendrello, Manager, Environmental, Government & Community Relations
J. Vargas, Director of Engineering
M. Harvey, Sr. Auditor, Nuclear Oversight

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 61726: Surveillance Observation
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 71750: Plant Support Activities
IP 82701: Operational Status of the Emergency Preparedness Program
TI 2515/141: Review of YEAR 2000 Readiness of Computer Systems at Nuclear Power Plants

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

IFI 50-443/98-03-01 TSC exercise weakness identified in the NRC evaluated exercise in June 1998.

Opened/Closed

NCV 99-04-01 Licensee not demonstrating timely activation of the facilities during off-hours as described in the emergency plan and procedures.

LIST OF ACRONYMS USED

ACR	Adverse Condition Report
AITTS	Action Item Tracking and Trending System
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
CAS	Central Alarm Station
CBS	Containment Building Spray
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
ENC	Emergency News Center
ENCM	Emergency News Center Manager
EP	Emergency Preparedness
EPAIL	Emergency Preparedness Action Item List
ERO	Emergency Response Organization
FME	Foreign Material Exclusion
gpd	gallons per day
gpm	gallons per minute
JTIC	Joint Telephone Information Center
LCO	Limiting Condition for Operation
MEMA	Massachusetts Emergency Management Agency
MOV	Motor operated valve
MPCS	Main Plant Computer System
NHOEM	State of New Hampshire Office of Emergency Management
NO	Nuclear Oversight
NSARC	Nuclear Safety and Audit Review Committee
ODCM	Offsite Dose Calculation Manual
psig	pounds per square inch gauge
QA	Quality Assurance
QC	Quality Control
REMP	Radiological Environmental Monitoring Program
RESL	Radiochemical and Environmental Sciences Laboratory
RHR	Residual Heat Removal
SG	steam generator
SORC	Station Operations Review Committee
SSREP	Seabrook Station Radiological Emergency Plan
SUFP	Startup Feedwater Pump
SW	Service Water
TDEFW	Turbine Driven Emergency Feedwater Pump
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
WR	Work request