U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-443
License No.:	NPF-86
Report No.:	50-443/96-08
Licensee:	North Atlantic Energy Service Corporation
Facility:	Seabrook Generating Station, Unit 1
Location:	Post Office Box 300 Seabrook, New Hampshire 03874
Dates:	August 13, 1996 - September 30, 1996
Inspectors:	John B. Macdonald, Senior Resident Inspector David J. Mannai, Resident Inspector
Accompanied by:	Glenn T. Dentel, Reactor Intern
Approved by:	John Rogge, Chief, Projects Branch 8 Division of Reactor Projects

EXECUTIVE SUMMARY

Seabrook Generating Station, Unit 1
NRC Inspection Report 50-443/96-08

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

Operations:

- Operations careful performance of a residual heat removal system quarterly flow surveillance demonstrated good preparation for and execution of a safety-related system surveillance. (Section O4)

- The inspectors observed improved interaction between station line management and the Nuclear Safety Audit Review Committee (NSARC). (Section O7)

Maintenance:

- The combustible gas control system (CGC) hydrogen analyzer cell replacement activities were completed adequately within the seven-day Technical Specification (TS) allowed outage time, with several difficulties encountered. However, the on-line maintenance was not well planned or executed with timely contingencies. The activity, completed in 6½ days, was originally planned to be completed in 34 hours. Station management did not initially provide timely or effective oversight of and involvement in the evaluation and resolution of emergent issues during the activity, which resulted in increased CGC system unavailability. (Section M1.1)

- The inspectors identified that painting activities in the emergency feedwater (EFW) pump house adversely impacted safety-related equipment. Specifically, EFW pump house floor drains had been covered and isolated with tape. The floor drains are credited to mitigate the consequences of a moderate energy line break and their availability is necessary for the qualification of electrical equipment. The action of covering the EFW pump house floor drains during a mode of operation in which they are assumed to be available constituted a change to the facility as described in the UFSAR and should have necessitated the performance of a 10 CFR 50.59 safety evaluation. (Section M1.2)

- The 18 month battery service surveillance test was performed satisfactorily with sound and meaningful supervisory oversight. The surveillance results were properly evaluated prior to final acceptance. (Section M1.3)

- System engineers demonstrated good awareness in the initial identification and trending of increasing lubricating (lube) oil temperatures on the "A" emergency diesel generator (EDG). Additionally, system engineers effectively diagnosed the probable failure of the thermostatic elements (power pills) in the lube oil temperature control valve (TCV) as the most probable cause of the increasing temperatures. Notwithstanding, the initial work plan did not verify the adequacy of the first set of

replacement power pills nor did it verify the proper poppet assembly/valve stem adjustment. The Independent Review Team (IRT) subsequently identified these weaknesses and initiated appropriate corrective actions. Additionally, the IRT developed an effective diagnostic troubleshooting plan to investigate the reverse power trips experienced on the "A" emergency diesel generator during post maintenance testing of the unrelated work on the lube oil TCV. (Section M1.4)

Engineering:

- The transport of the Unit 2 steam generators (SG) over the Unit 1 service water (SW) vault was performed safely with appropriate controls and contingency actions. Until NRC involvement, engineering did not fully consider the need for contingency actions for a potentially degraded ultimate heat sink or controls to ensure the SGs remained within the analyzed load path. Since the transport had the potential to affect the safety-related SW water system, engineering did not demonstrate an appropriately critical questioning attitude. The associated 10 CFR 50.59 safety evaluation, which was presented to and approved by the station operation review committee (SORC) the day before the scheduled 110% load test, was not reflective of well-planned engineering support. (Section E2)

Plant Support:

- During a tour of the central alarm station security personnel were found very knowledgeable of equipment and system status including any compensatory measures. Security controls and compensatory measures implemented for the removal and transportation of the Unit 2 SGs were excellent. (Sections S1 and S4)

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Report Details

Summary of Plant Status

The facility operated at approximately 100% of rated thermal power throughout the inspection period with routine minor power reductions performed to support instrument calibrations and turbine valve testing. On September 13, 1996, operators briefly reduced reactor power to approximately 90% in response to a circulating water system traveling screen high differential pressure alarm. Ocean debris was cleared from the screens and the reactor was returned to 100% of rated thermal power.

I. Operations

01 Conduct of Operations

01.1 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. Shift management discussion of industry operating experience at shift turnover was a strength. Station preparations for several coastal storms experienced during this inspection report period were very good.

04 Operator Knowledge and Performance

04.1 Residual Heat Removal System Quarterly Flow Surveillance

a. Inspection Scope (61726)

On August 20, the inspector observed performance of the "A" train residual heat removal (RHR) quarterly flow surveillance in accordance with procedure OX 1413.01 (RTS 96R003033003). The inspector reviewed the surveillance procedure, completed acceptance criteria, inservice test pump performance trend data, TS Section 4.5.2f, the UFSAR Sections 5.4 and 6.3, and held discussions with involved operators.

b. Observations and Findings

The inspector found the surveillance was performed according to procedure in a carefully controlled manner. The reactor operator who was performing the surveillance in the control room, for the first time, spent sufficient time to read and prepare in advance of the surveillance. The inspector observed that the operator was using good self-checking techniques and communication practices.

Surveillance test acceptance criteria were met. The pump performance data trends showed no adverse trends.

c. Conclusions

The inspector concluded the RHR Quarterly flow surveillance was performed satisfactorily with acceptance criteria satisfied. Operations performed the surveillance according to procedural requirements. The operator performed the evolution from the main control board carefully and effectively. The inspector had no further questions.

07 Quality Assurance in Operations

07.1 Nuclear Safety and Audit Review Committee

a. Inspection Scope (71707,40500)

On September 24, 1996 the inspector observed portions of the NSARC, which consisted of approval of meeting minutes from NSARC meeting 96-05 minutes and station operations report given by the unit director. Additionally, the inspector reviewed TS 6.4.3, material prepared for the NSARC meeting, North Atlantic Management Manual 11250, and held discussions with the NSARC Chairman.

b. Observations and Findings

The inspector found the meeting was conducted according to station administrative requirements and TS requirements. The unit director's station operations report presentation was a candid and critical assessment which communicated recent plant technical issues such as emergency diesel generator on-line maintenance, motor operated valve (MOV) closeout inspection issues, EFW pump seal failure, and the September 18 Emergency Preparedness (EP) full participation exercise. The chairman asked appropriately critical questions which facilitated additional discussions on the part of other committee members. The meeting was also attended by an increased number of line managers from the station as an NSARC self-assessment initiative to enhance the effectiveness of the quorum functions.

c. Conclusions

The inspector concluded the observed portions of the NSARC meeting were effective and demonstrated good safety perspectives. The emphasis on increased line management attendance at NSARC meetings is a good initiative. The unit director comprehensively presented an accurate and timely assessment of station performance to the NSARC quorum. The inspector had no questions regarding this activity.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Hydrogen Analyzer Cell Replacement

a. Inspection Scope (62707)

The inspector observed portions of on-line maintenance performed on the "B" train CGC system hydrogen analyzer (WR 96W000927). The inspector reviewed the work package, the on-line maintenance assessment, instrument calibration procedure, completed work package, vendor manual, TS Sections 3.3.3.6 and 3.6.4.1, and held discussions with maintenance personnel and station management.

b. Findings and Observations

On August 28, 1996, the licensee commenced the performance of on-line maintenance to replace the "B" train hydrogen analyzer based on a review of past calibration data and the knowledge that since the installed analyzer had exceeded the vendor recommended five year service life by approximately 18 months. The service life information was recently obtained by the system engineer and was not contained in the vendor manual. Although the licensee considered the analyzer operable, it was not certain that the instrument would remain within acceptable tolerances for the entire 18 month period between calibrations. The hydrogen analyzer is considered post accident monitoring (PAM) system instrumentation. Additionally, the hydrogen analyzer flow path is used as part of the post accident sampling system (PASS) for containment radioactive particulates and iodines. The expected duration of the work was 34 hours.

The licensee experienced numerous difficulties in calibrating the instrument following analyzer cell replacement. A second cell was replaced and similar difficulties were experienced. A third analyzer cell was subsequently installed. Additionally, while calibrating the analyzer, the hydrogen concentration readings (instrument is calibrated using a bottled test gas with 1%, 4%, and 9% hydrogen concentrations) appeared to be unstable and oscillating. During the calibration, the technicians were observing the analyzer output on a digital voltmeter set at the .0001 volt range.

The calibration procedure, which takes approximately 18-20 hours to perform, was performed three times unsuccessfully. Subsequent to the failures, the licensee obtained the services of a vendor field representative to assist in the identification and resolution of the problem. The instrument was eventually calibrated to within specified tolerances with approximately 12 hours remaining on the 7-day allowed outage time and the instrument was placed back in service on September 1, 1996. The vendor representative concluded the earlier hydrogen readings, considered unstable by the licensee, were in fact actually normal. This conclusion was attributed to the accuracy limitations of the analyzer system (+/- 5%) of full scale which corresponds to +/- .05 volts. With technicians observing the analyzer output

with the digital voltmeter set at .0001 volts the fourth digit was continually changing. This issue, combined with the normal oscillation caused by temperature cycling due to system heaters cycling on and off, created the incorrect appearance that the analyzer was randomly drifting. The inspector noted that vendor manual did not address instrument response during stabilization with heaters cycling on and off. Adding to the delays were the correction of some problems found during troubleshooting activities such as minor leaks in the test gas tubing, replacement of a pressure control valve, replacement of an amplifier card, and replacement of some system heaters.

The inspector subsequently questioned the qualification and training requirements pertaining to the performance of the hydrogen analyzer cell calibration. The involved technicians were qualified, but no specific training was required or given for this system. In addition, Adverse Condition Report (ACR) 96-831 was written at the direction of the Unit Director to document the problem and determine a root cause for the problems which led to significant increase in unavailability time of the instrument.

c. Conclusions

The inspector concluded the on-line maintenance activities were ultimately completed adequately within the TS allowed outage time. However, the on-line maintenance was not executed well nor were there adequate contingency actions planned prior to conducting the on-line maintenance such as vendor support and pre-established troubleshooting approaches. Licensee knowledge of proper system response during calibration activities was limited and led to potentially unnecessary replacement of additional analyzer cells.

The inspector also concluded that station management did not initially provide aggressive oversight or assistance to the resolution of the maintenance effort once it became clear that significant difficulties were being experienced during the activity. Seabrook Station Management Manual (SSMM) Chapter 2, Section 18, "On Line Maintenance Policy," paragraph 18.3.5.2 states that aggressive management action shall be taken whenever work implementation delays are encountered that have the potential to affect TS Action Statement exit times. Initially, the licensee did not implement an analytical approach to problem solving, rather a symptom-oriented approach was employed by continuing to replace analyzer cells without understanding what the cause or causes of the observed response behavior were. The vendor later indicated the analyzer cell readings were normal. Consequently, the maintenance which was expected to take 34 hours, took 6½ days, nearly exceeding the allowed outage time, which resulted in additional system unavailability. Unavailability time must be accounted for the system which falls under the maintenance rule.

The inspector concluded there were no actual safety consequences to these observations beyond the increased system unavailability time. In addition, the "A" analyzer remained operable. The decision to perform a root cause analysis of the problems encountered during the activity was prudent. The root cause analysis was

not completed at the conclusion of the inspection period. The inspector will continue to assess on-line maintenance implementation as a part of the resident inspection program.

M1.2 Emergency Feedwater Pump Room Painting Activities (VIO 50-443/96-08-01)

a. Inspection Scope (62707)

The inspector observed and reviewed painting activities in the safety-related EFW pump building. The inspector toured the building, reviewed the work request, painting procedures, and held discussions with involved personnel. Additionally, the inspector reviewed UFSAR Sections 3.11.2 and 9.3.3.; Report TP-7, "Seabrook Station Moderate Energy Line Break Study;" "Seabrook Station Environmental Qualification of Electrical Equipment Important To Safety;" and, calculation 9763-F-FS-06.

b. Observations and Findings

On August 21, 1996, the inspector identified that three, 4-inch floor drains located in the EFW pump house had been covered and isolated by tape. The inspector promptly informed control room personnel about the covered floor drains and specifically questioned the design basis of the drains and potential effect on equipment operability. Painting activities were stopped and the tape was promptly removed. The inspector learned station coating program procedures required that floor drains in the vicinity of painting be covered to prevent paint from getting into drain and causing subsequent problems in plant drainage and waste processing systems.

Subsequently, the licensee determined that the availability of the floor drains is assumed to mitigate the consequences of a moderate energy line break in the room so as to not impact equipment qualification and operation. The occurrence was documented in ACR 96-765. Plant design features that accommodate or mitigate moderate energy line breaks are commitments in UFSAR Sections 3.11.2 and 9.3.3. UFSAR Section 9.3.3.3 indicates that the equipment and floor drainage system is operable during all normal modes of operation. The maximum safe allowable flooding of the EFW pump house is 8 inches. There are five, 4-inch drains and two, 2½-inch drains in the EFW pump house which are designed to facilitate a drainage rate of 75 gallons per minute (gpm). The line which would result in the greatest amount (i.e. worst case) of leakage, should a break occur, would be the 8 inch EFW discharge header resulting in an approximate 84 gpm leak. The line is fed by the static head of the condensate storage tank (CST) which contains several hundred thousand gallons of water. The design features provide the basis for electrical equipment qualification (equipment is not submergence qualified) and have been credited in the qualification of electrical equipment. The moderate energy line break study concluded that with the maximum break size flooding could continue for at least 15 hours resulting in a flood depth of 8 inches, before safety-related equipment would be affected. This is considered sufficient time to allow for detection and isolation. However, with the floor drains covered, the maximum safe

operating flood level requiring operator action would be reached in approximately 2 hours to prevent the flooding from impacting EFW system operability.

The completed ACR evaluation concluded inadequate controls existed to ensure plant drainage features were not adversely impacted. Corrective actions included; discussing the ACR with operations and engineering support personnel; adding steps to operations procedures that require assessment before disabling drainage systems; and, adding a checklist or procedural steps to SSMA Chapter 3.0, "Work Control," to require that drainage capability be assessed before covering or disabling drainage systems.

c. Conclusions

The inspector found that painting activities adversely impacted safety-related equipment. Specifically, covering and isolating the floor drains with tape adversely impacted the design basis of the EFW pump building floor drainage equipment as described in the UFSAR. The corrective actions associated with the maintenance procedure changes have a due date of February 14, 1997 which the inspector did not consider timely since only minimal interim corrective actions which address maintenance practices pertaining to disabling of plant drainage systems have been initiated. The maintenance activity which covered EFW pump house floor drains constituted a change to the facility as described in the UFSAR without the required 10 CFR 50.59 Safety Evaluation to determine if an unreviewed safety question existed and is considered a violation. (VIO 50-443/96-08-01)

M1.3 18-Month Battery Service Test

a. Inspection Scope (62707)

On September 9, 1996, the inspector observed portions of the 18 month battery service test for the "1C" battery in accordance with procedure LX0556.04 (RTS 96RM41825001). The inspector reviewed the surveillance procedure, completed surveillance results, TS Sections 3.8.2.1, 4.8.2.1 and 3.8.3.1, UFSAR Section 8.3.2, NRC Regulatory Guide 1.129, ANSI/IEEE Std 450-1975, measuring and test equipment calibration data, and held discussions with maintenance technicians and supervision.

b. Findings and Observations

The purpose of the battery service test is to verify that the station battery capacity is adequate to supply and maintain in an operable status all of the actual or simulated emergency loads for the designed duty cycle of the batteries. TS 4.8.2.1d requires the battery service test be performed at least once per every 18 months. The inspector found the surveillance procedure was performed correctly and according to procedural requirements. The inspector reviewed calibration data associated with the software driven battery capacity tester. Test equipment calibration was current and properly documented. Personnel who performed the test were knowledgeable and experienced, especially regarding test equipment

installation and operation. The inspector directly observed meaningful oversight and involvement by electrical maintenance supervision.

The surveillance procedure acceptance criteria were met for cell to cell and terminal connection resistance and battery voltage. UFSAR Section 8.3.2 b, "Station Battery Capacity" indicates each safety-related battery is sized to supply its safety-related and nonsafety-related loads for the duration indicated in Table 8.3-5. In addition, each safety-related battery is sized to have sufficient capacity to service as the source, for the duration indicated in Table 8.3-5 for two load groups of the same train during the period when one battery is out of service. Figure 8.3-51 shows the separate and combined load profiles for the safety-related batteries. The inspector questioned if the battery service test demonstrated the battery load profiles depicted in UFSAR figure 8.3-51, "Train A Batteries Duty Cycle Diagrams." Specifically, with respect to the Bus 11C load profile at time 15 minutes and the combined loads of busses 11A and 11C. The inspector learned that the UFSAR has a change posted that decreased current values associated with the load profiles since the new Main Plant Computer System (MPCS) draws less current. Although the data was not recorded by the electronic data logger at time 15 minutes, the battery capacity tester simulated the correct loading. The licensee is evaluating a potential change to the procedure to record data at time 15 minutes. The change was not incorporated since administratively the MPCS design change is not completely closed out. The inspector reviewed the UFSAR change and concluded the procedure and battery service test results reflected UFSAR and TS requirements. TS Limiting Condition For Operation (LCO) action statements were appropriately maintained.

c. Conclusions

The inspector concluded the surveillance was performed satisfactorily in a well controlled manner, with sound supervisory oversight and involvement. UFSAR and TS requirements were accurately contained in the surveillance procedure. Test personnel effectively used self-checking practices, and the procedure was actively followed while maintaining timely documentation of results. Test equipment calibration data was reviewed and verified to be current. The inspector had no further questions.

M1.4 Emergency Diesel Generator Maintenance

a. Inspection Scope (62703)

The inspectors reviewed and directly observed various portions of the planning, scheduling, and conduct of on-line maintenance performed on the "A" EDG. For several months the licensee had been trending increasing lube oil temperatures on the "A" EDG. The potential for lube oil cooler performance degradation, lube oil filter fouling, and excessive engine bearing wear had been evaluated by system engineering personnel and were considered to be low probability contributors to the observed increase in lube oil temperature. Rather, the licensee concluded the most likely cause for the increased lube oil temperatures was the failure of the thermostatic elements, called power pills, in the lube oil TCV, DG-V-29A, that functions to direct increasing flow rates of lube oil to the lube oil cooler as lube oil temperatures increase during EDG operation. The inspectors reviewed TS 3.8.1.1 and WR 96W000957.

b. Observations and Findings

On September 19, 1996, the licensee removed the "A" EDG from service to replace the power pills in the lube oil TCV and also to stone the generator collector rings, replace the generator brushes, and modify the generator end cover to improve inspection and maintenance accessibility. The initial work effort was completed and a post-maintenance test run of the EDG was started at 5:12 p.m., on September 19. However, at 6:57 p.m., with the EDG at rated speed and load, the engine automatically tripped due to high lube oil temperature. Maintenance technicians inspected the crankcase area for a possible hot bearing, however all observed conditions were normal. On September 20, the EDG was restarted, ran at rated loading for approximately 30 minutes, then unexpectedly automatically tripped on reverse power. Just prior to the engine trip a gradual 20 second reduction in generator loading was observed. Additionally, lube oil temperature was observed to be higher than normal. The licensee generated ACR 96-0904 the EDG trip and formed an IRT to provide greater technical diversity and depth to the causal analysis following the second and unrelated EDG trip.

Ultimately, the IRT concluded that two factors contributed to the continuing high lube oil temperatures. The team identified that the replacement power pills, that had been removed from a Unit 2 EDG, were not performing to design specifications and were the dominant contributor to the high lube oil temperatures. Additionally, continued troubleshooting of the TCV identified that the poppet assembly/valve stem that the power pills exert force against to control lube oil flow to the lube oil cooler was approximately 0.013 inches out of normal adjustment, reducing the opening capability of the valve. New power pills were procured and the poppet assembly/valve stem was restored to proper tolerances, and normal lube oil temperatures were observed during the ensuing post maintenance EDG runs. Troubleshooting of the reverse power EDG trips focused on the operation of the electro-hydraulic governor. Through diagnostic testing and actual EDG runs, the team eliminated potential governor component failure and concluded the most

probable cause of the trips was transient blockage of ports within the governor due to contaminants in the governor oil supply that may have become upset during the initial trip of the EDG due to high lube oil temperatures. The governor oil was flushed and replaced and the EDG was run satisfactorily at rated load three times without anomaly and was subsequently declared operable.

c. Conclusions

The licensee demonstrated good awareness in the initial identification and trending of increasing EDG lube oil temperatures. System engineering used sound technical judgement in the evaluation of potential causes. Additionally, system engineering effectively identified the improper operation of the power pills in the TCV as the primary probable cause of the increased lube oil temperatures. Notwithstanding, the initial work plan did not establish a pre-installation performance test for the first set of replacement power pills, that later proved to be unsatisfactory, nor did it require that the proper adjustment of the poppet assembly/valve stem be verified, that also later proved to be out of proper tolerance or adjustment. While the unsatisfactory performance of the replacement power pills was most probably the dominant contributor, each of these concerns contributed to the continued presence of high lube oil temperatures and to delay in restoring the EDG to an operable status. However, more significantly, continued efforts to resolve the high lube oil temperature were an unnecessary distraction to the troubleshooting and evaluation of the automatic EDG reverse power trips.

The IRT effectively developed a logical diagnostic troubleshooting plan that systematically challenged EDG component and governor performance. The root cause analysis report associated with ACR 96-0904 was well written and comprehensively addressed each post maintenance anomaly, and supported the conclusion that most probable cause for the reverse power trips was due to the adverse effects of contaminants in the governor oil supply. The inspector had no additional comments regarding these activities.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Removal of the Unit 2 Steam Generators

a. Inspection Scope (37551)

During the inspection period, the first two of four steam generators were removed from Unit 2 for shipment to the Public Service Electric and Gas Company (PSE&G). PSE&G was responsible for the SG removal with Seabrook Station performing limited project oversight. The inspector reviewed and observed transport activities because the SG removal route consisted of traveling over Unit 1 SW access vault which contains both trains of the safety-related SW system. The inspectors reviewed the engineering calculation supporting steam generator transport over the SW access vault with technical assistance provided by the NRC Office of Nuclear Reactor Regulation (NRR) Civil Engineering and Geosciences Branch.

b. Observations and Findings

PSE&G engineering consultants prepared the calculation, with Seabrook Station Engineering review. The NRR Geosciences Branch review of the calculation concurred with the licensee conclusion that underground SW piping and associated structures could adequately withstand the load of the SG transport. Just prior the planned 110% load test, the inspector questioned what controls existed to ensure the SG transport vehicle remained within the analyzed load path and what contingency plans were established for a potentially degraded ultimate heat sink. The licensee subsequently developed contingency plans and established administrative controls to ensure the transport vehicle remained within the analyzed load path. The licensee prepared a 10 CFR 50.59 safety evaluation which supported the move.

The inspector attended the SORC meeting which approved the 10 CFR 50.59 safety evaluation. The safety evaluation concluded no unreviewed safety question existed and that a change in TS was not required. The safety evaluation was completed and approved by SORC on September 10, the day before the scheduled 110% load test.

On September 11, the load test was satisfactorily performed. On September 20, the inspector observed the first SG being transported over the SW access vault. The move was completed safely and within the analyzed load path. The licensee maintained good oversight during the move.

c. Conclusions

The SG transport over the Unit 1 SW vault was performed safely with appropriate controls and contingency actions. Engineering did not, prior to NRC involvement, consider the need for contingency actions for the potentially degraded ultimate heat

sink or controls to ensure the transport vehicle remained within the analyzed path. Since the move had the potential to impact both trains of the safety-related SW system, the inspector concluded engineering did not demonstrate an appropriately critical questioning attitude. The safety evaluation was adequate, however the focus was narrow with limited supporting detail and approval just prior to performing the load test was not representative of well planned engineering support.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments

a. Inspection Scope

During the inspection period the inspector toured the radiologically controlled area (RCA) on several occasions to observe radiological controls practices.

b. Observations and Findings

The Seabrook Station radiological controls technicians at the RCA checkpoint were attentive and provided assistance to radiation workers to assure proper work practices were used when radiation workers signed in and out of the RCA. The inspector determined that radiation area postings were proper and well marked and survey results were current and posted properly. All personnel observed were properly wearing dosimetry while in the RCA. A sampling of high radiation area doors identified no discrepancies with locking or posting requirements.

c. Conclusions

The inspector determined that Seabrook Station was properly implementing the station radiological controls program requirements in the areas inspected. Radiological controls personnel were knowledgeable of station procedures and provided good oversight of radiation workers. Department managers were observed in the field observing and supervising department personnel.

P4 Staff Knowledge and Performance in EP

P4.1 Post Accident Sampling System Drill

a. Inspection Scope

On September 3, 1996, the inspector observed the performance of a PASS drill. In addition, the inspector attended the briefing, reviewed the drill scenario, held discussions with EP personnel and observed portions of sample analysis.

b. Observations and Findings

The licensee performance of the drill was good. Overall, personnel performed the PASS according to station procedures using sound radiological practices. The responsible EP evaluator provided good critical assessment. The licensee successfully demonstrated the ability to obtain the PASS sample. Sample analysis was performed satisfactorily, however, the licensee identified and corrected a minor pH probe problem with the boron concentration analysis equipment. The PASS sample results showed excellent correlation with normal daily chemistry analysis results. The inspector noted that an NRC observation from an earlier PASS drill regarding the lack of a foreign material exclusion (FME) cover on a funnel still existed. The inspector verified that an engineering work request had been initiated to develop a permanent fix. In the interim, the licensee has installed a temporary cover.

c. Conclusions

The drill was performed satisfactorily with EP personnel appropriately evaluating performance. The drill critique was effective. The lack of a temporary FME cover for the sample point funnel while a permanent solution was being developed represented a minor weakness with no performance consequence during the drill. The inspector had no further questions.

S1 Conduct of Security and Safeguards Activities

S1.1 General Comment (71707, 71750)

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. Of particular note was the compensatory measures and security controls implemented for the Unit 2 steam removal project which required temporary relocation of the protected area boundary. Excellent supervisory and management oversight was observed during this activity.

S4 Security and Safeguards Staff Knowledge and Performance

S4.1 Central Alarm Station Tour

a. Inspection Scope (71707, 71750)

On August 28, 1996, the inspector toured the central alarm station (CAS), observed the status of detection and assessment equipment, reviewed equipment out of service, and held discussions with security staff and supervision.

b. Observations and Findings

The inspector found security personnel very knowledgeable of equipment and system status including problems and associated compensatory measures. Security personnel maintain good status of equipment deficiencies. Security management involvement with deficiency resolution was good. The inspector had no further questions.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management, following the conclusion of the inspection period, on November 19, 1996. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

X3 Other NRC Activities

During the week of September 16-20, 1996, a Region I Emergency Preparedness Inspection Team evaluated licensee EP program and performance during an annual EP exercise. The results of this inspection will be documented in NRC Inspection Report No. 50-443/96-07.

During the week of September 16-20, 1996, a Region I Senior Reactor Engineer conducted the first week of a two week engineering inspection. The results of this inspection will be documented in NRC Inspection Report No. 50-443/96-10.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

W. Diprofio, Unit Director
G. Kline, Technical Support Manager
R. White, Design Engineering Manager
J. Peterson, Maintenance Manager
J. Grillo, Operations Manager
B. Seymour, Security Manager
W. Leland, Chemistry and Health Physics Manager

NRC

Albert W. DeAgazio, Project Manager

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726:	Surveillance Observation
IP 62703:	Maintenance Observation
IP 64704:	Fire Protection Program
IP 71707:	Plant Operations
IP 71750:	Plant Support Activities
IP 73051:	Inservice Inspection - Review of Program
IP 73753:	Inservice Inspection
IP 83729:	Occupational Exposure During Extended Outages
IP 83750:	Occupational Exposure
IP 92700:	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92902:	Followup - Engineering
IP 92903:	Followup - Maintenance
IP 93702:	Prompt Onsite Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

Violation 50-443/96-08-01, "Failure To Perform 10 CFR 50.59 Safety Evaluation"

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ACR	Adverse Condition Report
CAS	Central Alarm Station
CGC	Combustible Gas Control
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
EP	Emergency Preparedness
FME	Foreign Material Exclusion
gpm	gallons per minute
IRT	Independent Review Team
LCO	Limiting Condition for Operation
MOV	motor operated valve
MPCS	Main Plant Computer System
NSARC	Nuclear Safety and Audit Review Committee
PAM	Post-Accident Monitoring
PASS	Post Accident Sampling System
PSE&G	Public Service Electric & Gas
RHR	Residual Heat Removal
SG	steam generator
SORC	Station Operations Review Committee
SW	Service Water
TCV	temperature control valve
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WR	Work Request