

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-443
License No.: NPF-86

Report No.: 50-443/97-01

Licensee: North Atlantic Energy Service Corporation

Facility: Seabrook Generating Station, Unit 1

Location: Post Office Box 300
Seabrook, New Hampshire 03874

Dates: January 14, 1997 - March 3, 1997

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EXECUTIVE SUMMARY

Seabrook Generating Station, Unit 1 NRC Inspection Report 50-443/97-01

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 7-week period of resident inspection. Additionally, radiation specialist inspectors from NRC Region I performed an inspection of the radiation protection program.

Operations:

- Cooling tower pump flow surveillance activities were performed effectively, with operators demonstrating sound communications and coordination. Control room management reflected good safety perspectives. (Section 02.1)
- The corrective actions and program improvements associated with a NRC-identified violation regarding foreign material exclusion controls were effective and focused on station-wide performance improvement. (Section 08.1)

Maintenance:

- New fuel transfer activities from the new fuel storage vault to the spent fuel pool were performed effectively. A sound safety focus was demonstrated when the activity was stopped when the number and experience of maintenance personnel assigned to the task was questioned. (Section M1.1)
- The licensee adequately addressed the potential for seismic interaction between a chainfall that had been attached to containment recirculation sump valve CBS-V-008 for a previously unresolved item. (Section M8.1)

Engineering:

- Leak sealing activities performed on a main steam pressure transmitter root isolation valve were well-controlled with excellent Seabrook Station supervisory oversight and control of leak sealing vendor personnel. Sound engineering analyses supported the leak sealant activities. (Section E2.1)

Plant Support:

- Radiological protection program controls were observed to have been properly implemented. Station personnel were observed complying with established procedures, programs and controls. Several strengths were exhibited especially in regard to the efforts expended in evaluating the need for programmatic changes as a result of the potential impacts of fuel defects. (Section R1-R8)
- Conduct of an emergency preparedness drill was effective with appropriate licensee self-assessment and critique of the emergency response activities. (Section P1.1)

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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.

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 'A' Train Cooling Tower Pump Flow Surveillance

a. Inspection Scope (71707, 62707)

On February 27, 1997, the inspectors observed portions of the cooling tower pump SW-P-110A quarterly flow surveillance performed in accordance with procedure OX1416.05, "Service Water Quarterly Operability Test Cooling Tower Pump" (RTS 97R00304001). Additionally procedure ES1830.002, "SW-P110 Pump Head Verification" was performed.

The inspectors attended the pre-evolution brief, observed portions of the actual surveillance, reviewed the on-line maintenance assessment form, applicable procedures, completed test results, UFSAR Section 9.2 and held discussions with operations, system engineering and inservice test program personnel.

b. Observations and Findings

The inspectors noted the pre-evolution brief was attended by appropriate involved personnel. The Shift Manager and Unit Shift Supervisor demonstrated critical questioning attitudes regarding flow instrumentation venting procedures and the need for stationing an operator at service water (SW) valve SW-V-54 during pump head curve data acquisition when the valve is in the throttled position.

The licensee had made the decision to establish new reference pump head curve values since the service water flow instrumentation can be affected by entrained air in the service water system. The entrained air can affect the differential pressures and thus impact pump performance data. Previously, pump performance data changes may have been caused by inconsistent venting practices rather than actual pump performance changes. To ensure consistent and repeatable flowrates are obtained for ASME Section XI IST flow surveillance testing, a detailed venting procedure was developed.

The surveillance was performed in a deliberate well-controlled manner using sound communication and coordination. The Shift Manager directed the test be put on hold while control room shift turnover took place. The inspectors observed good turnover between control room operators with an excellent focus on procedure steps. Involved personnel were knowledgeable of their roles and responsibilities. The inspectors also observed vibration data acquisition for the "A" train cooling tower pump and questioned the operator stationed at valve SW-V-54.

The inspectors noted excellent self-checking practices when a control room operator realized that the procedure did not require placing a main control board remotely operated valve switch from the closed position back to the auto position (unlike most switches this switch is not spring return to auto) after the valve was closed. The operator recognized this as a change from the former surveillance procedure prior to the Procedure Upgrade Program (PUP) revision. Previously, management made the decision to remove the specific procedural direction regarding control switch position to ensure the switch is returned to the auto position. Similarly, ACR 97-128 had recently documented a control switch that was found mispositioned (closed vice auto/closed) following surveillance testing. A procedure change was initiated for the applicable procedure. The inspectors reviewed the completed ACR evaluation. The ACR evaluation was a trend only with no generic implications considered for the station procedure program. The inspectors found that operations management expects operators to know that these switches must be manually returned to the auto position. Notwithstanding, department management is reevaluating the operations procedural program direction relative to this issue.

c. Conclusions

The inspectors concluded the surveillance was performed satisfactorily. The inspectors independently verified the surveillance acceptance criteria were satisfied. Involved personnel performed the evolution while maintaining critical questioning safety-perspectives. Sound communication and coordination among all involved personnel was observed. Operations personnel properly executed service water system lineup changes. The operations procedure program for procedural verification of components is being reevaluated by operations management. The inspector had no further questions at this time.

08 Miscellaneous Operations Issues

08.1 (Closed) Violation 96-02-01 Lack of Foreign Material Exclusion Controls

a. Inspection Scope (71707, 62707)

NRC Inspection Report No. 50-443/96-02 documented a violation of Seabrook Technical Specifications 6.7.1 which requires that written procedures shall be established and implemented and maintained covering the activities referenced in Appendix A of Regulatory Guide 1.33. Station management manual Chapter 2, Policies, Section 7, "Housekeeping/Cleanliness/Foreign Materials Exclusion" requires that controls for FME be implemented per procedure MA 3.4, "Foreign Material Exclusion."

Contrary to station requirements, the inspection identified the lack of FME controls for temporary jumpers used for surveillance testing of the risk significant turbine driven emergency feedwater pump. The inspector reviewed the licensee's reply to a notice of violation, Review Procedure MA 3.4, and completed ACR 96-308 evaluation. The inspector held discussions with station personnel.

b. Observations and Findings

The licensee implemented the program enhancements described in the violation response and completed ACR evaluation. Additionally, the inspector verified the completion of corrective actions associated with ACR 96-308.

The licensee's review concluded station personnel have historically viewed FME as the responsibility of the maintenance group without the full recognition and understanding that FME is the responsibility of all station personnel. Operations personnel performing the surveillance were not aware of the FME requirements regarding small components that interface with plant systems.

A new position has been created and staffed that will be responsible for overseeing the conduct of housekeeping and FME practices in the plant. This will include oversight of production activities performed by the various departments at the station. The responsible individual will work with the responsible line organizations to implement sound practices.

The inspector reviewed the revised program contained in procedure MA 3.4, "Foreign Material Exclusion." The FME program enhancements were, in part, developed by benchmarking industry best practices. The inspector found the procedural controls comprehensive regarding both FME planning and implementation. The attribute requiring performance of an FME surveillance with a checklist is noteworthy.

c. Conclusions

The inspector concluded FME program enhancements and changes were sound and focused on station wide responsibility and accountability. Corrective actions associated with the ACR and violation response were comprehensive and complete. The industry bench marking effort and the establishment of a staff position for FME were considered notable strengths. The inspector had no further questions and considered the violation closed. (CLOSED, VIO 50-443/96-02-01)

II. Maintenance

M1 Conduct of Maintenance

M1.1 New Fuel Offloading

a. Inspection Scope (62707,60705)

On February 25 and 26, 1997, the inspectors observed portions of transfer of new fuel from the fuel storage vault into the spent fuel pool. The activity was performed (WR 96W001025) using appropriate station procedures.

The inspectors directly observed new fuel transfer activities, reviewed procedures, and held discussions with reactor engineering, maintenance, operations and health physics personnel.

b. Observations and Findings

The inspectors found the new fuel transfer activity was performed safely, effectively and according to procedure. Good coordination and communication were demonstrated. Good self-checking practices were noted. Documentation of the various fuel movements were performed in a step-by-step manner. Foreign Material Exclusion (FME) controls were properly implemented.

The reactor engineer supervising the activity demonstrated outstanding safety perspectives by promptly informing shift management of a concern regarding the number (two vice three mechanics) and the experience of maintenance personnel assigned to the task. The activity was resumed when an additional experienced mechanic was provided by the maintenance group. Operations personnel operated the spent fuel crane carefully and deliberately. The inspectors noted that there was no operations management direct oversight in the fuel storage building during the inspection. Discussions revealed no specific operations oversight was planned or performed.

c. Conclusions

Station personnel performed new fuel transfer activities correctly and carefully according to station procedures. The inspectors found involved personnel were knowledgeable and experienced. Although the activity was performed well, the lack

of deliberate operations management oversight was considered an area for improvement. The inspectors had no further questions.

M8 Miscellaneous Maintenance Issues

M8.1 (Closed) URI 50-443/96-02-02, Chainfall Hoist Attached to Safety-Related Equipment

NRC Inspection Report No. 50-443/96-11 documented an updated NRC review of the completed evaluation for ACR 96-154. The unresolved item was originally documented in NRC Inspection Report No. 50-443/96-02. The inspector questioned the lack of a qualitative or quantitative analysis of the potential for seismic interactions with the chainfall attached to the containment recirculation sump valve CBS-V-008.

Engineering performed a qualitative review using the stress report for the encapsulation tank (FP53312). The licensee concluded the vibration induced forces due to the added mass of the chainfall acting on the trolley and encapsulation tank would be minimal. This was primarily due to the flexibility of the slackened chainfall. The engineering review was documented in an addendum to ACR 96-154, which was approved by the Management Review Team (MRT).

The inspector reviewed the ACR addendum and the stress report. The documented engineering review was considered adequate. The inspector considered the lack of the documented engineering analysis in the original ACR evaluation may have been attributed to the maintenance department responsibility for ACR resolution. Although there were no adverse consequences the need for engineering involvement in the resolution of certain aspects of this particular ACR was not fully recognized by the maintenance group or the Management Review Team (MRT). The inspector had no further questions and this item is considered closed. (CLOSED, URI 50-443/96-02-02)

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Secondary Plant Leak Sealing Activities

a. Inspection Scope (62707,37551)

On February 21, 1997, the inspectors observed leak sealing activities (WR96W002839) for main steam valve MS-V-14, The root isolation valve for main steam line pressure transmitter 1-FW-PT-516. The leak sealing was performed due to a packing leak on the valve. Prior attempts at tightening the packing were unsuccessful.

The inspectors reviewed the work package, engineering analyses, attended pre-evolution briefings, and held discussions with control room personnel, system engineer and the work group supervisor.

b. Observations and Findings

The inspector used inspection guidance contained in NRC inspection manual chapter 9900 while reviewing leak sealing activities. The inspectors found the necessary engineering controls and analyses were used in developing the work package.

The injections were performed by vendor personnel under the direct observation and supervision of Seabrook Station personnel which included a maintenance supervisor and the system engineer. Activities were performed according to Seabrook Station procedures.

The inspectors questioned the adequacy of the pressure gauge range of the leak sealant injection pump. The injection assembly was supplied and controlled by the vendor. The gauge had a range of 15,000 psig (calibrated for 0-10,000 psig) and the procedure limited the maximum sealant injection pressure to static pressure plus 2000 psi. ASME code requirements for pressure gauge ranges are applicable to hydrostatic or pneumatic testing. However, the licensee decided to require the use of a pressure gauge range of 0-5000 psig in the future which is consistent with ASME requirements.

The inspectors noted that maximum injection pressure was not exceeded during the two attempts. Between injection attempts, a decision was made between field personnel with control room concurrence to slightly loosen the packing gland fasteners and cycle the valve off its backseat and return it to the backseated position and tighten the packing gland fasteners to facilitate better sealant flow. The inspectors questioned field personnel if this contingency should have been placed in the work package since it may be routinely required when for packing leaks. The system engineer directed the leak sealing activity be secured after two unsuccessful attempts.

c. Conclusions

The inspectors found the leak sealing activities were accomplished in a controlled manner according to station procedures with good direct oversight and control of vendor personnel and practices. Field communications with control room personnel were very good. Licensee leak sealing activities were performed consistent with the NRC inspection guidance. The decision to stop leak sealing activities after two unsuccessful attempts was considered prudent. The inspector had no further questions.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments

a. Inspection Scope (71701, 71750)

During the inspection period, the inspectors 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.

R1.2 Response to Primary to Secondary System Leakage and Preparations for Fuel Defects

a. Inspection Scope (83750-01)

Reviews were performed of the licensee's responses to the primary to secondary system leakage and of their initiatives, evaluations, and actions in preparation for the effect of fuel defects on outage activities. Information was gathered through observation of activities, tours of the RCA including the CTB, PAB, FSB, and WPB, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observations and Findings

In November 1996, the licensee identified primary to secondary system leakage, and, in December 1996, the licensee identified an increasing concentration of radioactivity in the primary system due to suspected fuel defects. During this time frame, operation of the letdown degasifier resulted in airborne radioactive gas levels in the containment building and on the 53-foot level of the WPB which peaked at

several DACs. Sources of the gas leaks on the letdown degasifier system are being identified and corrected. The licensee reported that, although the airborne radioactive gases have not posed a significant personnel dose problem due to their relatively low average concentrations, the particulate daughters from these gases have reached levels that are detectable on personnel in the IPM whole body frisk booths.

Over the past year, the licensee stated that numerous reviews and initiatives have been implemented or are currently under evaluation in response to the potential for changing radiological conditions due to the existence of fuel defects, including:

- 1) HP group internal issues, such as event specific training, response checklists, meetings and daily newsletter articles to increase station awareness, review of HP instrumentation needs (i.e., supply of teletectors and alpha instrumentation), review of the plant's monitoring of isotopic mix and evaluation of any changes, review of the adequacy of whole body counting parameters, visits to other plants with experience with fuel defects to benefit from lessons learned, and a review of current and potential changes in plant dose rates and ALARA concerns;
- 2) Station operational issues, such as radiological conditions encountered on security rounds, impact of IPM alarms due to noble gas, the potential for fuel fleas (hot particles to date have been limited to discrete particles of activation product; skin dose conversion factors to be reviewed based on any new isotopic data on fuel fleas), increased dose rates during filter and resin changes (consideration of post-sludging flushing), identification and correction of leaking components/airborne areas, containment and RCA work, crud burst response plans, head lift and pressurizer venting issues, and fuel repair issues, decision process for balancing clean-up time and outage extension if activity concentration limits cannot be met prior to flooding up the refueling cavity (concern about dose rates on the refuel bridge), potentially higher tritium levels during refueling operations due to earlier use of boron removal resin and less dilution at the end of the cycle; and
- 3) Design issues, such as the spent fuel heat exchangers (located in an unshielded, high traffic area), the cavity drain system, pressurizer steam space venting, letdown monitor location on the 25-foot level of the PAB (unshielded, high traffic area), the floor drain system, the RWST cleanup (potential for elevated dose rates due to a large volume source), and primary to secondary system leaks.

The inspectors reviewed 1) health physics technician training handouts, HP1106C and HP11116C, titled Source Term Increase, 2) Seabrook Today articles dated December 12, 1996 and January 27, 1997 which addressed the issue from the radiation worker perspective, 3) a memo from the health physics group to distribution including station management dated March 27, 1996 and titled Station Response to a Significant Source Term Increase, which listed 30 potential issues to be addressed, 4) a presentation package titled Source Term Management,

5) Procedure HN0958.47 (Rev. 00, Effective date 02-13-97) titled Health Physics Response to Failed Fuel, 6) the current Failed Fuel Preparations Summary checklist of 26 issues which listed 15 actions which had been taken in response to the existence of fuel defects and four on-going actions, and 7) a draft OR05 fission gas response protocol for limiting personnel access into RCAs or evacuation of personnel from RCAs.

Other specific actions reported to have been taken by the licensee were:

- 1) Generation of an outline for radiation worker event briefing;
- 2) Issuance of a memo by the radioactive waste group on filter change-outs to address the potential significant exposure during the dropping of expended filters from the shielded transfer cask in the WPB (a dose saving technique identified at a neighboring nuclear station was under review);
- 3) Revision of the PCR procedure to address IPM alarms due to noble gas including a policy on radium-88/cesium-138 decay;
- 4) Request for a cavity drain modification to provide a traveling hydrolizing lance (cavity drain lines have low flow and horizontal runs which lead to significant hot spots during cavity draining);
- 5) Installation of water loop seals on several floor drains connected to the vents of various components to prevent leakage of noble gas;
- 6) Documentation of the need for rapid determination of changes to the isotopic mix in order to assess the impact on various radiation detection processes since the calibration of various instruments will be effected by any significant change in the isotopic makeup; changes to the average beta and gamma energies as well as the introduction of alpha emitters may impact:
 - i) whole body count times and scaling factors (to achieve required MDAs for isotopes of interest);
 - ii) passive internal monitoring effectiveness (presence of transuranics may impact need for annual WBCs and for in vitro bioassay);
 - iii) count room efficiencies for gross alpha and beta counting systems;
 - iv) SAM calibration;
 - v) air sample results (may need to account for hard-to-measure radionuclides in gamma spectroscopy results); and
 - vi) Part 61 assessment for waste characterization.

- 7) Action item to develop trigger points in the isotopic monitoring program and air sampling program to initiate in vitro bioassay on selected workers, to reassess the sensitivity of passive monitoring, to reconsider the WBC frequency, and to evaluate the need to modify the PCR procedure guidance;
- 8) Routine HP survey program and surveillance schedule reviewed as follows:
 - i) the VCT, letdown demineralizer, A & B carbon delay beds, and PDT degasifier changed to LHRAs (operation and maintenance of the letdown and waste gas system will be adversely affected by the source term increase; the iodine guard bed and the first carbon delay bed have estimated dose rates of 840 R/hr contact for 0.12% failed fuel);
 - ii) increase in surveys and addition of a particulate/iodine/ noble gas sampler on the 53-foot level of the WPB;
 - iii) addition of a quarterly survey to the waste gas system iodine guard beds and HEPA filters;
 - iv) review of the surveillance schedule for determination of change in survey frequency, review of routine RWPs for sufficiency of radiological controls, and monitoring of selected in-service filters placed on the immediate response checklist;
- 9) Review of the impact of significant levels of radioiodine and review of the use of ventilation including:
 - i) respirator use and checking of supply of iodine absorbent respirator cartridges;
 - ii) TEDE ALARA assessments;
 - iii) assignment of internal dose;
 - iv) WBC frequency;
 - v) preparation of hardware and procedures for the use of carbon absorbers for HEPA units; and
 - vi) use of HEPA unit ventilation for waste gas oxygen sensor calibrations.

c. Conclusions

Overall, the efforts in evaluating the need for programmatic changes as a result of the impacts of fuel defects demonstrated a self-critical and continuous improvement approach and were considered to be comprehensive, pro-active, and commendable.

R1.3 Planning and Preparation for the Upcoming Refueling Outage

a. Inspection Scope (83750-01)

Reviews were performed of the licensee's planning and preparation activities for the upcoming refueling outage. Information was gathered through observation of activities, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observations and Findings

An additional person has been added to the HP planning function to handle the routine planning activities in order to allow the senior HP analyst to concentrate on outage planning and coordination with HP and the development of outage RW/Ps. The overall outage schedule and individual project schedules, which are provided by the outage management system, are reviewed for evolutions requiring HP support and for the type and scope of support which is needed. Based on this review, an HP outage schedule will be produced which will be used in conjunction with the Plan-of-the-Day reports to coordinate the HP outage scheduling process during the outage.

In addition, in preparation for the outage, the licensee also consults a HP/Chem/Radwaste system of outage-specific action items which contains lessons learned and proposed improvements based on experience during previous outages.

ALARA review packages for approximately twelve outage projects were in various stages of development. Several packages, which were close to completion, were reviewed by the inspector. This review included those for steam generator eddy current testing and for RCP seals and "A" RCP motor replacement. The scope and depth of these reviews were extensive.

The inspectors attended an RSC meeting on February 24, 1996 in which OR05 preparations for steam generator eddy current testing and tube plugging, preparations for reactor disassembly and reassembly, radiological issues related to crud deposits and fuel leaks, and the man-rem goal for the outage which was 90 (86.26 man-rem was incurred for OR04) were discussed.

The inspectors noted that the licensee is continuing to implement a broad task-based approach for the RWPs which has resulted in a smaller number of total RWPs (approximately 15 during non-outage time and approximately 30 during a refueling outage) and is continuing to use HP Operational Guidelines to provide RWP-type instructions for the radiation protection technicians which has resulted in shorter RWPs. These changes were intended to help radiation workers to not unintentionally sign onto the wrong RWP and to more easily understand the RWP information pertinent to them, especially during outages.

c. Conclusions

Based on this review, the inspectors concluded that HP planning and preparation for outages and ALARA reviews were strengths and that the approach to writing RWPs demonstrated a good radiation worker orientation.

R1.4 Other Changes to the RP Program

Several other programmatic changes were reviewed by the inspectors.

The licensee stated that, if a TLD result is less than or equal to the cumulative ED dose and if the cumulative ED dose is greater than or equal to one millirem, the ED dose was being used as the record dose. This approach is conservative on the side of safety.

The licensee was conducting a pilot study on the use of dose rate familiarization maps. These maps use color-coded dots on posted maps to provide prevailing dose rate information to radiation workers.

The licensee was planning for the implementation of a "scrub" program which would allow the wearing of scrubs instead of coveralls for entries into low contamination areas to perform light work and inspections. The anticipated benefits are worker comfort, reduced heat stress potential, timesaving aspect on dressing and undressing, and laundry cost savings.

Based on this review, the inspectors noted that the licensee demonstrated a very conservative approach to recording record dose and further efforts for continuous improvement.

R2 Status of RP&C Facilities and Equipment

a. Inspection Scope (83750-01)

Reviews were performed of the status of health physics facilities and equipment, especially automated access control of the RCA, UFSAR commitments, and new equipment. Information was gathered through observation of activities, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observations and Findings

The licensee reported that a modification of the automated access control software was under development which, along with TLD barcoding, would provide automatic checks for use of proper dosimetry during the RCA entry process. This TLD barcoding and incorporation of it into the electronic access control process appeared to be a good initiative. The inspectors verified that the RP&C facilities were being maintained per UFSAR Section 12.5.

c. Conclusions

Based on this review, the inspectors concluded that the licensee is properly maintaining the health physics facilities and equipment and that the licensee's efforts demonstrated a continuous improvement approach.

R6 RP&C Organization and Administration

a. Inspection Scope (83750-01)

A review of the licensee's current health physics organization was performed, especially changes since the last inspection. Information was gathered through observation of activities, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observations and Findings

Since the last inspection of this program area, the licensee has moved the HP Services Group under the Health Physics Department Supervisor. The licensee reported that this reorganization was made so that more efficient use of personnel could be attained. The inspectors noted that five positions have been lost since the last inspection: 1 scientist (certified health physicist), 1 ALARA analyst, and 3 operational radiation protection technicians.

c. Conclusions

No degradation of the RP&C program is evident at this time, but RP&C staffing will be the subject of further review during the upcoming refueling outage and in the longer term.

R7 Quality Assurance in RP&C Activities

a. Inspection Scope (83750-01)

Reviews were performed of the implementation by the radiation protection organization of the ACR process, of the HP and Chemistry group's programmatic self-assessment and management walkdown procedures, and oversight of vendor services. Information was gathered through observation of activities, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observations and Findings

Implementation of the ACR process by the Health Physics Department was reviewed. The licensee stated that the threshold for identifying issues is lower as compared to the threshold when the ROR system was used. The inspectors noted that ACRs receive a higher level of management review as compared to the ROR system. The licensee reported that an individual within the HP department has been trained as a root cause specialist and that the use of root cause specialists is intended to provide consistent root cause analysis results. The current system provides for reporting of identified adverse conditions, the assessment and trending

of causes, and the tracking of completion of scheduled corrective actions. The licensee stated that a change in the assessment methodology was being evaluated which would lower the number of ACRs receiving a medium-level assessment.

In addition to the ACR system, there are also procedures both for chemistry and health physics group programmatic self-assessments (thirteen conducted in 1996 to evaluate radiation protection program elements) and for chemistry and health physics group field management walkdowns and observation assessments (sixteen in radiation protection in 1996)(including off-hours walkdowns). Deficiencies noted by these mechanisms, which are lower than the ACR threshold, are trended by this group, and corrective actions are tracked to completion. Also, HP has their own proceduralized walkdown and observation program.

A very high level of oversight on the TLD radiation badge vendor service has been demonstrated. Considerable time was expended by Seabrook Station staff in evaluating the services provided by their then-current TLD laboratory vendor service and several instances of TLD vs. ED discrepancies. As a result of findings revealed by these assessments, the licensee decided to switch to a new badge service vendor. The new badge service commenced in January 1997, and the first badge pull under the new service is scheduled for April 1997.

Section 12.5.2.3 of the UFSAR dictates that the HP Department must take efforts to ensure the quality of vendor-supplied bioassay services. The inspectors reviewed an audit conducted in 1996 of the Yankee Atomic Electric Laboratories in vitro bioassay program and in which no deficiencies were noted. The inspectors assessed that this UFSAR commitment had been met.

c. Conclusions

Based on this review, the inspectors concluded that the licensee is properly addressing quality assurance in the health physics activities and that the licensee's efforts demonstrated a strong emphasis on being self-critical and on maintaining a continuous improvement approach.

R8 Miscellaneous RP&C Issues

a. Inspection Scope (83750-01)

A recent discovery of a licensee operating their facility in a manner contrary to the updated FSAR description highlighted the need for a special focused review that compares plant practices, procedure and/or parameter to the updated FSAR descriptions. Selected portions of UFSAR sections 12.1 and 12.5 were reviewed.

b. Observations and Findings

While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the updated FSAR that related to the areas inspected.

The inspectors verified that the updated FSAR wording was consistent with the observed plant practices, procedures, and/or parameters.

A review of selected portions of the UFSAR and limited reviews of recording of radiation dose of record, in-plant posting of radiation survey data, and the protective clothing program were performed. Information was gathered through observation of activities, a tour of the RCA including the CTB, PAB, FSB, and WPB, discussions with cognizant personnel, and review and evaluation of procedures and documents.

c. Conclusions

The inspectors concluded that current practices implemented by the Health Physics Department were as described in Sections 12.1 and 12.5 of the UFSAR.

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.

P1 Conduct of EP Activities

P1.1 Emergency Preparedness Drill (71707, 71750)

a. Inspection Scope (71707)

On February 19, 1997, the licensee conducted a practice combined functional emergency drill (Drill # 97-01). This practice drill was performed to identify areas of improvement while demonstrating the plant's personnel ability to recognize the simulated emergency or accident conditions, to assess and classify the emergency in accordance with Station Emergency Response Manual Procedure ER 1.1, Classification of Emergencies, and to develop solutions for placing the station in a safe, stable condition. The inspector observed portions of the initiating event and operator response in the Simulator, and subsequent activation and staffing of the Technical Support Center (TSC). The inspector also observed response activities in the Emergency Operations Facility (EOF) which was activated during the drill, and attended the licensee drill critique.

b. Observations and Observations

The inspector found the drill was performed in a highly professional manner by all emergency response organization personnel involved. The licensee concluded that the drill objectives in the areas of facilities management and control, detection and classification of emergency events, protective action decision making, notification

and communication, etc, were met. The licensee's goal to identify areas for improvement was properly achieved and documented.

c. Conclusions

The inspector concluded the observed portions of the practice emergency drill and plant personnel activities and responses performed were effective in demonstrating the drill objectives. The licensee held adequate critique briefings and properly documented the results. The inspector had no questions regarding the conduct of this practice drill.

V. Management Meetings

X1 Exit Meeting Summary

The resident inspectors presented the inspection results to members of licensee management, following the conclusion of the inspection period, on April 7, 1997. The licensee acknowledged the findings presented.

The radiation specialist inspectors presented the inspection findings to members of licensee management on February 28, 1997. The licensee acknowledged the findings.

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

PARTIAL LIST OF PERSONS CONTACTED

Licensee

B. Drawbridge, Exec. Director-Services*
W. DiProfio, Station Manager* +
G. Kline, Technical Support Manager
R. White, Design Engineering Manager
J. Grillo, Operations Manager
B. Seymour, Security Manager
W. Leland, Chemistry and Health Physics Manager
A. Callendrello, Licensing Manager*
W. Cash, HP Dept. Supervisor* +
R. Cooney, Assistant Station Manager +
S. Dodge, Radiation Technical Specialist* +
F. Haniffy, Radwaste Operations & Shipping Supervisor +
D. Hapta, HP Supervisor*
J. Marchi, Audit Manager* +
J. Peterson, Maintenance Manager* +
J. Rafalowski, C&HP Project Supervisor*
J. Sobotka, NRC Coordinator* +
R. Sterritt, ALARA Coordinator*
G. St. Pierre, Operations Manager* +
L. Tardif, Chemist +
R. Thurlow, HP Technical Supervisor* +

NRC

Albert W. DeAgazio, Project Manager
J. Brand, Reactor Engineer*
L. Eckert, Radiation Specialist* +
J. McFadden, Radiation Specialist* +
D. Mannai, Resident Inspector*

+ Denotes those present at entrance meeting on February 25, 1997

* Denotes those present at exit meeting on February 28, 1997

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observation
 IP 62707: 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 Radiation 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

None

Closed

50-443/96-02-01	VIO	Lack of Foreign Material Exclusion Controls
50-443/96-02-02	URI	Chainfall Hoist Attached to Safety-Related Equipment

Discussed

None

LIST OF ACRONYMS USED

ACR	Adverse Condition Report
ALARA	As Low As Is Reasonably Achievable
ASME	American Society of Mechanical Engineers
CAS	Central Alarm Station
CBS	Containment Building Spray
CTB	Containment Building
DAC	Derived Air Concentration
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
FME	Foreign Material Exclusion
FSB	Fuel Storage Building
GPD	Gallons Per Day
GPM	Gallons Per Minute
HEPA	High Efficiency Particulate
HP	Health Physics
LCO	Limiting Condition for Operation
LHRA	Locked High Radiation Area
MOV	motor operated valve
MPCS	Main Plant Computer System
NSARC	Nuclear Safety and Audit Review Committee
NSARC OS	NSARC Operations Subcommittee
PAB	Primary Auxiliary Building
PCR	Personnel Contamination Report
PDT	Primary Auxiliary Building
PSIG	Pounds Per Square Inch Gauge
QC	Quality Control
RCA	Radiologically Controlled Area
RCP	Reactor Cooling Pump
RHR	Residual Heat Removal
ROR	Radiological Occurrence Report
RP&C	Radiological Protection and Chemistry
RSC	Radiation Safety Committee
RWP	Radiation Work Permit
RWST	Refueling Water Storage Tank
SAM	Small Article Monitor
SG	steam generator
SIR	Station Information Report
SORC	Station Operations Review Committee
SUPP	Startup Feedwater Pump
SW	Service Water
TDEFW	Turbine Driven Emergency Feedwater Pump
TEDE	Total Effective dose Equivalent
TLD	Thermoluminescence Dosimeter
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report

VCT	Volume Control Tank
WBC	Whole Body Count
WPB	Waste Processing Building
WR	Work Request