

April 19, 2002

Mr. Ted C. Feigenbaum
Executive Vice President and Chief Nuclear Officer
Seabrook Station
North Atlantic Energy Service Corporation
c/o Mr. James M. Peschel
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION - NRC INSPECTION REPORT 50-443/02-02

Dear Mr. Feigenbaum:

On March 30, 2002, the NRC completed an inspection at the Seabrook nuclear power station. The enclosed report documents the inspection findings which were discussed on April 5, 2002, with Mr. G. St. Pierre and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No significant findings were identified.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). On February 25, 2002, the NRC issued an Order to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment. With the issuance of the Order, we will evaluate Seabrook Station's compliance with these interim requirements.

Mr. Ted C. Feigenbaum

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Sincerely,

/RA/

Anthony McMurtray, Acting Chief
Projects Branch 6
Division of Reactor Projects

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

Enclosure: NRC Inspection Report No. 50-443/02-02
Attachments: Supplemental Information

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Mr. Ted C. Feigenbaum

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-443

License No.: NPF-86

Report No.: 50-443/02-02

Licensee: North Atlantic Energy Service Corporation

Facility: Seabrook Generating Station, Unit 1

Location: Post Office Box 300
Seabrook, New Hampshire 03874

Dates: February 17 through March 30, 2002

Inspectors: Glenn Dentel, Senior Resident Inspector
Javier Brand, Resident Inspector
Jason Jang, Senior Radiation Specialist
Thomas Moslak, Health Physicist
Leonard Cheung, Senior Reactor Inspector
Jimi Yerokun, Senior Reactor Engineer
Keith Young, Reactor Inspector
Gregory Smith, Senior Physical Security Inspector

Approved by: Anthony McMurtray, Acting Chief
Projects Branch 6
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000443-02-02, 2/17/02 - 3/30, 2002; North Atlantic Energy Service Corporation; Seabrook Station; Unit 1. Resident Inspection Report.

The inspection was conducted by resident inspectors, a regional health physicist, a regional radiation specialist, a regional security inspector, and several regional reactor inspectors. This inspection identified no findings. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>.

A. Inspector Identified Findings

No significant findings were identified.

B. Licensee Identified Violations

There were no violations identified by the licensee during this inspection.

Report Details

Summary of Plant Status

The plant was operated at approximately 100% power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R02 Evaluations of Changes, Tests, or Experiments

a. Inspection Scope

The inspectors reviewed six selected safety evaluations associated with initiating event, mitigating systems, and barrier integrity cornerstones to verify that changes to the facility or procedures, as described in the UFSAR, were in accordance with 10 CFR 50.59. The inspectors also verified that the safety issues pertinent to the changes were properly resolved or adequately addressed. The safety evaluations were selected based on the safety significance of the changes and the risk to structures, systems and components.

The inspectors also reviewed 14 screened-out evaluations for changes, tests and experiments for which the licensee determined that safety evaluations were not required. This review was performed to verify that the licensee's threshold for performing safety evaluations was consistent with 10 CFR 50.59.

In addition, the inspectors reviewed the administrative procedure that was used to control the screening, preparation, and issuance of the safety evaluations to ensure that the procedure adequately covered the requirements of 10 CFR 50.59.

The inspectors also interviewed engineering personnel engaged in the preparation and the review of the selected safety evaluations.

Finally, the inspectors reviewed a sample of condition reports (CRs) documenting problems related to safety evaluations to verify the appropriateness of corrective actions.

A listing of the 10 CFR 50.59 safety evaluations, screened-out evaluations, and condition reports reviewed is provided in Attachment 1.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdown - "A" Emergency Diesel Generator (EDG)

a. Inspection Scope

On March 4 thru March 6, the inspectors performed partial walkdowns of the "A" EDG prior to and after removal of the "B" EDG for planned maintenance and pre-outage modifications. The inspectors reviewed the system alignment as described on plant drawings and performed verification of major equipment alignment in the "A" EDG room, the essential switch gear rooms, and the battery rooms. The inspectors also examined the material condition of the "A" EDG and major components in the areas of inspection and discussed specific minor material condition discrepancies with operators and engineers.

b. Findings

No findings of significance were identified.

.2 Partial Walkdown - Security Camera System Walkdown

a. Inspection Scope

On February 22, the inspectors performed partial walkdowns of the security camera system and security alarm stations, and conducted interviews with security officers and security management. The inspectors also discussed with security operators specific minor material condition discrepancies, and verified that proper compensatory measures were in place.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Area Walkdowns

a. Inspection Scope

The inspectors reviewed the fire protection analyses and examined the following risk significant areas:

- "A" and "B" EDG Rooms - 21'-6" elevation
- "A" and "B" Essential Switchgear Rooms - 21'-6" elevation
- "A", "B", "C" and "D" Safety Related Battery Rooms- 21'-6" elevation
- Emergency Feedwater Pumps Room - 27' elevation

Specific fire protection conditions examined included control of transient combustibles, material condition of fire protection equipment, and the adequacy of any fire

impairments and compensatory measures. In addition, the inspectors reviewed the pre-fire strategies for these areas, and procedures MX0599.06, "6-Months Surveillance And Post-Maintenance Inspection of Technical Requirements Fire Rated Doors," Rev. 3, and MX0516.05, "18-Month Surveillance of Technical Requirements Fire Rated Dampers," Rev. 8.

b. Findings

No findings of significance were identified.

.2 Controls of Hydrogen Storage Locations

a. Inspection Scope

The inspectors reviewed Seabrook station controls of hydrogen storage locations per NRC Temporary Instruction 2515/146. The inspectors verified Seabrook's compliance with applicable codes and commitments to ensure that unrecognized risk significant conditions did not exist. The inspectors also performed walkdowns to verify that proper distance was maintained between bulk hydrogen storage and risk significant tanks, structures, systems, or components (SSCs) and ventilation intakes. The National Fire Protection Association (NFPA) 50A, "Standard For Gaseous Hydrogen Systems at Consumer Sites," was used to verify these distances.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On February 28, the inspectors observed operator training focusing on human performance of time critical tasks. The inspectors reviewed the operator's ability to correctly evaluate the training scenario and implement the emergency plan. The inspectors also evaluated whether deficiencies were identified and discussed during the evaluation. In addition, the inspectors reviewed the planned actions to address CR 02-02628 regarding a time critical operator action to establish minimum emergency feedwater recirculation flow.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

.1 Remote Safe Shutdown System Review

a. Inspection Scope

The inspectors evaluated the implementation of the maintenance rule, 10 CFR 50.65, as it pertained to the “B” Thermal Barrier Cooling Pump failure that occurred on January 17, 2002. The inspectors verified that the pump failure was evaluated and that corrective actions implemented were commensurate with the failure history of the pump. The inspectors interviewed various licensee personnel, including the system engineer, the nuclear risk management supervisor, and the maintenance rule coordinator. The inspectors reviewed several Condition Reports (CRs), as well as the following documents:

- CR- 02-00669, which documented the “Apparent Cause Evaluation” to determine why the pump failed and corrective actions to prevent recurrence.
- PEG-45, “Maintenance Rule Program Monitoring Activities,” Revision 0.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance activities in order to evaluate the effect on plant risk. The inspectors reviewed the routine planned maintenance and emergent work for the following equipment removed from service:

- On March 4 thru 8, the inspectors reviewed the on-line maintenance assessment for the implementation of design change request (DCR) 01-005. This DCR was for the partial installation of a new governor on the “B” EDG. The inspectors reviewed portions of the work package (01W001908), and some of the corresponding wiring diagrams. The inspectors also observed the activity verifying that controls were in place to protect the potential risk significant circuitry and other components in the area.
- On March 11, the inspectors reviewed the on-line maintenance assessment for preventive maintenance work on the “B” reserve auxiliary transformer (RAT). The inspectors observed portions of the work and interviewed the system engineer, the field supervisor, maintenance technicians, and operators to assess their understanding of the availability of the remaining “A” RAT. In addition, the inspectors reviewed CR 02-03201, which documented minor discrepancies found in the flat washers for the “B” RAT flexible links.
- On March 14, the inspectors observed emergent work involving replacement of the blender mode start switch and addition of a time delay relay in the boric acid and reactor make-up water control circuit. The inspectors reviewed the work

package, maintenance support evaluation 02-045, and the corresponding wiring diagrams. The inspectors also observed the activity verifying that controls were in place to protect the potential risk significant circuitry in the area.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed several operability determinations (OD's) in order to determine that the identified conditions did not adversely affect safety system operability or plant safety. The criteria specified in Generic Letter 91-18, "Resolution of Degraded and Non-Conforming Conditions," and NRC Inspection Manual Part 9900 "Operable/Operability-Ensuring the Functional Capability of a System or Component," were used to perform these reviews. In addition, where a component was determined to be inoperable, the inspectors verified the technical specifications limiting condition for operations implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- Steam generator (SG) water level low-low setpoint discrepancies at Seabrook. This issue was identified following a manual reactor trip at Diablo Canyon on February 14, 2002. Westinghouse, the manufacturer of the SG's, attributed the discrepancies to a previously unaccounted differential pressure drop created by steam flow past the mid-deck plate in the moisture separator section of the SG. The inspectors reviewed the licensee's assessment of this issue documented under CR 02-02124. The inspectors also reviewed applicable technical specifications and the final safety analysis report, and held several meetings with design and system engineers, to ensure that this issue was properly evaluated and adequate corrective actions were implemented.

In addition, the inspectors reviewed CR 02-03746, which documented the effects that this issue had on the SG low-low-low setpoint that actuates the manual reactor trip non-safety-related AMSAC (automatic transient without scram mitigating system actuation circuitry) system.

- OD 01-06360, which evaluated the effects of excessive component cooling water (CCW) flows to lubricating oil heat exchangers for several safety-related pumps such as residual heat removal, safety injection, and containment building spray. The inspectors performed field walkdowns of the applicable flow instrumentation, and reviewed the CCW system pump curves to confirm the evaluation conclusion that erosion of the cooler tubes was not a concern.
- OD 02-03389, which evaluated unexpected debris identified in two outlet nozzles associated with the safety related cooling tower spray header piping. The inspectors reviewed applicable technical specifications, the final safety analysis report, and the service water system flow performance test to demonstrate that

the existing condition did not affect system performance. The inspectors also reviewed previously completed system performance tests to ensure that there were no negative trends in system performance.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed the licensee's current listing of operator work-arounds and operator impact items and verified that they were properly tracked and scheduled for completion based on the priority and impact on the plant. The inspectors evaluated whether the work-arounds adversely impacted the ability of the operators to implement emergency procedures or respond to plant transients. The inspectors examined the Operations Administrative Instruction OAI.20 "Operations Work-arounds and Operational Impact Items," Rev. 16 to verify that the licensee would adequately address the cumulative effects of these work-arounds on the operation, reliability, and availability of affected systems. The inspectors also reviewed selected CRs and a self assessment completed under CR 01-0527, "Aggregate Review of Operator Work-around/Impact Items."

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

.1 Resident Periodic Inspection

a. Inspection Scope

The inspectors reviewed DCR 01-005, which initiated partial installation of associated wiring and magnetic pickups for a new governor on the "B" EDG. Additionally, the inspectors reviewed portions of the work package (01W001908), and some of the corresponding wiring diagrams. The inspectors observed portions of the installation activities, performed visual inspections of the EDGs, and interviewed the EDG system engineer. The inspectors also observed the activity verifying that controls were in place to protect the risk significant circuitry and other components in the area.

The new governor will allow slow starts of the EDG. This will minimize premature wear of components that was caused by fast starts during required surveillance testing. Installation of a new governor is one of the corrective actions from the root cause evaluation of the November 2000 "B" EDG failure.

b. Findings

No findings of significance were identified.

.2 Biennial Review

a. Inspection Scope

The inspectors reviewed nine selected risk-significant plant modification packages to verify that: (1) the design bases, licensing bases, and performance capability of risk significant Structures, Systems or Components had not been degraded through modifications; and, (2) modifications performed during increased risk configurations did not place the plant in an unsafe condition.

For the selected modifications, the inspectors reviewed the design inputs, assumptions, and design calculations, such as instrument set-point and uncertainty calculations, to determine design adequacy. The inspectors also reviewed: (1) design change notices (field changes) that were issued during installations to determine proper installations of the components; and, (2) post-modification testing and instrument calibration records to determine readiness for operations. Finally, the inspectors reviewed the affected procedures, drawings, design basis documents (DBDs), and UFSAR sections to verify that the affected documents were appropriately updated.

For the accessible components associated with the modifications, the inspectors walked-down the systems to detect possible abnormal installation conditions.

The following modification packages were reviewed:

| | |
|--------------|--|
| DCR 98-0009 | RF06 Motor-Operated Valve Design Changes; |
| DCR 01-0014 | 345 kV High Voltage Termination Yard Air Entrance Bushings and SF6 Bus Duct Modifications; |
| DCR 96-016 | PCCW Heat Exchanger Replacement; |
| DCR 98-039 | Control Building Air-Conditioning Chiller Replacement Project, Safety Related; |
| DCR 00-0017 | FJ Circuit Breaker Replacement the Fuses; |
| DCR 99-002 | RHR Suction Isolation Valve Interlock; |
| MMOD 97-0579 | EDG Lube Oil Temperature Control Valve Enhancements; |
| MMOD 00-0560 | Elgar Inverter Analog Logic Circuit Board Modification; |
| MMOD 00-0556 | Modifications to Actuators For MS-V-393,294,395. |

Of the nine plant modifications reviewed, one modification was in the initiating event cornerstone, six were in the mitigation cornerstone, and two were in the barrier integrity cornerstone.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed several post-maintenance testing (PMT) activities to ensure: 1) the PMT was appropriate for the scope of the maintenance work completed; 2) the acceptance criteria were clear and demonstrated operability of the component; and 3) the PMT was performed in accordance with procedures. The following PMTs were reviewed:

- On March 1, the inspectors verified that leak checks on the compressor and motor current readings were within expected/allowable limits for WO 99C7033, “A” EDG air start compressor swapout.” The inspectors also reviewed issues identified in CR 02-02645.
- On March 8, OX1426.05, “EDG “1B” Operability Test,” Rev. 8, following implementation of DCR 01-005, for partial installation of the new EDG governor.
- On March 12, IS1684.132, “F -1906 Steam Generator C Blowdown Flow Calibration,” Rev.1, following replacement of the flow transmitter per minor modification (MMOD 97-0665).
- On March 14, OX1405.07, “Safety Injection Quarterly And 18 Month Pump Flow And Valve Test,” after replacement of the “B” safety injection pump lubricating oil cooler per work request WO 01B8760. The inspectors also reviewed CR 02-03404 which documented a small component cooling water leak identified during testing.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed portions of surveillance testing activities or performed documentation reviews of completed surveillance testing activities of safety-related systems. These observations or reviews were performed to verify that the systems and components were capable of performing their intended safety function, to verify operational readiness, and to ensure compliance with required technical specifications and surveillance procedures.

The inspectors performed system and control room walkdowns, observed operators and technicians performing test evolutions, reviewed system parameters, and interviewed the system engineers and field operators. The following surveillance procedures were reviewed:

- On March 21, OX1416.04, “Service Water Quarterly Pump And Discharge Valve Test and Comprehensive Pump Test,” Rev. 9 for the “C” service water pump.
- Testing of the “A” and “B” cooling tower pumps on March 15, to verify that debris identified in two of the cooling tower spray header nozzles did not affect system

performance. The surveillance tests were performed per OX1416.05, "Service Water Cooling Tower Pumps Quarterly And 2 Year Comprehensive Test," Rev. 7 and OX1416.06, "Service Water Discharge Valves Quarterly Test And 18 Month Position Verification," Rev. 5.

b. Findings

No findings of significance were identified.

2. **Radiation Safety**
Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas

a. Scope

During the period February 25 to 28, 2002, the inspectors conducted the following activities to verify that the licensee was properly implementing physical and administrative controls for access to locked high radiation areas and other radiologically controlled areas. The inspectors verified that workers were adhering to these administrative controls when working in these areas. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and the licensee's procedures.

- Independent radiation surveys were performed in areas of the Primary Auxiliary Building, Mechanical Penetration Area, Decay Heat Vaults, and Waste Processing Building. These surveys were used to confirm the accuracy of survey maps, and assess the adequacy of radiation work permits, associated controls, and area postings. Keys to Technical Specification Locked High Radiation Areas (TSLHRA) were inventoried and these areas were verified to be properly secured and posted during plant tours.
- The inspectors reviewed pertinent information regarding cumulative personnel exposure history for 2001, current exposure trends, and recent emergent maintenance activities to assess the licensee's effectiveness in controlling worker's dose. Included in this review were the ALARA Reviews (ARs) and post-job reviews for the on-line leak repair to the "A" steam generator manway (AR 01-01) and the on-line thrust bearing replacement to a thermal barrier component cooling water pump (AR 02-17). Also reviewed were three ALARA Evaluations for recent tasks resulting in less than one person-rem of exposure.
- On February 27, 2002, the inspectors observed a pre-job RWP (No.02-00010) briefing for a routine containment entry. The inspectors reviewed containment radiation survey maps and interviewed selected workers on their knowledge of the job site radiological conditions and electronic dosimetry alarm set points.
- The inspectors examined the recently installed camera/remote radiation monitoring system in the Waste Processing Building. The Radwaste

Performance Program Coordinator was interviewed regarding the effectiveness of the system in minimizing worker exposure when processing radwaste.

- The inspectors attended daily Health Physics Department staff meetings to assess the management controls for work in radiologically controlled areas.
- The inspectors reviewed CRs relating to the control of personnel exposure and work activities to determine if the issue was identified in a timely manner and that appropriate actions were taken to evaluate and resolve the issue. The regulatory and safety significance of each issue was also evaluated. Included in this review were CRs 02-2598, 02-2277, 02-1528, 02-1380, 02-1378, 02-1197, 02-890, 01-12398, 01-11468, 01-9678, and 01-9236.

Additionally, in evaluating the effectiveness of the licensee's problem identification program, the inspectors reviewed Radiation Protection shift logs, Radiation Safety Committee meeting minutes, relevant self assessments, and a Nuclear Oversight Audit report (No. 02-A01-01).

b. Findings

No findings of significance were identified.

2PS1 Gaseous and Liquid Effluents

a. Inspection Scope

The inspectors reviewed the following documents to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs. The requirements of the radioactive effluent controls were specified in the Technical Specifications (TS) /the Technical Requirements Program (TRP) 5.2/ the Offsite Dose Calculation Manual (ODCM):

- 2000 Radiological Annual Effluent Release Report and Radiation Dose Assessment Reports;
- review of the current ODCM (Revision 22, October 19, 2001) and technical justifications for ODCM changes made;
- ODCM updating process, including technical justifications;
- selected analytical results for charcoal cartridge, particulate filter, and noble gas samples;
- selected analytical results for radioactive liquid and particulate composite samples;
- implementation of the compensatory sampling and analysis program when the effluent radiation monitoring system (RMS) is out of service;
- 2002 radioactive liquid and gaseous effluent release permits, required by TRP5.2-6.0 and TRP5.0-7.0;
- implementation of the NRC Bulletin 80-10 sampling program;
- associated effluent control procedures, including analytical laboratory procedures;

- calibration records for laboratory measurements equipment (gamma and liquid scintillation counters);
- implementation of the measurement laboratory quality control program, including effluent intra-laboratory and inter-laboratory comparisons and control charts;
- self-assessments for effluent control programs (00-117; 00-0140; and 01-0558);
- review of the following Condition Reports (CR Nos: 01-03037; 01-04573; 01-06323; 01-08568; 01-09507; 02-00845; 02-01350; 02-01463; 02-01532; and 02-02296) and corrective actions;
- 2001 QA audit (Audit No. 01-A06-01) for the radiological effluent control/ODCM implementations;
- the most recent surveillance testing results (visual inspection, delta P, in-place testings for HEPA and charcoal filters, air capacity test, and laboratory test for iodine collection efficiency) for:
 - TS 3/4.6.5 Containment Enclosure Emergency Air Cleanup Systems;
 - TS 3/4.7.6 Control Room Emergency Makeup Air and Filtration Systems;
 - TS 3/4 9.12 Fuel Storage Building Emergency Air Cleanup Systems; and
 - UFSAR 9.4.3 Primary Auxiliary Building Exhaust Systems.
- the most recent Channel Calibration and Channel Operational Test results for the radioactive liquid and gaseous effluent radiation monitoring system (RMS) and its flow measurement devices as listed in Tables A.5.1-2 and A.5.2-2 of the TRP5.2:

RMS

- liquid radwaste test tank discharge monitor (R-6509);
- steam generator blowdown flash tank drain monitor (R-6519);
- turbine building sumps effluent line monitor (R-6521);
- primary component cooling water system monitors (R-6515 and R-6516);
- gaseous waste processing system noble gas monitor (R-6503 and R-6054); and
- plant vent noble wide range gas monitor (R-6528).

Flow Measurement Device

- liquid radwaste test tank discharge;
- steam generator blowdown flash tank drain;
- plant vent noble wide range gas flow rate monitors (Table A.5.2-1, Instruments 2.d and 2.e); and
- rate of change monitor for the primary component cooling water system.

The inspectors toured and observed the following activities to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs:

- walkdown to determine the availability of radioactive liquid/gaseous effluent RMS and to determine the equipment material condition;
- walkdown to determine the operability of air cleaning systems and to determine the equipment material condition; and
- the observation of radioactive liquid, air filter and charcoal cartridge sampling and preparation for gamma spectrometry measurements

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

.1 Occupational Exposure Control Effectiveness

a. Scope

The inspectors reviewed implementation of the licensee's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspectors reviewed CRs and associated documents, for occurrences involving locked high radiation areas, very high radiation areas, and unplanned personnel exposures. This inspection reviewed the PIs against the criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 2, to verify that all occurrences that met the NEI criteria were identified and reported.

b. Findings

No findings of significance were identified.

.2 High Head Safety Injection (HHSI), Residual Heat Removal (RHR), Emergency Feedwater (EFW), and Emergency AC Power, Emergency Diesel Generators (EDG) Systems Unavailability

a. Inspection Scope

The inspectors selectively examined records used by the licensee to identify safety systems unavailability, which are used to monitor the readiness of important safety systems to perform their intended functions in response to off-normal events or accidents.

The inspectors reviewed the PIs for the HHSI, RHR, EFW, and EDG systems for the time period from July 1 to December 30, 2001, against the applicable criteria specified in NEI 99-02 to verify that all conditions that met the NEI criteria were recognized and identified. The inspectors reviewed records including quality assurance surveillance reports, corrective action program records, control room operators' logs, and PI data summary reports. The inspectors also reviewed, in detail, the operator logs and operations procedures completed during October and December 2001. The inspectors interviewed system engineers and operators to ensure that proper compensatory measures were taken when equipment was declared inoperable but available.

b. Findings

No findings of significance were identified.

.3 (Closed) URI 50-443/01-08-01: Auxiliary Feedwater System Unavailability Performance Indication - Evaluating the Turbine Driven Emergency Feedwater Pump Failure to Run Fault Exposure Time

The licensee concluded that the fault exposure time for a March 5, 2001 pump failure should have been included in the performance indicator and submitted the additional hours during their quarterly submittal. The licensee withdrew their frequently asked questions for this issue. The additional hours did not result in crossing a risk significance threshold and therefore this is a minor issue.

40A2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed CRs associated with 10 CFR 50.59 issues and plant modifications to ensure that the licensee was identifying, evaluating, and correcting problems associated with these areas and that the corrective actions were appropriate. The inspectors also reviewed five self-assessments related to 10 CFR 50.59 and plant modification activities.

Additionally, the inspectors reviewed a CR which the licensee issued after the inspectors identified a minor issue associated with an Updated Final Safety Analysis Report update. The inspectors determined that the licensee had appropriately described the problem and entered it into their corrective action program.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

a. Inspection Scope

On February 24 thru 27, 2002, a regional security specialist conducted a walkdown of the Protected Area and vehicle barriers, the intrusion alarm and alarm assessment systems, and all defensive positions. The specialist also conducted a review of the Owner Controlled Area controls put in place as the result of NRC security advisories issued since September 11, 2001. The security specialist interviewed security officers and security management relative to changes made in the security posture since September 11, 2001.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on April 5, 2002, following the conclusion of the period. The licensee acknowledged the observations presented. The inspectors asked the licensee whether any materials evaluated during the inspection were considered proprietary. No proprietary information was identified. Each specialist inspector conducted an exit meeting with licensee management at the conclusion of their onsite inspection.

.2 Site Management Visit

End-of-Cycle Performance Meeting

On March 29, 2002, Mr. A. Randolph Blough, Director, Division of Reactor Projects, and Mr. Curtis Cowgill, Branch Chief, Division of Reactor Projects, Branch 6, conducted the Seabrook annual assessment meeting with Mr. Ted Feigenbaum and other members of licensee management.

ATTACHMENT**SUPPLEMENTAL INFORMATION**a. Key Points of Contact

| | |
|-----------------|--|
| B. Brown | Design Engineering Supervisor |
| M. Debay | Assistant Operation Manager |
| W. Cash | Health Physics Department Manager |
| P. Freeman | Manager, Nuclear Design Engineering (Electrical) |
| R. LeGrand | Manager, Work Control and Outages |
| W. Leland | Manager, Chemistry/Health Physics |
| T. Nichols | Manager, Plant Engineering |
| S. Perkins-Grew | Manager, Emergency Preparedness |
| J. Peschel | Manager, Regulatory Programs |
| B. Plummer | Manager, Operations |
| D. Roy | Manager, Nuclear Training |
| R. Sherwin | Manager, Maintenance |
| J. Sobotka | Manager, Oversight |
| G. St. Pierre | Station Director |
| P. Stroup | Director, Service |
| J. Vargas | Director, Engineering |
| R. White | Manager, Nuclear Design Engineering (Mechanical) |

b. Items Opened, Closed, and DiscussedClosed:

50-443/01-08-01 URI Auxiliary Feedwater System Unavailability Performance Indication - Evaluating the TDEFW Pump Failure to Run Fault Exposure Time.

c. List of Acronyms Used

| | |
|-------|--|
| AE | ALARA Evaluation |
| AMSAC | ATWS Mitigating System Actuation Circuitry |
| AR | ALARA Review |
| ATWS | Automatic Transient Without Scram |
| CCW | Component Cooling Water |
| CFR | Code of Federal Regulation |
| CR | Condition Report |
| DBD | Design Basis Document |
| DBT | Design Basis Threat |
| DCR | Design Change Request |
| DCN | Design Change Notice |

c. **List of Acronyms Used** (Continued)

| | |
|--------|---|
| EDG | Emergency Diesel Generator |
| EFW | Emergency Feedwater |
| HEPA | High-Efficiency Particulate Air (filter) |
| HHSI | High Head Safety Injection |
| HPSTID | Health Physics Study/Technical Information Document |
| IP | Inspection Procedure |
| kV | Kilovolt |
| MMOD | Minor Modification |
| NEI | Nuclear Energy Institute |
| NFPA | National Fire Protection Association |
| NRC | Nuclear Regulatory Commission |
| OD | Operability Determinations |
| ODCM | Offsite Dose Calculation Manual |
| PARS | Publicly Available Records |
| PCCW | Primary Component Cooling Water |
| PI | Performance Indicator |
| PMT | Post Maintenance Testing |
| QA | Quality Assurance |
| QC | Quality Control |
| RAT | Reserve Auxiliary Transformer |
| RCA | Radiologically Controlled Area |
| RHR | Residual Heat Removal System |
| RWP | Radiation Work Permit |
| SDP | Significance Determination Process |
| SG | Steam Generator |
| SSC | Structure, System, or Component |
| TRP | Technical Requirements Program |
| TS | Technical Specifications |
| TSLHRA | Technical Specification Locked High Radiation Area |
| UFSAR | Updated Safety Analysis Report |

PARTIAL LIST OF DOCUMENTS REVIEWED**PROCEDURES:**

| | |
|-------------------|---|
| HD0955.53, Rev 00 | Use of AMS-4 |
| HD0958.03, Rev 23 | Personnel Survey and Decontamination Techniques |
| HD0958.17, Rev 12 | Performance of Routine Radiological Surveys |
| HD0958.30, Rev 23 | Inventory and Control of Locked or Very High Radiation Area Keys and Locksets |
| HD0963.02, Rev 13 | Administrative Guidelines for Health Physics Instrumentation |
| HD0992.02, Rev 28 | Issuance and Control of Personnel Monitoring Devices |
| HN0951.04, Rev 06 | Health Physics Repetitive Tasks |
| HN0958.13, Rev 25 | Generation and Control of Radiation Work Permits |

| | |
|-------------------|--|
| HN0958.25, Rev 25 | High Radiation Area Controls |
| JD0999.910, Rev 0 | Reporting Key Performance Indicators |
| RP 2.1, Rev 15 | General Radiation Worker Instruction and Responsibilities |
| RP 9.1, Rev 16 | RCA Access/Egress Requirements |
| RP 9.2, Rev 6 | Radiological Access Requirements to Containment Area |
| RP 15,1, Rev 15 | Job Pre-Planning and Review for Radiation Exposure Control |

ALARA EVALUATIONS:

Limittorque Actuator Inspections
 Calibration of sump pump WLD-P-5
 Transfer of Tri-Nuc filters for the Fuel Storage Building to the Waste Process Building

RSC MINUTES:

Radiation Safety Committee Meeting Minutes Nos. 01-04 and 01-05

DEPARTMENTAL SELF-ASSESSMENTS:

Self-Assessment 02-0104, Protective Clothing Optimization
 Self-Assessment 01-0399, Annual Forms Audit
 Self-Assessment 01-0532, Radiation Protection Technology Workshop Applications
 Self-Assessment 01-0289, Annual Radiation Protection Program Review
 Self-Assessment 01-0123, Radioactive Material Control
 Self-Assessment 01-0050, Health Physics Training Effectiveness

HEALTH PHYSICS STUDY/TECHNICAL INFORMATION DOCUMENT (HPSTID)

| | |
|---------------|--|
| HPSTID-01-014 | Determining Contact Dose Rates on Dewatered 8-120 Resin HIC's from Remote AMP-100 Readings |
| HPSTID-02-001 | FILTRK Filter Surveys Revisited |

QA AUDITS/SURVEILLANCES:

Nuclear Oversight Audit Report No. 02-A01-01, "Radiation Protection"

OTHER

Spent Fuel Pool Inventory Record

10 CFR 50.59 Safety Evaluations

| | |
|----------------------|--|
| DCR 98-0009 (DCN 16) | RFO6 Motor-Operated Valve Design Changes |
| DCR 01-0014 (DCN 05) | 345kV High Voltage Termination Yard Air Entrance Bushings & SF6 Bus Duct Modifications |
| DCR 96-016 (DCN 26) | PCCW Heat Exchanger Replacement |
| DCR 98-039 (DCN 84) | Control Building Air-Conditioning Chiller Replacement Project, Safety Related |
| DCR 00-0017 (DCN 02) | FJ Circuit Breaker Replacement the Fuses |
| DCR 99-002 (DCN00) | RHR Suction Isolation Valve Interlock |

10 CFR 50.59 Safety Screens

| | |
|-----------------------|---|
| MMOD 97-0530 (DCN01) | Replacement Capacitor for Power Supply in Emergency Power Sequencer Panels, 1-DG-CP-79 & 1-DG-CP-80 |
| MMOD 98-0573 (DCN08) | 345kV Breaker Upgrade |
| MMOD 99-0529 (DCN 05) | 345 kV Breaker Re-closer Relay Replacement |
| MMOD 00-0528 (DCN 00) | Replacement Capacitor & Inductor for Westinghouse Invertors 1-EDE-I-1A, B, C and D |
| MMOD 00-0550 (DCN 00) | Inverter EDE-I-1A, 1B, 1C, 1D Circuit Board Substitution |
| MMOD 00-0560 (DCN 00) | Elgar Inverter Analog Logic Circuit Board Modification |
| MMOD 99-0564 (DCN 07) | DG Air Start Solenoid Mech/Elect Connection Enhancements. |
| MMOD 98-682 (DCN 03) | EFW Pump Discharge Check Valve Replacement |
| MMOD 99-514 (DCN 01) | MSIV Main Steam Dump Valve Modification |
| MMOD 98-0599 (DCN 03) | EFW Turbine Overspeed Trip Test Jumper. |
| MMOD 00-0556 (DCN 03) | Modification to Actuators for 1-MS-V-393, 1-MS-V-394 and 1-MS-V-395. |
| MMOD 98-682 (DCN 03) | EFW Pump Discharge Check Valve Replacement |
| MMOD 97-0579 (DCN 01) | Diesel Generator Lube Oil Temperature Control Valve Enhancements |
| MMOD 99-0565 (DCN 01) | Containment Building Level Instrument Modifications |

Procedures

Design Control Manual (NADC), Revision 19
 Regulatory Compliance Manual (NARC), Revision 76
 LS 0556.13, UPS MISC. Setpoints UPS 1-EDE-I-1E & 1-EDE-I-1F, Revision 1
 LS 0569.16, Testing Rising Stem MOVs Using the NAESCO Method, Revision 4
 MS 0519.21, Valve Packing Maintenance, Revision 7

Condition Reports (CRs)

CR 00-05397
 CR 01-02115
 CR 02-00549
 CR 02-00553
 CR 02-02456
 CR 02-03353
 CR-00-11860
 CR-01-02619
 CR 01-13361
 CR 01-09658
 CR 01-12751
 CR 01-15752
 CR 02-02913

Self Assessments

SA 01-0100 Design Change Quality, July 11, 2001
 SA 01-0101 RFO7 Design Change Notice Lessons Learned, September 6, 2001
 SA 01-0108 Maintenance Support Evaluations, September 7, 2001
 SA 01-0129 Assessment of DCR 99-0036, IST Pressure Gages, April 26, 2001
 SA-01-0423 Revised 10 CFR50.59 Implementation

Drawings

1-NHY-309702 345 kV Switching Station Key Interlocking Diagram, Rev. 8
 1-NHY-309711 345kV Three Line Diagram Bay No. 1 Cable Schematic, Rev. 8
 1-NHY-309712 345 kV Three Line Diagram Bay No. 2 Cable Schematic, Rev. 3
 1-NHY-309713 345 kV Three Line Diagram Bay No. 3 Cable Schematic, Rev. 4
 1-NHY-310231 UPS Misc. Setpoints UPS 1-EDE-I-1E & 1-EDE-I-1F., Sh. 153, Rev. 1
 1-SY-B200022 345 kV Switching Station SF6 Gas System Diagram Details,
 Rev. 6

Calculations

80785-06 Vendor Calculation for 345 kV Cable Differential Relay Setting, November 16,
 2001
 Cal 5-SP-1F Instrument Setpoint Calculations for RC-PB-403A and -405A, September 28,
 1999