ENCLOSURE 2

ERRATA

PLEASE BE ADVISED OF A CORRECTION IN THE SALP REPORT NUMBER.

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REPORT AS 86-99 INSTEAD OF 85-98.

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

INSPECTION REPORT 50-443/85-98

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK STATION, UNIT 1

ASSESSMENT PERIOD: JANUARY 1, 1985 - MARCH 31, 1986

BOARD MEETING DATE:

MAY 14, 1986

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I. INTRODUCTION

A. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant construction and operation.

An NRC SALP Board, composed of the staff members listed below, met on May 14, 1986 to review the collection of performance observations and data and to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance". A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee's performance at the Seabrook Station for the period January 1, 1985 through March 31, 1986. This SALP differs significantly from previous Seabrook Station assessments. For the entire assessment period, Unit 2 has been in an "indeterminate" status with licensee work confined to preventive maintenance, preservation and protection activities and the construction completion required to support Unit 1 operation. Therefore, licensee performance related to Seabrook Unit 2 has not been assessed, although some inspection (See Note in Table 2) has been performed of licensee efforts with regard to Unit 2. Also, construction related activities have been combined into one functional area with emphasis not so much on the individual disciplines, but more upon constuction completion and readiness for operation. New functional areas were added to address other plant operations and readiness aspects of licensee performance.

B. SALP Board:

Chairman:

W. F. Kane, Deputy Director, Division of Reactor Projects (DRP)

Board Members

T. Martin, Director, Division of Radiation Safety and Safeguards (DRSS)
S. Ebneter, Director, Division of Reactor Safety (DRS)
E. Wenzinger, Chief, Projects Branch No. 3, DRP
T. Elsasser, Chief, Reactor Projects Section 3C, DRP
V. Nerses, Project Manager, PWR Project Directorate 5, NRR
A. Cerne, Senior Resident Inspector

Other Attendees

W. V. Johnston, Deputy Director, DRS
J. R. Johnson, Chief, Operational Programs Branch, DRS
W. J. Lazarus, Senior EP Specialist, DRSS
J. R. McFadden, Radiation Specialist, DRSS
D. Ruscitto, Resident Inspector
M. M. Shanbaky, Chief, Facilities Radiation Protection Section, DRSS
R. W. Starostecki, Director, DRP (Part Time)

C. Background

Public Service Company of New Hampshire (PSNH) applied for a license to construct and operate the Seabrook Station (DNs 50-443 and 50-444) on July 9, 1973, and was issued Construction Permits (CPPR-135 and CPPR-136) on July 7, 1976. Each reactor is a Westinghouse four-loop, PWR rated at 1198 MWe and is housed in a reinforced concrete containment structure. The units are arranged using a "slide-along" concept with certain structures common to both units. PSNH has contracted with the Yankee Atomic Electric Company (YAEC) for services which include project administration, facility design control, construction coordination, quality assurance, and licensing. For the purpose of this report, these YAEC services are considered synonymous with PSNH activities.

On June 23, 1984 the New Hampshire Yankee Division (NHY) of PSNH was created with the primary responsibility for construction of Seabrook Station. While some of the organizational interfaces and responsibilities between PSNH and YAEC have been restructured to accommodate the formation of NHY, at this time, PSNH continues to retain overall responsibility for all activities related to Seabrook, as is specified in the Construction Permits. Proposed organizational changes seeking to name the New Hampshire Yankee Electric Corporation (i.e., NHY incorporated and separated from PSNH) as the new managing agent for Seabrook Station have not yet been effected. Thus, use of the generic term ("licensee") in this SALP currently constitutes recognition of not only the ultimate responsibility of PSNH, but also the specific duties of both NHY and YAEC.

a. Licensee Activities

At the beginning of this SALP assessment period, the licensee projected Unit 1 construction to be 83% complete. The site work force, still building up from the 1984 work suspension, numbered about 2500 personnel, 1400 of whom were craft. As construction continued, priorities were directed to the support of preoperational testing and the completion of major milestone activities. In this regard, major testing progressed through the period with the conduct of the Reactor Coolant System Hydrostatic Test in April, 1985; Hot Functional testing during November, 1985; and Engineered Safety Features

testing, Loss of Offsite Power testing and the Containment Structural Integrity and Integrated Leak Rate testing in early 1986. Additionally, six plant buildings were completed and turned over to the control of the plant staff.

By the end of the assessment period, only 3% of the plant systems remained in a construction status awaiting turnover to the startup test staff. The remaining construction work, not yet substantially complete, includes insulation and fire sealant installation, painting, activities in support of the remaining preoperational testing, building turnover, and design modification rework. Preservice inspection, ASME Code stamping, and piping and pipe support stress reconciliation programs are also continuing. The construction work force, as of March 31, 1986 was approximately 3500 personnel, about 2200 of whom were craft. The licensee estimates Unit 1 to be 98% complete.

Other licensee activities during this SALP period included continued operator licensing, emergency preparedness, and operational readiness planning and program reviews. New fuel was initially received on site in February, 1986 and an Emergency Drill, exercising NRC, the State of New Hampshire and licensee response, was also conducted in February, 1986. As of March 31, 1986, a station staff in excess of 500 personnel, in addition to a New Hampshire Yankee corporate staff, were in residence at the Seabrook site.

The licensee projects a Fuel Load Date (FLD) of June 30, 1986 for Seabrook Unit 1.

b. Inspection Activities

Two NRC resident inspectors were assigned throughout the assessment period with a third inspector assigned on site since May, 1985. A total of 53 inspections were performed with 7912 hours dedicated to the inspection of Unit 1 activities. This corresponds to 6330 hours on an annualized basis. An additional twelve hours were utilized to confirm licensee preventive maintenance, preservation and protection efforts on Unit 2. NRC inspections conducted during this SALP period are functionally categorized below, with the five types of team inspections listed separately by their unique scope.

Region I Specialist Inspections	Number
Construction	8
Preoperational Testing	15
Fire Protection	2
Operational Readiness	4
Radiological Controls	3
Security	3
Emergency Preparedness (EP)	1

Operator Licensing	2
Resident Inspections	9
Team Inspections	
Management Reorganization	1
NDE Independent Measurements	1
EP Appraisal	2
Safe Shutdown (Appendix R)	1
As-Built Plant	1

The nine resident inspections noted above represent continuous on-site coverage of licensee activities throughout this assessment period. A distribution of inspection hours, by functional area is shown in Table 2. Enforcement data, resulting from these inspection activities, are summarized in Table 3.

This report also discusses the "Assurance of Quality" as a separate functional area. Although this topic is assessed in the other functional areas as one of the evaluation criteria, discussion of this area separately provides a synopsis. For example, quality assurance effectiveness has been assessed on a day-to-day basis by resident inspectors and as an integral aspect of specialist inspections. Although quality work is the responsibility of every employee, one of the management tools to measure this effectiveness is reliance on quality assurance inspections and audits. These and other major factors that influence quality, such as involvement of first-line supervision, safety committees and worker attitudes, are discussed in each area.

c. Other Activities

An NRC Caseload Forecast Panel visit to Seabrook was conducted on September 4-5, 1985 to assess the status of Unit 1 construction. Their review found the June 30, 1986 fuel load date (FLD) to be reasonable, but recognized that funding and schedular uncertainties, known to exist at that time, made the achievement of fuel load during the third quarter of CY 1986 more likely.

It is noted that subsequent to the Caseload Forecast Panel visit to Seabrook, the joint owners of Seabrook Station voted to authorize full-construction funding and proceed with all scheduled construction activities, effective October 1, 1985.

The EPA permit, granting final approval for use of the ocean cooling tunnels, became effective August 25,1985. Testing of the circulating water system commenced that same day.

The NRC Special Nuclear Materials License No. SNM-1963 (Docket No. 70-3027), authorizing the receipt, possession, inspection and storage of fuel assemblies and other radioactive materials for eventual use at Seabrook Unit 1, was issued on December 19, 1986. Initial fuel receipt and storage on site, in accordance with the provisions of the 10CFR70 license, commenced in February, 1986.

A Prehearing Conference for the EP phase of the ASLB hearings was conducted in Portsmouth, New Hampshire on March 25-26,1986. In accordance with the ASLB Memorandum and Order, dated January 17, 1986, the hearings for New Hampshire Offsite Emergency Planning Contentions are scheduled to commence on July 21, 1986.

The "Proof & Review" edition of the Seabrook Technical Specifications (TS) was issued for comment in late March, 1986. The licensee, Region I and the Office of NRR are currently involved in review activities for TS conformance to FSAR commitments, plant-specific as-built conditions, and operational safety considerations.

II. CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in the construction, preoperational, or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Special areas may be added to highlight significant observations.

The following evaluation criteria, where appropriate, were used to assess each functional area.

1. Management involvement and control in assuring quality.

2. Approach to resolution of technical issues from a safety standpoint.

3. Responsiveness to NRC initiatives.

4. Enforcement history.

5. Reporting and analysis of reportable events.

6. Staffing (including management).

7. Training and qualification effectiveness.

Based upon the SALP Board assessment each functional area evaluated is classified into one of three performance categories. The definitions of these performance categories are:

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and reasonably effective so that satisfactory performance with respect to operational safety is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety is being achieved.

The SALP Board also assessed each functional area to compare the licensee's performance during the last quarter of the assessment period to that during the entire period in order to determine the recent trend for each functional area. The trend categories used by the SALP Board are as follows:

Improving: Licensee performance has generally improved over the last quarter of the current SALP assessment period.

Consistent: Licensee performance has remained essentially constant over the last quarter of the current SALP assessment period.

Declining: Licensee performance has generally declined over the last quarter of the current SALP assessment period.

Notwithstanding the allowance permitted by a Category 1 rating to reduce NRC attention, NRC oversight at Seabrook Station will be maintained at a high level if a low power license is issued. Due to the nature and scope of activities conducted during low power testing and power ascension, it is NRC policy that close scrutiny be provided for the first two years of operation. Subsequent SALP evaluation will therefore be done on a 12 month frequency irrespective of the good performance noted in this report.

III. SUMMARY OF RESULTS

A. Overall Facility Evaluation

During this assessment period, the licensee's overall performance reflected not only a commitment to safety and quality construction, but also evidence of effective planning and conduct of activities directed toward fuel load and safe operations thereafter. The inspection effort during this period was far in excess of that of previous SALP periods. An evaluation of a broad spectrum of licensee activities was necessary because of the nature of ongoing construction completion, preoperational testing, and operational preparedness activities. Hardware quality has been found to be in conformance with design requirements and system installation has met licensing commitments. The preoperational test program has confirmed the existence of quality construction with generally outstanding test results and minimal number of test exceptions. In almost all cases, a high level of performance was achieved with evidence of effective planning for those areas where program implementation could not yet be fully assessed. Management attention continued to be focused on improving those areas identified in the previous SALP period as potential problems. As a result, only minor problems were observed during the period.

Regarding operational preparedness, thorough planning and a high level of management attention to the readiness of plant hardware, programs, and procedures are very much in evidence. Licensed operator training and the preparation and receipt of new fuel are noteworthy examples of the effectiveness of the licensee's programs. Also, the licensee's development of the security program represents effective management planning to integrate experienced staff supervisors with a trained contract security force. In summary, where operational programs have been implemented, the quality exhibited during construction appears to have carried over during the transition process from construction into operations.

While licensee responsiveness to operational issues has been appropriately directed, it should be noted that these programs are still under development. Future inspection and assessment of the full program implementation will provide an ongoing measure of their effectiveness. As Seabrook Unit 1 now enters a new phase of program development, implementation, and work priorities, this overall facility evaluation should be considered both a positive reflection of past licensee performance, as well as an indicator of licensee potential for continued performance at a high level during the operational phase.

B. Facility Performance

FUNCTIONAL AREA	CATEGORY LAST PERIOD (7/1/83-12/31/84)	CATEGORY THIS PERIOD (1/1/85-3/31/86)	RECENT TREND*
Construction	2	1	Consistent
Preoperational Testing	1	1	Consistent
Fire Protection and Housekeeping	N/A	1	Consistent
Operational Readiness	N/A	1	Consistent
Emergency Preparedness	N/A	2	Improving
Assurance of Quality	1	1	Consistent (See Trend at the end of Section IV.F)
Licensing	2	1	Consistent

*Trend during the last quarter of the current assessment period.

IV. PERFORMANCE ANALYSIS

A. Construction (3788 hours, 48%)

1. Analysis

During the previous SALP assessment period, the following functional construction areas were evaluated and rated separately: Containment, Safety-Related Structures & Major Steel Supports (Category 1); Piping Systems & Supports (Category 2); Safety-Related Components-Mechanical (Category 2); Auxiliary Systems (Category 1); Electrical Equipment and Cables (Category 3); and Instrumentation (Category 2). The summary of these SALP results noted a significant improvement in the piping systems & supports area, but declining trends in the electrical and instrumentation areas because of apparent programmatic problems. Management attention to routine problems (e.g., housekeeping) was solicited to: (1) correct deficiencies, and (2) provide direction to an improvement in the trend in this area. During the previous SALP period it was also noted that positive steps had been taken in the way of a project restructuring and organizational realignment to eliminate some of the interface and control difficulties which had been identified as the root cause of several problem areas.

During this current assessment period all construction disciplines have been combined under one functional area. In recognition of both the management reorganization, which started during the previous SALP period, and the problems raised by the previous SALP, a Construction Team Inspection (CTI) was conducted in June, 1985 to assess the effectiveness of the resumption of construction activities under the new site organization. Particular inspection emphasis was placed upon the electrical and instrumentation areas, as well as engineering interface controls, where problems had previously been identified. The results of this CTI (three violations, three weaknesses, and three strengths) provided no indication of programmatic deficiencies. In fact, the site management organization (i.e., the area directed by the CTI scope to be the focal point of inspection effort) was identified as a licensee program strength.

The CTI findings, when analyzed in conjunction with the enforcement data and negative observations from other construction inspections, appear to share one common attribute -- while process control, documentation, and identification failures were identified, these problems/errors did not appear to lead to an adverse impact on the hardware itself. It is noted that of the seven enforcement items grouped in this construction functional area, only one violation was found to result from deficient construction.

This theme of hardware installation and construction in compliance with design requirements and licensing commitments appears to be corroborated also by another more recent CTI. In March, 1986, an

As-Built Construction Team Inspection was conducted with a primary inspection focus on hardware. While two severity level V violations were identified, the summary conclusion of this inspection was that Seabrook Unit 1 was constructed in substantial agreement with the FSAR. Additionally, an NRC independent measurements inspection of 68 weldments, utilizing the Region I Mobile Nondestructive Examination (NDE) laboratory, in conjunction with a review of licensee radiographs for over 150 welds, identified no weld deficiencies or hardware problems.

The NDE van inspection in July, 1985 did document some concerns regarding the conduct of the Preservice Inspection (PSI) program at Seabrook Unit 1. An unresolved item was written to track several PSI questions involving data keeping, calibration, weld surface preparation and plans for ultrasonic (UT) examination of the loop cast stainless steel (SS) elbows. Subsequent NRC inspections noted adequate licensee resolution to most of these questions. A recent, joint NRR/Region I inspection of a demonstration of the UT technique planned for the loop cast SS elbows revealed not only technical acceptability, but responsiveness on the part of the licensee. The basic concerns regarding the PSI program, as raised by the NDE van inspection, have since been closed, although NRC follow-up of two specific items remains.

As in the case of the PSI issue, other NRC inspections in this functional area have raised questions more of a program and process control nature, than of the identification of improper construction. Such issues include the improper usage of selected revisions of ASME Code Cases, failure to implement commitments to Regulatory Guide (RG) 1.97, and the questionable adequacy of criteria for final building verification and cable tray testing qualification. For all of these items, licensee action to address the concerns has been complete and responsive.

For example, when problems were identified with the licensee adoption and documentation of certain ASME Code Cases, not only was a project position on ASME Code Case adoption and usage announced and disseminated, but also a complete review of all past and present Code Case usage was initiated. Both design and procurement specifications were checked. Such comprehensive corrective action was followed through by the licensee even though no evidence of material or construction defects existed as a result of the identified improper Code Case usage. In fact, licensee completion of their investigation, with subsequent NRC review, revealed the lack of any adverse hardware impact.

The status of construction during the current assessment period provided sufficient opportunity for the inspection of electrical and instrumentation activities, not only because by nature such work

is prevalent during the later stages of construction, but also because the previous SALP had raised some concerns in these areas. Thirteen NRC inspections examined either in-process or as-built work in these disciplines. Additionally, NRC team inspections reviewed such activities in conjunction with the scope of the CTI objectives. While some violations were identified, the overall findings of the NRC inspection effort into the electrical and instrumentation disciplines confirmed the general effectiveness of licensee corrective measures initiated during the latter part of the previous SALP period. Analysis of all the inspection items, not just enforcement data, indicates a consistent theme of concerns with process and design control issues with no evidence that the questioned controls had resulted in incorrect construction. While some of these issues remain open, licensee actions to address the questions appear to be pointed in the proper direction.

Similarly, an analysis of the CDRs (See Table 1) reported during this assessment period reveals no real trend of programmatic deficiencies in this construction functional area. NRC review of interim and final 10CFR50.55(e) reports, as applicable, and involvement in the in-process troubleshooting of several of these deficiencies has confirmed adequate liaison with the vendors and working interfaces among engineering, construction, and test personnel to expeditiously solve the known problem as well as investigate any generic impact.

Thus, in summary of the assessment of construction activities, significant NRC inspection effort has identified few hardware deficiencies and the licensee appears to have adequate control over their self-identified construction problems. While some concerns over process controls were noted, they appear to have received adequate licensee attention. One CTI near the beginning of the assessment period evaluated construction management and programs, while another CTI at the end of the period examined the as-built plant hardware. These team inspections, in concert with resident and specialist inspections over the course of the entire SALP period, verified implementation of a generally effective construction management program with resultant evidence of quality hardware, material, components and systems.

2. Conclusion

Rating: Category 1.

Trend: Consistent

3. Board Recommendation

None.

B. Preoperational Testing (2451 hours 31%)

1. Analysis

During the last assessment period, preoperational test activities were just commencing. NRC review of the preoperational test program verified adequate controls and program direction. One specific problem area was noted in that unauthorized work activities on components under the jurisdiction of the Startup Test Department (STD) were identified. The licensee responded with programmatic corrective action. A high level of performance was maintained in this area during the previous SALP period; however, this assessment was based upon a limited NRC inspection effort.

Over the course of the current assessment period, the bulk of preoperational testing for Seabrook Unit 1 was accomplished. NRC inspections devoted effort to the witnessing of tests in progress and the review of approved test procedures and test results. Significant tests conducted and witnessed by the NRC during this time period included the Reactor Coolant System (RCS) Hydrostatic test, the Reactor Protection System test, the integrated system Hot Functional Test (HFT), the Engineered Safety Features (ESF) and Loss of Offsite Power (LOP) tests, and the combined Structural Integrity Test (SIT) and Containment Integrated Leak Rate Test (CILRT). It is noteworthy that all of these tests, also being major schedular milestones, were provided significant management oversight to ensure conduct in concert with schedular presssures and other construction priorities. Despite a situation where the pressure for progress might be perceived to be contrary to the quality objectives of the test program, the subject tests were performed, witnessed and reviewed with generally outstanding results.

While the month-long HFT did result in some significant test exceptions requiring system redesign, the SIT/CILRT resulted in no test exceptions being noted and the RCS hydro identified only one RCS boundary leak (other than the expected flanged joints) in an instrument tube. NRC questions on ESF testing have been raised with regard to valve interlocks and safety-injection "S" signal reset design, but in each case the conduct of the test was found to agree with the system design, as stated in the FSAR. Thus, the NRC concerns related to design, not testing, issues. Similarly, for other testing activities (e.g., diesel generator operation), the problems that have arisen provided validation of the test objective itself. STD troubleshooting of some diesel generator air start problems (identified during Phase 1 testing in 1984) ultimately led to the discovery of an undersized diesel starting air vent line (reported as a 10CFR50.55(e) design deficiency in 1986 (see Table 1). This issue currently remains an open NRC inspection item. Another NRC inspection item on the diesel generators was a concern regarding the sequence of LOCA/LOP testing with respect to the 24 hour endur-

ance runs of the diesels, as per Regulatory Guide 1.108. This issue was satisfactorily resolved when the licensee agreed to duplicate stable diesel generator temperature conditions (as determined by the 24-hour run test) as an initial condition to the performance of the hot LOCA/LOP sequencing load test.

The most significant system problems identified, to date, during preoperational testing were noted during HFT. In particular, with respect to the Emergency Feedwater (EFW) system, a water hammer was experienced in the steam lines to the Terry Turbine and EFW recirculation and flow to the steam generator problems were noted; extensive system redesign was required. As was the case with other HFT problems (i.e., feedwater recirculation vibration, main steam bypass, steam dump, and steam generator blowdown exceptions), the system/component rework will be functionally retested during the startup hot functional testing, after core load, but prior to initial criticality. The licensee's coordination between its engineering, construction, and test staffs to effect the correct system redesign on the above items has been comprehensive. NRC personnel have been briefed and kept informed of all significant developments and NRC inspection relative not only to the above items, but all HFT activities resulted in no significant adverse findings.

While the HFT identified certain major items requiring retest, the remainder of the preoperational test program (i.e., Phase 2 & 3 tests) to date, represents a verification of system readiness for operations with relatively few problems. At any given time during this SALP period, as preoperational testing was conducted in accordance with the more than one hundred each preoperational and acceptance test procedures, the number of open test exceptions remained below 100 in number. Preoperational testing has, in general, met its objectives with respect to Unit 1 components and systems and in fact has identified several of the construction deficiencies, reported under 10 CFR 50.55(e), listed in Table 1. The trend for the number of remaining work items, as tracked on the licensee Incomplete Items List (IIL), is downward as the total items currently number less than 4000 for the first time since pre-HFT in mid-1985.

NRC inspection in this functional area has identified only one violation, although it was a repetitive item from the last SALP period involving an unauthorized work activity. Licensee corrective action has not yet been reviewed by the NRC, however, the STD record in the resolution of problems encountered to date in testing has been both comprehensive and complete. A high level of performance was found to exist in this functional area during the prior SALP period based upon limited data. During this SALP period, that high level of performance has been maintained over the course of the majority of preoperational test activities.

This evaluation corroborates the finding of a minimal number of actual hardware problems identified in the construction area. Licensee performance in this area reflects aggressive management involvement and serves as an impetus for the STD to sustain such a level of testing performance as construction is completed and operations and the startup testing phase commences.

2. Conclusion

Rating: Category 1.

Trend: Consistent

3. Board Recommendation

None.

C. Fire Protection and Housekeeping (296 hours, 4%)

1. Analysis

This area was not evaluated during the previous SALP period, although some housekeeping concerns were raised as they impacted the acceptability of safety-related components.

During this assessment period, a Region I team inspection was performed to evaluate the licensee's efforts to comply with the requirements of 10CFR50, Appendix R, concerning fire protection features necessary to ensure the ability to achieve and maintain safe shutdown in the event of a fire. Two Region I specialist inspections into the Fire Main Loop installation and the readiness of the Fire Protection Program, particularly as it related to fuel receipt onsite, were also conducted. Additionally, routine resident inspections have examined fireproof coating material applications, fire sealant installation, and cable separation and routing activities. Housekeeping, as appropriate to the status of the Unit 1 plant conditions during construction, testing and building turnover to the plant staff, were observed during random plant inspection-tours.

Electrical separation concerns have been raised during both this and previous SALP periods. Where nonconforming conditions have been identified (e.g., less than six inch wire spacing internal to panels), the licensee had committed to corrective rework to retrain and separate the cables/wires or install barriers, as required by the applicable IEEE Standards. However, a recent licensee submittal to NRR of an "Analysis of Electrical Separation Criteria for Seabrook Station" establishes the basis for the adoption of certain new separation criteria at Seabrook, as determined by analysis and testing. Thus, previous long-standing commitments for the correction of electrical separation deviations need not be implemented if NRR approves the licensee proposal to relax the separation criteria, based upon site-specific testing. Similarly, the Region I team inspection identified two Appendix R exemptions in the areas of emergency lighting and the reactor coolant pump oil collection system. Each of these exemptions requires further NRR review to determine the acceptability of the plant design and to resolve the open inspection items.

Generally, with respect to the Appendix R team inspection at Seabrook, both the corporate and site management were found to be aggressively pursuing fire protection issues to their proper resolution. The licensee's fire hazard analysis was thorough and detailed. The licensee has made several modifications to achieve compliance with Appendix R, Section III.G separation requirements. The licensee also had many redundant means of achieving a plant safe shutdown in the event of a fire, including two redundant Remote Shutdown

Panels whose adequacy was demonstrated through walkdowns of selected portions of the procedures to safely shut down the plant. Walkdowns have further demonstrated that procedures were well planned and adequate procedural training was given to the operators.

The inspections team's conclusion was that the licensee's fire protection program, when fully completed and implemented, will be adequate for its intended purpose. A major contributing factor is the rapport maintained by the fire protection staff and management and the increased awareness of the plant's personnel of fire protection concerns. Other NRC inspections of fire protection at Seabrook have confirmed this conclusion, even though one apparent deviation from FSAR commitments was identified. The installed Fire Loop hydrant isolation valves had not been procured as U.L. listed components, as was committed. The licensee, however, provided a comparison of the installed valves with similar U.L.-listed valves and demonstrated that the existing valves are acceptable for their intended service. Another inspection item identified a discrepancy between the SER and actual plant design with respect to the inability to start the fire pumps from the control room. This issue is being pursued by the licensee with the Office of NRR.

With respect to housekeeping at Seabrook Unit 1, both NRC CTIs (discussed in Section IV.A of this report) noted acceptable levels of site cleanliness. Resident inspections have noted that the acceptability of site housekeeping appears to be dependent upon the status of plant activities; construction areas require continual attention, buildings turned-over to the plant staff appear to be maintained in good order, and other plant areas appear to improve as the preoperational testing and turnover process progress.

The housekeeping problems raised during the past SALP appear to have been adequately addressed by plant management. Continued attention to this area, as well as to the resolution of the noted fire protection licensing issues with NRR, is necessary to provide a consistency to the licensee's approach to fire protection as the plant enters operations.

2. Conclusion

Rating: Category 1.

Trend: Consistent.

3. Board Recommendation

None.

D. Operational Readiness (743 hours, 9%)

1. Analysis

This functional area was evaluated in the previous assessment period only from the perspective of Operator Licensing. In that area, a Category 1 rating was assigned based upon evidence of a highly competent, technical training program and the resulting high pass rate of SRO/RO candidates in their initial licensing examinations. During the current SALP period, the functional area of Operational Readiness has been expanded to include consideration of procedures and staffing, radiological controls, and security, in addition to operator licensing. Analysis of each of these areas is discussed separately below.

a. Procedures and Staffing

During the current SALP period four separate Region I inspections were conducted in such areas as plant maintenance and surveillance procedures, design change and modification controls, and operational QA/QC program administration and controls. Resident inspections have examined the plant readiness for fuel receipt and storage, and licensee plans/implementation of their commitments to meet the TMI Action Plan requirements specified by NUREG-0737. Also, several IE Bulletins and Circulars, of an operational nature, sent to Seabrook Station for information only, were reviewed in conjunction with licensee measures to address the concerns raised by these generic documents.

No enforcement findings or unresolved safety issues have been identified as a result of these operational preparedness inspections, to date. Licensee attentiveness to an FSAR commitment to have the Fuel Building and the appropriate fuel handling and storage systems completed and tested prior to new fuel receipt onsite was noted. Scheduled fuel receipt was first delayed to allow time to meet such a commitment and subsequently, removal of the new fuel from the storage casks was further delayed to provide for additional testing of the fuel building ventilation systems. NRC inspection of the new fuel arrival, movement and storage revealed adequate security measures in place, the utilization of approved new fuel handling and inspection procedures, knowledgeable operations personnel, and general compliance with the provisions of the Special Nuclear Materials license issued by the NRC Office of NMSS.

NRC inspections of licensee plans for controlling specific operations programs for Measuring and Test Equipment (M & TE), calibration, inservice testing, material storage, records storage, procurement, safety review committees, and admini-

strative procedures all resulted in a finding of adequate progress and proper direction by the licensee operations staff in addressing proper quality controls and generic industry initiatives. The status of operating and emergency procedures was not amenable to inspection during this assessment period, since most procedures were still in draft form. However, it was noted that the operating personnel had utilized these procedures, where appropriate, during the conduct of preoperational testing, to troubleshoot procedural problem areas. While the development of operating procedures is dependent upon Technical Specification approval, management attention to their program for operating procedure issuance is warranted to provide not only a generic site perspective on the way regulatory guidance (e.g., NUREG-0737) is to be handled, but also assurance that these procedures can be reviewed and edited in a timely manner relative to the licensee fuel load date.

In the same vein, licensee actions to demonstrate compliance with NUREG-0737 commitments have not been timely, as sufficient progress on certain TMI Action Plan requirements had not been made by the end of this assessment period. Licensee management attention was directed to this area, and since the end of the assessment period, greater progress appears evident. Continued management responsiveness to all remaining operational preparedness areas and items is necessary to assure Seabrook Unit 1 plant readiness for fuel load and operation.

NRC inspection effort has also been devoted to the licensee's nonlicensed training program, and other training conducted to correct or prevent problems which have arisen in the construction and preoperational test areas. One NRC concern in the area of nonlicensed training was raised in that no matrix and comprehensive schedule of such training was yet available to demonstrate that all personnel training needs would be fulfilled. Since the identification of that item, NRC reinspection has found the licensee responsive to this concern and has taken adequate action to allow closure of the open item.

b. Operator Licensing

During the current assessment period, two operator license examinations were administered during the weeks of March 18, 1985 and September 30, 1985. Of the 17 senior reactor operator (SRO) and 3 reactor operator candidates examined in March, only one SRO candidate was denied a license. All 5 senior reactor operator candidates participating in the September examination were issued licenses. This included the candidate previously denied a license during the March exam.

The licensee began its first replacement operator training class in mid-February, 1985. The class of 15 reactor operator and 5 senior reactor operator candidates is presently scheduled for a July 1987 operator license examination.

In addition to operator training, the licensee has demonstrated a strong commitment to the enhancement of the simulator's operational capabilities. A new modern high speed computer is being installed to improve system response time and fidelity and to provide a larger storage capacity.

The simulator malfunction list provided for the March 1985 examination contained several malfunctions with only a cursory description. The licensee was informed of this weakness at the March 1985 operator license examination exit meeting. This same weakness was again identified during the September 1985 examination. It continued to make the development of quality simulator scenarios difficult for operator license examination purposes.

The first group of cold license candidates was examined in September, 1984. These operators and those that closely followed will be scheduled for renewal near the proposed time of fuel load and the follow-on startup test program. Based on this and the fact that none of the operators will have been able to make "active use" of their licenses during the previous two years, the NRC staff has begun selective monitoring of the licensed operator requalification training program. This program was implemented immediately after the last cold license training class ended. To date, the licensee has demonstrated a strong commitment to quality requalification training that not only addresses the operator's need for skill and knowledge reinforcement, but also identifies unique areas of specialized training that are required in preparation for the upcoming startup test program. The licensed operator requalification training program at Seabrook is considered an additional strength in the already strong operator licensing training program.

With respect to licensed operator training and qualification at Seabrook, the licensee continues to devote substantial resources to the training program. The licensee training staff appears to be both technically competent and professional. Responsiveness on the part of the licensee to suggestions to improve training has been evident.

c. Security

Three preoperational security program reviews were performed during the assessment period by region-based inspectors. Routine resident inspections continued throughout the assessment period.

The effectiveness of the licensee's planning for the security program was evident from the first preoperational review. Development of the security program was on schedule and station administrative procedures pertaining to plant security and security program implementing procedures had been prepared and approved for use. Management attention was evident from the selection of personnel and the organization of key staff positions. The station security organization is directed by an experienced Security Program Manager, assisted by a Site Security Supervisor. Four experienced functional supervisors are assigned to provide guidance and coordination in developing and implementing the program. Early establishment of these program features enabled the regional inspectors to conduct an in-depth analysis of the Physical Security Plan, Training and Qualification Plan and Security Contingency Plan even before the receipt of new fuel on site. It also enabled the NRC's Office of Nuclear Material Safety and Safeguards to complete its plan reviews and an onsite program review expeditiously and with a minimum of effort. The experience and professional attitude of the licensee security management and staff were evident.

NRC representatives found that the licensee had established a professional management team to select, train and manage the contract security force. The licensee has aggressively responded to all NRC initiatives and is currently prepared to implement a fully developed security program.

With the receipt of fuel on site in February 1986, the resident inspectors routinely checked security controls for the fuel building where the new fuel assemblies are being stored. Also, while not part of the Seabrook physical security program to be implemented during operation, security controls of various areas of the plant where preoperational testing activities were in progress were inspected to confirm compliance with procedural requirements and preoperational test assurance controls. These NRC inspections revealed that the appropriate programmatic security controls were being properly implemented.

Licensee management and security supervisors have provided a workable system for allowing NRC inspectors "immediate unfettered" access to Seabrook Station for inspection purposes and are developing plans for badging and access provisions for NRC personnel to facilitate future NRC inspections when the Seabrook Physical Security Plan is implemented. While NRC inspection effort during this SALP period cannot provide a complete assessment of the licensee's security controls, both the lack of significant problem areas and management responsiveness to security issues provide evidence of properly directed licensee efforts in this area. Since the Physical Security Plan

will be implemented for Seabrook Unit 1 in sufficient time prior to planned fuel load for the licensee to identify problem areas, management attention to security controls should be focused in such a way as to address corrective measures, where required.

d. Radiological Controls

During the latter part of this assessment period, three inspections were conducted by region-based radiation specialists into the following areas: readiness for preoperational inspections in radiation protection, radioactive waste management, transportation, and effluent control and monitoring; preparation for initial fuel receipt; initial fuel receipt; and, radiation protection.

During this assessment period, the radiological controls department was involved in the management control system via the station operation review committee (SORC), radiation safety committee (RSC-ALARA), and frequent routine management meetings. All interfaces between the health physics (HP), radioactive waste, chemistry, instrumentation and control, and training had not been fully defined and documented. Corporate responsibility for appraisal of the radiation protection program was not clearly stated with regard to scope and frequency. Planning and scheduling appeared adequate in that licensee-provided readiness dates for preoperational inspections generally remained unchanged during the inspection period.

General employee and radiation worker training programs were in progress. While supplemental health physics training for self-monitoring had not yet been fully defined, active planning in this area was apparent from discussions with the licensee. The Quality Assurance organization has initiated their surveillance program and plans to audit the radiation protection program on an annual basis, which exceeds standard requirements for audit frequency. The external personnel dosimetry system received NAVLAP certification during this inspection period.

Acceptable quantitative ALARA goals have been established. While procedural deficiencies in ALARA procedures were identified, the HP staff committed to resolve them by fuel load. Satisfactory changes to the ALARA procedures were initiated. One revision has completed the licensee's review and approval process while the other is currently going through this step. The fact that considerable responsibility for implementing ALARA principles had been placed with job supervisors was expressed as an NRC concern. However, a need for additional ALARA training for job supervisors and upper level management had already been recognized by the licensee.

Adequate management control systems are in place in the area of HP. There is an adequate number of supervisory and professional staff possessing acceptable educational and experience credentials. A simulated fuel receipt was conducted prior to the initial fuel receipt in February 1986. Approximately fifty percent of the radiation protection technicians are on hand; the majority of the technicians present are fully qualified by experience; the site-specific training and qualification manual process is being implemented.

Dosimetry procedures were found to be adequate, but not comprehensive. However, this was compensated by a strong training program in the dosimetry area. One deficiency in the radiation work permit procedures was noted, and the licensee has implemented an approved revision which corrected the deficiency. Procedures for fuel receipt and the posting and controlling of a radiologically-controlled area (RCA) were found to have been effectively used. Recordkeeping was adequate, but documentation of the dose assessment methodology was found to require additional licensee attention. Subsequently, the licensee remedied this NRC concern about dose assessment methodology documentation. Additional data is required to support the beta dosimetry methodology and is presently being developed by the licensee.

A whole-body-counting program is available and in use. A real-time computer-based personnel training and dosimetry recordkeeping system is being utilized. During this inspection period, additional portable survey meters, respirators, and air samplers have been added to the licensee's equipment stores, while even more equipment is on order. However, testing and turnover of certain systems to the station staff is not yet complete.

While the radioactive waste (RW) management, transportation, and effluent control and monitoring areas did not receive detailed inspections during this assessment period, NRC inspectors did review the organizational reporting lines and responsibilities and did interview responsible supervisors in these disciplines. The laboratory facilities were observed to be spacious, well kept, and well equipped. Emphasis on multiple levels of quality control was apparent from discussions with chemistry personnel. It was noted that RW supervisory and technician staffing is almost complete and that health physics training to be provided to radioactive waste handling personnel is being developed.

Several new fuel shipments have been received, and adequate radiological controls and attention to DOT regulations were observed. Work controls were demonstrated to be effective for fuel receipt and for controlling and posting of RCAs. The planned operational survey and monitoring program is acceptable.

The operational readiness of the four radiological controls areas (radiation protection, waste management, transportation and effluent control and monitoring) in regard to organization and management controls, staffing and training, work controls and procedures, and facilities and equipment exceeds what would be routinely found at a plant like Seabrook Station Unit 1 at this preoperational stage. Since radiological controls functions have not yet been adequately challenged by operational requirements, a full assessment cannot be made at this time. However, based upon supervisory awareness of the problem areas and what still needs to be accomplished, the Radiological Controls Program appears to be heading on a proper course. This positive trend should continue, provided that the management commitment, the degree of preplanning and preparation, and the attention to detail remain at the same level that has been demonstrated up to this point.

2. Conclusion

Rating: Category 1.

Trend: Consistent.

3. Board Recommendation

A normal level of inspection activity on part of the NRC shall be maintained during the next SALP assessment period due to the preoperational nature of the findings in this area.

E. Emergency Preparedness (634 hours, 8%)

1. Analysis

This functional area was not evaluated during the previous SALP. During this assessment interval, New Hampshire Yankee (NHY) has placed considerable emphasis on the area of emergency preparedness as they have approached their projected fuel load date. Two NRC team inspections were conducted to perform the NTOL Emergency Preparedness Implementation Appraisal (EPIA), and a third inspection was conducted to evaluate licensee performance during a full-participation exercise.

The emergency preparedness function is controlled by a corporate staff that is located at the site. This staff maintains a close liaison with the site organization. The organization and staffing is ample, principally consisting of a Director of Emergency Planning, a Radiological Assessment Manager, an Emergency Preparedness Supervisor, and two Senior Emergency Planners. The position of Director of Emergency Planning is temporarily filled by a contract consultant.

Installation of equipment and training of personnel to fulfill their emergency response organization functions is ongoing but has been substantially completed based on observations made during the two appraisal inspections and the exercise. The EPIA was begun during December, 1985, based on the applicant's firm judgement that they had reached a condition in which the emergency preparedness program could be adequately evaluated. However, the appraisal had to be terminated prior to completion because equipment, training, and procedures had not been sufficiently completed to assess the EP program. This appeared to be indicative of inadequate planning on the part of the licensee. Sufficient progress had been made by February, 1986 so that the first full-scale exercise was conducted on February 26 and the appraisal was completed on March 28, 1986. The principal concerns identified during the appraisal are a lack of sufficient numbers of qualified individuals to fill the key emergency response organization positions during an emergency on a twenty-four hour basis (presently only a primary and one alternate are qualified) and lack of on-shift dose assessment capability. NHY has committed to have at least three people qualified for each key EP position prior to issuance of a full-power license and to provide shift personnel with a programmed calculator to meet the requirement to perform dose assessment at two, five, and ten miles, prior to the arrival of the augmentation emergency response staff.

The exercise on February 26, 1986 involved the utility and the state of New Hampshire, as the Commonwealth of Massachusetts Emergency Plans had not yet been submitted for review by FEMA. No major on-site deficiencies in the implementation of an adequate emergency response were identified during the exercise. In general, personnel

involved in the exercise demonstrated a high level of training and knowledge of their response functions. Assessment of plant conditions and recommendations of protective actions for the public were timely and conservative. The EOF is of adequate size and functioned effectively with both the state of New Hampshire and a response team from NRC Region I participating in the exercise. Several deficiencies were identified by FEMA with offsite response by New Hampshire. These areas will be reassessed in a subsequent exercise prior to consideration of a full power license. That exercise is also expected to include participation by Massachusetts.

There has been excellent cooperation on the part of NHY with the NRC on the resolution of issues concerning the Emergency Plan and procedures.

2. Conclusion

Rating: Category 2.

Trend: Improving.

3. Board Recommendation

Continued licensee attention to EP issues and to the resolution of the open items resulting from both the EPIA and the emergency exercise is warranted.

F. Assurance of Quality

1. Analysis

During the previous SALP period, "Quality Programs" was assigned a Category 1 rating based primarily upon the strong and stabilizing influence that the QA program at Seabrook has had upon project and construction controls. During this period, quality program effectiveness has been assessed by both resident and specialist inspectors. Various aspects of this functional area have been considered and discussed, as appropriate, as integral evaluation criteria in other functional areas and the respective inspection hours are included in each one. It is noted that management involvement in assuring quality is one attribute that is considered in the assessment of licensee performance for all areas. Consequently, this area is a synopsis of these discussions relating to the quality of work, and management's role in assuring it.

An NRC team inspection (the first CTI discussed in Section IV.A of this report) dedicated significant inspection resources to licensee management programs and quality assurance. Two of the licensee strengths documented in that inspection were attributed to Site Management and Quality Assurance. New Hampshire Yankee (NHY) management was recognized for both its positive management support of quality and the establishement of new programs and directives (e.g., the Independent Review Team, the Employee Allegation Resolution program, the Piping and Pipe Support Closeout Task Team, and the reorganization of site engineering under one director). The site QA function was cited as a strength because of the implementation of effective audit and trending programs and for its responsiveness in initiating comprehensive corrective actions.

A review of the enforcement data in Table 3, reveals that of the four violations attributed to this functional area, two involved improper handling of Nonconformance Report (NCR) dispositions and two involved incomplete follow-up of corrective action on Construction Deficiency Reports. Thus, in all four cases, the site QA program was instrumental in finding the subject problems, but licensee measures were not sufficiently complete to assure proper correction/repair of the identified problems. These examples represent somewhat of a continuing negative theme from the last SALP where licensee correspondence to the NRC on CDRs and enforcement actions was found at times to be incomplete and corrective repair/rework was not always timely.

As was discussed in the CTI as a strength, the initiation of corrective action at Seabrook appears to be well directed. However, the total assurance of quality depends upon every licensee employee, and particularly upon supervisory level responsiveness to the problems. If corrective measures are not followed through in the same

comprehensive vein as the inspection program that first identified the items, the results are continuing problems and, as was noted in the preoperational test area (Section IV.B), recurrent enforcement findings. Management attention to this concern is warranted as new operational programs are developed and different technical areas come under inspection.

Despite the examples of corrective action problems, noted above, NRC inspections have generally identified a minimal number of problems, particularly in the hardware area. This was substantiated by the as-built team inspection (CTI) conducted at the end of this assessment period (March, 1986). Management reinforcement of quality objectives is evident not only in the support of the QA program, but also in first-line craft and supervisor training and in project policy statements routinely issued by the construction manager to prevent individual problems from becoming generic issues.

A "Startup Quality Assurance Interface Agreement" between the construction and operations QA program staffs, and with the concurrence of the station manager and the startup test department manager, has been implemented. This Seabrook QA policy defines various organizational responsibilities and scopes the role of the Operational QA Program from the time of Conditional Acceptance Turnover (CAT) of components, structures or systems to the initial fuel load of Seabrook Unit 1. The planning and coordination that has served as the basis for such a QA policy appears to be well thought out and should provide the necessary direction for the further implementation of QA controls as the transition into operations continues.

NRC specialist inspections into the operational preparedness phase of the Seabrook QA program have identified no substantive weaknesses. Licensee QA interface controls for design changes, maintenance, procurement, and testing activities appear to be working as additional components and systems achieve CAT status. Licensee attempts to achieve some measure of practice in the implementation of such controls, by initiating the program first for nonsafety-related equipment, have successfully identified some problem areas requiring program revision.

As discussed in other functional areas in this SALP, licensee management's approach and priorities toward the achievement of programmatic controls that assure quality appear well directed. The licensee's initiation of an FSAR Consistency Review has provided programmatic response to previous NRC concerns regarding errors in the FSAR and has established a better basis for the continued development of test criteria and operational procdures. Other management initiatives, like the establishment of a site licensing office and a site organizational restructuring, have provided a better framework for responding to NRC concerns and other quality items requiring action. As has been recognized by previous SALPs,

an effective QA program has been and is in place at Seabrook Station and continued management support continues to provide the necessary assurance of quality.

2. Conclusion

Rating: Category 1.

Trend: Consistent. Such a consistent trend recognizes continued management attention to quality programs during the transition phases of the Seabrook project from construction to preoperational testing and on to operational readiness.

3. Board Recommendation

None.

G. Licensing

1. Analysis

During the last assessment period, the licensee's overall performance in the plant licensing area was considered satisfactory and improving with evidence of licensee management attention and involvement.

During this current SALP period, the basis for this analysis was the licensee's performance in support of the following licensing actions, which were either completed or active during the current assessment period:

-- fire protection
-- vibration of diesel generator instrumentation
-- containment systems
-- materials engineering
-- emergency preparedness
-- instrumentation and controls
-- detailed control room design review
-- electric power systems
-- environmental qualification of electric equipment
-- seismic and dynamic qualification of mechanical & electrical equipment
-- licensed operator requalification
-- safety parameter display system
-- technical specifications

During the latter half of calendar year 1985, licensing actions on the part of the licensee began to pick up considerably. This clearly was necessary because a number of SER outstanding issues needed resolution. During this SALP reporting period licensee's management involvement in licensing actions improved significantly. The licensee's management has been accessible and available to assure that necessary corporate decisions are arrived at to bring about resolution of NRC concerns. Of particular note is the licensee's management involvement in the Seabrook proposed Technical Specification (TS) improvement program. The staff has determined that many of the objectives in the licensee's TS improvement program coincide with those of the NRC program to improve TS. The licensee's effort in this area has been sizable and represents a commendable reflection of licensee management's involvement and commitment to this program.

It is noted that the licensee has dedicated substantial resources to the development of appropriate Technical Specifications (TS) for Seabrook Unit 1. With the issuance of the "Proof and Review" edition of TS in March 1986, the licensee has initiated a substantive review process to correlate the TS to FSAR commitments and current

design precautions, limits, and setpoint data. This demonstrates good initiative on the part of the licensee to determine and provide objective evidence that the plant can be safely operated as licensed.

As noted in the previous SALP report, the licensee's management has established an office in Bethesda, Maryland to provide ready attention to NRC concerns. This has continued during the current evaluation period.

The licensee generally demonstrated an understanding of issues during meetings and discussions with the NRC staff and in its submittals to the staff. The licensee generally exhibits conservatism where the potential for safety significance exists. The approach to resolution of technical issues is viable and generally sound and thorough. The licensee was willing to perform additional studies as necessary to resolve technical issues. Generally, when the NRC and the licensee held differing technical positions, the licensee provided a sound basis for his position. Some exceptions occurred in the containment systems, control room design and safety parameter display system portions of the safety review. In these cases, the licensee was slow in demonstrating a clear understanding of the issues. However, once the licensee began to understand the problems, the staff received acceptable responses.

Positions within the licensee's organization are identified and authorities and responsibilities are defined. The licensee's licensing and engineering groups appear to be adequately staffed as indicated by representatives who have attended numerous review meetings. Generally, sufficient technical staff are participating in review meetings to effect resolution of open items. The licensee's licensing staff has demonstrated a much needed cooperativeness in resolving difficult issues. Staffing at the Seabrook Unit 1 plant appears adequate for the status of the plant as it prepares for operation.

The licensee is responsive to a majority of NRC concerns and has taken the initiative to resolve issues by requesting conference calls and meetings and has then followed up with responsive submittals. In general, responses have been technically sound and addressed NRC concerns in a professional manner. The licensee provided effective licensing liaisons between their technical staff and NRR. Except for certain of the technical issues noted above, licensee responses have been timely.

2. Conclusion

Rating: Category 1.

Trend: Consistent

3. Board Recommendations

None.

V. SUPPORTING DATA AND SUMMARIES

A. Construction Deficiency Reports (CDRs)

Twenty-four CDRs were reported by the licensee during the assessment period. Of this total, five potential deficiencies were subsequently withdrawn by the licensee with NRC inspection confirming the validity of the licensee analysis and resultant cancellation. All reported deficiencies are listed in Table 1 and were evaluated and discussed, as appropriate, in the affected functional area.

While analysis of the listed CDRs for causal linkage has identified no unacceptable chains per statistical acceptance criteria, it was noted that seven of the ten deficiencies analyzed as vendor problems were related to the electrical discipline. This appears to be consistent not only with CDR data from the previous SALP period where eight of a total 22 CDRs were caused by vendor problems in electrical components, but also with other NTOL plant data where electrical component deficiencies are more numerous than those reported in other disciplines. Both the status of construction progress and the nature of preoperational testing activities as the plant approaches operations, tend to identify and accentuate electrical problems. However, this is not perceived to be a programmatic problem with electrical CDRs and no additional corrective measures, other than those taken to correct the individual deficiencies, are believed necessary since no generic electrical problem appears to exist.

B. Investigations and Allegations Review

During this assessment period five allegations were received, only one of which is open with an investigation by the NRC Office of Investigations currently in progress. The other four allegations were inspected and closed with no substantive negative findings resulting from the NRC follow-up of the stated concerns.

Additionally, the investigation/inspection of five allegations reported during previous SALP periods were completed during this assessment period. Four of these allegations were unsubstantiated, while NRC follow-up of the fith revealed that the licensee had identified the problem and reported it under the provisions of 10 CFR 50.55(e). NRC inspection of the resulting CDR confirmed adequate licensee corrective action and measures taken to prevent recurrence of the problem.

Early in this assessment period, the licensee established the Employee Allegation Resolution (EAR) program at Seabrook Station to investigate, track and respond to allegations/concerns brought to their attention. NRC interface with the EAR program has provided both an independent verification of programmatic actions taken by the licensee to address quality concerns, and an effective means of utilizing the licensee inspection resources without compromising the conduct or results of the

NRC investigation. In three specific cases, the EAR program was called upon to investigate and respond to allegations received by the NRC. All three allegations have been closed with no substantive findings and with independent NRC inspection corroborating both the EAR investigation results, and the implementation of corrective measures to avoid similar problematic situations in the future.

C. Escalated Enforcement Action

None.

D. Management Conferences

1. March 21,1985 - a special, announced management meeting at NRC request to discuss the results of the Region I SALP board convened to evaluate licensee performance from July 1,1983 to December 31, 1984.

2. May 15,1985 - a special, announced management meeting upon mutual NRC/Licensee agreement to discuss the Seabrook project status and schedule and to review licensee initiatives in the areas of the Employee Allegation Resolution (EAR) program, an FSAR consistency review, and establishment of a site licensing office.

3. October 2,1985 - a special, announced management meeting upon mutual NRC/Licensee agreement to discuss the Seabrook Staion cable tray design and seismic tray testing in progress, intended to qualify extensive bracing redesign.

4. October 16,1985 - a special, announced management meeting upon mutual NRC/Licensee agreement to discuss the project construction, licensing and state regulatory hearing status and emergency planning schedules.

E. Licensing Activities

1. NRR Site Visits, Audits and Management Meetings

The following listing represents those subject areas where the NRR personnel have visited Seabrook Station for the purpose of conducting activities related to Unit 1 licensing. A significant number of meetings were also conducted between the applicant and NRR personnel with meeting notices and summaries documenting the discussion topics, as applicable.

-- Cable Tray Support Qualification
-- Caseload Forecast Panel
-- Emergency Preparedness
-- Environmental Qualification of Equipment
-- Fire Protection/Safe Shutdown

-- Power Systems Review
-- Pump and Valve Operability Review Team
-- Security
-- Seismic Qualification Review Team
-- Technical Specification Review

Also, on September 27, 1985, the Director of the Office of NRR met with applicant representatives at Seabrook Station to discuss the project status and tour the plant to observe Unit 1 construction progress.

2. Licensing Documents

The following listing represents the documents issued, to date, by NRR as part of the Operating License review for Seabrook Unit 1.

-- Final Environmental Statement (FES) - December, 1982
-- Safety Evaluation Report (SER) - March, 1983
-- SER (Supplement 1) - April, 1983
-- SER (Supplement 2) - June, 1983
-- SER (Supplement 3) - July, 1985
-- Technical Specifications ("Proof and Review" edition) - March, 1986

TABLE 1

CONSTRUCTION DEFICIENCY REPORTS
(1/1/85 - 3/31/86)

SEABROOK STATION

CDR NUMBER	DEFICIENCY	CAUSE CODE
85-00-01	Failure of Gould molded case circuit breakers to pass trip test	B
85-00-02*	Missing cation bed demineralizer radiography	A
85-00-03*	Reduced discharge head for the service water pumps	C
85-00-04	Lining problem in the Airflex instrument air hoses	D
85-00-05*	Questionable integrity of limit switch brackets on SI valves	D
85-00-06	Brown-Boveri circuit breaker switch wiring damage	B
85-00-07	Questionable HVAC heat load design calculations	E
85-00-08*	Incompatible grease in fan motor bearings	A
85-00-09	Inadequate spacing between battery cells and rack	B
85-00-10	Logic deficiency in the EFW high flow isolation signal	E
85-00-11	Incorrect time delay links in circuit breaker over-current trip devices	B
85-00-12*	Georgia Tech STRUDL computer program error	E
85-00-13	Detachment of lining in the service water piping and valves	C
85-00-14	Excessive leakage in nitrogen gas supply containment isolation valves	B
85-00-15	Salt water spill from the service water system in the water system in the auxiliary building	A
85-00-16	Seizure of linkage in HVAC dampers	B

CDR NUMBER	DEFICIENCY	CAUSE CODE
85-00-17	Binding of contacts in Gould motor control starters	B
85-00-18	Disc malfunctions in Dresser valves used in gas systems	B
85-00-19	Misapplication of Type MDR relays in the solid state protection system	B
85-00-20	Failure of HVAC air dampers to close under certain air flow conditions	C
85-00-21	Improper terminal boards used in the uninterruptible power supply inverters	B
86-00-01	Design deficiency in undersizing the diesel generator air vent line	E
86-00-02	Pressurizer pressure transmitter drift in excess of design basis	C
86-00-03	Impact of a P-10 permissive malfunction on protective system functions	E

Cause Codes

A - Personnel/Procedure Error
B - Vendor Problem
C - Component Failure
D - Construction Error
E - Design Error

*Reported by the licensee as a potential CDR and subsequently cancelled. Basis for nonreportability was reviewed by NRC and item is considered closed.

TABLE 2

INSPECTION HOURS SUMMARY
(1/1/85 - 3/31/86)

SEABROOK STATION

FUNCTIONAL AREA	HOURS	% OF TIME
A. Construction	3788	48
B. Preoperational Testing	2451	31
C. Fire Protection and Housekeeping	296	4
D. Operational Readiness	743	9
E. Emergency Preparedness	634	8
F. Assurance of Quality	--*	--
G. Licensing	--*	--
TOTALS	7912	100

*Hours expended in these activities are either included in other functional areas or considered not to be direct inspection effort.

NOTE: Additionally, a total of 12 inspection hours were expended during this assessment period in the review of preservation, protection and preventitive maintenance activities, for Seabrook Unit 2 (a plant still in an indeterminate status).

TABLE 3

ENFORCEMENT DATA
(1/1/85 - 3/31/86)

SEABROOK STATION

A. Number and Severity Level of Violations

Severity Level I	- 0
Severity Level II	- 0
Severity Level III	- 0
Severity Level IV	- 9
Severity Level V	- 2
Deviation	- 2
TOTAL	13

B. Violations vs. Functional Area

	IV	V	DEV.
A. Construction	4	2	1
B. Preoperational Testing	1	-	-
C. Fire Protection and Housekeeping	1	-	1
D. Operational Readiness	-	-	-
E. Emergency Preparedness	-	-	-
F. Assurance of Quality	4	-	-
G. Licensing	-	-	-
TOTALS*	10	2	2

*NOTE: The total number of Severity Level IV violations listed vs. functional area is one greater than the total issued (i.e.: Section A above). This occurred because of the issuance in the 86-14 inspection report of a single violation containing multiple findings, each in a different functional area.

C. Listing of Violations

REPORT	SUBJECT	SEVERITY LEVEL	FUNCTIONAL AREA
85-01	Failure to translate flow restrictor sizing tolerances into the design details	IV	A
85-01	Failure to document and track nonconforming conditions for all affected components	IV	F
85-03	Failure to attach required nameplates to safety-related equipment	V	A
85-06	Failure to install UL approved valves in the fire protection water supply system	DEV.	C
85-15	Failure to control design/construction interfaces with regard to pipe support installation	IV	A
85-15	Failure to detail installation criteria for instrument tubing crossing seismic boundaries	IV	A
85-15	Incorrect dispositioning of nonconformance reports on instrument tubing	IV	F
85-20	Failure to implement complete corrective action on identified component pedestal cracking problems	IV	F
85-20	Failure to control a design change and implement adequate corrective action on valve bracket rework	IV	F
85-25	Failure to comply with commitments to to NRC Regulatory Guide 1.97	DEV.	A
86-12	Failure to translate an enclosure building ventilation design requirement into the construction details	IV	A
86-14	Failure to follow procedures in fire sealant and preoperational testing activities	IV	B/C
86-14	Failue to adequately control component identification	V	A

ENCLOSURE 3

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-443

JUN 0 5 1986

Public Service of New Hampshire
ATTN: Mr. Robert J. Harrison
President and Chief Executive Officer
P. O. Box 330
Manchester, New Hampshire 03105

Gentlemen:

Subject: Systematic Assessment of Licensee Performance (SALP) Report No. 50-443/86-99

On May 14, 1986, the NRC Region I SALP Board reviewed and evaluated the performance of activities associated with the Seabrook Station, Unit 1. This assessment is documented in the enclosed SALP Board report. A meeting has been scheduled for June 10, 1986 at 10:00 a.m. at the site to discuss this assessment. That meeting is intended to provide a forum for candid discussions relating to the performance evaluation.

At the meeting, you should be prepared to discuss our assessment and your plans to ensure continued emphasis upon those activities which would have a positive effect upon your performance through Seabrook's transition into the operations phase. Any comments you may have regarding our report may be discussed. Additionally, you may provide written comments within 30 days after the meeting.

Following our meeting and receipt of your response, the enclosed report, your written response (if deemed necessary), and a summary of our findings and planned actions will be placed in the NRC Public Document Room.

Your cooperation is appreciated.

Sincerely,

T Murley

Thomas E. Murley
Regional Administrator

Enclosure: NRC Region I SALP Report No. 50-443/86-99

cc w/encl:
John DeVincentis, Director, Engineering and Licensing
William B. Derrickson, Senior Vice President
Warren Hall, Operational Services Supervisor
Donald E. Moody, Station Manager - Seabrook Station
Gerald F. McDonald, Construction QA Manager
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire

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ENCLOSURE 4

SEABROOK STATION
Engineering Office

PSNH

Public Service of New Hampshire

July 10, 1986

SBN-1156
T.F. B4.2.7

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Attention: Mr. Thomas E. Murley, Regional Administrator

References:
(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) USNRC Letter, dated June 5, 1986, Systematic Assessment of Licensee Performance (SALP) Report No. 50-443/86-99, T. E. Murley to R. J. Harrison

Subject: Systematic Assessment of Licensee (SALP) Report No. 50-443/86-99

Dear Sir:

During the SALP meeting held at Seabrook Station on June 10, 1986, discussions were held regarding the Review Board's evaluation [Reference (b)], and Seabrook Station's transition into the operations phase. We feel that the communications at that forum were in sufficient detail and positive in nature such that further comments regarding the SALP report were not required.

If you require further response, please feel free to contact us.

Very truly yours,

John DeVincentis
Director of Engineering

cc: Atomic Safety and Licensing Board Service List

Director, Office of Inspection and Enforcement
United States Nuclear Regulatory Commission
Washington, DC 20555

Mr. Vincent S. Noonan, Project Director
PWR Project Directorate No. 5
United States Nuclear Regulatory Commission
Washington, DC 20555

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