U. S. NUCLEAR REGULATORY COMMISSION
REGION I

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Licensee: Public Service Company of New Hampshire
New Hampshire Yankee Division
Post Office Box 300
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Inspection At: Seabrook, New Hampshire

Dates: November 13-20, 1989

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Purpose: To assess readiness for safe power operation through reviews of operations and operations support programs.

Findings: This inspection found the Seabrook Nuclear Power Station capable of conducting and supporting safe power operation. Items identified for resolution were: assuring that local operating and alarm response procedures are usable and available at local stations; and confirming that Technical Specification (TS) clarifications and interpretations do not change any TS or alter the intent or commitments in the Final Safety Analysis Report. All Confirmatory Action Letter CAL 89-11 items inspected by the ORAT were found acceptable; the remaining CAL 89-11 items were assinged to other inspections.

Approved by: Ole C. McCabe, Jr. 1/6/90
E. C. McCabe, Jr., Team Manager Date

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1.0 FINDINGS SUMMARY

This Operational Readiness Assessment Team (ORAT) inspection sample showed that, upon resolution of the items below, New Hampshire Yankee (NHY) is prepared to safely operate Seabrook above five percent power.

(1) Verification that local operating and alarm response procedures are available and useable at local operating and alarm stations.

(2) Verification that all Technical Specification clarifications and interpretations do not contravene the intent of the Final Safety Analysis Report or the Technical Specifications.

(3) Completion of licensee actions required by CAL 89-11.

The ORAT also identified the following for consideration as potential performance improvements.

-- Increasing the in-field presence of middle management.

-- Providing formal refresher and significant process change training on 10 CFR 50.59 safety evaluations for Station Operations Review Committee (SORC).

-- Reducing the administrative burden on the SORC.

-- Reducing maintenance backlog and maintenance personnel overtime.

-- Providing continuing radiological controls training for temporary radiological controls personnel who are employed for extended continuous periods.

-- Establishing challenging ALARA goals and training job supervisors and radiological controls technicians in ALARA techniques.

-- Providing specific training for radiological controls and operations personnel on the radiological hazards expected from power operation.

-- Providing additional engineering review of Annunciator Response Procedures.

2.0 OVERVIEW

2.1 Background

On May 26, 1989, New Hampshire Yankee (NHY or the licensee) was granted low power license NPF-67 for Seabrook Station Unit 1 (Seabrook, the plant or the facility). NPF-67 superseded zero power license NPF-56. Upon receipt of the low power license, New Hampshire Yankee completed a transition from zero power operating procedures to normal operating procedures. The NRC specified

that, before the Seabrook Nuclear Power Station would be authorized to operate above 5% power, an operational readiness assessment would be made. An initial operational readiness assessment was made during inspection from May 27-June 1, 1989, and the results were acceptable.

On June 22, 1989, the operating crew failed to manually trip the reactor during a natural circulation test when required by the startup test procedure. Low power operation was suspended. The licensee and the NRC reviewed the event in detail. NHY developed specific corrective actions that were be to performed prior to resuming low power operation.

2.2 Inspection Scope

This ORAT inspection was conducted to further assess the licensee's ability to operate at power. Team members inspected licensee readiness for plant startup, power ascension, and operation. Radiological controls, maintenance, surveillance, engineering and technical support, and selected licensee commitments (based on the June 22 event) were also reviewed.

The ORAT inspection involved 458 inspection hours and emphasized activities subsequent to June 1989, with program and procedure changes receiving particular attention. In addition to compliance with NRC requirements and licensee commitments, ORAT members assessed licensee readiness for safe operation based on their judgement.

During the inspection and associated licensee meetings, the inspectors contacted and interviewed workers, first line supervisors, section, department, and division managers, and corporate personnel.

2.3 Results Summary

Facility management staffing, qualifications, and performance were found to be acceptable. Key staff members were found to have the proper safety perspective and demonstrated a good understanding and a conservative approach to Seabrook operation.

The Operations Department was adequately staffed with capable managers, licensed operators, and administrative personnel. Operators were knowledgeable of their responsibilities and were provided with the equipment and procedures needed for safe operation. Station configuration control and self-assessment methods were rigorous. Interfaces between operations and operations support groups were acceptable.

The maintenance organization staff and experience were adequate to support power ascension. Work control, material control, procurement, equipment calibration, and management functions were in place to support maintenance. However, the maintenance staff is working significant overtime and the backlog of work requests remains high. Maintenance staffing needs licensee consideration in relation to long-term adequacy.

The Technical Specification Surveillance Program has been successfully implemented for Mode 5 operation. Staffing levels and procedures are in place to support full power operation surveillance testing. The professionalism and knowledge of personnel conducting technical specification surveillances were strong.

NHY has established and implemented a generally well defined radiological controls program cabable of supporting power ascension and full power operations. Some areas for improvement were identified, and the licensee initiated immediate and appropriate corrective actions during the inspection. The licensee was in the process of reassigning responsibilities for radwaste management and transportation. That reorganization was not assessed during this ORAT. (Programmatic inspection of this area is scheduled for January 8-12, 1990 and will be documented in Report 90-03.)

Engineering and Technical Support programs were in place to adequately support full power operation. Inspector findings regarding the availability and useability of the local emergency diesel generator procedures were resolved by the licensee during the inspection. No other safety-related local procedure deficiencies were found. The licensee initiated action to confirm the availability and useability of all local alarm response procedures.

Licensee implementation and management oversight of the Corrective Action Plan for CAL 89-11 has been good. The ORAT inspection concluded that the licensee, upon completion and closure of all CAL items, and within the scope of this review, will be able to operate Seabrook Station safely and in accordance with NRC regulations.

3.0 FACILITY MANAGEMENT

3.1 Review Scope

The inspectors reviewed facility management readiness by examining the Seabrook organization and staffing (see Figures 1 through 6), interviewing licensee managers, and observing management involvement in activities. The purpose of this assessment was to:

-- assess whether the NHY managerial organization is able to assure safe operation;

-- confirm that the station was adequately staffed and that employees exhibited an appropriate safety attitude; and

-- evaluate the effects of the recent NHY upper management changes.

3.2 Findings

After the natural circulation test event, the licensee undertook NHY management changes and realignment. (Figure 1 represents the revised NHY organization.) First, the licensee relieved the Vice President - Nuclear Production

(VP-NP) of his duties at the Seabrook Station. That individual subsequently resigned. (CAL 2.A-1)* To improve management control and accountability, the VP-NP position was replaced with the new position of Executive Director - Nuclear Production. A new position, Senior Vice President and Chief Operating Officer, was also added. (CAL 2.A-2) This restructuring placed more emphasis on plant operations. Functions not directly contributing to the support of plant operations were moved into other areas of the company. With this change, NHY more clearly defined the responsibility and authority of key positions.

The ORAT found the above-mentioned senior managers to be appropriately trained for their positions with respect to formal education and experience. The team did note that the Executive Director - Nuclear Production was a Yankee Atomic Electric Co. employee on loan to NHY. The licensee indicated that this was a temporary assignment. The ORAT noted no inadequacy because of this temporary assignment.

Through interviews, the ORAT concluded that the NHY upper managerial team demonstrated a conservative approach to problem resolution and an appropriate safety perspective. Management was informally tracking performance and was adequately determining the status of problem areas.

The ORAT observed an absence of middle management oversight in the plant. No associated in-plant activity inadequacy was noted. Several licensee managers indicated that they recognized this as a problem, and that actions would be taken to increase management's in-plant presence. The ORAT concluded that this issue represents a potential area for performance improvement.

Station Operations Review Committee (SORC)

The inspectors evaluated the SORC process through document review and attendance at SORC meetings. SORC members were found to be knowledgeable of their responsibilities and of the matters discussed.

ORAT review found the licensee lesson plan (TS1002C) and instructor guide on 10 CFR 50.59 safety evaluations to be accurate and thorough. In reviewing SORC member training, the inspector noted that the SORC members last received formal 10 CFR 50.59 training in 1987. The licensee had no plans to schedule periodic SORC member refresher training on the safety evaluation process.

In addition, the inspector noted that the licensee recently incorporated NSAC 125, "Guidelines for 10 CFR 50.59 Evaluations," developed by the Nuclear Safety Analysis Center for the Electric Power Research Institute (EPRI), into its safety evaluation process and planned to provide additional SORC member training through the required reading process. The inspector questioned the adequacy of such training in view of the complexity and importance of the process. The lack of formal 10 CFR 50.59 refresher training and of formal training on significant changes to the process were considered program weaknesses and were identified to the licensee for consideration.

*Refers to licensee corrective action identification per CAL 89-11; see Paragraph 9.0 and Attachment 1.

All SORC meetings have a formal agenda that is prepared and distributed by the SORC secretary well in advance of the meetings. All documents for SORC review, with the exception of "walk-thrus," are distributed to SORC subcommittee members in advance of the meeting. The agendas include review items with a listing of their respective subcommittees. SORC members not designated to serve on a particular subcommittee can participate in the subcommittee review. Subcommittee members provide written comments to the person responsible for the item; these comments normally are resolved prior to the SORC meeting. If comments are not received or remain unresolved, the item is dropped from the agenda and is rescheduled. The inspector noted that the Seabrook Station Management Manual (SSMM) provides explicit review instructions to SORC subcommittee members.

Walk-thrus were evaluated for adequacy of SORC review. SORC members stated that walk-thrus are rare. SSMM 5.0 limits walk-thrus to those which the SORC Chairman considers impractical to conduct during a normally scheduled meeting or which require immediate attention during normally scheduled meetings. Procedure changes are normally treated as walk-thrus. Procedure changes differ from procedure revisions, which are major upgrades and require full processing. Changes are lesser modifications which alter only a small part of a procedure. Some changes are nonetheless intent changes (i.e., they alter procedure method, scope or acceptance criteria). Intent changes require SORC review prior to implementation. The ORAT found that both the observed SORC review of specific changes and the change review practices were adequate. However, inasmuch as some changes may neither require immediate attention nor be impractical to conduct during regularly scheduled meetings, the licensee was encouraged to modify SSMM 5.0 to specifically authorize the existing practice or to modify the existing practice to conform to the NHY policy on strict procedure compliance.

Non-intent changes can be implemented prior to SORC review and receive the review and approval of the onshift Shift Superintendent (SS) or Unit Shift Supervisor (USS) and a station staff supervisor knowledgeable in the area affected by the change. Additionally, non-intent changes receive responsible department manager approval prior to SORC review and approval, which is required within 14 days of implementation. Intent changes cannot be implemented prior to SORC review and approval; they also receive responsible department head review and approval prior to SORC review. The SSMM requires that SORC members evaluate all procedure changes for 10 CFR 50.59 considerations and the potential effect on their respective areas of responsibility. Through interviews, the inspectors found individual SORC members to be aware of this responsibility. The inspectors concluded that procedure changes receive adequate review prior to their implementation.

There was increased management emphasis on strict procedure compliance after the June 22 event, and the licensee noted a marked increase in the number of procedure changes initiated by plant personnel. ORAT inspectors noted that, for the SORC meetings observed, procedure changes consumed almost half of the SORC meeting time. In discussions with the SORC Vice Chairman (VC), the inspectors learned that plant personnel find that what was previously acceptable

in terms of procedure accuracy is no longer acceptable. While the increased sensitivity to procedural compliance is appropriate, the increase in procedure changes has introduced an increased SORC burden and reduced the time available to SORC members for their other responsibilities. The SORC VC stated that he felt the burden would not continue at this level indefinitely as the procedures would eventually become "fine-tuned." He was also reluctant to decrease SORC review efforts because he wanted the responsible managers to thoroughly assess the potential effect of each change on their departments and provide additional unreviewed safety question reviews. ORAT review found no safety inadequacies in the present approach, and noted that licensee management continues to carefully address this issue to assure that both SORC and departmental functions are adequately implemented.

The inspector reviewed the licensee's Independent Review Team (IRT) assessment of the SORC function and found it to be well prepared and thorough. Recommendations, especially those related to the reduction of SORC burden on SORC members, identified important considerations. (CAL 3-8)

3.3 Conclusions

Facility management, as structured, is capable of directing and supporting safe power operation. Facility management staffing, qualifications, and performance were acceptable. The reorganization strengthened lines of responsibility, authority, and accountability. By creating a Chief Operating Officer, the licensee developed a single focal point for control and operation of Seabrook. The ORAT concluded that key individuals exhibited the proper safety perspective and that the necessary managerial attributes exist.

4.0 PLANT OPERATIONS

4.1 Review Scope

The inspectors reviewed operations and operations support functions to evaluate the licensee's capability to safely operate the facility. The purpose of the evaluation was to:

-- determine whether the Operations Department is sufficiently staffed with capable operators and managers;

-- determine whether the licensee has provided the Operations Department with the necessary procedures, equipment, administrative and technical support; and,

-- assess the effectiveness of the interface between the operations and operations support departments.

4.2 Findings

4.2.1 Operations Staff

The inspectors found the Operations Department to be adequately staffed with experienced and knowledgeable operators and managers. It was noted, however, that NHY has 22 operators with active licenses, and the six shift rotation requires 24. Active license holders staff the two open positions on an overtime basis. The inspectors determined that this did not place an undue burden on the operating shifts, mainly because of the current plant outage condition. The inspectors also noted that 12 candidates sat for NRC license examinations during the inspection (November 13, 1989).

The two senior reactor operator (SRO) licensed positions required by Technical Specifications are manned by the Shift Supervisor (SS) and Unit Shift Supervisor (USS). Currently, all but one of the Supervisory Control Reactor Operators (SCROs), who are required to have only reactor operator (RO) licenses, hold SRO licenses. The Operations Management Manual (OPMM) states that it is expected that all SCROs will obtain SRO licenses within a reasonable time. This is more than is required by Technical Specifications (TS). The inspectors found this to be a positive operations management decision to increase onshift qualifications.

In addition to the licensed operators, each operating shift is staffed with a minimum of five Auxiliary Operators (AOs) and two fire fighters. Three AOs serve on the fire brigade to supplement the two fire fighters assigned to each shift. Both the AOs and the fire fighters report directly to the USS. The fire fighters perform routine inspections and surveillances in support of the fire protection and housekeeping programs as outlined in the Station Fire Protection Manual (SSFP).

Currently, no AOs hold RO licenses, and it is not required that they do. NHY has established the Alternate Control Room Operator (ACRO) position, which is an RO-licensed position, in addition to those required by the regulations. The inspectors viewed this as a positive initiative, but noted that this position is not presently staffed due to unavailability of licensed operators.

The inspectors found that NHY has a number of alternate positions available for licensed operator advancement. In addition to the training department, licensed operator promotions are available in the Independent Review Team (IRT), which is discussed below, and in the planned Operations Support Group (OSG). Such advancement opportunities provide an incentive for operators to obtain NRC licenses beyond those required and thereby improve overall station operating qualifications.

Currently, all designated SSs are qualified to serve as Shift Technical Advisors (STAs). Several USSs are also qualified as STAs, and would serve in this position if the onshift SS was not qualified. As specified in the OPMM, while the SS and the USS are allowed to assume the STA position as a collateral duty, other NHY personnel qualified to serve as STAs (including SCROs, CROs and

personnel outside of the Operations Department) are prohibited from assuming other duties while serving as an STA because of the potential for interference with the STA function. (CAL 2.B-2)

The onshift operations staff has experienced an approximate 10% annual turnover rate. The inspectors did not view this as excessive; 75% of the current onshift operators have held licenses at Seabrook for over four years. In addition, many have previous commercial or naval nuclear power operating experience. The licensee stated that several of those leaving the onshift operations staff had relocated to other positions within NHY and their operating experience was not lost to the organization.

The inspectors noted that the licensee is planning to institute an Operations Support Group (OSG) to alleviate the operations administrative workload and provide Operations with their own technical review group. The OSG will report to the Operations Administrative Supervisor (OAS) and will consist of two subgroups: a technical support group with a supervisor and three engineers, and a procedure group with a supervisor and two procedure writers/reviewers. The inspectors concluded that the proposed OSG could reduce the administrative load on Operations and improve the consistency and quality of procedure preparation and review. While the proposal for establishing an OSG is a positive initiative, it has no bearing on the existing readiness to conduct power operation.

The inspectors found the onshift operators to be capable and professional. High operator morale was indicated by their positive attitudes and pride in their work. Operators maintained a professional control room atmosphere. The SS and USS asserted appropriate control and command. Control room access and activities were appropriately controlled. Potentially distracting activities were not observed. Operator response to annunciators was found to be appropriate and timely.

The ORAT observed several shift turnovers and found them to be thorough and complete. The formal shift turnover checklist was effective in assuring complete and consistent turnovers. Onshift operating logs (TS log, locked valve log, temporary modifications log, temporary setpoint change log) were detailed, concise, and useful to the onshift crew.

The inspectors observed effective operator communications and cooperation with other departments. The interface between operations and the Quality Assurance group was particularly noteworthy.

In addition to their control room responsibilities, the OPMM requires that SSs make monthly tours with the AOs, such that each of the three major plant AO assignments is covered during each quarter. The SSs are directed to inspect plant areas for equipment material condition, housekeeping, safety, radiological controls, and security. The inspectors viewed this as a positive licensee initiative.

4.2.2 Operations Procedures

The inspectors found the operations procedures to be sufficiently detailed and accessible by control room personnel. Operators were observed to adhere to these procedures, including those for configuration control.

A weakness in document control was identified and corrected by the licensee during the inspection: the licensee's initial practice was to remove all controlled copies of procedures that had exceeded their routine review period. When document control personnel attempted to remove an overdue abnormal procedure from the control room, the operators prohibited the removal. Recurrence was prevented by revising procedures to omit this practice. This was an instance of effective upgrading of facility practices.

The missed procedure review was initiated. This was an isolated instance of failure to review a procedure listed on the monthly listing of procedures due for review during the next 12 months. The licensee is assessing whether additional controls are needed to assure reviews are timely. The ORAT had no further questions.

4.2.3 Equipment Configuration and Operability Controls

Operations establishes proper system configuration by using system lineup sheets that are included as part of each specific system operating procedure. Once a system is lined up for the relevant plant mode, the lineup sheets are logged and maintained in the control room. Any variations to the required lineup are documented in lineup exception sheets which are also filed in the control room for reference. To control system lineups for a mode change, the Operations Department has developed mode change checklists that operators use to ensure that systems are properly aligned for the new mode. Operations support departments are alerted to the approaching mode change through mode change notices. These notices allow a controlled and integrated licensee effort to ensure compliance with Technical Specifications and other operating requirements during mode changes.

Additional system configuration control is provided by the locked component log, in which the operating crew tracks normally locked components which have been placed out of position. For systems or components on which work is being performed, configuration is controlled with a tag-out log. System tag-outs are prepared outside of the control room; this reduces control room distractions and the administrative burden on the onshift operators.

Random ORAT comparisons of local component indications and associated control room documentation identified no discrepancies. The system configuration control system was assessed as thorough and effective.

4.2.4 Housekeeping

The plant was in an outage during the inspection, and the ORAT noted that housekeeping and material control improvements could be made. This was particularly true where work had been completed but the area not subsequently cleaned. However, the ORAT identified no housekeeping issues that threatened equipment operability. Overall, housekeeping was assessed as adequate.

4.2.5 Response to Operational Events

To assess the NHY response to operational events, the ORAT reviewed NHY programs for and performance of event reporting, post-event review, and self-assessment. The NHY Reporting Manual (NYRE) provides for the timely submittal of periodic and special reports to NHY management and regulatory agencies.

NYRE Chapter 2, "Report and Commitment Identification," contains requirements and procedures for the initiation and preparation of Station Information Reports (SIRs). An SIR is used to report and evaluate operational events which may require further investigation or regulatory agency notification. NYRE Chapter 2 lists conditions and events which require initiation of an SIR. The procedure requires that the Shift Superintendent be informed of any questionable conditions and be provided a copy of the SIR in order to determine any immediate reporting requirements. NYRE Chapter 3, "Regulatory Reports," contains the directions for reports required by the NRC and provides instructions for how and where to submit them.

Subsequent to an event, to documentation in an SIR, and to the submittal of required immediate NRC reports, NHY evaluation is provided for in Procedure 12830, "Event Evaluation and Reduction Program." The program is normally used to evaluate reactor trips and Engineered Safety Feature actuations but may also be used for other events as requested by NHY management. Initial evaluation of SIRs and Post-Trip Reviews (Station Operating Procedure OS1000.08) is followed by review and assignment of appropriate corrective actions by the Station Operations Review Committee (SORC) with further review by a standing Nuclear Safety Audit and Review Committee (NSARC) subcommittee.

As part of the event evaluation process, a root cause evaluation is performed in accordance with NHY Procedure 12810, "Root Cause Analysis." Analysis results are included in the SIR package, which must be completed by the Event Evaluation Team Leader within five business days of the event. SORC review must be accomplished within ten days. The final NSARC report, including any assigned action items, is required to be issued within 30 business days of the event.

4.2.6 Self-Assessment Programs

In addition to the above event evaluation process, the licensee has several programs to provide self-assessment of NHY operations. The NSARC, besides its NHY 12830 responsibilities, is committed through Technical

Specifications to provide to the licensee President a means of independently ascertaining whether activities related to nuclear safety are performed safely and in accordance with the policies of NHY and the requirements of the NRC.

Another program committed to in Technical Specifications is the Independent Safety Engineering Group (ISEG), which is responsible for maintaining surveillance of station activities to improve station safety. The ISEG examines station operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other station design and operating experience information which may indicate areas for improving station safety.

NHY Procedure 12820, "Human Performance Evaluation System (HPES)," outlines an additional program to reduce human errors. The HPES provides a process for reviewing and evaluating situations where human performance either did cause, or could have caused, an inappropriate occurrence.

The licensee has also provided for a top level, independent assessment group in NHY Procedure 11260, "Independent Review Team (IRT)." The IRT performs independent reviews, evaluations and assessments and provides reports and recommendations as directed by senior licensee management. The IRT is presently composed of an IRT Manager and a team of on-loan NHY personnel forming a Self-Assessment Team (SAT). The current SAT was formed in October 1989 and is charged with assessing and evaluating the licensee full power and power ascension program. The previous SAT existed from August 1988 until September 1989 and evaluated the low power testing program. Since its inception in 1984, the IRT has performed over 250 evaluations for NHY management. In addition to on-loan personnel, the licensee plans to permanently assign two individuals with operational backgrounds as core members of the IRT.

Through review of the NHY Manual, the NHY Reporting Manual, and the Seabrook Station Unit 1 Technical Specifications, the ORAT concluded that NHY has established a well-defined program for event tracking and self-assessment. The above-mentioned procedures and programs were all cross-referenced, and all requirements for further review of an event were noted to be clearly delineated in the inspected documents.

To verify that the in-place programs have been properly implemented, the inspectors interviewed several licensed operators, members of the Operations Department management staff, the IRT Manager (who is also a standing member of the NSARC) and the Director of the Office of Quality Programs. The operators interviewed were Supervisory Control Room Operators, Unit Shift Supervisors and Shift Superintendents. All were aware of what types of events were reportable per 10 CFR 50.72 and what events required initiation of an SIR.

The inspector reviewed the lesson plan for operator training on event identification and reporting. No discrepancies were noted. All interviewed members of NHY management were knowledgeable of their roles and responsibilities in the event evaluation and self-assessment processes.

As a follow-up to the personnel interviews, the inspector audited the SIR documentation for two of the more significant events which had recently occurred at Seabrook: a failure to manually trip during the natural circulation test (SIR 89-039) and the loss of residual heat removal shutdown cooling capability (SIR 89-066). Both SIR packages contained the required documentation, including the SIR initiation sheet, NRC Event Notification Worksheet, Event Evaluation Team report, and root cause analysis worksheets. In addition, SIR 89-039 included the post-trip review documentation and an IRT analysis report. Both SIRs were determined to be thorough and complete.

The inspectors noted that, subsequent to the natural circulation test reactor trip event, the licensee improved their event reporting and evaluation process. For example, the Event Evaluation Report for that event was required to be completed before the reactor could be restarted. This was accomplished just prior to the ORAT arriving on site. (CAL 2.A-3) Also, procedure OS1000.08 was revised to require discussion of any reactor trip with the NRC prior to reactor restart, and Revision 21 of the NHY Reporting Manual was implemented to require the SS and the USS to complete an NRC Event Notification Worksheet prior to making a 10 CFR 50.72 report to the NRC Operations Center. (CAL 2.A-4 & CAL 2.A-5)

Based on the discussions with NHY personnel, the review of the in-place programs, and the inspection of completed SIR packages, the ORAT concluded that the NHY staff is able to effectively assess and respond to operational events.

4.2.7 Technical Operations Support Programs

The licensee has established two operating experience feedback programs. One reviews plant events and the other reviews industry events. The ORAT found these programs to be adequately staffed with experienced engineers. Licensee actions in response to events are tracked to completion using the licensee's SIR process (for internal events) or the Integrated Commitment Tracking System (ICTS, for industry events.) The inspectors concluded that the feedback programs are capable of performing their intended function.

In addition to the operating experience feedback programs, the licensee's engineering group recently established a scram avoidance program. Because a large percentage of pressurized water reactor trips are caused by feedwater system problems, the group is currently focusing on the feedwater and feedwater control systems. The group is working with a computer model for these systems and plans to incorporate their findings into the operator training program. Operations personnel are also involved with the scram avoidance program through specialized training and evaluations. The ORAT assessed this program as a positive licensee initiative.

4.3 Assessment

The Operations Department is adequately staffed with capable managers, licensed operators, and administrative personnel. Operators are knowledgeable of their responsibilities and are provided with the necessary procedures,

equipment, and administrative support to allow them to conduct safe operations. The ORAT observed that the operators interfaced effectively with each other and control room equipment.

Station configuration control and self-assessment methods are rigorous. Interfaces between operations and the operations support groups are acceptable.

4.4 Conclusions

The Seabrook Operations Department is capable of conducting safe power operations.

5.0 MAINTENANCE

5.1 Review Scope

The inspectors reviewed the New Hampshire Yankee maintenance program to ascertain whether the program was implemented effectively and could support the power ascension program and power operation. The review included the maintenance organization manuals, procedures, work control programs, and the planning and tracking programs. Interviews were conducted with management personnel, supervisory personnel, and technicians. Observations were made of the assignment and performance of work.

5.2 Findings

5.2.1 Management, Organization, and Staffing

The Station Management Manual describes the organization of the maintenance function. (See Figure 4.) The Maintenance Manager reports directly to the Station Manager; three Department Supervisors report to the Maintenance Manager. The Maintenance Department Supervisor is responsible for corrective and preventive maintenance on mechanical and electrical equipment. The Instrumentation and Controls (I&C) Department Supervisor is responsible for maintaining the on-site station instrumentation and control equipment and for operation of the calibration facility. The Utilities Department Supervisor is responsible for operation of dry radioactive waste packing equipment and performance of maintenance on fire doors and other general utility and upkeep work on buildings.

The Maintenance Department Supervisor is supported by 87 personnel including a Mechanical Supervisor, an Electrical Supervisor, a Training Coordinator, a Lead Planner, seven working mechanical foremen, four working electrical foremen and four contractors. The I&C Department Supervisor is supported by 64 personnel including four I&C Supervisors, a Training Coordinator, a Lead Planner, nine I&C working foremen, and three contractors. The Utilities Department Supervisor is supported by 37 personnel including three supervisors, a planner and five working foremen.

The manpower resources match the station allotments as indicated on the organizational chart provided in Figure 4. However, the technicians are working a 60-hour work week. This extensive overtime use was assessed as warranting specific licensee management attention.

5.2.2 Work Control

The ORAT interviewed and observed the working foremen and technicians in the conduct of their duties.

The Maintenance Manager meets with the department supervisors and the mechanical and electrical supervisors each morning to review major jobs scheduled for the day and to resolve potential conflicts. A plan of the day (POD) meeting is held at 1:30 p.m. daily at the supervisor, working foreman, and planner level to review planned maintenance including proper documentation, plant conditions, availability of parts and support from other groups.

The working foremen report to supervisors and are responsible for maintaining the equipment in their assigned systems. As a result, the same system engineers and technicians routinely work together. The department planners identify emerging work, and the working foremen are responsible for accomplishing the work. A working foreman directs the work of five or six technicians and coordinates and interfaces with other departments to resolve problems.

The licensee uses a computerized system to track Work Requests, Design Coordination Reports, Document Revision Reports, Requests for Engineering Services, Nonconformance Reports, and Facility Service Requests. The tracking system follows each document through 21 stages from initiation to final document control center closeout. Over ten different types of reports can be produced. A report listing the outstanding work requests by responsible working foreman is issued daily.

A weekly report on the backlog of work requests receives wide distribution and is displayed throughout the station. The licensee's goal is to have less than 750 work requests outstanding, not counting work requests held for plant conditions or paper work close out. The present back log is approximately 1200 work requests and has been decreasing since mid-October 1989. The following tables summarize licensee report information on maintenance work status.

TABLE 5.2.a

OVERALL MAINTENANCE BACKLOG

TYPE	NUMBER	OLDER THAN 3 MONTHS	OLDER THAN 12 MONTHS
Emergency and Priority 1: Needed to Restore System to Operable Status	2	0	0
Priority 2: Could Lead to System Inoperability	83	13	0
Priority 3: Can Be Performed As Manpower and Schedule Allow	708	243*	60*
Priority 4: To Be Completed As Fill-In Work.	245		

*Includes Both Priority 3 and 4 Items.

TABLE 5.2.b

MODE DEPENDENT MAINTENANCE BACKLOG

TYPE	NUMBER
Needed to Enter Mode 4	142
Needed to Enter Mode 3	12
Needed to Enter Mode 2	4
Needed to Enter Mode 1	13

ORAT review concluded that maintenance was being adequately tracked and prioritized. Review and observation of selected portions of the maintenance activities and procedures listed in Attachment 2 identified no deficiencies.

The ORAT concluded that the POD meetings were effective in establishing the status of work requests and establishing priorities for planning and procurement. Working foremen were effective in implementing and supervising the conduct of the prioritized work. The ORAT concluded that the open requests were effectively tracked, that the status of each open work request was well documented, and that the open work requests were appropriately coordinated with operational controls so that the impact on component operability was being properly addressed.

5.2.3 Material Control and Procurement

The ORAT reviewed the Procurement Manual, held discussions with the Material Requirements Department Supervisor, the Administrative Services Manager, and receipt inspectors, and observed a portion of the receipt inspection of valves in the warehouse.

The licensee has developed a computerized program for common components and is completing the data base. This program assigns a tag number to every component in the plant. The tag number identifies the technical attributes of the component, the parts needed to repair it, and the number of parts in inventory. Since common components have the same tag number, inventories for common replacement parts are better managed by this system.

The licensee has undertaken a program for improving the dedication of commercial grade parts for use in safety systems. That program is described in Engineering Procedure 32510, "Engineering Review of Commercial Grade Dedication," and provides for implementation of EPRI NP-5652, "Guidelines for the Utilization of Commercial Grade Items in Nuclear Safety-Related Applications," which was conditionally accepted by the NRC in Generic Letter 89-02. Program development is beginning, and 15 contractors have been hired to conduct the work. The ORAT concluded that installed equipment and spares are presently acceptable based upon construction, preoperational, and operational controls and tests, and licensee reviews.

The Procurement Department identifies the receipt of all quality controlled items with a company identification number (CID) which is entered in a computer tracking program. The computer program tracks the detailed information on the component's shelf-life (if applicable), the work order under which the component is issued, and the location of the item in the warehouse.

Receipt inspections are conducted by the Procurement Department. The ORAT reviewed the documentation for the receipt inspection of Copes-Vulcan, Inc. valves and discussed the receipt and issuing tracking system with licensee receipt inspectors. Receipt inspection included review of documentation of identification numbers, shipping list certification of conformance, physical damage, and special tests needed. For the receipt inspections reviewed, over ten Purchase Information Requests had been issued requesting clarifications, authorization for acceptance, and identification of noted deficiencies. The inspector concluded that this limited sample of receipt inspection for the reworked valves showed extensive, detailed and well-documented receipt inspection.

The inspector concluded that the procurement and receipt programs are adequate to support power ascension and that program enhancements are being developed.

5.2.4 Calibration and Test Equipment Control

The ORAT reviewed the Measuring and Test Equipment (M&TE) chapter of the Station Maintenance Manual, held discussions with the working foreman of the M&TE Laboratory and the Maintenance Supervisor, and toured the calibration lab.

The calibration lab maintains standards for electronic meters, accelerometers and pressure, temperature, time, leak rate, and radiation equipment. Special test equipment is calibrated by vendors on an as-needed basis. Equipment used in the field is staged in one of four major tool cribs for sign-out by users. Equipment calibration frequency is determined by date or frequency of use. The calibration lab provides a computer listing to each tool crib, indicating instruments which are due for calibration. For equipment calibrated on a usage basis, the tool crib supervisors maintain a sign-out list and return instruments for calibration when the usage limit is met. Equipment users are aware of the usage limits and notify the tool crib supervisor when equipment requires calibration. When a user identifies a problem with a piece of equipment, the equipment is taken out of service, tagged, and returned to the calibration lab. If a piece of equipment is not used for six months, it is removed from the crib and is stored by the calibration lab.

Five technicians work in the calibration lab and are assigned responsibility for specific types of measuring devices. Experience for technicians at the lab ranges from three months to six years. The laboratory has operated for seven years and the calibration program has been changed to meet the needs of the station. Next day calibration service is provided for urgent requests. The backlog is presently 200 pieces of equipment and the technicians are working an overtime schedule. No associated work delays or inadequacies were identified.

While calibration equipment is stored in the Radiological Controlled Area, the licensee has not established a hot (radioactively contaminated) calibration lab. Plans have been discussed for a temporary hot calibration lab; a trailer and most required calibration equipment are onsite. The licensee estimates that a temporary facility could be placed in service within two months, but no definitive plans have been developed. The absence of a hot calibration facility was assessed as a potential problem with calibration efficiency. However, NRC requirements were found to be met.

The calibration program was well established. It provides adequate tracking and control of equipment requiring calibrations. The technicians who use calibrated equipment are conscious of calibration requirements. A larger staff could reduce backlog and overtime, but the present staff was assessed as adequate to maintain equipment in calibration.

The ORAT concluded that the present calibration facilities are adequate to support power ascension and that support of extended power operation would be enhanced by a facility for calibrating contaminated equipment.

5.2.5 Personnel Control

The ORAT observed maintenance personnel during assignment of work and during the performance of maintenance and calibration activities, held discussions with working supervisors, training coordinators, department supervisors, and the Maintenance Manager, and reviewed selected training records and qualifications of technicians.

Maintenance support is provided on shift, requiring each technician to work on a rotating shift for a six-week period twice a year. The maintenance staff is working ten-hour days, six days a week to complete the required work during the current outage.

Most maintenance technicians, working foremen, and supervisors have held their positions for over four years and are qualified to the highest licensee level. Specialty and refresher training is ongoing to maintain and increase technicians' knowledge and proficiency. Working supervisors maintain a listing of the technicians who have completed specialty training courses and ensure that technicians are assigned to jobs for which they are qualified. The maintenance training programs are being prepared for industry accreditation in the summer of 1990. Department training coordinators and technicians are assigned to assist in job task analyses and lesson plans preparation.

Lead technicians and supervisors are taught the responsibilities of the next level of management by on-the-job training and through acting for their immediate supervisor when the supervisor is absent.

The ORAT concluded that the Maintenance Department is adequately staffed with motivated and technically competent personnel and that the maintenance departments can support power ascension. Maintenance personnel interface effectively within their assigned crafts, with other crafts, with engineers, and with operations personnel. The maintenance personnel observed displayed a professional attitude toward the completion of their assigned tasks.

5.2.6 Management Support and Assurance of Quality

The ORAT discussed management support with managers and supervisors and assessed the effectiveness of the quality assurance program by observing technicians and supervisors in the field.

Management provides direction and guidance for completing the maintenance program. Daily staff meetings and plan of the day meetings are used to track and plan identified maintenance work. The work request system provides direction to working supervisors and the technicians for the completion of identified tasks.

ORAT observations found quality to be an integral part of the conduct of jobs. The ORAT observed the following examples of technicians stopping work to verify that proper quality assurance was maintained. An I&C technician stopped work on the diesel generator and requested engineering support to

evaluate the acceptability of a split in the plastic covering on the cable of a temperature detector. An electrician stopped work on an isolated residual heat removal cross-connect valve when he sensed flow and requested operations verification of the isolation of the valve. A mechanic assisted an operator in determining the status of the diesel generator fuel racks. An I&C technician stopped work on repair of an accumulator level meter to verify that the issued repair part was the proper replacement part.

Second person verifications, QA hold points, and working foreman reviews are included in procedures and work requests. Working foremen were observed at most job sites, but supervisors and managers were not observed in the field.

The ORAT observed the pretest briefing prior to testing the diesel generator. The mechanical working foreman and control room personnel discussed the test, the sequencing of required actions, and the operating precautions. Based on the inspectors' observations and the successfully conducted test, the ORAT concluded that the pre-test briefing was effective.

The ORAT concluded that management support and assurance of quality is adequate to support power ascension and power operation.

5.3 Assessment

Preventive and corrective maintenance is being adequately performed by a technically competent and highly motivated staff which exhibited high morale. That staff is routinely working significant overtime. No associated inadequate work was identified, but excessive overtime and a high work backlog are a potential detriment to effective operations support.

The assignment, conduct, and documentation of maintenance work is well defined and was implemented in accordance with the licensee's program. Outstanding work requests and overdue preventive maintenance items are closely tracked.

Material procurement and control adequately supports maintenance. Receipt inspections and the tracking of material is well established. The procurement process, including the qualification of commercial grade parts is evolving and improving.

The calibration lab is well established and adequately supports the maintenance work. However, the lack of a hot calibration facility will complicate calibration of contaminated components.

The maintenance staff is experienced and well qualified. Communications within the maintenance organization are good and effective interfaces are established with other on-site organizations.

Management provides adequate direction and support. Assurance of quality function is effective at the technician level, with appropriate independent evaluation and verification.

5.4 Conclusions

The maintenance organization is adequately staffed and experienced. Effective work control, material control, procurement, equipment calibration, and management functions are in place. The staff is working significant overtime and the backlog of work requests remain high. Present staffing levels, and calibration facilities may not be fully effective in supporting extended power operation.

6.0 SURVEILLANCE

6.1 Review Scope

The ORAT reviewed the Technical Specification Surveillance Program and implementing procedures for readiness to assess the following.

-- Whether administrative procedures are available and adequate to control Technical Specification surveillance testing.

-- Whether station staffing is adequate to administer and conduct the Technical Specification Testing Program.

-- Whether surveillance testing is being successfully executed and adequately controlled.

-- Whether the SPECAPPRAISAL computer data base assured that Technical Specification surveillances are properly modeled in the data base.

6.2 Findings

The Technical Specification (TS) Test Program is controlled by administrative procedure MT10.1, Rev 2, "Technical Specification Surveillance Scheduling and Performance." Surveillances are tracked and scheduled using a computer-based system. Routine surveillances which are performed more often then once every seven days are administratively controlled by department procedures and are not tracked on a computer-based system.

The Surveillance Test Program is controlled by the Technical Support Department. The Lead Surveillance Engineer, who reports to the Program Support Department Manager, has two Engineering Analysts and an Engineering Aide working for him. Both Engineering Analysts are contract engineers; the licensee is pursuing filling these positions with NHY personnel.

The ORAT reviewed License Event Reports (LERs) for the past two years to identify missed Technical Specification (TS) Surveillances. Two 1988 LERs (88-02 and 88-06) identified missed surveillances. Both missed surveillances were attributed to not properly identifying equipment required to be tested. The ORAT concluded that these missed TS surveillances (in two years) did not indicate a generic program weakness.

Station Information Reports (SIRs) were reviewed for the past two years by the licensee to identify surveillance deficiencies. SIR 89-061 describes TS surveillance tests 4.3.3.9 and 4.3.3.10 for the liquid and gaseous effluent monitoring systems as being missed: monthly source checks of various effluent gas and liquid monitors were not conducted per the surveillance procedure. The licensee later identified that the source checks had been performed automatically by the monitoring systems, therefore, the monitors were operable. Because the monitors were operable, an LER was not required. The root cause of the missed surveillance test was identified as inability of the SPECAPPRAISAL computer program to track and reschedule partially completed surveillances. MT10.1 was changed so that partially completed surveillance tests can be input into the SPECAPPRAISAL program, and equipment not tested is now maintained on the limiting condition for operation (LCO) action statement status log sheets.

The ORAT independently verified the accuracy of the daily TS surveillance 4.1.1.2 for shutdown margin. The shutdown margin was recorded as item 31 on the TS Mode 5 log sheet.

The ORAT observed selected portions of surveillance procedures OX1413.01, Rev. 5, "RHR Quarterly Flow and Valve Stroke Test and 18 Month Valve Stroke Observation," and OX1426.05, Rev. 3, "D/G 1B Monthly Operability Surveillance." During performance of section 8.2 of procedure OX1413.01, the licensee identified that the discharge pressure gage was not adequate for the Inservice Testing (IST) surveillance of the RHR pump. The gage was temporarily replaced by pressure gage of acceptable accuracy. The licensee stated that the test procedure would be changed to specify installation of a more accurate pressure gage.

During performance of procedure OX1426.05 the inspector observed strong Quality Control involvement. Also, Maintenance provided assistance in test performance. In addition, Operations used the assistance of the system engineer and system I&C foreman to resolve the discharge pressure gage issue described above.

6.3 Assessment

Administrative procedures were available and adequate to successfully execute the Technical Specification Surveillance Program. Staffing to schedule and track surveillances was adequate; all positions were filled. Test procedures reviewed were detailed and technically sound. The professionalism and knowledge of personnel conducting TS surveillances was evaluated as strong.

6.4 Conclusions

The Technical Specification Surveillance Program has successfully been implemented for Mode 5 operations at Seabrook. Staffing levels and procedures are in place to support power operation surveillances.

7.0 RADIATION PROTECTION

7.1 Review Scope

The readiness and capability of the licensee's radiological controls program to support power ascension and full power operations was reviewed by the ORAT. Readiness and capability were evaluated against criteria in applicable regulatory requirements, Final Safety Analysis Report Commitments, and Technical Specification requirements. The ORAT evaluated the licensee's performance in this area by independent observations during plant tours, discussions with personnel, reviews of documentation, and independent walkdown of systems.

7.2 Findings

7.2.1 Organization and Staffing

The licensee has a well defined radiological controls organization (see Figure 5). The current, approved organization is fully staffed. ORAT review noted that the licensee hired 12 contractors to augment the organization and that there may be a need to provide additional permanent personnel (e.g. in dosimetry records) if the contractor support is terminated. This was based on inspector observation of work activities. The licensee's radiological controls representatives indicated that additional permanent personnel have been requested and that the qualified contractor personnel would be retained if needed.

The ORAT found the organization and staffing of the radiation protection portion of the radiological controls organization, with its contractor support, to be fully capable of supporting power operation.

The ORAT noted, during discussions with the licensee's radiological controls representatives, that the radwaste management and radwaste transportation organizational responsibilities were being changed. Those changes were not evaluated during this ORAT inspection. (This aspect will be reviewed from January 8-12, 1990 and documented in Report 90-03).

7.2.2 Qualification and Training

The ORAT reviewed the qualifications, training and continuing training for radiation protection personnel in the radiological controls organization. The review included technicians, supervisors, and managers.

The ORAT considered the personnel to be highly qualified and trained. Continuing training was being provided to permanent personnel as appropriate. Both permanent and contractor personnel were provided with timely training in new or revised procedures and industry events.

The ORAT noted that the contactor radiological controls technicians, hired to augment the staff during initial plant startup, have not been included in the formal continuing training program. Those contactors were provided initial

training and qualification when they were hired. The licensee indicated that the continuing training of contractors would be reviewed. Licensee attention is warranted to assure that this lack of continuing training does not develop into a qualification inadequacy.

Qualifications and training of radiation workers were reviewed during the May-June 1989 readiness inspection and were found acceptable. Current training was found by the ORAT to be adequate to support full power operation.

The ORAT noted that there was no specific training for radiological controls or operations personnel on the expected radiological conditions associated with plant systems which will present radiological hazards during power operation (e.g., expected areas of continuing and transient high radiation dose rates). These personnel may access such areas during startup and operation. Such training is especially appropriate for operations personnel since they are permitted to monitor their own entries into high radiation areas. The licensee initiated a review of this matter, which the ORAT considers a potential program improvement.

7.2.3 Communications, Morale and Attitude

The ORAT evaluated radiological controls, communications, morale and attitude. A positive attitude was evident during ORAT discussions with personnel. Radiological controls personnel communications with operations department personnel was acceptable. Generally, communications were good and were enhanced by attendance at frequent meetings with all levels of the organization.

The ORAT noted that the licensee had identified two instances where radiological controls personnel had not performed assigned tasks as expected. The licensee had thoroughly evaluated these instances and concluded that the individuals displayed poor attitudes and an apparent lack of professionalism and pride in their work. The ORAT noted that the licensee's management was notified of the apparent problem by the workers' peers. The ORAT found that the licensee had performed a thorough review of the issue and instituted measures to more closely monitor worker performance. These instances were considered to be isolated and not indicative of a pervasive problem. The ORAT considered overall attitude and morale to be very good.

7.2.4 Facilities and Equipment

The ORAT reviewed the radiological controls facilities and equipment and noted that there were ample supplies (both consumable and nonconsumable) to support the radiological controls program, including the external, internal and respiratory protection programs. The inventory of consummables (e.g. protective clothing) was computer tracked. Supplies were reordered when needed.

A state-of-the-art instrument calibration facility, which provides for calibration of monitoring instruments directly traceable to the National Institute of Standards Technology, was operational.

7.2.5 External Exposure Controls

The ORAT reviewed the following elements of the external exposure control program.

-- Procedures.
-- Dosimetry devices.
-- Radiation work permits.
-- Records and reports.
-- Number and types of survey meters.
-- High radiation area access controls.
-- Posting and barricading of radiological areas.
-- Calibration facilities and radiation sources used.
-- Area radiation monitors and calibrations.
-- Control and leak checking of radioactive sources.

The ORAT found that the overall external exposure controls program was well defined and capable of supporting power ascension and full power operation. Procedures were of good quality. Tours by ORAT members found radiological controlled areas to be properly posted.

The licensee has assigned a radiological controls individual to the planning and scheduling department. That individual reviews work requests and acts as an intermediary between the radiation protection group and work groups. This coordination was assessed as a benefit to radiological controls work review and planning.

The inspector identified the following weaknesses for which the licensee implemented prompt and acceptable corrective actions.

-- Procedure guidance explaining the methods of continuous coverage of personnel working in high radiation areas were subjective and open to interpretation.

-- Procedures did not provide good controls for tracking of extremity exposures during work.

-- Procedures did not provide a clear indication of the minimum radiological surveys needed to support radiation work permit work.

7.2.6 Internal Exposure Controls

The ORAT reviewed the following elements of the internal exposure control program.

-- Procedures.
-- Bioassay methods and equipment.
-- Records and reports.
-- Respiratory protection equipment.

-- Engineering controls.
-- Posting.

The ORAT concluded that the overall internal exposure control program was generally well defined and capable of supporting power ascension and full power operation. Ample supplies of respiratory protection and airborne radioactivity sampling equipment were available. The internal dosimetry program was fully implemented. Bioassay methods were established and implemented.

The ORAT observed candy wrappers in the radiological controlled area (RCA). Ingestion of food is prohibited in the RCA. The licensee initiated acceptable action to reinform personnel of the prohibition.

7.2.7 Safety-Related Ventilation Systems

The ORAT reviewed the surveillance testing of the control room emergency ventilation system and the containment enclosure ventilation system. These systems were visually inspected by the ORAT to determine their condition and to compare them to approved drawings.

The two systems were being retested to determine their operability as defined in the Technical Specifications (TSs). The retesting was consistent with TS requirements, with the following being noted.

-- A test to determine if the control room emergency ventilation system appropriately realigns and goes into the filter recirculation mode when ordered has not yet been done. That test is to be completed prior to going into Mode 4 after completion of the control room emergency ventilation system design change. Licensee controls to assure conduct and adequacy of this testing were assessed as acceptable.

-- The wattage test results for the installed heaters for the control room emergency ventilation system exceeded the TS specified wattage. No inability to meet operational requirements was involved.

The licensee had completed a technical clarification specifying that the heater wattage was acceptable and no change in Technical Specification was required. The inspector informed the licensee that the TSs should be changed to reflect the higher wattage. The licensee indicated that this and other technical clarifications were under review to evaluate the need to change the TSs. This unresolved item is considered part of an overall issue of whether any TS or FSAR provision has been altered by the licensee's interpretations and clarifications (443/89-83-01).

7.2.8 ALARA Program

The licensee has established a procedurally described program to control personnel ALARA (as low as reasonably achievable) exposures to radiation and radioactive material. That program places the ALARA review responsibility on job supervisors. The ORAT noted that job supervisors have received limited ALARA training.

The ALARA program also allows radiological controls technicians to issue radiation work permits for work involving accumulated personnel radiation exposure of less than two person-rem. These individuals have also received limited ALARA training.

In addition, the inspector noted that no formal program for establishing challenging ALARA goals was in place.

The ORAT concluded that a basic ALARA program was in place, with room for improvements in the assurance of ALARA proficiency of job supervisors and radiological controls technicians, and in establishing challenging and specific ALARA goals.

7.2.9 Industrial Safety and Housekeeping

The ORAT reviewed industrial safety and housekeeping during plant tours. NHY has established procedures for industrial safety and housekeeping.

Tours of the station by ORAT members noted some examples of failure of workers to use the safety equipment supplied by the licensee. For example, personnel were not using safety glasses or safety belts when working in the Refueling Cavity. The licensee immediately initiated review and acceptable corrective action.

During tours, questionable safety and fire protection practices were observed. Painters were noted to be cleaning brushes in an enclosed, non-ventilated room, and the paint fume smell was strong. Safety personnel had not been notified of this concern by the work supervisor, and no airborne sampling of atmospheric contaminates was done. The painters did not wear respirators, and left flammable, thinner-soaked rags in plastic bags.

The conditions noted above were assessed as poor practices which, though uncharacteristic, merit licensee attention. (Subsequent inspection confirmed correction of the specific items noted.) Continued adequacy of industrial safety and housekeeping will be regularly evaluated during routine NRC inspection.

7.2.10 Process and Area Radiation Monitors

The ORAT reviewed the calibration and surveillance of process and area radiation monitors described in the TSs. Instruments reviewed included control room isolation instrumentation, main steam line radiation monitors, and reactor coolant leakage detection instrumentation. The ORAT also reviewed the calibration of general area radiation monitors.

The ORAT found that the licensee established well defined procedures for surveillance testing and calibrating the instruments. All instruments were tested in accordance with TS requirements, and alarms were properly set.

The ORAT observed that the individuals performing calibration and testing had a high degree of system and procedure knowledge. Also, the ORAT noted that procedures required a second individual to verify that instrumentation was properly returned to service.

7.2.11 Radioactive Material and Contamination Control

The ORAT reviewed radioactive material and contamination control, including personnel contamination and the surveys and equipment used to check material being released from radiologically controlled areas (RCAs).

The ORAT found that the licensee had established well-defined procedures for posting and labeling of radioactive and contaminated material, for providing guidance for surveying material removed from RCAs, and for use of protective clothing. Material removed from the RCAs was surveyed by radiological controls personnel.

There was limited radioactive material stored at the station. The radioactive material present was primarily residue from calibration of equipment. No contaminated areas were identified. A routine survey program to check for station contamination has been established. Although no significant contamination currently exists, equipment and materials were thoroughly checked prior to being removed from the RCAs. Properly calibrated state-of-the-art personnel contamination monitors were being used by personnel exiting RCAs.

The ORAT noted no formal identification of all areas in the station where radioactive material was authorized to be stored. Identification of such areas as authorized for storage is a good practice. This was identified to the licensee for consideration.

The ORAT concluded that the radioactive material and contamination control program is capable of supporting power ascension and full power operation.

7.3 Conclusions

The licensee has established and implemented a generally well-defined radiological controls program capable of supporting power ascension and full power operation. NHY initiated immediate corrective actions on the concerns identified.

8.0 ENGINEERING AND TECHNICAL SUPPORT

8.1 Review Scope

The ORAT evaluated operational readiness of the engineering and technical support organizations through review of organization and staffing, modification and configuration controls, and interdepartmental interfaces. Some ongoing and recently completed modifications were reviewed for the quality of design planning, independent verification, installation, and testing. Also, the inspectors reviewed the licensee's process for determining whether a modification required completion prior to power operation. Planning for accomplishment of outstanding modifications was reviewed as well. Engineering staffing levels and qualifications were evaluated for adequacy of engineering support to the operating staff. During interviews with engineers and engineering supervisors, staff attitude and morale were assessed.

Working relationships between the organizational elements involved in engineering support activities were evaluated through interviews and by observations during licensee meetings. In addition, the ORAT reviewed the licensee's recent self-assessment and QA audits and actions on the findings to assess the effectiveness of the licensee's management oversight and commitment to program improvements.

8.2 Findings

8.2.1 Engineering and Technical Support Staffing

The on-site Seabrook Station engineering structure consists of the Plant Technical Support Department and the New Hampshire Yankee (NHY) Engineering Group. (See Figures 3A and 3B.) These staffs are supplemented by engineers from the Yankee Atomic Electric Company (YAEC) headquarters office. The Engineering and Technical Support staffing was assessed as adequate and had a very low turnover rate. The inspectors noted good working conditions, including sufficient facilities and equipment.

Persons contacted in the Engineering, Technical Support, and Quality Assurance (QA) areas were enthusiastic about their work and participation in preparation for plant operation. The overall favorable staff attitude and morale was further evidenced by the low turnover.

8.2.2 Station Modifications

The Technical Support Department evaluates requests for engineering services (RESs) that have been initiated by plant departments including Operations and Maintenance. RESs requiring plant changes are converted to Design Coordination Reports (DCRs) or minor modifications (M-Mods) by NHY Engineering through evaluation, review and approval prior to Work Request (WR) preparation.

Technical Support implements Station Operation Review Committee (SORC) approved DCRs and M-Mod packages. This is accomplished by preparation of a WR that defines the work to be accomplished and provides the applicable drawings, procedures, instructions and documentation requirements. Technical support to accomplish a DCR or M-Mod work is performed by systems engineers from the Technical Support staff.

The ORAT reviewed the RES, DCR, and M-Mod processes and sampled DCRs and M-Mods to establish their technical quality. Associated WRs and the field condition of affected components were examined. The inspectors found that the Engineering Group and Technical Support Department were effectively controlling plant modifications to ensure that plant system and components were in the condition required by plant design and regulatory requirements. Where work was not completed, review of scheduling and tracking of work progress, including operational hold points, showed that the licensee's program was effective in preventing component or system startup until work was completed. Proper equipment and system operability are confirmed by post-installation and startup testing.

The NHY Engineering Group staff's time is divided among DCR development, processing operational experience concerns, commitments and regulatory requirements, and conducting engineering reviews and developing improvements.

8.2.3 Plant Safety and Reliability

The ORAT found that both Engineering and Technical Support personnel were involved in tasks related to optimizing plant safety and reliability. These tasks include items such as emergency diesel generator (EDG) failure modes and effects analyses, non-nuclear balance of plant (BOP) systems review, and development of a motor-operated valve operational test method using valve stem strain gage measurements to quantify valve loading.

The control room and local annunciator response procedures (ARPs) for the emergency diesel generators (EDGs) were sampled by the ORAT inspectors. Operations had prepared these procedures and they had been reviewed by SORC. Other than through the SORC process, Engineering and Technical Support were not involved with the review and evaluation of the ARPs to establish that the defined operator actions are optimum. Such review and evaluation was assessed as a potential performance improvement item.

The ORAT evaluated the availability and useability of the EDG ARPs and noted the following.

-- The reviewed EDG ARPs were adequate in that they defined a suitable set of operator actions for each annunciator.

-- EDG local panel ARPs were not available for operator use in either of the two EDG buildings.

-- The index or identification of the ARPs was not consistent with the panel annunciator identifications; that is, the procedures used an alpha-numeric identification while the panel annunciators were identified by numbers only. This could delay operator response while the appropriate procedure was located.

The above problems were acknowledged by the licensee and corrected prior to the close of this inspection. Further, the licensee committed to review the availability of all safety-related ARPs for operator use at the local panels and confirm procedure useability, including verification that a direct correlation between the panel designator and the procedure designator existed. This was identified as an unresolved item (443/89-83-02) and is scheduled for resolution prior to plant restart.

In summary, the ORAT found that Engineering and Technical Support had generally provided the input necessary to assure that plant systems are in the as-designed condition and will function as intended.

8.2.4 Integrated Readiness Document (IRD)

The ORAT reviewed the licensee's Integrated Readiness Document (IRD) program with the Licensing Manager, who is responsible for the IRD. The objectives of the IRD are: (1) to track all activities required to be completed before issuance of the full power operating license (FPOL); and (2) to track activities for which the NRC has requested status at the time of licensing. The IRD consisted of 120 items and was being updated weekly. It included data on NRC Bulletins, Safety Evaluation Reports (SERs), Confirmatory Action Letter (CAL) 89-11 actions, Generic Letters, Inspection Reports, 10 CFR 21, NUREG-0737, Emergency Preparedness issues, Licensee Event Reports, and Self-Assessments.

The inspectors selected regulatory-driven Design Coordination Reports (DCRs) 87-311, 89-045, and 89-055. These DCRs were found in the IRD and their status was current and complete.

8.2.5 QA/QC Interface in Engineering Modifications

Design Coordination Reports (DCRs) for engineering modifications are reviewed and approved by Nuclear Quality Assurance (NQA) in accordance with Section 6 of the NHY QA Management Manual and Engineering Procedure 31312. The QA

engineer's scope of review includes the 10 CFR 50.59 safety evaluation, the analyses and calculations, the FSAR changes, procurement QA, and procedural and document changes.

When a DCR is SORC approved, the Technical Support Implementing Engineer develops the associated Work Request (WR) package. QA and Quality Control (QC) review the WR package, establish QC hold points, determine QA surveillances to be conducted during the implementation phases (e.g., walkdowns, testing, and turnover to Operations). QA engineers also support QC by participation in hold points. The QA engineers interface with the Technical Support Engineers in defining the QA requirement in areas such as nondestructive evaluation, welding, test procedures, corrective and preventive action.

The ORAT reviewed QA/QC involvement during the walkdown of DCRs 87-311, 87-422, and discussions regarding DCRs 88-182, 89-055, and 86-709. The first four DCRs dealt mainly with valve work; DCR 86-709 dealt with the control Room Habitability System. It was concluded that these engineering modifications were reviewed by an adequately staffed and trained NQA Engineering Group.

The ORAT reviewed Safety Audit and Review Committee Meeting 89-06 minutes of October 25, 1989. Those minutes included trending and analyses of Management Action Requests (MARs) and QA reports of Inspection, Surveillance, Audit, and Corrective Action. The ORAT also reviewed 15 Quality Assurance Surveillance Reports (QASRs), four QA Audit Reports (QAARs), one MAR, and Independent Review Team (IRT) QA Review Update Report No. 4. That update report monitors the IRT recommendations based on SALP Report 50-443/87-99. The ORAT found that NQA was keeping management apprised of the quality of work at the Seabrook Station.

To meet their Operational QA Program responsibilities, NQA identified plans to add selected technical expertise on the QA Audit Teams, use a more selective, in-depth technical and integrated approach to DCR review, increase QA Engineering involvement in DCR implementation, complete Level II (plant specifics; e.g., component design) and Level III (system) training for NQA personnel, and add permanent personnel with licensed operator experience on their staff. (NQA currently has two contractors with SRO experience.) ORAT review concluded that these are positive initiatives but do not affect present readiness for power operation.

8.2.6 Confirmatory Action Letter 89-11 Items

With respect to Confirmatory Action Letter 89-11, Engineering actions were noted to be complete or in progress. (Attachment 1 to this report contains CAL item status.)

During the inspection of the Engineering and Technical Support area and the review of related Quality Assurance activities, certain DCRs, M-Mods, LERs, and Maintenance and Operations Manual procedural changes were examined to confirm timely completion of CAL items. The team verified that significant

engineering involvement and effort had contributed to the corrective action implementation of the 1B CAL area. As a result of this inspection, CAL Items 1.B-1 through 1.B-8 were found to have been adequately addressed by licensee corrective measures and NHY management attention to their completion.

8.3 Conclusions

The ORAT concluded that Engineering and Technical Support have appropriate programs in place and have provided the engineering input to assure that plant systems and components are in the as-designed condition and will function as designed.

The integrated Readiness Document (IRD) adequately tracks items required for completion. Engineering and Technical Support activities have been audited and are under periodic surveillance by Nuclear Quality Assurance (NQA).

Overall, the ORAT concluded that Engineering and Technical Support is ready for power operation.

9.0 CONFIRMATORY ACTION LETTER CAL 89-11 CORRECTIVE ACTION PLAN (CAP)

9.1 Background

Based upon the licensee's failure to manually trip the reactor as required during the natural circulation test on June 22, 1989 and the failure to implement a comprehensive post-event analysis, CAL 89-11 was issued by NRC Region I on June 23, 1989. That CAL documents the licensee's agreement to review corrective actions and post-trip review results with the NRC. The licensee submitted, as an enclosure to its response (NYN-89086) to the CAL, a Corrective Action Plan which detailed specific areas for evaluation and action. On October 23, 1989, the licensee provided an updated submittal (NYN-89128) of its Corrective Action Plan. This document included a total of 55 corrective action items divided into seven general areas as follows:

-- 1A - Procedural Compliance
-- 1B - Equipment Readiness
-- 1C - Pretest Preparation
-- 1D - Power Ascension Test Program
-- 2A - Post Event Management
-- 2B - Operations Management
-- 3 - Management Oversight

The ORAT reviewed several of these corrective actions (discussed in this report as CAL items 1A-1 thru 3-8). Attachment 1 to this report documents the ORAT review status for CAL items and references the ORAT report section where the CAL item is discussed. All CAL items reviewed were found acceptable.

9.2 Management Oversight

The ORAT examined licensee management attention to, involvement in, and oversight of CAL 89-11 for CAL items 3-1 through 3-8. Documented evidence of the progress, tracking and review of specific corrective actions to completion was examined. Also, the ORAT reviewed the New Hampshire Yankee Core Values and Work Ethic Policy and the associated development of a "Values for Excellence" culture.

NHY has conducted independent assessments of the effectiveness of the CAL corrective measures. The results of several evaluations of the overall content and direction of the Corrective Action Plan have been provided to NHY executive management. The ORAT interviewed several onsite managers and discussed the impact of the newly implemented policies and program revisions on employee morale, understanding, conduct of work, and organizational goals.

The NRC had previously witnessed formal licensee training on the NHY procedural adherence and core values policies. In succeeding weeks, there were examples of management's dissemination of policy information in weekly news flyers, in the "Week in Review," and in the "Station Manager's Messenger." These contained articles on values for excellence, work performance, station goals and problem areas, and discussed both NHY policy and examples of where the work ethic can be appropriately applied. Random interviews with plant personnel by the ORAT confirmed that station personnel were receiving and acknowledging the intent of management's messages. One indicator was the increase in procedure changes initiated by employees, as discussed earlier in this report.

The ORAT also reviewed a Nuclear Quality Group review of the effectiveness of the NHY procedure compliance policy upgrade, a June 22 event case study which has been or is to be presented to personnel involved with the power ascension test program, and plans for the review of operating experience gained from startup test problems identified at other plants. Additionally, in assessing the effectiveness of the Station Operation Review Committee (SORC), the ORAT reviewed a SORC Effectiveness Evaluation conducted by an independent team of experienced nuclear personnel under the auspices of the NHY Independent Review Team.

Management oversight of the licensee's overall program of corrective measure implementation of CAL 89-11 was discussed with the NHY Senior Vice President and Chief Operating Officer (COO). He was thoroughly cognizant of both the status of corrective and ongoing review efforts and the need to assess the implementation of additional recommendations resulting from internal reviews. The Senior VP and COO was asked to provide the NRC with a letter discussing the NHY upper management perspective on the effectiveness of the corrective action program and upon the insights gained from the several independent reviews that have been conducted. The Senior VP and COO agreed to provide such an assessment as part of any further request to the NRC to lift the CAL constraints from Seabrook operation, after completion of the NHY Corrective Action Plan program implementation.

9.3 Procedure Compliance

Items 1.A-1 through 1.A-11 of the licensee's Corrective Action Plan constitute the licensee's response to improving operator understanding of the NHY Procedural Compliance Policy. This response consisted largely of developing, issuing, and conducting training on an improved policy on Procedural Compliance. The response also contained an instruction for the establishment of a Human Performance Evaluation System (HPES) and a revision of the Natural Circulation Test Procedure.

ORAT inspection consisted of a review of the licensee's proposed corrective action for each issue, and a comparison of the completed corrective action to the intent of the proposed corrective action. In addition, the ORAT reviewed training and Quality Assurance programs as they related to procedural compliance.

To address procedure compliance, the licensee took three basic steps. First, the policy on procedural compliance was clarified to more accurately reflect management's intent that all procedures are to be followed unless an overriding safety concern prohibits such action. The second step was to issue the revised policy statement once it was approved. The third step was to ensure that all site workers were aware of and understood the Procedure Compliance Policy. To meet this goal, a program designed to ensure that all workers receive training on the policy was established.

Station Procedure 10000 discusses the NHY policy on procedural compliance and states in part that, "procedure compliance is the foundation for the conduct of business..." It goes on to state that noncompliance with procedural requirements is only permissible when there are immediate overriding safety concerns involving:

-- protection of the health or safety of the public,
-- prevention of injury or life threatening situation, or
-- prevention of damage to major plant equipment.

The policy also provides guidance on what to do if an approved procedure is found to be unclear or in error. The Procedure Compliance Policy, as stated in Station Procedure 10000, is quoted in the Seabrook Station Management Manual (SSMM), in the Production Management Manual (NPMM), and in the Operations Management Manual (OPMM). As an additional indication of the emphasis management places on procedural compliance, NHY meetings were held with all shifts to discuss the issue.

Ensuring that all workers are aware and have a proper understanding of procedural compliance was addressed in items 1.A-9 and 1.A-11 of the Corrective Action Plan. Item 1.A-9 specifically deals with the problem of ensuring that all site workers receive training on the basic Procedural Compliance Policy. In resolving this item, a training lesson on procedural compliance was prepared for approval by the Training Group Manager. In addition, a memorandum from the Executive Director-Nuclear Production was distributed to managers, department

supervisors, and training liaison personnel. That memorandum emphasized the importance of ensuring that all people for whom the individual manager was responsible received training. A memorandum from the Training Group Manager to the Executive Director-Nuclear Production addressed the actions being taken to resolve the problems encountered in achieving 100% compliance.

In a memorandum dated October 12, 1989, the Training Group Manager stated that current simulator training scenarios satisfactorily challenge operator judgement on procedural compliance. In a memorandum dated November 10, 1989, the Training Group Manager went on to state that Procedural Compliance Policy training for all operators and instructors is complete, that extensive EOP training on procedural compliance was conducted and witnessed by QA personnel, and that further intensive training for operating crews is scheduled.

Some items did not specifically deal with procedural compliance, yet were designed to improve procedures, their development and revision and overall contents (1.A-7, 1.A-8 and 1.A-10). Item 1.A-8 dealt with the reorganization of the Operations Department to provide people to perform the required development and review of Operations procedures. The resolution of this issue involved increasing Operations Department staffing from 94 to 103 people. In addition, each shift would be reorganized in an attempt to better support both ongoing maintenance and procedural review.

Item 1.A-10 involved the implementation of a Human Performance Evaluation System (HPES). The resolution of this item involved the appointment and qualification of a HPES Coordinator, and the adoption of industry accepted methodologies into a NHY program.

Items 1.A-7 involved the rewriting of the Natural Circulation Test procedure to allow for testing on decay heat rather than during low power critical operations. This change will involve a change to the FSAR and to previous commitments. The licensee has submitted a request to perform the test under actual decay heat conditions. This issue is under review by the NRC staff.

9.4 Power Ascension Test Program Review

CAL 89-11 identified items that required significant Startup Test Program involvement. Listed below are the stated corrective actions and the documents reviewed by the ORAT team to verify completion of the actions. No inadquacies were identified.

(1.D-2) Revise the Startup Test Program to remove the reactivity computer from the horseshoe area when it is not required for testing. Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.2.3, test performance, now requires this.

(1.D-3) Revise the Startup Test Procedures to provide additional guidance for terminating a test and exiting the test procedure when equipment malfunctions occur. ORAT review confirmed that this had been provided in the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.2.3, 4.2.6 and 4.2.7.

(1.D-6) Revise the Power Ascension Test Program to include NHY Executive Management "review points" at the key plateaus of 5%, 30%, 50% and 75%. This is now required by the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.3.2, Review and Approval of Results.

(1.D-7) Revise the Power Ascension Test Program to require that each procedure has a background document that describes the reason the test is being conducted, the basis for any set point and criteria, or other such information related to the test. The background document will be included in the procedure throughout the review, approval and implementation cycles. Doing so is now required by the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.6.12, Attachments and Figure 5.4, Power Ascension Test Background Document Guideline.

9.5 Assessment

The development and issuance of the Procedural Compliance Policy as discussed in items 1.A-1, 1.A-2, 1.A-3, 1.A-4, and 1.A-6 was assessed as conservative. Management's intent that all procedures are to be followed unless an overriding safety concern prevents such action is abundantly clear. Guidance as to what constitutes an overriding safety concern and what to do if a procedure is ambiguous or in error is also provided in the policy. The policy was formally issued as a part of Station Procedure 10000. In addition, it has been quoted in the SSMM, the NPMM and the OPMM. The policy and its issuance have received ample management attention at all levels.

The effect that the enhanced policy on procedural compliance has had on station activities is discussed in other parts of this inspection report, as applicable (e.g., the increase in the number of procedures requiring revision because of increased sensitivity to procedural wording on the part of licensee personnel). Attention to operations has been high, and ORAT and other reviews have found very rigid adherence to procedures. The licensee's policy is conservative, clear, and has received adequate emphasis and management attention. Therefore, items 1.A-1, 1.A-2, 1.A-3, 1.A-4, 1.A-5 and 1.A-6 of the Corrective Action Plan have been adequately implemented.

The training conducted on procedural compliance, as discussed in item 1.A-9, is adequate to provide reasonable assurance that all site workers are or will be made aware of NHY policy. The various memoranda from the Training Group Manager indicate that management is taking a serious and active role in ensuring 100% training. Further, the lesson plan for Procedural Compliance Policy training has received adequate management review. The training program

is ongoing, and there is reasonable assurance that it will continue to be managed properly. Therefore, item 1.A-9 has been properly implemented by the licensee.

As part of the response to item 1.A-11, Licensed Operator Training Program, the Training Group Manager reviewed current simulator scenarios with regard to their ability to challenge operator judgement on procedural compliance. The scenarios were found to be adequate. As another part of the response to this item, a memorandum from the Training Group Manager stated that extensive EOP training with the focus on procedural compliance had been conducted and witnessed by QA personnel. NHY QA observers made no written comment on the training. Licensee training and QA managers were advised of the benefits of written QA assessments of training.

As the final part of the response to this item, a series of meetings between management and the operating crews was held. A summary of the questions that arose during these meetings, along with the answers to those questions, was distributed to all operators.

Although formal test results and comments by the QA department would have improved the licensee's response to this issue, it was apparent that management has given adequate attention to the review of the Licensed Operator Training Program as it regards procedural compliance. Licensed operator training will be the subject of future NRC inspections and Item 1.A-11 will receive additional NRC attention during those inspections. No evidence of inadequate training or lack of attention on the part of the training department to this issue were identified during this ORAT inspection.

The response to item 1.A-8, reorganization of Operations, was found to be appropriate to the needs of the NHY organization. An increase in the size of the Operations Department is ongoing. The form of the reorganization has not been finalized, but it was apparent that there was a dedicated management effort to complete the project. No further inspection of Item 1.A-8 is required because of the NHY management attention and direction to this area.

The response to item 1.A-10 consisted of the inception of a Human Performance Evaluation System (HPES). NHY procedure 12820 establishes the HPES and defines responsibilities. The HPES coordinator and the training manager were trained on the principles of HPES management. The HPES instruction references the proper documents. Therefore, the licensee's response adequately meets the commitment to establish a HPES. The ORAT had no further questions on Item 1.A-10.

NHY's response to item 1.A-7 was revision 3 to the Natural Circulation Test procedure. That procedure is currently under review by the NRC staff. This issue will be addressed in the context of the NRC review of the licensee's submittal (NYN-89140) of FSAR Chapter 14 revisions to their Power Ascension Test Program. Additionally, NRC inspection of the conduct of Natural Circulation

Testing is planned. While Item 1.A-7 cannot be considered finally closed until the FSAR change is approved, the planned resolution mechanism is considered acceptable, and no further direct inspection of CAL 1.A-7 is required.

With regard to items 3-1 through 3-8, review of licensee training material, internal evaluation reports, procedural revisions and policy messages, and interviews with NHY employees from the senior management level down have confirmed a strong management involvement with the NHY CAL corrective action program. While continued upper management oversight of the overall program is essential to the effectiveness of the implemented corrective measures, no additional NRC inspection, other than the routine planned operations and test program efforts of items 3-1 through 3-8, is required. Future NRC inspections of a routine nature will check station operator and support personnel attitudes, knowledge, and compliance with the revised NHY programs and procedures and how such programs effectively ensure an overall policy of safe plant operation. The ORAT had no further questions on the adequacy of licensee actions on these items.

9.6 Conclusions

The licensee's implementation of a Corrective Action Plan in response to CAL 89-11 is ongoing and well directed. Corrective measures are substantially complete for the corrective action items.

Management oversight of the NHY integrated program of corrective action implementation has been a strong and continuous effort. Senior licensee management personnel are aware that such monitoring and oversight must continue. The independent assessments of corrective action effectiveness of individual items were a positive initiative.

Overall, licensee implementation and management oversight of the Corrective Action Plan to CAL 89-11 has been good. ORAT inspection of licensee corrective measure response has provided evidence that the licensee, upon completion and closure of all CAL items, will be able to competently and safely operate Seabrook Station in accordance with NRC regulations and a conservative station philosophy.

10.0 EXIT MEETING

An exit meeting was held on November 20, 1989. Attendees are listed in Attachment 3 to this report.

ATTACHMENT 1 TO REPORT 50-443/89-83

NRC CONFIRMATORY ACTION LETTER 89-11 ITEMS REVIEWED

On June 23, 1989, the NRC issued Confirmatory Action Letter (CAL) 89-11 in response to the June 22, 1989 natural circulation test event. On July 12, 1989, the licensee addressed CAL 89-11 by submitting a detailed corrective action plan. The licensee submitted plan updates on August 25 and October 23, 1989. The plan includes specific action items which address the root causes of the event.

The ORAT reviewed the completion of selected CAL action items and found each item reviewed to be acceptable. Those CAL items inspected are listed below, with reference to applicable sections of this inspection report.

1A Procedure Compliance

Measures to assure procedure compliance were assessed as acceptable (see Report Details 9.2 through 9.5). (Items 1.A.1 through 1.A.10 were closed.)

1B Equipment Readiness

Equipment readiness was found by the ORAT inspection to be properly assured through staff qualifications, appropriate operations procedures, and system configuration and operability controls (see Detail 8.2.6). (Items 1.B.1 through 1.B.8 were closed.)

1C Pretest Preparation

Adequacy of pretest preparations was not assessed by the ORAT. This aspect is addressed in Inspection Report 50-443/89-21.

1D Power Ascension Test Program

ORAT review found acceptable Startup Test Program Corrective Actions (see Detail 9.4). (Items 1.D.2, 1.D.3, 1.D.6, and 1.D.7 were closed.) Acceptability of the Startup Test Program is further documented in Inspection Report 50-443/89-21.

2A Post Event Management

Complete review of post-event reviews requirements for comprehensive consideration of human performance and other evaluative criteria was not accomplished by the ORAT, but the conclusion was drawn that NHY upper management showed a conservative approach to problem resolution and an appropriate safety perspective (Detail 3.2). Also, the ORAT found plant operators and managers to be appropriately trained (Detail 4.2). Further, the ORAT found NHY's program for response to operational events to be acceptable (Detail 4.2.5) and noted that the NHY event reporting and evaluation process had been improved (Detail 4.2.6). The ORAT did confirm NHY plans

for corrective measures to ensure that post-event review requirements specifically require resolution of both human factors and equipment failure aspects. (Items 2.A.1 through 2.A.5 were closed.) Final inspection of these Event Evaluation and Post-Trip Review issues is addressed in Inspection Reports 50-443/89-13 and 50-443/89-21.

2B Operations Management

Operations staffing and management was found to be acceptable for power operation (see Details 3.2, 3.3, 4.2). (Item 2.B.2 was closed.)

3 Management Oversight

Management oversight of facility activities was found to be acceptable (see Details 3.0, 9.2 through 9.8). (Items 3.1 through 3.8 were closed.)

ATTACHMENT 2 TO REPORT 50-443/89-83

MAINTENANCE PROCEDURES REVIEWED OR OBSERVED

WR 88-6485	Emergency Diesel Generator Exhaust System; Repair Leaks
WR 89-2648	Disassemble Valve RH-21; Examine Seat and Disk
MS 0514.05	Movats Testing of Raising Stem Motor Operated Valves
ES 1809.001	Master Integrity Test Procedure
OX 1456.81	Operability Testing of IST Valves
WR 89-5278	SW/PCCW HX Eddy Current Testing
MS 0515.19	PCCW "A" and "B" Heat Exchanger Channel Head Cover Removal/Installation
MS 0517.03	Installation of Piping, Pipe Supports and STOW Supports
MS 0517.08	Installation of Structural Steel
MS 0517.10	Installation and Repair
DCR 87-193	Lifting Device for 1-CC-E17A&B Covers
MS 0518.08	Piping Support Spring Can Setting and System Balancing

ATTACHMENT 3 TO REPORT 50-443/89-83

EXIT MEETING ATTENDEES

New Hampshire Yankee

W. Temple, NRC Coordinator
R. Conolly, Lead QC Inspector
J. Warnock, Nuclear Quality Manager
D. Sovill, NQG Surveillance Supervisor
J. Cady, Independent Safety Engineering Group Supervisor
D. Perkins, Licensing Engineer
D. McLain, Production Services Manager
R. Sweeney, Bethesda Licensing Manager
F. Sowetsky, Technical Projects Supervisor
J. Peterson, Assistant Operations Manager
J. Malone, Operations Administrative Supervisor
W. Cash, Health Physics Department Supervisor
J. Linville, Chemistry Department Supervisor
T. Murphy, I&C Department Supervisor
P. Richardson, Training Manager
C. Vincent, QC Department Supervisor
J. Peschel, Regulatory Compliance Manager
R. DeLoach, Executive Director - Engineering/Licensing
T. Harpster, Director, Licensing Services
S. Buchwald, QA Supervisor
D. Moody, Station Manager
N. Pillsbury, Director of Quality Programs
B. Drawbridge, Executive Director of Nuclear Production
T. Feigenbaum, Senior Vice President and Chief Executive Officer
J. Grillo, Operations Manager
R. Cyr, Maintenance Manager
W. DiProfio, Assistant Station Manager

U.S. Nuclear Regulatory Commission

J. Johnson, Chief, Projects Branch No. 3, Division of Reactor Projects (DRP)
L. Kolonauski, Project Engineer, Technical Support Section, DRP
R. Fuhrmeister, Resident Inspector, Seabrook
R. Wessman, Director, Project Directorate I-3, NRR
V. Nerses, Project Manager, PD I-3, NRR
N. Dudley, Project Engineer, Projects Branch No. 4, DRP
A. Cerne, Senior Resident Inspector, Seabrook
F. Young, Senior Resident Inspector, Three Mile Island

FIGURE 1

NHY MANAGEMENT ORGANIZATION

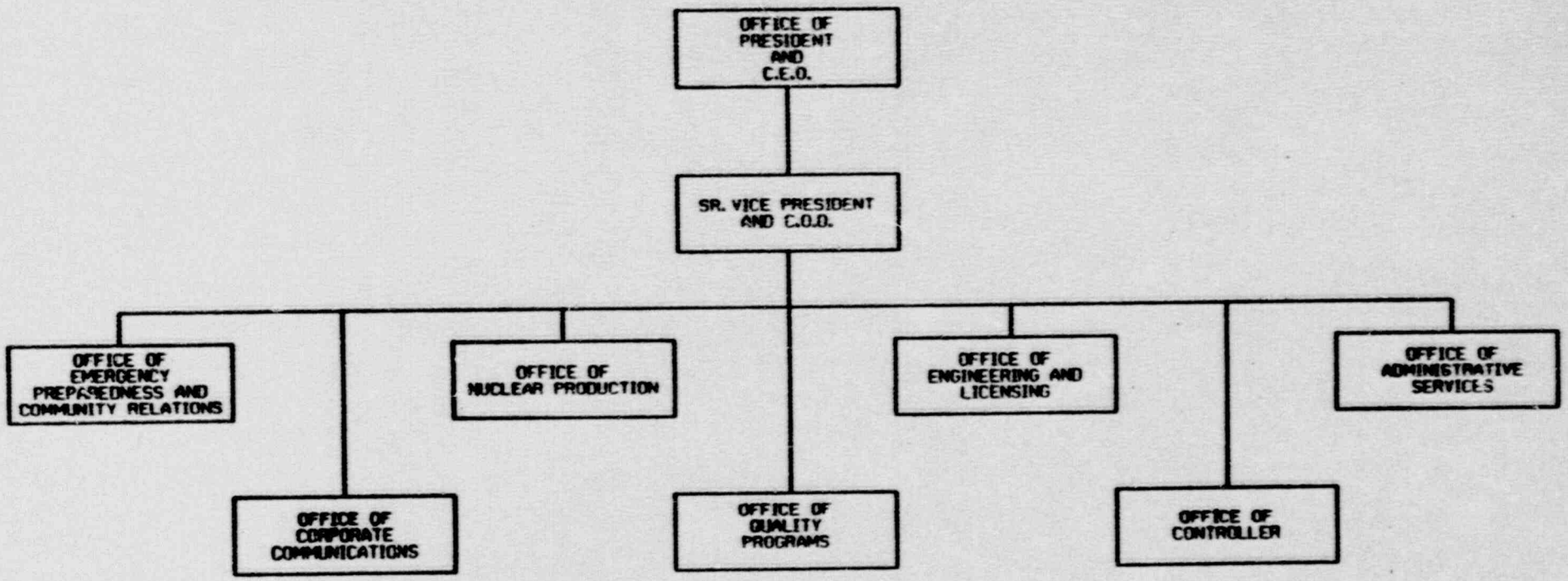

FIGURE 2

NHY OPERATIONS DIVISION

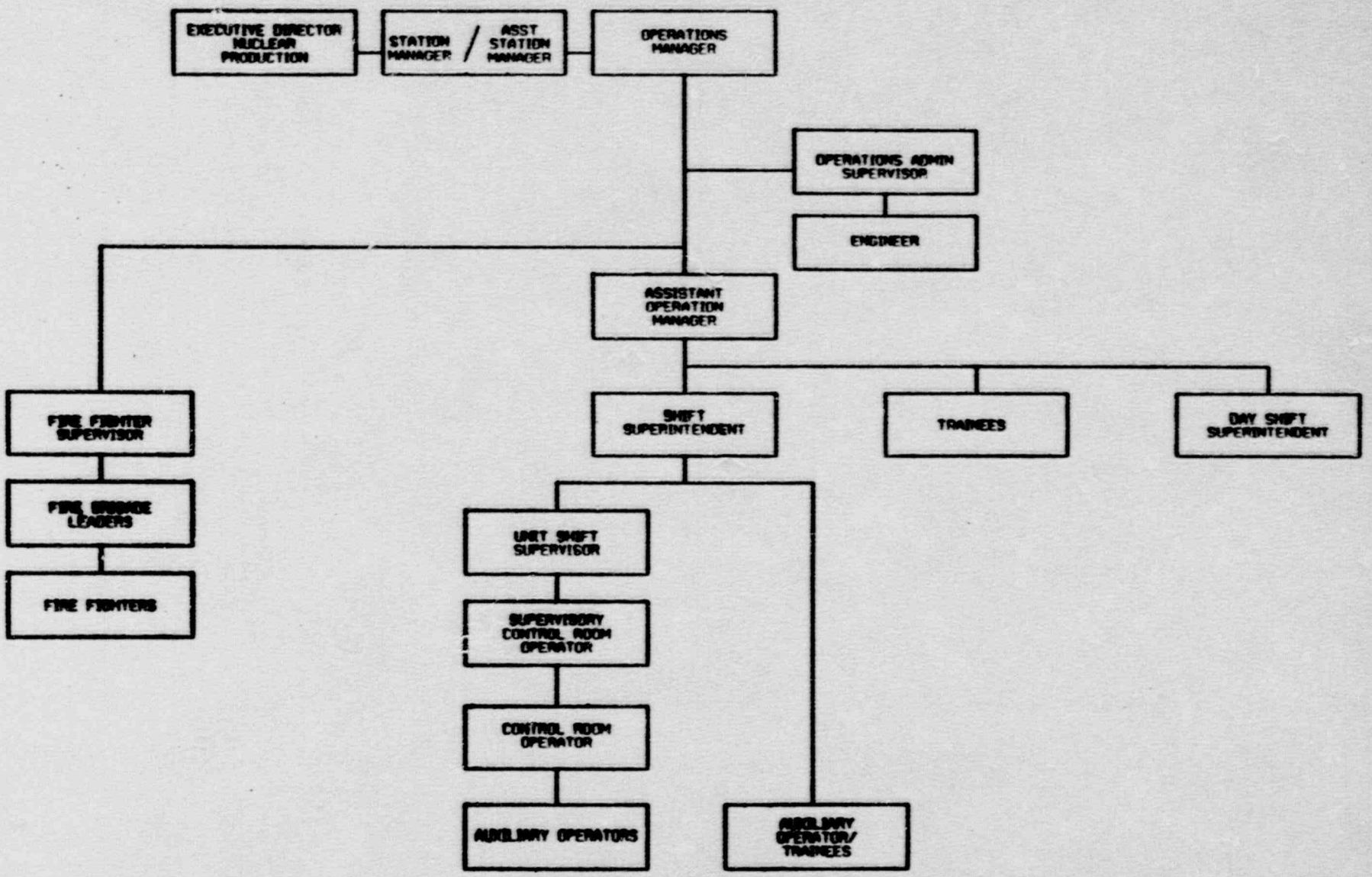

FIGURE 3A

NMY NUCLEAR ENGINEERING DEPARTMENT (CORPORATE)

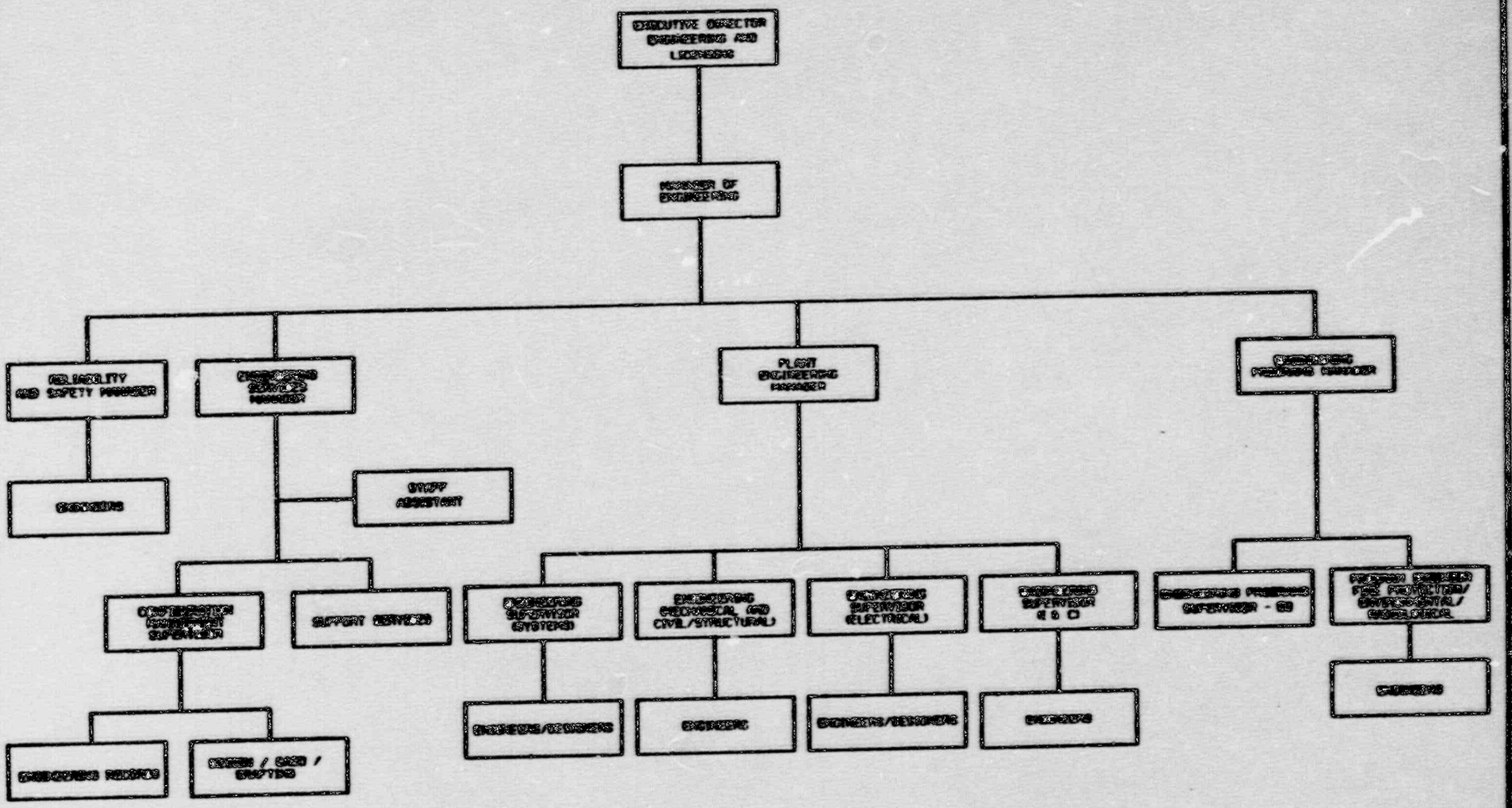

FIGURE 3B

NMY ENGINEERING DEPARTMENT (TECHNICAL SUPPORT)

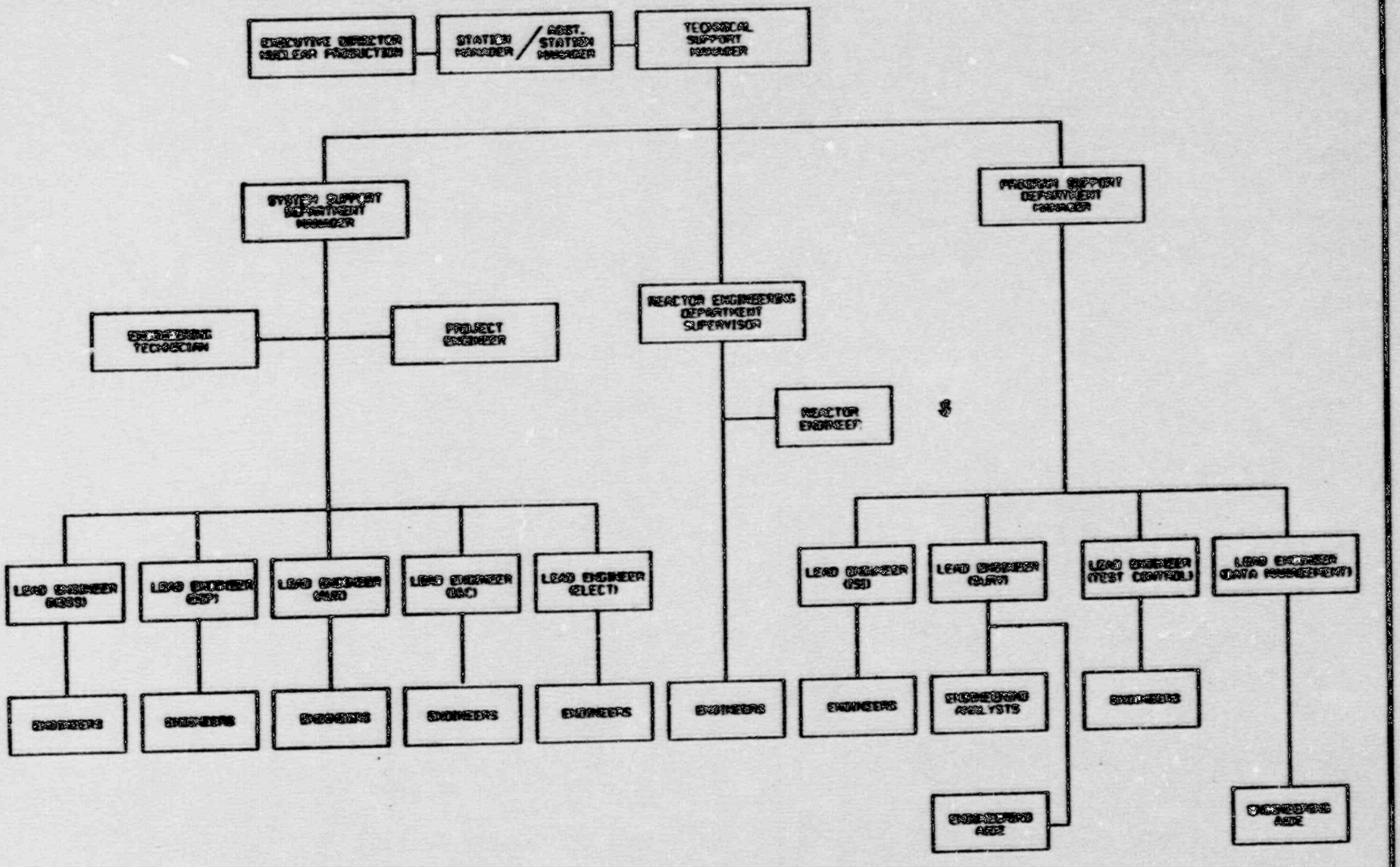

FIGURE 4

NHY SITE MAINTENANCE DIVISION

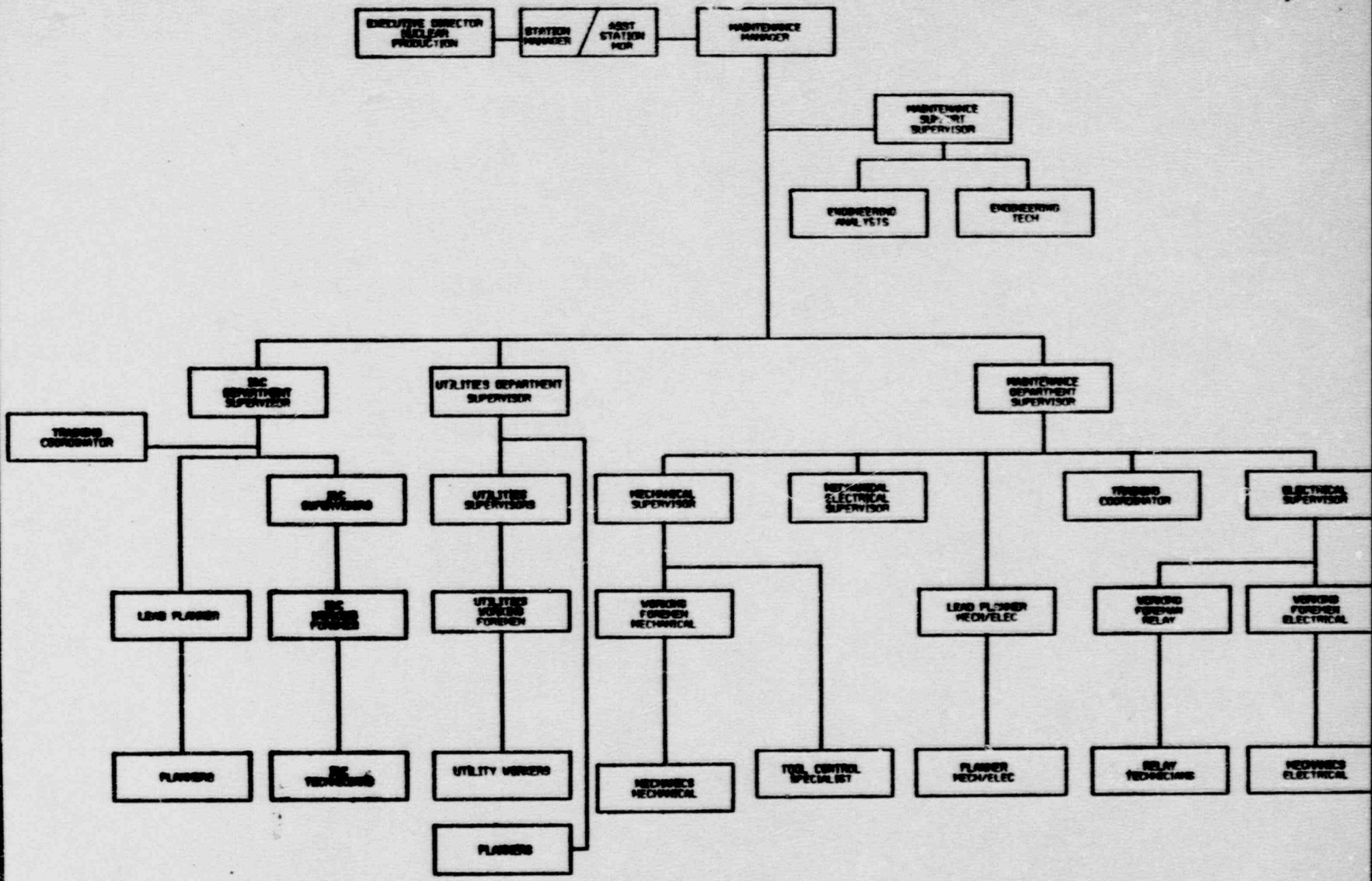

FIGURE 5

NHY HEALTH PHYSICS ORGANIZATION

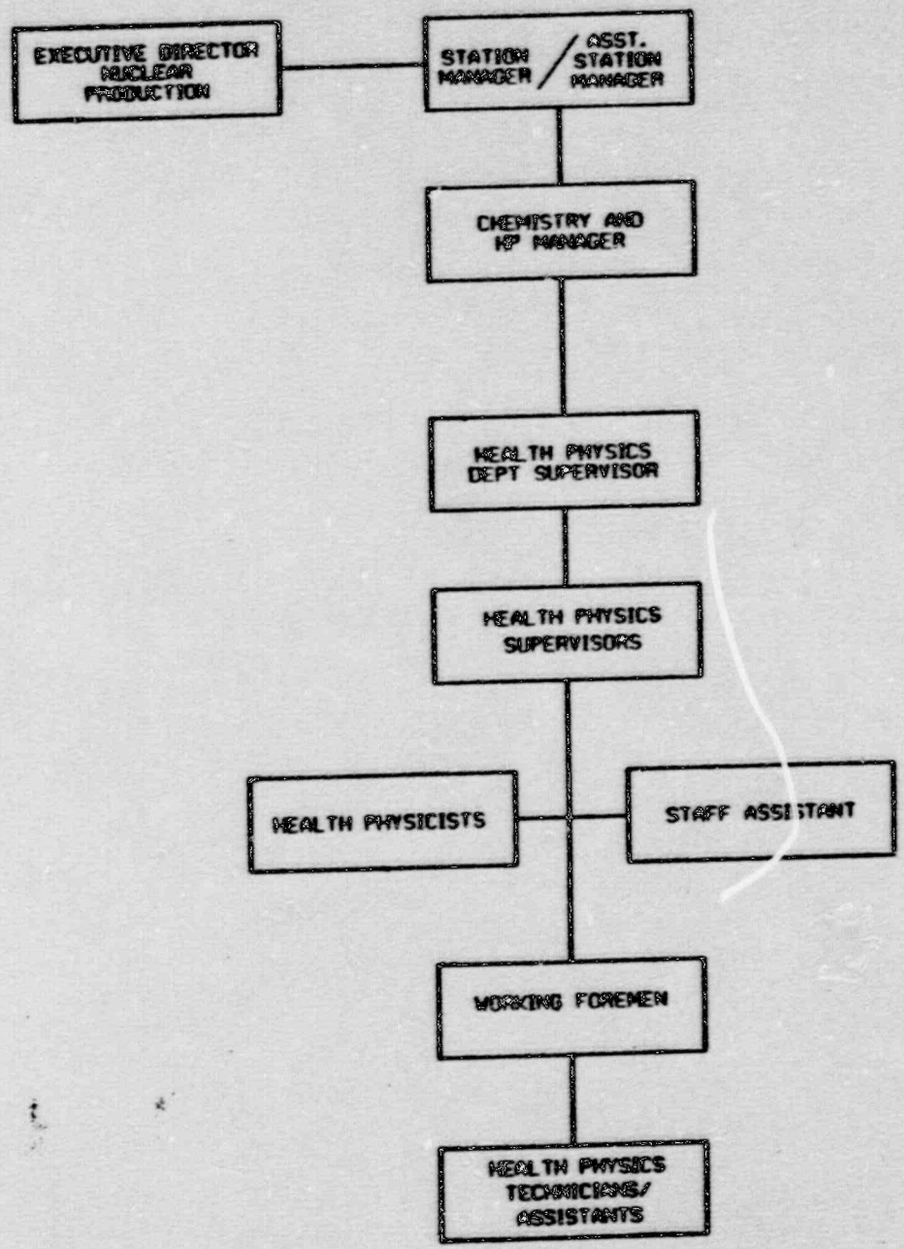

FIGURE 6

NHY OUTAGE/MODIFICATIONS DIVISION