

NEW HAMPSHIRE YANKEE INDEPENDENT REVIEW TEAM

OPERATIONS DEPARTMENT ASSESSMENT

AUXILIARY OPERATOR PERFORMANCE CONCERNS

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1.0 Executive Summary

On Sunday, March 1, 1992, a Shift Superintendent (SS) determined an Auxiliary Operator (AO) completed and signed his log sheets without actually performing all of the indicated tasks. This determination was made during a quarterly surveillance to determine if on-shift personnel were appropriately performing assigned duties. The Shift Superintendent notified the Assistant Operations Manager, who in turn notified the Station Manager. The Executive Director - Nuclear Production, who requested the Independent Review Team (IRT) assess the AO performance concerns, was notified the following day.

The IRT Task Force consisted of the following personnel: IRT Manager, Director of Emergency Preparedness and Site Services, Regulatory Compliance Manager, Reliability and Safety Engineering Manager, IRT Project Specialist, Operations Technical Projects Supervisor, a Senior Simulator Instructor, four senior engineers from Regulatory Compliance and Reliability and Safety Engineering, and an Engineering Designer.

The assessment focused on three primary areas in order to determine the root cause for the AO performance concerns. The first was an Auxiliary Operator Performance Assessment. The second was an in-depth analysis of the AO training programs to identify programmatic weaknesses that may have contributed to the AO performance concerns. The third was an assessment of management effectiveness.

The root cause analysis identified "failure to follow procedures" as the root cause of the AO performance concerns since the AOs who missed certain buildings did not implement the directives provided in the Operations Management Manual (OPMM). A secondary root cause has been identified as "management systems" in that the procedure compliance policy was not uniformly applied with regard to documentation of routine rounds. Although several AOs stated that they did not consider logs to be in the same category as "procedures," the IRT Task Force concluded that sufficient guidance exists in the OPMM concerning acceptable logkeeping. Furthermore, New Hampshire Yankee Manual (NYMA) Procedure 10000, New Hampshire Yankee Organization, delineates that procedure compliance includes administrative manuals. The fact that many AOs did not recognize the need to treat logs the same as procedures does not alter the actual stature of the logs as procedures. The ineffectiveness of On-the-Job Training associated with AO round taking, an inadequate policy concerning explicit management expectations for routine tasks, and inadequate supervision of AO watchstanding practices were contributing factors.

As part of this analysis, the IRT Task Force conducted a detailed review of Security Department keycard transaction logs against AO logs and journals. This review had two objectives. The first was to establish a pattern of behavior concerning missed rounds and to determine when the practice of missing rounds may have started. The second was to identify all occasions where missed rounds resulted in missed Technical Specification surveillances or, in the case of the Emergency Feed Water (EFW) Building, where an NRC commitment to monitor the temperature of the discharge piping was not fulfilled.

Data obtained in the review of Security Department keycard transaction logs, AO journals and log sheets for the Condensate Storage Tank Enclosure, Cooling Tower, Service Water and Emergency Feedwater buildings revealed that several AOs had not entered areas of the plant that their logs indicated they had inspected. Analysis of this data and the associated evaluations and interviews revealed three distinct groups of AOs. The first group

consists of those AOs who knowingly misrepresented log entries, who realized their responsibility to perform the required tasks and who knowingly misrepresented performance of these tasks. The second group consists of those AOs who through rationalization, substandard work practices, or other similar causes missed entering some smaller number of the required areas. The third group consists of those AOs who completed all required inspections. Evaluating the actions of the three groups reveals important lessons and opportunities for improvement.

The data analysis resulted in identifying six cases where Technical Specification surveillance requirements were missed. The analysis also identified multiple occasions when the EFW temperature monitoring commitment was not met. The results from the data analysis (Section 3.0.B) were communicated to Station Management for evaluation and appropriate action.

This analysis did not identify any safety concerns. Safe plant operation was maintained at all times. There were no indications that collusion was involved with the AO performance concerns. There is also no evidence of any intent to endanger the safety of the plant or the ability to protect the public health and safety. The assessment demonstrated that this is not a pervasive problem in the New Hampshire Yankee organization.

The IRT Task Force concluded that the management approach for ensuring that each AO understood their job responsibilities and how to execute those responsibilities was established in program manuals, log sheets, and classroom training. Notwithstanding this, the IRT Task Force also determined that management's communication of expectations, and reinforcement of basic values and performance, was not sufficient to ensure full compliance with the intent of watchstanding and logkeeping requirements. However, an individual's conscious and deliberate transgression of established policy and training transcends management's responsibility for establishing, communicating and reinforcing expectations, policy and basic values. It should be noted that the majority of AOs did not have any identified performance concerns.

Section 2.0 of this report identifies recommendations that address the aforementioned root cause and contributing factors.

2.0 Recommendations

A. Introduction

This section of the report provides a composite list of recommendations developed from other sections in the report. The recommendations are grouped by the Root Cause, Secondary Root Cause, and Contributing Factors. The first column outlines the basic issues supported by the analysis sections. The analysis sections include AO Performance Assessment, Training, Data Reduction, and Management Effectiveness. The second column reflects these analysis sections. The third column lists the IRT Task Force recommendations that address the basic issues. The fourth column lists the suggested group responsible for developing and implementing the corrective action. The remaining columns provide an outline for the responsible manager to specify their action plan and due date for completion.

These recommendations are the IRT Task Force's suggested actions to address the issues raised by this analysis. Individual managers may choose to develop alternate sets of actions to correct the basic issue. The first two columns of the recommendation table provide the managers with the opportunity to reference the sections of the report that frame the issue.

The IRT Task Force suggests that the President and CEO assign the Executive Director - Nuclear Production as the lead individual responsible for ensuring that appropriate actions are developed and tracked through completion.

B. List of Recommendations

See following pages.

IRT RECOMMENDATIONS

ROOT CAUSE: FAILURE TO FOLLOW PROCEDURES: DID NOT USE [AA1]

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
Procedure Compliance Policy	A.3	1. Executive Management should review and evaluate the procedure compliance policy scope with regard to the applicability of verbatim compliance.	Executive Management		
		2. Conduct refresher training on a periodic basis in the following: <ul style="list-style-type: none"> • Procedure Compliance Policy • Need for integrity/accuracy/completeness when documenting work activities. Emphasizing that all documentation may be needed to reconstruct work activities • NRC regulation on willful misconduct by licensed and/or <u>unlicensed</u> employees. 	Training		

IRT RECOMMENDATIONS

SECONDARY ROOT CAUSE: MANAGEMENT SYSTEMS: POLICY NOT ENFORCED (BD5)

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
Administrative Work Load	4.0.A.3 4.0.D.2	3. Streamline company processes by consolidating and eliminating (as possible) programs, policies, manuals and procedures. Emphasis should be placed on eliminating redundancy and excessive administrative requirements and documentation (e.g., canceling Nuclear Production Manual, Quarterly Surveillance for Shift Superintendents to review Work Request priorities, procedure for bulletin boards). Consider using outside expertise.	Executive Management		
		4. Determine where operations administrative burdens for compliance with Technical Specifications and NRC commitments can be reduced by design enhancements. Examples: <ul style="list-style-type: none"> • EFW back leakage temperature monitoring • Spent Fuel Pool cooling pumps area temperature 	Station Management		
		5. Review and revise the AO logs to eliminate checks determined to be excessive (e.g., Cooling Tower and CST every four hours).	Operations Management		
		6. Consider providing Auxiliary Operators with updated tools for recording rounds data to provide consistent documentation and enhanced capability for equipment monitoring. Consider systems such as used by Virginia Power (Nuclear Plant Journal, Jan-Feb '92)	Operations Management		

IRT RECOMMENDATION

CONTRIBUTING FACTOR: TRAINING: INADEQUATE TRAINING (BC2)

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
Structure of AO Initial On-The-Job (OJT) Training	4.0.A.3	7. Revise the AO Initial Training Program so that at the start and the end of the program, the Executive Director-Nuclear Production, Station Manager, Operations Manager and Training Manager address the company's expectations and standards that the AO must meet, and convey the consequences of failing to meet these expectations and standards. This should be emphasized annually during AO Continuing Training.	Operations/ Training Management		
	4.0.B.2.b				
	4.0.C.2	8. Revise the AO Initial Training Program so that upon AO's arrival at training, the Shift Superintendent (SS) delivers Operations Department expectations to the new AO (orientation). In addition, an AO currently on the shift meeting these expectations will be assigned as a mentor to train this new AO on job requirements during the OJT process. This will include signing of all qual guide related material. The Shift Superintendent will be responsible for monitoring the progress of assigned AOs throughout the training program to make sure the department's expectations are being met.	Operations Management		
	4.0.D.2	9. Revise the AO OJT program to incorporate the Operations Good Practice on AO logs and round taking.	Training		
Continued on next page		10. Add signature blocks on the OJT qual guide to include:	Training		
		a. AO mentor, stating that the AO trainee is ready for qualification approval.			
		b. AO trainee, stating he accepts all responsibility of information found in qual guide.			
		c. Shift Superintendent, stating his expectations have been met.			
		d. Operations Manager, stating that the department expectations have been met.			

IRT RECOMMENDATION

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
AO Continuing Training Program	4.0.B.2.c 4.0.C.3	11. Review applicable OJT lesson plans and Job Performance Measures (ie rounds, logs keeping, CST integrity checks) to ensure that AO administrative requirements have been included in these lesson plans.	Training Management		
		12. Operations and Training should reevaluate the priority placed on the AO Continuing Training Program. Training should ensure adequate instructor resources are available to conduct the program. Training should consider placing an instructor on-shift in the plant to conduct training.	Operations/ Training Management		
		13. Reevaluate the AO training commitments to see if any requirements can be reduced or eliminated. Recommend that some of the requirements deemed necessary be fulfilled on shift.	Operations/ Training Management		
		14. Provide consistent administration of exams, written or walkthrough, to document students have comprehension of the material.	Training		
Tracking Training Feedback Action Items	4.0.C.3 4.0.D.2	15. Examine the training feedback disposition process to ensure that actions are properly addressed and implemented.	Operations Management		

IRT RECOMMENDATIONS

CONTRIBUTING FACTOR: MANAGEMENT SYSTEMS: INADEQUATE POLICY [BD4]

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
Conveying Management Expectations	4.0.A.3	16. Develop a standard orientation program for new employees to convey clear and concise management expectations and develop a means to reinforce these expectations on a regular basis. (See recommendation #7 and #8 for example)	Executive Mgmt. Station Mgmt. Group Mgmt. Employee Relations		
	4.0.B.2.a	17. Develop team-building opportunities with all on-shift Operations personnel. Consider periodic gatherings, other than shift turnover, which would encourage team interplay.	Operations Manager		
	4.0.C.2	18. Develop Operations Department good practices to incorporate operations standards, management expectations and good practices pertaining to AO logs and watchstanding.	Operations Manager		
	4.0.D.2	19. Develop Operations Department Qualification Program and include this program in the NYQM.	Operations Manager		

IRT RECOMMENDATIONS

CONTRIBUTING FACTOR: MANAGEMENT SYSTEMS: INADEQUATE SUPERVISION (BD1)

ISSUES	SECTION OF REPORT	RECOMMENDATION	RESPONSIBLE GROUP	IMPLEMENTATION PLAN	DUE DATE
Task Oriented Management Style	4.0.B.2 a 4.0.D.2	20. Review and evaluate the processes utilized to manage technical and administrative tasks to streamline and consolidate the management function. Encourage the decision making process to be made at the appropriate levels in the organization. Allow managers more time to manage people and to develop strategies in order to facilitate improved interpersonal communications. Consider using consultants to complete this review and to provide specific recommendations.	Executive Management		
AO Supervision	4.0.A.3	21. Operations Management should ensure that the intent of OAI.14 #8 "Plant Performance Monitoring" is met.	Operations Manager		

3.0 Background

A. Summary of AO Performance Concerns

On Sunday, March 1, 1992, a Shift Superintendent conducted a quarterly surveillance to determine if on-shift personnel were appropriately performing assigned duties. The method utilized by this Shift Superintendent for verifying completion of the Auxiliary Operator (AO) rover watch rounds was to review Security Department keycard transaction logs to determine if the AO actually entered the buildings where the specific rover surveillances were required. As a result of conducting the surveillance, the Shift Superintendent determined that one AO had not fully completed all assigned duties associated with the AO rover rounds. Specifically, the AO had not performed a routine periodic inspection (required every four hours) of a building, but had indicated on the rover round log sheets that this specific surveillance had been performed. After confronting the AO with the discrepancies, the Shift Superintendent counseled him on his duties and responsibilities and the AO was relieved of his watch by the oncoming shift. The Shift Superintendent subsequently notified the Assistant Operations Manager, who in turn notified the Station Manager of the AO performance concerns.

In a preliminary attempt to determine whether this AO had previously committed similar infractions, the Assistant Operations Manager directed the oncoming Shift Superintendent to review the Security Department keycard transaction logs for the previous day, Saturday, February 29, 1992. This review once again focused on the buildings that this AO would have been required to enter in order to perform the rover surveillances. The Shift Superintendent determined that this AO had also not fully completed portions of the rover rounds on Saturday. The Shift Superintendent subsequently discussed the AO performance concerns with the oncoming Shift Superintendent and the Assistant Operations Manager the following day at shift turnover.

On Monday, March 2, 1992 both Executive Management and the NRC were informed of the AO performance concerns. Executive Management subsequently outlined an investigation process for determining if this AO, or other AOs, had committed similar infractions. The Executive Director - Nuclear Production requested that the Independent Review Team (IRT) conduct an assessment of the AO performance concerns. Additional details for the sequence of events regarding the AO performance concerns and the IRT assessment are described in Section 6.0 of this report.

The following section describes the analysis methodology utilized by Executive Management and the IRT Task Force to assess the AO performance concerns.

* B. Analysis Methodology

1. Data Analysis

This section of the report describes the process and methods used by the IRT Task Force to assess the historical performance of AOs on the various AO watches, with a focus on the rover watch rounds. The process was an in-depth expansion of the review activities that originally identified the AO performance concern on March 1, 1992. The process was also dynamic in that pertinent information identified during the course of the assessment

provided insight into the performance concern and consequently some new directions for additional review activities.

The analysis occurred in four distinct phases. The scope of each phase is shown in the following table.

<u>Phase</u>	<u>Dates Analysis Conducted</u>	<u>Applicable Watch</u>	<u>Applicable Building/Area</u>	<u>Data Time Frame</u>
I	Mar. 4	Rover	CST, CT, EFW, SW	Jan/Feb. 1992
IIA	Mar. 9	Rover	CST, CT, EFW, SW	Nov/Dec. 1991
IIB	Mar. 11	Rover/ Primary	CST, EFW, FSB	Jan/Feb. 1991
III	Mar. 16	Rover/ Primary	CST, EFW, FSB	Mar/1990 to present
IV	Mar. 27	Chemistry/ HP	RWST	Nov. 1991 to Feb. 1992

CST: Condensate Storage Tank Enclosure Building
 CT: Cooling Tower
 EFW: Emergency Feedwater Pumphouse
 SW: Service Water Pumphouse
 FSB: Fuel Storage Building
 RWST: Refueling Water Storage Tank

2. Bounding Parameters

With these four phases, the IRT Task Force appropriately bounded the data review efforts needed to determine the patterns of behavior, date when the patterns began and the extent of the concern. The bounding parameters for this analysis are as follows:

- a. March 1990 was the receipt of the full-power operating license.
- b. The CST enclosure integrity Technical Clarification (TS-104) was issued on March 21, 1990. Prior to this date, entry into the CST enclosure rooms was not required to perform this surveillance.
- c. The FSB area temperature Technical Specification surveillance requirement was in effect as of August 1991. This date marks the point at which the Spent Fuel Pool cooling pumps were required to be operable.
- d. The EFW temperature monitoring requirement was established in December 1986. EFW discharge pipe temperature monitoring is required in MODES 1, 2, and 3. However, Seabrook Station was in an extended shutdown (MODE 5) prior to March 1990.

- e. The data from November 1991 to February 1992 was sufficient to establish patterns of behavior and the extent of the performance concerns.
- f. The data from March 1990 to February 1992 was sufficient to conclude that the pattern has existed for a prolonged period of time.
- g. The data collected in Phases I, II, and III was sufficient for determining the root cause of the AO performance concerns.

3. Technical Specification Surveillances and Commitments

In addition to the above, the IRT Task Force also reviewed the aforementioned data to determine if any Technical Specification surveillances or other commitments had been missed since the issuance of the full-power operating license. The data reduction effort revealed six instances where Technical Specification surveillances were missed. The following list provides the data associated with these missed surveillances.

<u>Technical Specification</u>	<u>Building</u>	<u>Date</u>
4.7.1.3	CST	Aug. 25, 1990
4.7.1.3	CST	Aug. 25, 1990
4.7.1.3	CST	Dec. 22, 1990
4.7.1.3	CST	May 12, 1991
4.7.1.3	CST	Nov. 9, 1991
4.7.10	FSB	Feb. 21, 1992

The Phase III data reduction effort also indicated that the EFW temperature monitoring commitment was missed on multiple occasions.

The Phase IV data reduction effort for Chemistry and Health Physics indicated 100% compliance with the required surveillance frequency.

4. Analysis Method

The method utilized for conducting the data analysis involved a review of several data sources and a serial, independent review of the data. The sources of data included the following:

a. Security Department Keycard Transaction Logs

These computer generated Security Department keycard transaction logs (see Attachment 3.0.B-1 in Section 7.0 of this report for an example) indicate surname and time of entry and exit for specific building doors. The IRT Task Force used the Security Department keycard transaction logs for specific building doors. This review was limited to those areas that could be verified by ingress or egress through a single door. The IRT Task Force also used the Security Department keycard transaction logs for specific individuals as necessary to explain unusual patterns.

b. AO Round Logs

These logs (see Attachment 3.0.B-2 in Section 7.0 of this report for an example) indicate the typical responsibilities for the AO for each round. The logs indicate the criteria (e.g., SAT) for the AO to apply when conducting the round.

c. AO and Unit Journals

The IRT Task Force used these journals as a means for checking plant conditions or similar factors that may have explained why a particular plant evolution prevented the AO from conducting the round. These journals also assisted in the identification of the on-shift AOs.

The serial method of independent review entailed an initial review of the Security Department keycard transaction data for a door by one member of the IRT Task Force. A second IRT Task Force member subsequently reviewed the same Security Department keycard transaction log. The independent reviews were compared for accuracy and discrepancies were noted and resolved. In some cases, a third IRT Task Force member, not involved with either of the two prior reviews, reviewed the results and resolved differences.

4.0.A Root Cause Analysis

1. Problem Statement

The root cause analysis described in the following sections has been performed as described in Seabrook Station Operating Experience Manual (SSOE) OE 4.3, Root Cause Analysis. One of the key elements of an effective analysis is an accurate definition of the problem. This definition must be precise because the subsequent description, analysis, and explanation will be directed at correcting the problem *as defined*.

A key test for a precise problem statement is to determine if the effect of the problem, as defined, can be explained after the initial data gathering. If this is true, the definition must back up to the point where the problem can no longer be explained.

After review of facts and data assembled during the initial assessment of this event, the IRT Task Force developed the following problem statement:

"Auxiliary Operator completion and signature of log sheets without actual performance of all indicated tasks."

This statement was determined to fulfill the requirements of a problem statement.

2. Root Cause Analysis Methodology

Both Barrier Analysis and Kepner-Tregoe Problem Analysis were used to determine the root cause for this assessment. Either one of these methods provides an acceptable methodology for this assessment. In this particular case, the use of two diverse methods served to check the validity of the root cause analysis results and provided confidence that the recommendations are adequately comprehensive.

Barrier Analysis

Barrier Analysis is useful for determining if there has been a breakdown in the devices or methods used to protect people or equipment. It is particularly useful to examine problems that may have some programmatic aspects. Since barriers can be viewed as controls to prevent unwanted actions, they can be analyzed to determine why they were either non-existent or failed to prevent the occurrence of some undesirable action. Barriers can be physical, such as a chain lock on a valve, they can be programmatic, such as a procedure, or something else, such as time or distance. When the barriers are identified in a logical progression, failed or missing barriers can be identified and corrective actions taken.

For every failure, an activity or result exists that was somehow impacted by the failure or non-existence of a barrier. This failure may be regarded as the source of a hazard to safe activities (target). Barrier Analysis identifies the hazard, the target, and the barriers that failed, did not fail, or were not used (circumvented or disregarded) during the course of the event.

Some typical physical barriers are: safety and relief devices, engineered safety features, redundant equipment, and locked doors and valves. Typical programmatic barriers

include: operating and maintenance procedures, company policies and practices, and training, education and experience.

Corrective actions are developed to address barriers that were judged to have failed, not been used, or inadequate.

Kepner - Tregoe Problem Analysis

Kepner-Tregoe Problem Analysis is useful in a group analysis setting. It is useful for circumstances involving multiple individuals, systems, or organizational interfaces when:

1. the performance of a system, individual, or component does not meet its expected level,
2. the cause of the unacceptable deviation is unknown, and
3. the cause must be known in order to take corrective action.

This common-sense approach to problem solving works by describing the problem and evaluating what it is and what it is not, developing possible causes by identifying changes and distinctions, and testing these possible causes to determine the true cause. This technique involves five basic steps.

The first step is to precisely define the problem. This definition is described in Section 4.0.A.1 of this report. The next step is to specify the problem by developing a comprehensive description of the problem's four dimensions, identity (what), location (where), timing (when), and magnitude (how much), both as it IS, and as it COULD BE but IS NOT. This data allows a clearly established boundary around the problem. By checking each item that IS or COULD BE but IS NOT, the exact nature of the problem becomes more apparent.

The problem specification is used to look for distinctions that separate the IS data from the IS NOT. The cause of the problem must be acting on something unique about the IS when compared with the IS NOT. Distinctions and changes are used to generate possible causes.

Each possible cause is then tested against the specification. The cause must explain both the IS and the IS NOT data in each dimension. Assumptions that are necessary to make the cause realistic are identified. The most probable cause will fit all the facts in the specification. Many possible causes will be discarded because they cannot explain the data.

The final step is to verify the most probable cause. This involves verification of the assumptions that may have been necessary to qualify this cause.

Background

Most of the information reviewed during the course of this analysis was compiled by various members of the IRT Task Force. Information sources included the Operations Management Manual, data reduction results (see Section 3.0.B of this report), AO Performance Assessment interview summary (see Section 4.0.B of this report), training related information (see Section 4.0.C of this report), Management Effectiveness (see Section 4.0.D

of this report), STG #3664 "Attention-To-Detail" Task Force, IRT#92-002 "Configuration Control Task Force," and NHY Procedure 10000 "New Hampshire Yankee Organization." Other sources include various Quality Assurance Surveillance Reports (QASR), that dealt with logs.

Early results from the data reduction effort suggested that the majority of the AOs were completing all rover rounds without problem. A number of cross-tabulations were then performed on data for November 1, 1991 through February 29, 1992, to look for significant patterns or correlations. The data examined included name, date, day, time, and location. This data supported the conclusion that personal behavior was the strongest influence on missed rounds, with a weak correlation to time for non-weekend days. No other correlations were indicated.

3. Results

Root and Secondary Causes

Through a combination of Barrier Analysis and Kepner - Tregoe Problem Analysis, the root cause has been determined to be *Failure to Follow Procedures*, in that the Auxiliary Operators (AOs) in question did not use the OPMM, which was the governing procedure for their rounds. This is cause code AA1 of OE4.3. Although several AOs had stated that they did not consider logs to be in the same category as "procedures," the IRT Task Force concluded that sufficient guidance exists in the OPMM concerning the requirements for log keeping. It must be emphasized that individual perceptions of the procedural status of a document do not change the actual stature of the document. This root cause concerns those AOs who omitted portions of their rounds (see Section 4.0.B of this report), and acknowledges that the bulk of the AO force rigorously completed all requirements for their rounds.

A secondary cause has been identified as *Management Systems*, in that the procedure compliance policy was not uniformly applied with regard to documentation of routine rounds. This is cause code BD5. The IRT Task Force concluded that non-compliance with self imposed administrative (i.e., non-technical) requirements is distributed throughout the company. The IRT Task Force has concluded that this is due largely to an unnecessarily large burden of procedures, policies, and programs on company personnel. This conclusion is further supported by the results of the November 1991 "Attention to Detail" Task Force and the February 1992 IRT Configuration Control Task Force Report.

Contributing Factors

Several contributing factors have been judged to have had a bearing on this problem. Contributing factors are not ranked or listed by any priority.

A contributing factor has been identified in the area of *Training*. Since several AOs believed that logs were not considered procedures, the On-the-Job Training (OJT) specifically associated with AO round taking was judged to be ineffective in clearly establishing management expectations for this task. This contributing factor was judged to be equally applicable to those AOs who performed without problems. This is cause code BC2.

A contributing factor has been identified in the area of *Management Systems* and management effectiveness. There is an inadequate policy concerning explicit descriptions of management expectations for routine tasks. As an example, Operations Management tours with AOs tend to focus on potential response to major plant events or equipment operation, without reinforcing basic job and watchstanding expectations. This is cause code BD4.

The final contributing factor has also been identified in the area of *Management Systems*. Specifically, there was inadequate supervision of AO rounds keeping practices. For example, more consistent and effective application of the guidance concerning Operations Department Plant (i.e., personnel) Performance Monitoring might have discovered this problem much earlier. Inadequate supervision in the field has also been identified in previous IRT and company task force reports. This is cause code BD1.

Recommendations

Recommendations as a result of the root cause analysis were reviewed with recommendations from other sections and were incorporated into the consolidated recommendations listed in Section 2.0 of this report.

4.0.B Auxiliary Operator Performance Assessment

1. Assessment Methodology

Background

The Auxiliary Operator Performance Assessment was performed utilizing the guidance of NHY Procedure 12820, Human Performance Evaluation System (HPES). The guidance provided in the procedure and the HPES techniques were utilized to support the overall IRT Task Force evaluation and not to create a separate HPES report.

The HPES program provides a process for the review and evaluation of a situation where human performance either did, or could have, caused an inappropriate action to be performed. The HPES process is intended to identify the causes of human performance problems and to provide recommendations to prevent actions from recurring.

The HPES process concentrates on developing recommendations for preventive measures and to allow all NHY personnel to benefit from the experience of others and it is not utilized as a punitive process. Therefore the interviews conducted with the individuals are considered to be confidential and there are no references to individuals by name or title in this assessment, nor are any statements included that could be traced to an individual.

Methodology

The AO Performance Assessment utilized interviews with Auxiliary Operators (AO) and supplemented the interviews with a review of documents mentioned in the interviews. The assessment included interviews with 29 AOs (28 current AOs and one Control Room Operator who was recently an AO), including a second conversation at the request of one AO. The AO interviews were conducted either immediately after their disciplinary interview or on the AO's watchstation. During the interview process the IRT Task Force attempted to obtain answers that would reflect the actual thought process in place in late February 1992 before the Shift Superintendent's discovery of the AO performance concerns. This technique proved very beneficial with most of the AOs cooperating fully and providing very useful information.

The AO Performance Assessment began with consideration of the problem statement of Section 4.0.A above, "Auxiliary Operator completion and signature of log sheets without actual performance of all indicated tasks." The assessment attempted to determine why some AOs did not always complete all of the tasks that the signature stated were completed. The conclusions reached are subjective due to the nature of interviews and because answers, comments and statements must be interpreted and responses summarized. The conclusions reflect the impressions obtained by the IRT Task Force and do not imply that a consensus of AOs agree on all items.

This particular assessment did not attempt to identify the root cause which is more appropriately addressed in Section 4.0.A. As stated previously, the root cause was determined to be "failure to follow procedures" and this assessment attempted to determine the factors that contributed to the AOs' failure to follow procedures.

The results of the AO Performance Assessment are provided below in summary without a statistical analysis of the individual answers and there is no attempt to provide statistical comparisons to the nuclear industry or society in general.

2. Results of the Assessment

The analysis of the information obtained from interviews and the document reviews indicated that some AOs did not complete all of the tasks that their signatures indicated they completed due to differences in work ethic. There appear to be three groupings of AOs according to work ethic:

- Group 1 - AOs who knowingly omitted portions of their rounds without any rationalization or justification.
- Group 2 - AOs who understood the importance of and the requirements for the AO rounds but who had rationalized why certain areas or pieces of equipment did not have to be inspected every round due to their knowledge of plant and equipment conditions. A typical AO in this group appeared to be convinced that he was doing the right thing or potentially doing a better job by devoting his time to more important items. This group also includes cases where an AO simply forgot to check an area or became confused regarding the points on his rounds due to an honest mistake (such as being called to perform other tasks), or substandard watchstanding practices.
- Group 3 - AOs who clearly understood the importance of and the requirements for the AO rounds and who had rigorously completed all aspects of their rounds. This group of AO has the strongest work ethic and it appeared to be based upon their previous work experience or their individual fundamental values.

There are three factors that contributed to the AO performance concerns. They are, as perceived by the IRT Task Force, in order of importance:

1. Lack of adequate Management oversight of the AOs, to include the communication of requirements and expectations, and the communication of feedback regarding performance.
2. A weak On-the-Job (OJT) Training Program for AOs.
3. Ineffective implementation of the Continuing Training Program for AOs.

Some conclusions related to each of these three factors are provided below. These conclusions are not intended to address each item discussed with the AOs or reviewed subsequently, but rather to provide a basis for the recommendations which are provided in Section 2.0 of this report. It must be emphasized that the stated conclusions are based upon insights obtained and developed by the IRT Task Force during the AO interview process, subsequent document reviews, and during discussions with other NHY personnel.

a. Management Oversight

There is a longstanding problem with AOs and the AO position, in that from the development of the position, the detailed requirements for performance of the AO's job on the individual watchstations has not been documented nor clearly communicated to the AOs. Neither have the expectations of Operations Management with regard to the performance of AOs on the watchstations been clearly communicated.

The AOs receive strong system based training, however, when they arrive in the Operations Department for the commencement of OJT, the training becomes less structured and the new AO essentially learns from observing the qualified AO, or in some cases teaches himself due to the lack of an assigned trainer or mentor. During this period there is little guidance provided from Operations Management regarding the administrative tasks required of an AO. There is, however, a heavy concentration on the technical tasks and the associated technical knowledge.

The Operations Department is informally segregated with the AOs as a group forming their own individual, leaderless department that receives technical direction from the shift operating crew. Each shift crew operates a little differently from the others. With a greater interchange of AOs between crews than with the licensed operators there are effectively six separate departments directing another department. Operations Management, to include the Operations Manager, the Assistant Operations Manager, the Assistant Station Manager and the Station Manager are "second floor Admin" and are considered by the AOs, as a whole, as the unit that responds to tell them when they made a mistake or to provide direction related to technical tasks and schedule. There is a lack of communication between Operations Management and the AOs with variances in the quality of communication on each shift.

The informal segregation is demonstrated by the failure to take adequate logs. This has been identified as a failure to follow procedures and is similar to the June 22, 1989 failure to follow procedures. In both cases the failure to follow procedures is related to individuals not clearly understanding the scope and depth of the procedure system and incorrectly establishing their own hierarchy of procedures. However, the corrective actions regarding the NHY Procedure Compliance Policy were not effectively communicated to the AOs. Many of the AOs did not consider AO logs to be procedures or within the scope of the Procedure Compliance Policy even though the requirements are clearly stated in the Operations Management Manual (OPMM).

An additional example of the failure to adequately communicate expectations and requirements is related to the resignations of a Chemistry Technician and a Health Physics Technician in 1989 due to activities related to the falsification of records. The majority of the AOs interviewed did have knowledge of the events, but could not recall if the events were formally communicated in training or in department meetings and believed that their knowledge came from rumors. The message related to procedure compliance and falsification of records was not received by the AOs since the majority did not believe that the log keeping practices being evaluated could be considered to be falsification of records.

b. Auxiliary Operator OJT Program

The OJT Program for AOs is sound from a technical standpoint and is heavily task oriented. The sections regarding rounds qualification (2.4.2 and 3.2) imply that log taking is required but addresses the quantitative aspects of the logs and does not provide guidance on the subjective aspects of the rounds. The AOs are taught to recognize out-of-specification readings but the importance of and requirements for inspecting shut down equipment is not stressed. This contributes to the rationalization of shut down equipment not being as important as operating equipment.

Such a thought process related to shut down equipment existed with some AOs during the extensive shut down periods prior to receipt of the zero power license and again when MODE 5 was re-entered after receipt of the zero power license. Complacency was a watchstanding trait with some AOs. During these periods, the AOs, along with other NHY personnel, were concerned about retaining their jobs during the licensing process. Complacency could easily have been perpetuated when the Shift Superintendents were removed from shift after Hot Functional Testing and when the majority of the equipment in the plant was not running. During such periods there was little oversight of the OJT process and the watchstanding practices being taught or learned.

The AOs learned to stand the watch and take rounds at NHY by learning from qualified AOs. Without specific standards and guidance the "trainers" and the "trainees" were left to their own devices and in such a situation strengths or weaknesses can be advanced or allowed to perpetuate. The OJT Program does not reinforce the NHY Procedure Compliance Policy. With consideration of the identified log keeping weaknesses, it is easy to see how potential weaknesses can be cultivated without clear guidance and requirements in the OJT Program.

c. Auxiliary Operator Continuing Training Program

The AO Continuing Training Program is detailed and well structured but has not been effectively implemented. The program is not highly regarded by the AOs because the majority of the training provided recently was very task oriented and was related to their collateral duties such as firefighting. The program has not provided significant training in plant systems and components, theory or other functions that would help the AOs become better AOs or to prepare them for licensed operator training. As a result, the training does not receive much respect nor is a great deal of attention paid to the presentations or the material provided for reading.

The AOs in general, can not remember any recent training related to the NHY Procedure Compliance Policy or any proactive training related to log keeping or similar administrative processes. The majority do not recall much of the update training. The majority do remember the training on logkeeping as being very specific to problems such as out-of-specification readings not being circled without emphasis on the programmatic requirements such as the Procedure Compliance Policy.

Recommendations

The recommendations from the AO Performance Assessment have been reviewed with the recommendations from the other sections and are incorporated in the consolidated recommendations in Section 2.0 of this report.

4.0.C Training

The IRT Task Force evaluated AO training programs to identify any programmatic weaknesses which may have contributed to the AO performance concerns.

Summary

AO training is separated into two (2) programs, Initial Training and Continuing Training. The Initial Training Program is designed to provide the knowledge and skills necessary to achieve AO qualification, while the Continuing Training Program is intended to maintain and improve the knowledge and skills of qualified AOs. The Initial Training Program is divided into two segments, Classroom Training and On-the-Job Training (OJT). Programmatically, Classroom Training and Continuing Training is the responsibility of the Operations Training Group and OJT is the responsibility of the Operations Department. Review of the Initial and Continuing AO Training Programs reveals the following:

1. The Classroom Training segment of the Initial AO Training Program is sound and provides the AOs with the administrative knowledge and skills required in the areas of watchstanding responsibilities and log keeping requirements.
2. The OJT segment of the Initial AO Training Program generally lacks structure and improvement in several areas is warranted.
3. The Continuing AO Training Program design and lesson plan content provides the qualified AOs with the administrative knowledge and skills required in the areas of watchstanding responsibilities and log keeping requirements. However, the effective implementation of the program has been challenged due to:
 - additional AO training to fulfill collateral duty requirements,
 - instructor resource constraints, and
 - the inconsistent administration of exams.

Details for the IRT Task Force's assessment of the AO Training Program are provided in the following sections.

1. Initial Auxiliary Operator Training

Classroom Training

Classroom Training consists of a series of lectures organized into nine (9) courses. The first course of instruction is entitled "Plant Introduction and Overview" and includes training in Operations administrative requirements. Topical areas include log taking and shift turnover requirements. The IRT Task Force reviewed Lesson Plan N12581 entitled "Plant Introduction and Overview - Operation Administration." The review focused on the areas of general AO duties and responsibilities including log taking requirements. Review of the lesson plan content revealed that the responsibility to review and understand the logs before

assuming the shift is explicitly identified in the lesson plan. In addition, the lesson plan introduces the AO to the concept of Technical Specifications. Emphasis is placed on the importance of the AO's role in the area of rounds, in that the local monitoring of plant systems includes equipment covered by Technical Specifications. The lesson plan also contains an assortment of transparencies which includes the Secondary AO Log and the associated "SAT" (satisfactory) definition found at the bottom of the log sheet.

The IRT Task Force also reviewed Lesson Plan N1284I entitled "Auxiliary System - Condensate System." This lesson plan was taught to the 1990 AO Initial Class. Included in this lesson plan is the topic of "CST Enclosure Integrity Verification." This topic was generated via Training Development Request (TDR) 89-330 as a result of Minor Modification (MMOD) 89-0597. MMOD 89-0597 was installed to provide compliance with the Condensate Storage Tank (CST) enclosure integrity requirements identified in Technical Specification 3.7.1.3. Review of the lesson plan content revealed that the requirements of Technical Specification Surveillance 4.7.1.3 and the AO's role in assuring compliance with this Technical Specification is explicitly covered. In addition, the details of what to check and how to perform these checks in order to comply with CST enclosure integrity requirements is also specifically covered in the lesson plan. Review of exams administered in the Initial AO Training Program revealed that exams contained specific questions in the areas of general AO responsibilities and log keeping requirements. The IRT Task Force identified AO instructor qualification as a significant strength in the training program. Historically, AO Classroom Training has been provided by Lead Instructors possessing a strong Operations background, who have held or currently hold a Senior Reactor Operator License. These individuals include former members of the Operations Department who held the Unit Shift Supervisor position.

Based on the above analyses, the IRT Task Force concludes that the Classroom Training segment of the Initial Auxiliary Operator Training Program provides the AOs with the administrative knowledge and skills required in the areas of watchstanding responsibilities and log keeping requirements.

2. On-The-Job Training (OJT)

The OJT segment of the Initial Auxiliary Operator Training Program is the practical experience segment of the program. OJT includes those tasks that are best trained and evaluated in the plant under operational conditions. This segment of the initial training covers plant operations in detail, providing the student with the knowledge and skills necessary to operate systems safely under all plant conditions. OJT is the responsibility of the Operations Department. While participating in OJT, the students are:

- a. assigned to their regular shift, and
- b. directed by qualified Operations personnel.

After comprehensive review of the AO qualification process, the IRT Task Force concludes that the OJT program lacks structure and warrants enhancements in the following areas.

- Criteria for management's expectations in the area of rounds and watchstanding practices, including procedure compliance requirements, is not identified in the Auxiliary Operator Qualification Guide. Criteria for management's expectations would assure that the AO is aware of the watchstanding responsibilities both during the OJT Program and in the subsequent rounds qualification process.
- The qualification guide does not include the AO's signature in the "AO Qualification" step. The absence of this requirement decreases the AO's accountability in the qualification process. A signature step should be utilized to signify that the AO understands and accepts the responsibilities associated with the AO position. This would provide accountability and foster the AO's ownership for the qualification process.
- A program to monitor the effectiveness of the OJT program does not exist. The quality of training and evaluation provided to students by qualified AOs is not programmatically monitored by Operations Management.
- The responsibility for the qualification of an AO is not specifically assigned to a member of the Operations Department. The new AOs in training have no designated mentors to oversee their qualification progress.
- In general, all qualified AO OJT instructors perform training and evaluation of student AOs during the OJT program. Selecting a core group of top performing AOs (based on attitude and technical ability) to conduct designated OJT tasks would increase the quality of the OJT program. This practice has proven successful in the Maintenance Department.
- In general, the OJT lesson plans are System Task oriented (i.e., operating plant systems). The administrative requirements of the AO position are not generally factored into the OJT lesson plans. The inclusion of administrative requirements would help to reinforce the lessons taught in the classroom segment.
- The Operations Department has not developed a Qualification Program for inclusion to the New Hampshire Yankee Qualification Manual (NYQM). The NYQM establishes NHY policies and requirements for developing, approving and implementing qualification programs. The NYQM specifies that departments performing tasks which are in INPO accredited training programs are subject to the NYQM. The NYQM contains qualification programs for all groups subject to the manual with the exception of Operations.

3. Auxiliary Operator Continuing Training Program

The AO Continuing Training Program includes Plant Update Training to ensure that the AOs are periodically updated on Operational matters. The IRT Task Force reviewed Lesson Plan N1516C entitled "Attention To Detail" which is provided as part of Plant Update Training. The purpose of this lesson plan is to reintroduce the qualified AO to the Operations Department directives concerning recordkeeping philosophy, equipment usage and expected normal operation practices. Review of the lesson plan content revealed that the

responsibility to review and understand the logs before assuming the shift is explicitly identified in the lesson plan. In addition, the responsibility to raise any issue that is not understood in the performance of AO duties is also stressed in the lesson plan. The lesson plan also contains numerous examples of previous "Attention To Detail" occurrences at NHY as identified by Station Information Reports (SIR), Operational Incident Reports (OIR), and Quality Assurance Surveillance Reports (QASR). The lesson plan emphasizes the need for AOs to be attentive during rounds and in the performance of tasks. The lesson plan also covers equipment availability requirements for conditions not covered by Technical Specifications. Examples include Service Water and Cooling Tower pump requirements in MODES 5 and 6. The lesson plan also contains an assortment of transparencies which includes the Primary AO log and the associated "SAT" (satisfactory) definition found at the bottom of the log sheet. The IRT Task Force also reviewed Lesson Plan 5002C, entitled "Plant Update Training." This lesson plan was taught in Phase 3 during the 1990 AO Continuing Training Program. Included in this lesson plan is the topic of CST Enclosure Integrity Verification. This topic was also generated via Training Development Request (TDR) 89-330 as a result of MMOD 89-0597. Review of this lesson plan revealed that the content for this topic is identical to that covered in the 1990 Initial Auxiliary Operator Training Program, Lesson Plan N12841.

The IRT Task Force concludes that the content of the lesson plans described above provide the qualified AO with the administrative knowledge and skills required in the area of log keeping and watchstanding practices. However, exams were not administered for these particular lesson plans. The IRT Task Force was, therefore, unable to ascertain the short-term effectiveness of the training provided in these areas. Further review identified that exams are not consistently administered in the Auxiliary Operator Continuing Training Program.

The IRT Task Force also reviewed the 1990 AO Continuing Training Program Evaluation Report. This report is an annual evaluation used to monitor the program's long-term effectiveness. Review of the "Supervisory Survey" revealed a comment which identified a need to interview successful AOs to determine a baseline for good practices on rounds. The subsequent recommendation stated that Operations would develop a "Good Practice" by the Spring of 1991 to address this issue. Interviews with Training Center personnel revealed that Operations did not develop this "Good Practice" and as such, training was not provided in this area.

Interviews with Training Center personnel also revealed that limited training was provided within the scope of the AO Continuing Training Program during 1991. Training Center personnel cited that additional AO training to fulfill collateral duty requirements (e.g., Fire Brigade Requalification, General Employee Training, Visual Testing, Self Contained Breathing Apparatus, Confined Space Entry, Hazardous Material, Rescue Training, Quarterly Fire Brigade Meetings), and refueling preparation training consumed the majority of time allotted for the 1991 annual AO training cycle. Additionally, AO instructor resources were also limited as the lead instructor for the Continuing Auxiliary Operator Training Program was assigned instructor duties for the Initial Licensed Operator Program. (The simultaneous training of two Initial Licensed Operator Classes in 1991 necessitated the utilization of the lead AO instructor.)

After comprehensive review of the AO Continuing Training Program, the IRT Task Force concludes that the design of the program is sound. However, the effective

implementation of the program has been challenged and enhancements are warranted in the following areas:

- Additional AO training requirements beyond the scope of the program have resulted in a net reduction of plant refresher training. These requirements need to be re-evaluated to determine if any can be reduced or eliminated. Requirements that are deemed necessary should be fulfilled outside of the normal training week.
- Instructor resource constraints during the 1991 cycle impacted the quality of the program. The priority given to the AO Continuing Training Program needs to be re-evaluated to ensure resources are adequate to meet the program's expectations.
- The inconsistent administration of exams diminishes the program's short-term feedback mechanism to measure comprehension and also weakens the student's accountability for received training. This practice needs to be re-examined to ensure students retain adequate comprehension.

4.0.D. Management Effectiveness

1.0 Background

The management effectiveness review consisted of interviews and data analysis. The IRT Task Force interviewed the management chain starting with the President and CEO and the Executive Director - Nuclear Production. The IRT Task Force also interviewed Station Management and the Operations Department chain of command down through the Supervisory Control Room Operators (SCRO). These interviews effectively covered the entire chain of command for the Auxiliary Operators up through and including the President and CEO.

The data analysis consisted of appropriate internal NHY memoranda, Curriculum Advisory Committee meeting minutes, NRC Inspection Reports, NHY Management Manuals (Production Management Manual, Seabrook Station Management Manual, Operations Management Manual), Operations Department Instructions, Operations Department Administrative Instructions, Quality Assurance Surveillances and Audits, the quarterly performance surveillance conducted by the Shift Superintendents, Shift Superintendent semi-annual performance appraisals, and Security Department keycard transaction logs for key managers indicating their presence in the plant.

These interviews and the data analysis resulted in the following conclusions.

2.0 Analysis and Conclusions

Operations Management used several different methods to attempt to ensure that the AOs understood their job responsibilities and how to go about executing those responsibilities. These responsibilities are outlined in administrative procedures (e.g., OPMM) and covered in initial AO classroom training, OJT and AO Continuing Training. For example, the AOs were specifically trained on the requirements for the "CST enclosure integrity verification." Furthermore, Operations Management qualified each AO on each of the five watchstations prior to the AO being allowed to stand a watch alone. The OPMM also requires that each Shift Superintendent periodically accompany AOs on rounds. Management's communication of expectations, reinforcing basic values and performance, however, was not sufficient to ensure full compliance with the intent of the watchstanding and log keeping requirements. Management effectiveness is therefore a contributing factor in those instances where AOs developed substandard work practices, rationalized actions or did not retain sufficient attention to detail. However, an individual's conscious and deliberate transgression of established policy and training transcends management's responsibility for establishing, communicating, and reinforcing expectations, policy and basic values. Notwithstanding the foregoing, the following section addresses areas where Management actions were a secondary root cause and contributing factors to the AO performance concerns.

NHY holds technical tasks as a higher priority than administrative tasks. This is a NHY norm supported by the following. NHY practices and enforces verbatim procedure compliance for technical and operational procedures. Compliance and enforcement for administrative procedure requirements is performed differently. Operating plant equipment receives more scrutiny than standby equipment. Operations Management reinforced this priority by occasionally directing AOs to perform quick rounds, in order to focus their

efforts on plant evolutions. The OJT qualification process focused on plant component manipulations. Operations Management assumed that each individual retained a basic set of operating philosophies and intangible values (e.g., work ethic). The Operations Management expectations on good watchstanding and rounds practices varies according to shift. There is no uniform set of expectations established and implemented by Operations Management. Many Shift Superintendents emphasize housekeeping and safety as expectations that are in addition to monitoring plant equipment and manipulating equipment. The Nuclear Quality Group (NQG) surveillance and Trend Reports also support the emphasis of technical task performance over administrative task performance.

Most Operations managers and supervisors appear to possess two general sets of expectations. The first set of expectations applies to technical competence and timely completion of assigned tasks. Management Manuals, procedures and training are some of the vehicles for documenting the expectations. Adherence to schedules and completion of commitments are two ways of measuring performance and evaluating task expectations. The second set of expectations apply to how an individual goes about completing the task. Interviews indicate that Operations managers and supervisors do not communicate this second set of expectations. This NHY management style is supported by the following examples. Managers and supervisors in the Operations Department retain and apply a set of internalized criteria. This criteria may apply to selecting AOs for licensed operator training class or SCROs for promotion to Unit Shift Supervisor (USS). This unwritten criteria usually relates to intangible values such as responsiveness, inter-personal skills, attitude or cooperative spirit. This criteria forms a set of expectations that is not communicated in daily work activities or in the annual performance appraisal process.

Managers and supervisors that attend NHY management training frequently express the observation that the NHY environment does not support the principles developed in the training process. The NHY prevailing management style does not reinforce, encourage, or measure the application of skills developed in NHY's management training courses. NHY's management style focuses on the performance and completion of tasks. In directing these activities, Operations managers do not routinely take into account the people managing aspects of their jobs. Basic individual values pertaining to work ethics, honesty, trust and integrity were assumed to be shared and inherent values across all of NHY. Operations Management explicitly stated their expectations for the technical requirements of performing the AO watch practices but failed to explicitly state their intangible expectations for detailed work practices. Operations managers also clearly stated their expectations for safe operation of plant equipment. In a series of briefings to the Operations Department and Training Group, which were given as part of the short term corrective actions, the Executive Director - Nuclear Production stated his expectations for activities such as watchstanding, logkeeping, completing documentation and attention to detail. This practice, where an Executive or Senior Manager states expectations, should also be routinely applied to new employees and newly promoted supervisors.

Operations managers, as a rule, know their expectations for the intangible aspects of various positions in the company. They acknowledge that they do not communicate these expectations. Operations managers recognize that they have the responsibility for creating and cultivating the culture and management style. Collectively, managers do not share a common definition or understanding of what culture and management style is, or should be. The environment in which the AOs performed varied according to the shift that they worked on. Some of the shifts encouraged participation by the AOs. On other shifts, the AOs were

not treated as members of the same team. There are also variances in expectations between each of the Shift Superintendents and Operations Department Management.

The IRT Task Force reviewed the meeting minutes for the AO Curriculum Advisory Committee (CAC). Operations Management and Training comprise the AO CAC. The CAC is Operation Management's method for determining the scope and frequency for Training. The 1990 AO CAC meeting developed several actions to resolve a series of AO comments on the AO Continuing Training Program. The assigned actions included the responsibility for Operations to develop a good practice on rounds for incorporation into the AO Continuing Training Program and evaluating the need for Job Performance Measures (JPM) on surveillances that require AO support. Operations Management did not develop the good practice or assign it to the Operations Department Staff for development. The evaluation for JPM's is also an outstanding action item. In addition, Operations Management should also assess the impact of routine tasks and either reinforce their importance or alter the frequency or approach for performing the task.

Failure to follow procedures is the root cause for the AO performance concerns. In conducting the Management Effectiveness review, the IRT Task Force determined that there were several administrative procedures and commitments to the NRC where Management failed to follow procedures. The collective review of the data for managers and the AOs indicates that NHY does not uniformly apply the verbatim compliance policy to administrative requirements.

The Nuclear Production Management Manual (NPMM), Seabrook Station Management Manual (SSMM) and Operations Management Manual (OPMM) provide detailed administrative criteria. These criteria address management presence in the plant, quarterly performance monitoring, and quarterly appraisals of Shift Superintendents. In addition, the President and CEO also directed, in an NHY internal memorandum, several members of Executive Management to conduct periodic plant tours.

The IRT Task Force reviewed Security Department keycard transaction data for Executive Management to measure their compliance with the directive to have a presence in the plant. This data indicates that Executive Management did not meet the intent of the directive. The IRT Task Force review of the Station management in the plant program (SSMM Chapter 2 Section 11) reveals a similar pattern.

The interview process indicates that managers recognize the value of a management presence in the plant. Most managers and supervisors said that personal observations are the best gauge for measuring employees' performance and fulfillment of their expectations. However, all managers indicated that existing administrative tasks and job requirements form a barrier that prevents them from affording the time to go into the plant.

The IRT Task Force also reviewed NHY's implementation of the quarterly performance appraisal of the Shift Superintendents. NHY documented the commitment in the NPMM and subsequently in the SSMM (Chapter 3 Section 14). This administrative commitment required that Operations Management perform a quarterly performance appraisal for each Shift Superintendent and document the results on the management factors section of the Performance Appraisal form. The Station Manager was subsequently required to review the appraisal with each Shift Superintendent. The Station Manager was also required to review the results with the Executive Director - Nuclear Production and the President and

CEO. NHY met this requirement one time since the commitment was developed and documented in the NHY Management Manuals.

The IRT Task Force also reviewed the quarterly performance monitoring activity conducted by the Operations Department (OAI.14 Routine Administrative Surveillance). This performance monitoring activity was the process that uncovered the missed A/O rounds. The IRT Task Force review of previously conducted quarterly surveillance indicates that the quarterly surveillance did not always meet the intent of the performance monitoring requirements. Specifically, the surveillance did not always emphasize tasks "that are routine, tedious, mundane, and normally performed by one individual when fatigue or complacency may be potential factors."

NHY practices verbatim compliance for operational and technical requirements. This analysis did not reveal any conditions or procedure compliance issues that would detract from safe and prudent operation of the plant. The NYMA Procedure 10000, New Hampshire Yankee Organization outlines the NHY policy on procedure compliance. This policy makes no distinction between technical and administrative procedures. NHY does not uniformly apply the procedure compliance policy. NHY should re-examine this policy for desired level of application and accountability.

Recommendations

Recommendations as a result of the Management Effectiveness analysis were reviewed with recommendations from other sections and were incorporated into the consolidated recommendations listed in Section 2.0 of this report.

5.0 Determination of the Extent of the Performance Concerns

A. Review of Other NHY Departments

The IRT Task Force conducted an analysis to determine whether the Auxiliary Operator performance concern existed in other departments. The departments selected for analysis were chosen based on similar job performance activities involving periodic surveillance activities or rounds. The departments reviewed include Maintenance, the rounds performed by the Roving Fire Patrols, Chemistry and Health Physics, and Security. The analysis included interviews and a review of data. The data sources reviewed included Security Department keycard transaction logs, program manuals and Nuclear Quality Group reports.

1. Review of the Maintenance Department (including I&C, Electrical, and Mechanical)

The Maintenance Department maintains facilities, equipment, systems, and components to perform their intended functions through corrective and preventative maintenance. These activities are job specific and are usually performed by more than one individual. They also typically involve post maintenance verification testing. Very infrequently does the Maintenance Department perform activities which are routine in nature such as log taking.

The activities performed by the Maintenance Department are monitored by the Maintenance Group Supervisors, who have overall responsibility for planning, supervising, and closing out work activities and by the technical inspectors within the Quality Control Department.

The type of documentation for the Maintenance Department is task specific as opposed to routine log taking. This type of documentation is less susceptible to falsification. This documentation receives several levels of review within the Production Department as well as review by the Nuclear Quality Group. Typically, Maintenance Department personnel perform their work in groups or pairs. This further reduces the likelihood of documentation concerns as to do so would require the collusion of several individuals.

2. Review of the Roving Firepatrol Rounds

Roving Firepatrols are utilized at Seabrook Station to periodically monitor areas where a component of the fire protection system has been disabled.

These patrols are supervised by the Fire Brigade Leader who also determines which areas need to be checked. The Firepatrol logs completion of an area check by marking the appropriate block on the log sheet and by "punching in" with the Morse Watchman System (MWS).

Located at each disablement location is a MWS station. When an area is checked, the firepatrol inserts the MWS data collector into the MWS station and an electronic record of the check is created. At the completion of the watch, the Fire Brigade Leader verifies that the logs are correct by obtaining a computer screen printout from the MWS data collector. This verification is directed by Operations Administrative Instruction 23, entitled "Operation of the Morse Watchman System," and ensures that all disablement locations have been checked. Any discrepancies are further investigated. The MWS is used as frequently

as the equipment is available. During normal plant operation the MWS is used for more than 99% of the required area checks. With the inherent increase in firepatrol requirements, it is used less often during plant outages.

3. Review of the Chemistry and Health Physics Department

The Chemistry Department performs daily primary and secondary sampling per the Technical Specifications. Chemistry samples are often taken by one technician and then analyzed by several different technicians that may be on different shifts. Additional sampling and data recording is performed on other frequencies and on a non-routine basis as directed by the applicable Technical Specification Limiting Condition for Operations. The Health Physics Department does not perform any routine Technical Specification related log taking but does perform other routine checks such as radiological surveys.

The results of the activities performed by the Chemistry and Health Physics are documented in numerous ways such as logs, radiological survey maps, and chemistry reports. These documents and activities are monitored by both department supervision and the Quality Control Department.

Two previous incidents, similar to the Auxiliary Operator performance concerns have also occurred in the Chemistry and Health Physics Department. These incidents occurred during the period of extended plant shutdown. The occurrences have heightened the awareness of the Chemistry and Health Physics technicians as to the importance of correctly documenting performance of assigned tasks. These incidents were discussed with personnel in the Chemistry and Health Physics Department by the Station Manager.

A review of the Security Department keycard transaction log for the Refueling Water Storage Tank area was conducted as part of the Phase IV data reduction. This review was performed to verify that Chemistry and Health Physics personnel were present in the area to conduct periodic sampling and radiological surveying. The results of the analysis, as described Section 3.0.B of this report, demonstrate that the appropriate personnel conducted the specified activity.

4. Review of the Security Department

The Security Guard Force performs various routine patrols and inspections such as protected barrier inspections (e.g., manhole covers, gates, fences etc.) and door checks.

Security Department supervision maintains a highly visible presence in the field. The ratio of workers to supervisors is low (4:1). This enables supervision to closely monitor security personnel. Additionally, when an activity is complete it is reviewed by supervision for completeness and is often matched against the Security Department keycard transaction log to determine whether the specific individual was in the correct location to complete the task.

A security officer performing a door check would record on the log sheet that the door was secure. The officer in the Central Alarm Station (CAS) could readily verify that the individual was in the correct area based on the Security Department keycard transaction log. This log tracks the use of keycards throughout the protected area and is easily accessed

by the CAS operator. Additionally, activities such as fence-line patrols are recorded on video camera which may be monitored from the CAS.

B. Conclusion

The IRT Task Force concludes that the AO performance concerns were not evident in other NHY departments.

6.0 Chronology of Events and Actions Taken As a Result of the AO Performance Concerns

A. Introduction to the Chronology

The following provides a detailed chronology of events relating to the AO performance concerns from the date of discovery to the date of issuance of the draft report. It specifically describes the events that lead to the discovery of the performance concerns, actions taken by all levels of NHY management in response to the AO performance concerns, NRC interfaces, and the thought processes explored and activities performed by the IRT Task Force. Also described are the corrective actions implemented by NHY in response to the AO performance concerns.

This chronology represents a good faith effort to document significant events that occurred regarding the AO performance concerns and the IRT assessment. It was developed based on direct observation, discussions with key individuals, and notes provided by IRT Task Force members and others. This chronology was also distributed for review and comment to key individuals. Notwithstanding this, this chronology may not necessarily represent all actions taken by NHY in response to the AO performance concerns.

B. Detailed Chronology

See attached.

CHRONOLOGY OF EVENTS

Sunday, March 1, 1992

- -- A Shift Superintendent conducted a quarterly surveillance to determine if on-shift personnel were appropriately performing assigned duties. As a result of conducting the surveillance, the Shift Superintendent determined that an Auxiliary Operator (AO) had not fully completed all assigned duties associated with the rover AO rounds. Specifically, the AO (AO #1) had not performed a routine periodic inspection (required every four hours) of a building. After confronting the AO with the discrepancies, the Shift Superintendent counseled him on his duties and responsibilities and the AO was relieved of his watch by the oncoming shift.
- Approx.
1830 -- The Shift Superintendent informed the Assistant Operations Manager, who in turn notified the Station Manager of the AO performance concerns.
- -- The Assistant Operations Manager directed the Shift Superintendent to obtain the Security Department keycard transaction logs for Saturday, February 29, 1992, and review the rover rounds that the subject AO was responsible for completing. Based on this review, discrepancies were also noted in the rounds that this AO completed on Saturday.
- -- The Shift Superintendent discussed the AO performance concerns with oncoming Shift Superintendent at shift turnover.

Monday, March 2, 1992

- 0830 -- The Executive Director - Nuclear Production was informed of the AO performance concerns.
- -- Station Management informed the NRC Senior Resident Inspector of the AO performance concerns.
- 0930 -- The President and CEO was informed of the AO performance concerns.
- 1001 -- The Security Department rescinded protected area access for the subject AO's keycard.
- Approx.
1100 -- Executive Management was informed of the AO performance concerns during the Monday morning meeting.
- 1400 -- Executive Management outlined the assessment process for the AO performance concerns. The Executive Director - Nuclear Production requested from the Director of Quality Programs that the Independent Review Team (IRT) conduct an assessment of the AO performance concerns.

- 1430 -- The AO identified as not properly completing his rounds (AO #1) was interviewed by the Assistant Operations Manager, a Shift Superintendent, and the Employee Relations Manager. As a result of this interview this AO was suspended without pay pending further assessment, and escorted outside of the protected area.
- 1700 -- Operations Management briefed Station Management and the Executive Director - Nuclear Production on the suspension of the first AO. Discussions were also held on potential disciplinary actions.

Tuesday, March 3, 1992

- 0700 -- The Assistant Operations Manager issued a night order to the operating crews to review a previous night order dated December 30, 1991, entitled "Complacency." This latter order asked the crews to discuss complacency, i.e., "self satisfaction accompanied by unawareness of actual danger or deficiencies," and how it applies to each shift during day-to-day operations. This order also requested recommendations for ensuring the crews do not become complacent.
- 0800 -- The IRT Manager met with the Assistant Operations Manager to discuss status and potential courses of action.
- 0830 -- Station Management informed the NRC Senior Resident Inspector of the suspension of an AO for 48-hours.
- 0930 -- The IRT Manager met with the Executive Director - Nuclear Production to discuss status and potential courses of action.
- -- The IRT Manager initiated the assessment of the AO performance concerns.
- -- The IRT Manager requested the Security Department to print out the keycard transaction logs for the two Condensate Storage Tank (CST) enclosure rooms for January and February 1992. This data was to be provided to the IRT Manager on Wednesday, March 4, 1992.
- 1300 -- The IRT Manager interviewed the Assistant Operations Manager.
- 1600 -- The IRT Manager interviewed a Shift Superintendent.
- 2130 -- The IRT Manager interviewed seven AOs, two additional Shift Superintendents, and one Unit Shift Supervisor.

Wednesday, March 4, 1992

- -- Operations Management met with Station Management, the Executive Director - Nuclear Production, and the Employee Relations Manager to review the actions taken to date and to finalize disciplinary actions.

-- -- The IRT Manager and the Operations Technical Projects Supervisor reviewed the keycard transaction data for the CST for January and February 1992, and informed Station Management that based on the preliminary review of the data additional AOs had not properly completed their rover rounds.

1300 -- The IRT Manager and Station Management met to discuss disciplinary action for the AOs identified by the CST data.

1430 -- The Assistant Operations Manager, Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager and a Shift Superintendent conducted a disciplinary meeting with the first AO (AO #1). This AO was suspended for two weeks retroactive to the beginning of the initial suspension period, put on probation for 6 months, decertified from AO activities, and required to attend an AO remedial training program pending the results of further assessment. These remedial actions were subsequently applied to all AOs who are noted as being suspended for two weeks.

-- -- The IRT Manager requested the Security Department to print out the keycard transaction log for the Cooling Tower (CT) and the Emergency Feedwater (EFW) pumphouse for January and February 1992. This data was to be provided to the IRT Manager on Thursday, March 5, 1992.

Thursday, March 5, 1992

0600 to

1230 -- The IRT Manager and the Operations Technical Projects Supervisor reviewed the keycard transaction data for the CT and EFW pumphouse for January and February 1992.

1230 -- The IRT Manager informed Station Management of the results of the data analysis for the CT and EFW pumphouse for January and February 1992. This data identified additional AOs who did not properly complete their rounds.

-- -- The IRT Manager requested the Security Department to print out the keycard transaction log for the Service Water (SW) pumphouse for January and February 1992. This data was to be provided to the IRT Manager on Friday, March 6, 1992.

-- -- The Assistant Operations Manager requested a Shift Superintendent (future Assistant Operations Manager) to assist with responding to the AO performance concerns.

1700 -- The IRT Manager met with the President and CEO, Executive Director - Nuclear Production, and the Director of Licensing Services to discuss the preliminary data analysis. The IRT Manager subsequently discussed potential courses of action with the Executive Director - Nuclear Production, and the Regulatory Compliance Manager.

Friday, March 6, 1992

-- -- The IRT Manager and the Operations Technical Projects Supervisor reviewed the keycard transaction data for the SW pumphouse for January and February 1992, and informed Station Management of the results. This data lead Operations Management to the conclusion that five additional AOs needed to be interviewed.

-- -- The IRT Manager verified the accuracy of the Security Department keycard transaction data with the Security Manager and appropriate staff.

Approx.

1000 -- The Executive Director - Nuclear Production accompanied an AO on a rover round.

1300 -- NHY management including the President and CEO, Executive Director - Nuclear Production, Director of Licensing Services, Station Management, Operations Management, IRT Manager, and the Employee Relations Manager, met and discussed the results of the data analysis completed to date, a detailed course of action for interviewing additional AOs, and an outline for briefing the NRC.

1500 -- NHY management including the Executive Director - Nuclear Production, briefed the NRC Senior Resident Inspector, and subsequently NRC Region I (via teleconference) on the current findings and NHY's intended course of action.

-- -- The IRT Manager requested the Security Department to print out the keycard transaction log for the CT, CST, EFW pumphouse and SW pumphouse for November and December 1991.

Approx.

2200 -- Operations Management issued a night order that each Shift Superintendent subsequently discussed with his crew. This order reviewed proposed changes to the Operations Management Manual (OFMM) pertaining to completeness of plant records. This order also reviewed existing OFMM procedures regarding shift records requirements, log sheets, attention to detail, core values and work ethic. These night orders also stated that each Shift Superintendent shall perform a set of rounds with each AO, and review the watchstation and all duties expected of the AO as a watchstander.

Saturday, March 7, 1992

-- -- NRC Inspector #1 came onsite and accompanied AOs on rounds.

0900 to

1400 -- Based on the results of the January and February 1992 data, Operations Management, the Employee Relations Manager, and a Shift Superintendent interviewed and suspended five additional AOs (AOs # 2 through 6) for

96-hours without pay pending further assessment. This brought the total number of suspended AOs to six.

-- -- The Operations Technical Projects Supervisor reviewed the keycard transaction data for the CT, CST, EFW pumphouse, and SW pumphouse for November and December 1991.

1500 to
2100 --

NHY management including the President and CEO, Executive Director - Nuclear Production, Director of Licensing Services, Station Management, Operations Management, IRT Manager, and the Employee Relations Manager met and reviewed the AO interview results and the actions taken. At the conclusion of the meeting the President and CEO indicated that the suspended AOs could not be reinstated without his prior approval.

-- -- Operations Management and the Employee Relations Manager briefed the President and CEO, Executive Director - Nuclear Production, and other NHY management on the results of the AO interviews and the disciplinary actions taken.

-- -- Station Management briefed the NRC Senior Resident Inspector on the current status and intended course of action.

-- -- The IRT Manager expanded the scope and composition of the IRT Task Force investigating the AO performance concerns.

Sunday, March 8, 1992

-- -- NRC Inspector #2 came onsite and accompanied AOs on rounds.

-- -- Operations Management, the Employee Relations Manager, and a Shift Superintendent conducted interviews with two additional AOs who held reactor operator licenses and two Control Room Operators. The Control Room Operators were being interviewed based on data analysis from the time period when they were AOs. No disciplinary actions were taken against one of the Control Room Operators; the other received a written warning. The two AOs (AOs # 7 and 8) were suspended for 96-hours pending further assessment.

-- -- Operations Management and the Employee Relations Manager briefed the Station Manager and Assistant Station Manager on the actions taken to date.

-- -- The IRT Manager contacted three of the four IRT Task Force team leads (i.e., AO Performance Assessment, Management Effectiveness, and Training) in anticipation of a March 9, 1992, 0900 IRT Task Force meeting. The IRT Manager also developed a scoping document outlining the scope and methods for conducting the IRT assessment.

Monday, March 9, 1992

0700 -- Operations and Station Management conducted a status meeting. Additional courses of action were discussed.

0800 -- The IRT Manager contacted the fourth IRT Task Force team lead (i.e., Root Cause) in anticipation of a March 9, 1992, 0900 IRT Task Force meeting.

0830 -- The Assistant Station Manager briefed the NRC Senior Resident Inspector on status and intended course of action.

-- -- NHY briefed the New Hampshire Public Utilities Commission, New Hampshire Office of Emergency Management, Massachusetts Emergency Management Agency, Local Communities in the Emergency Planning Zone, and NRC Region I on status and intended course of action.

0900 -- The IRT Task Force conducted a kick-off meeting. This team consisted of eight personnel with diverse backgrounds. Issues discussed included background information on the AO performance concern, delegation of responsibilities among team members, and the draft Operations Department Assessment scoping document. This assessment was designed to review management's effectiveness in resolving this issue, the root cause, an AO Performance Assessment, a review of the training program, and the development of a chronology of events. Three of the team members were directed to continue previously initiated data review activities.

Approx.
1100 -- Based upon new data received from the IRT Manager, Operations Management conducted an interview of another AO. This AO (AO #9) was suspended for 96-hours without pay pending further assessment.

1300 -- The Executive Director - Nuclear Production began a series of briefings to Operations Department personnel regarding the AO performance concerns, the pending assessment, requirements for rounds, and management's expectations.

-- -- NHY briefed the NRC Senior Resident Inspector on the status of the assessment and disciplinary actions taken.

1500 -- The Executive Director - Nuclear Production provided a second briefing to Operations Department personnel.

1600 -- The IRT Task Force conducted a status meeting. Those in attendance included the team members. The meeting started with a call to NHY legal counsel to outline IRT Task Force members' legal responsibilities and identify potential legal actions. Following this, a teleconference was initiated with the Employee Relations Manager, who was one of three NHY employees responsible for interviewing twelve AOs; eleven AOs who missed some rounds and one AO who did not miss any rounds. This discussion summarized the interviewer's perception of the AOs interpretation of the definition of "satisfactory," the significance of the AO's signature on the bottom of log sheets, why there were

frequent misses of the Cooling Tower surveillance, an AO's understanding of management directives, and recollection of similar incidents of falsification of documents in the past at NHY.

1500 -- A Shift Superintendent made a four-hour notification to the NRC pursuant to 10 CFR 50.72(b)(2)(vi), regarding the AO performance concern as a news worthy event. This notification stated that NHY was informing local news agencies and local government agencies that disciplinary action had been taken against certain AOs as a result of discrepancies found in the logs taken on their rotas, including the fact that not every location was checked on every round. The Shift Superintendent also stated that NHY had previously briefed the NRC on this issue and an assessment was continuing.

The Shift Superintendent responded to the NRC operations officer's questions regarding AO termination, total number of AOs affected, and disciplinary actions taken. The NRC operations officer requested a follow-up notification if a written press release was made.

1600 -- A Shift Superintendent initiated Station Information Report (SIR) 92-005 to evaluate the four-hour notification provided to the NRC regarding the AO performance concern as a news worthy event.

1700 -- The IRT Task Force met with the Assistant Operations Manager and a Shift Superintendent (future Assistant Operations Manager), who were the two other NHY employees responsible for interviewing the twelve AOs. This discussion was similar to the discussions held at 1600, but also included the interviewer's perception of the effectiveness of On-the-Job Training for AOs, AO qualification, and the AO's impression of how long this problem has been in been in existence at Seabrook Station.

Discussion was also held on the Security Department's high confidence that the keycard transaction data utilized to verify entry into specific buildings were accurate.

-- -- The President and Chief Executive Officer issued NHY Letter dated March 9, 1992 (NHY-920161) to all employees. This letter summarized the AO performance concerns, how it was discovered, the fact that the NRC had been informed, and the fact that disciplinary actions had been taken and more were possible with further review. This letter also stressed an employee's responsibility regarding accuracy, excellence, and accountability for their actions, and that NHY viewed this occurrence as a serious issue.

-- -- The President and CEO informed the Seabrook Joint Owners of the AO performance concerns.

1700 -- NHY informed the news media of the AO performance concerns.

1730 -- The Regulatory Compliance Manager responded to a phone call from the NRC Emergency Operations Center and discussed disciplinary actions related to the AOs and the status of any issued or pending press releases.

Tuesday, March 10, 1992

- 0700 -- The Executive Director - Nuclear Production provided a third briefing to Operations Department personnel.
- 0900 -- Operations and Station Management conducted a status meeting. Discussions included corrective actions and communicating the significance of the AO performance concern to the balance of NHY employees.
- 1215 -- A Shift Superintendent initiated Station Information Report (SIR) 92-006 to evaluate a missed Technical Specification Surveillance 4.7.1.3 regarding CST integrity. This surveillance was missed on November 9, 1991, and was identified during IRT Task Force data analysis activities. The Regulatory Compliance Department determined that a Licensee Event Report would be required by April 9, 1992, per 10 CFR 50.73.
- 1300 -- The IRT Manager observed the Executive Director - Nuclear Production provide a fourth briefing to Operations Department personnel.
- 1500 -- NRC Inspector #3 conducted an entrance meeting for NRC Inspection 92-08. The inspector stated that the scope of inspection was to include the safety significance of AO performance concern, the AO rounds process, the IRT assessment process, Operation's Department procedures, management's controls, the training program, and adequacy of corrective actions.
- 1530 -- The Executive Director - Nuclear Production, Shift Superintendent, and a Licensing Engineer gave a background briefing to NRC Inspector #3 and the Senior Resident Inspector.
- 1600 -- The IRT Task Force conducted a status meeting. Those in attendance included the team members. The team members were briefed on the NRC entrance meeting. During this meeting it was determined that the data review process should focus on data from the Condensate Storage Tank (CST), Emergency Feedwater Pumphouse (EFW), and Fuel Storage Building (FSB). The CST and FSB surveillances are governed by the Technical Specifications and the EFW temperature monitoring activity was a previous commitment to the NRC (SBN-1255, December 10, 1986). The other data, i.e., surveillances for the Cooling Tower and Service Water pumphouse, are not related to the Technical Specifications or other commitments. It was also determined that the data from January and February 1991 should be reviewed in addition to November and December 1991, and January and February 1992 data. This was to assist in determining the extent of the problem.

Preliminary evaluation of the keycard transaction data indicated no strong correlation to time-of-day, or day-of-the-week. The IRT Task Force continued analyzing data, interviewing AOs, and reviewing the training program.

Wednesday, March 11, 1992

- 0700 -- Production Management conducted a status meeting. Those in attendance included the Executive Director - Nuclear Production, Assistant Station Manager, Assistant Operations Manager, Operations Technical Projects Supervisor, a Shift Superintendent (future Assistant Operations Manager), IRT Manager, and the Employee Relations Manager. This meeting included a review of draft disciplinary action letters and interviews scheduled for the day, the preliminary results from the November and December 1991 keycard transaction data analysis, the ability to maintain adequate AO coverage in light of multiple suspensions, the potential for the missed Cooling Tower surveillances being caused by a miscommunication of management's expectations, and the need to look closely at any missed portions of rounds for licensed AOs. The meeting was adjourned at 0755.
- 0800 -- The IRT Manager requested the Security Department to print out the keycard transaction log for the CST, EFW pumphouse, and FSB for March, August and September 1990.
- 0835 -- A second status meeting was convened with the Executive Director - Nuclear Production, Assistant Station Manager, Station Manager, Assistant Operations Manager, a Shift Superintendent (future Assistant Operations Manager), IRT Manager, and the Director of Licensing Services. This meeting addressed the status of the in-process data analysis, the ability to bound the issue by using earlier data, and the need to brief the NRC Senior Resident Inspector at 0915. The meeting was adjourned at 0910.
- 0915 -- NHY briefed the NRC Senior Resident Inspector and NRC Inspector #3. The briefing addressed disciplinary action meeting schedule, status of keycard transaction data analysis for November and December 1991, potential segregation of the missed surveillances for the Cooling Tower from other missed surveillances, and potential for missed Technical Specification surveillances.
- 1100 -- The IRT Manager and the Director of Licensing Services provided an update briefing to the President and CEO.
- 1300 -- The IRT Manager met with the NRC to discuss scope and method of the IRT assessment.
- -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted disciplinary meetings for five AOs previously suspended on Saturday, March 7, 1992. These meetings were conducted throughout the day. Four AOs were each suspended for two weeks without pay retroactive to the initial suspension date.
- Management extended the suspension of the one remaining AO previously suspended on Saturday, March 7, 1992, in order to evaluate that individual's performance further.

- 1600 -- Operations Management, the Employee Relations Manager, and a Shift Superintendent conducted an interview of one Control Room Operator who was previously interviewed on Sunday, March 8, 1992, who was issued a written warning at that time, but was rescinded due to additional data analysis. This Control Room Operator was reinterviewed based on more recent data analysis results. This Control Room Operator was issued a letter of reprimand; no further disciplinary actions were taken at this time.
- 1630 -- Operations Management, the Employee Relations Manager, and a Shift Superintendent conducted an interview of a Control Room Operator who was identified based upon recent data analysis. No disciplinary actions were taken against this Control Room Operator.
- -- The Security Manager issued a memorandum to the IRT Manager (SS-59571) attesting to the accuracy and reliability of the keycard transaction data being analyzed by the IRT Task Force.
- -- A member of the IRT Task Force interviewed five AOs.
- 1630 -- Station Management briefed the NRC Senior Resident Inspector on the disciplinary action meetings conducted on this date.

Thursday, March 12, 1992

- 0900 -- The Executive Director - Nuclear Production briefed the Seabrook Joint Owners on the AO performance concern at the monthly Joint Owner meeting.
- Approx.
1100 -- Four members of the IRT Task Force walked selected portions of the AO rover round utilizing a rover round log.
- 1100 and
1300 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted disciplinary action meetings for two AOs who held reactor operator licenses and who were previously suspended on Sunday, March 8, 1992. These two AOs were suspended for two weeks. These AOs were also told at this time that their reactor operator licenses would be terminated.
- 1400 -- A disciplinary action meeting was also conducted for one AO who was previously suspended on Monday, March 9, 1992. This AO resigned from NHY.
- Approx.
1600 -- Operations Management, the Employee Relations Manager, and a Shift Superintendent conducted interviews for three other AOs who were recently identified based on recent data analysis. One AO was exonerated and two

AOs were suspended for 96-hours without pay pending further assessment. The latter two AOs (AOs # 10 and 11) became the tenth and eleventh to be suspended.

-- -- The IRT Task Force continued to review additional keycard transaction data. A member of the IRT Task Force interviewed five additional AOs.

1600 -- The IRT Task Force conducted a status meeting. Those in attendance included the team members and two Regulatory Compliance personnel who were subsequently added to the IRT Task Force. Additionally, NRC Inspector #3 attended a portion of this meeting.

Friday, March 13, 1992

0900 -- One of the AOs who held a reactor operator license and who was initially suspended on March 8, 1992, met with the NRC Senior Resident Inspector, NRC Inspector #3, and a Shift Superintendent. This meeting was held at the AO's request.

0900 -- NHY management conducted a status meeting. Those in attendance included the President and CEO, Executive Director - Nuclear Production, IRT Manager, Director of Licensing Services, Assistant Operations Manager, Assistant Station Manager, Training Manager, Nuclear Quality Manager, and a Shift Superintendent. This meeting was to review the chronology of events, discuss data reliability and patterns, disciplinary action taken to date, disciplinary action to be taken, outstanding short term actions, IRT Task Force status including preliminary conclusions, recommendations, and root causes, feedback from the NRC, and the future course of action.

1000 -- A member of the IRT Task Force interviewed the Station Manager.

1200 -- Operations Management suspended Licensed Operator Initial Training. This made seven additional AOs available to fill AO openings on the operating shifts. These AOs were provided with requalification training.

1300 -- NHY management briefed the NRC (including NRC Region 1) on status, intended course of action, and potential for a missed Technical Specification surveillance in the FV3.

1300 -- A Unit Shift Supervisor initiated Station Information Report (SIR) 92-008 to evaluate a missed Technical Specification Surveillance 4.7.10 regarding Spent Fuel Pool Cooling Pump area temperature. This surveillance was missed on February 21, 1992, at 1600, and was identified during IRT Task Force data analysis activities. The Regulatory Compliance Department determined that a Licensee Event Report would be required by April 13, 1992, per the requirements of 10 CFR 50.73.

1430 -- NRC Inspector #3 conducted an exit meeting for NRC Inspection 92-08. The exit meeting was attended by a number of NHY personnel including the

President and CEO, the Executive Director - Nuclear Production, Assistant Station Manager, Assistant Operations Manager, the Director of Licensing Services and the IRT Task Force. The NRC Inspector stated that the purpose of the inspection was to evaluate the licensee's response, assess the safety significance of the missed AO rounds, and to determine the need to perform follow-up inspection activities. With regard to plant safety, the NRC Inspector cited NHY's actions of providing briefings to the operating crews, the Shift Superintendent accompanying AOs on rounds, requiring Quality Control sampling of AO rounds, Shift Superintendent verification of rover rounds, consistent feedback (i.e., from interviews with AOs and data analysis), that AOs consider procedures and Repetitive Task Sheets of higher importance than rover round log sheets, and the fact that past NRC experience has shown that Seabrook has missed few Technical Specification surveillances. The NRC Inspector also noted that NHY intends to review Technical Specification Surveillances for the core group of worst AOs.

The NRC Inspector cited the following areas as potential weaknesses which may have contributed to this event: scope and conduct of AO On-the-Job training; no individual being responsible for training a new AO; no follow-up checks of new AOs being conducted; Operations Management approval of new AOs should put more emphasis on management's expectations; the Shift Superintendent's rarely accompany AOs on rounds; and round sheets are bulky and lack detail regarding the surveillances to be performed.

The NRC Inspector indicated that NHY would likely receive three violations as of that time. The first violation would be cited for missing two Technical Specification surveillances. The second violation would pertain to falsifying records required by the NRC, and the third would pertain to willfully causing a licensee to violate NRC regulations.

With regard to mitigating actions, the NRC Inspector referenced NHY's immediate actions taken by the Assistant Operations Manager, the formation of the IRT Task Force, the scope of the IRT review, overall quick management response, good response by upper management (e.g., briefings conducted by the Executive Director - Nuclear Production), and the candid dialogue NHY exhibited with the NRC.

The exit meeting was adjourned at approximately 1515.

1515 -- The IRT Task Force conducted a status meeting. Those in attendance included the team members. Discussions included methods of bounding the AO performance concern, and results of additional interviews with AOs and Station Management. It was also determined that it was necessary to review the keycard transaction data for the CST, EFW and FSB from March 1990 to present. This data would be reviewed to determine if any Technical Specification surveillances, or other commitments, were missed since full power licensure.

-- -- A member of the IRT Task Force interviewed three additional AOs.

1600 -- The IRT Task Force requested the Security Department to print out the keycard transaction log for the CST, EFW pump house, and FSB for March 1990 to present. This data was to be provided to the IRT on Monday, March 16, 1992.

1630 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted a disciplinary action meeting for an AO who was previously suspended on Saturday, March 7, 1992. This AO was suspended for two weeks retroactive to the date of the initial suspension.

-- -- NHY issued a letter to the NRC (NYN-92026) to terminate the reactor operator licenses held by two AOs who were previously found to have not fully completed their rover rounds. These AOs were initially suspended on Sunday, March 8, 1992.

1800 -- NHY provided an update to news media regarding the AO performance concern.

Note: At the end of this date the Assistant Station Manager became the Station Manager due to retirement. Henceforth, he will be referenced to as the Station Manager.

Saturday, March 14, 1992

-- -- Five of the AOs from the Licensed Operator Initial Training class reviewed AO rounds with a Shift Superintendent as part of the requalification process. Following this, these AOs were available to supplement AO staff on the operating shifts.

-- -- The Operations Manager briefed two operating crews on the AO assessment.

1500 to
1800 -- The IRT Manager interviewed the Operations Manager.

Sunday, March 15, 1992

-- -- The Assistant Operations Manager contacted the Shift Superintendent to set up an interview on Monday, March 16, 1992, with a recently identified AO.

Monday, March 16, 1992

0800 -- The IRT Task Force started reviewing keycard transaction log data for the CST, EFW pump house, and FSB for March 1990 to present. This review was to verify compliance with Technical Specification surveillances.

0900 -- The IRT Manager interviewed a Shift Superintendent and a Unit Shift Supervisor.

-- -- A member of the IRT Task Force interviewed three additional AOs.

-- -- Two of the AOs from the Licensed Operator Initial Training class reviewed AO rounds with a Shift Superintendent as part of the requalification process. Following this, these AOs were available to supplement AO staff on the operating shifts.

-- -- The IRT Task Force continued data analysis activities and determined that an additional Technical Specification surveillance regarding the integrity of the CST had been missed. The IRT Task Force informed NHY management of this missed surveillance.

-- -- Operations Management, the Employee Relations Manager, and a Shift Superintendent interviewed an AO who was recently identified as a result of recent data analysis activities. This AO (AO #12) was suspended for 96-hours pending further assessment. This became the twelfth AO to be suspended.

1300 and
1400 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted disciplinary action meetings for two AOs who were previously suspended on Thursday, March 12, 1992. These two AOs were suspended for two weeks retroactive to the date of the initial suspension.

1300 -- A Shift Superintendent initiated Station Information Report (SIR) 92-009 to evaluate a missed Technical Specification Surveillance 4.7.1.3 regarding CST integrity. This surveillance was missed on May 12, 1991, and was identified during IRT Task Force data analysis activities. The Regulatory Compliance Department determined that a Licensee Event Report would be required by April 15, 1992, per the requirements of 10 CFR 50.73.

1500 -- The Executive Director - Nuclear Production provided a fifth briefing to Operations Department personnel.

1635 -- NHY management conducted a status meeting. Those in attendance included the President and CEO, Executive Director - Nuclear Production, IRT Manager, Director of Licensing Services, Assistant Operations Manager, Station Manager, Training Manager, Maintenance Manager, and a Shift Superintendent (future Assistant Operations Manager). Discussions at this meeting included the third missed Technical Specification surveillance, the status of the data analysis to identify missed Technical Specification surveillances, AO termination criteria and the option for resignation. The IRT Manager also provided a status of the other IRT Task Force activities.

Tuesday, March 17, 1992

0830 -- A meeting was conducted with the President and CEO, Executive Director - Nuclear Production, Station Manager, Assistant Operations Manager, Director of Licensing Services, and the Corporate Communications Manager to discuss the agenda for the meeting with the NRC Regional Administrator, Region I, scheduled for Thursday, March 19, 1992.

Approx.
0900 --

Executive Management issued an update bulletin to employees regarding the IRT review of the AO situation. This bulletin stated that the IRT evaluation of AO work practices and log keeping was continuing and was expected to take approximately two more weeks. This bulletin also stated that the current focus of the IRT effort was a review of information to verify that all inspections required by the Technical Specifications had been performed since the receipt of the full-power operating license. Three Technical Specification surveillances had been determined to have been missed to that date.

The bulletin also summarized the disciplinary actions taken by NHY management. These included the suspension of ten AOs for two weeks without pay, suspension of one additional AO pending further review, and the suspension and subsequent resignation of another AO. These AOs were also taken off duties that would require them to perform as AOs, and were placed on probation pending further review.

The bulletin also indicated that two of the AOs who held reactor operator licenses were reassigned to duties that did not require a license. NHY had also requested that the NRC terminate those licenses.

Also summarized were the actions taken by management, such as discussions held by the Executive Director - Nuclear Production and the Station Manager with the Operations staff. It was also stated that the Station Manager would brief other NHY departments on this issue.

The update reemphasized that the AO performance concern is a very serious issue.

-- --

A member of the IRT Task Force interviewed five additional AOs.

Approx.
0930 --

The IRT Manager issued a memorandum to the Security Manager (IRT# 92-005) requesting additional information on the accuracy of the computer generated keycard transaction data. Information requested included the computer overall computer error rate, hardware and software error rates, systemic errors, random errors, empirical evidence regarding keycard reader errors, and corrective actions taken in response to errors.

1000 --

A meeting was conducted with the Executive Director - Nuclear Production (part-time attendance), Director of Administrative Services, Assistant Operations Manager, a Shift Superintendent (future Assistant Operations Manager) the

Employee Relations Manager, and counsel to review the approach to disciplinary actions taken to date, potential for future labor proceedings, and potential future disciplinary actions. This meeting was adjourned at 1215.

- 1340 -- A member of the IRT Task Force met with the Assistant Operations Manager and a Shift Superintendent (future Assistant Operations Manager) to discuss the chronology of events regarding the AO issue.
- 1700 -- Operations Management briefed the NRC Senior Resident Inspector on NHY's meeting with their corporate council, the fact that the Operations department was providing input into the IRT's chronology, a status update, and progress on the AO remedial training program.

Wednesday, March 18, 1992

- 0900 -- Operations Management met with the Operations Training Supervisor to discuss the AO remedial training program.
- 1300 -- A meeting was conducted with the Executive Director - Nuclear Production, Station Manager, Assistant Operations Manager, and a Shift Superintendent (Assistant Operations Manager) to discuss the disciplinary meetings to be conducted with two AOs later that day.
- 1400 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted a disciplinary meeting with the first AO identified as not completing his rounds. This AO was initially suspended on Monday, March 2, 1992. This AO resigned from NHY.
- 1500 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, the Employee Relations Manager, and a Shift Superintendent conducted a disciplinary meeting with another AO who was previously suspended on Saturday, March 7, 1992. This AO was terminated by NHY.
- 1630 -- Operations Management including the Executive Director - Nuclear Production (part-time attendance) briefed the NRC Senior Resident Inspector on the two disciplinary meetings conducted earlier that day, and the resultant resignation and termination.
- -- The NRC Office of Investigation called the President and CEO to inform NHY that the Office of Investigation will be investigating the AO performance concern.
- -- A member of the IRT Task Force interviewed seven additional AOs.

Thursday, March 19, 1992

0815 -- The IRT Task Force conducted a status meeting. Those in attendance included the team members and a Engineering Department Designer who was added to the IRT Task Force. Discussions included a status of keycard transaction data analysis. Specifically, the CST was completed from March 1990 to present. Notwithstanding this, further review was being conducted to confirm or refute two additional potential missed Technical Specification surveillances. The data analysis for the FSB was approximately one-third complete and was expected to be completed within two more days. The IRT noted a discontinuity in the keycard transaction data provided by the Security Department for the FSB. Upon further review, Security had determined that this door had been posted during the subject time period. Security subsequently provided the manual Security door entry log to the IRT Task Force. The IRT Task Force agreed it was prudent to review EFW Pumphouse data back to March 1990. This data analysis was expected to take over one week to complete. The IRT Task Force also agreed to document the basis for the March 1990 data review cut-off date.

Discussions were also held on the potential for labor proceedings based upon the scope of the data reviewed. Status was provided for all activities being conducted by the IRT Task Force including the preliminary results of reviews conducted to determine if the AO performance concern was present in other departments. The IRT Task Force agreed to document the results of these reviews in the final report.

The IRT Task Force set a preliminary schedule for a first draft of the IRT Report for March 27, 1992.

0900 -- A meeting was conducted with the Assistant Operations Manager, Training Manager, Operations Training Manager, a Shift Superintendent (future Assistant Operations Manager), and the Operations Training Supervisor on the AO remedial training program.

0930 -- The Assistant Operations Manager requested the Training Department to provide copies of training materials that pertain to the CST, and attendance lists for these classes.

1030 -- The Assistant Operations Manager met with a Shift Superintendent (future Assistant Operations Manager) to discuss the need to include specific data on missed rover rounds in specific AO's personnel files.

1100 -- Executive Management briefed the NRC Regional Administrator, Region I (T. T. Martin) and the NRC Chief, Projects Branch 3 (Jim Linville), on the status of the AO assessment and actions taken to date.

1250 -- A Shift Superintendent (future Assistant Operations Manager) called an IRT Task Force member to provide a summary of events that occurred on March 17 and 18, 1992.

1430 -- A Shift Superintendent (future Assistant Operations Manager) met with an IRT Task Force member to discuss the firewatch and Technical Requirements, and specifically the potential for missed firewatch rounds.

1500 -- A Shift Superintendent (future Assistant Operations Manager) requested that the Fire Fighter Supervisor specifically log his reviews of the Morse Watchman.

Approx.

1500 -- The NRC Director, Division of Reactor Projects, called the President and CEO and requested that NHY place a letter on the docket describing NHY's actions regarding the AO performance concerns, the scope of the IRT review, short term actions including disciplinary actions, the basis for NHY's confidence that it is still safe to operate the plant, the process for remediation, a schedule for completing actions, and a commitment to share the results of the IRT study with the NRC.

1545 -- NHY management conducted a status meeting. Those in attendance included the President and CEO, Executive Director - Nuclear Production, IRT Manager, Assistant Operations Manager, Station Manager, Assistant Station Manager, Training Manager, and a Shift Superintendent (future Assistant Operations Manager). Discussions at this meeting included an update on the status of the IRT assessment, and the fact that the NRC Office of Investigations has opened up an investigation. This meeting was adjourned at 1715.

-- -- The President and CEO issued a memorandum (NHY-920178) to all managers, supervisors, and IRT Task Force participants to inform them that the NRC Office of Investigations will be conducting an investigation of the AO performance concern. This memorandum also requested that full cooperation be provided to the NRC Office of Investigations and that all documentation regarding the AO performance concern was to be retained.

-- -- The President and CEO sent a letter (NYN-92030) to the NRC Director, Office of Investigations stating that direction had been given to all NHY managers, supervisors, and members of the IRT Task Force to retain all assessment records generated as well as any records that may have relevance to the matters being investigated.

Friday, March 20, 1992

0600 -- A Shift Superintendent (future Assistant Operations Manager) briefed the midnight operating crew on disciplinary actions taken to date.

0730 -- The Assistant Operations Manager briefed the Station Manager on the status of the IRT assessment as it was discussed in the Thursday, March 19, 1992, management meeting.

0730 -- A Shift Superintendent (future Assistant Operations Manager) briefed the day operating crew on disciplinary actions taken to date.

0900 -- The Assistant Operations Manager briefed the NRC Senior Resident Inspector on the status of the IRT assessment as it was discussed in the Thursday, March 19, 1992, management meeting.

0930 -- A Shift Superintendent (future Assistant Operations Manager) briefed the balance of the operations staff on disciplinary actions taken to date.

0955 to
1100 -- The Station Manager, Maintenance Manager (future Assistant Station Manager) briefed half of the Instrumentation & Controls Department on the status of the AO assessment, NRC enforcement policy, and expectations of the new Station Manager. These expectations included upholding NHY's Values for Excellence, procedure compliance, and effective training.

1000 -- A Shift Superintendent (future Assistant Operations Manager) conferred an IRT Task Force Member to provide a summary of events that occurred on March 19 and 20, 1992.

1130 -- A Shift Superintendent (future Assistant Operations Manager) briefed the Training Center Shift on the status of the AO assessment.

1200 -- A member of the IRT Task Force interviewed the new Station Manager.

1330 -- A Shift Superintendent (future Assistant Operations Manager) met with the Training Manager to discuss the need to include an industrial psychologist in the remedial AO program.

1400 -- The IRT Manager issued a draft chronology of events regarding the AO performance concern for review and comment. (See LIC-920341).

1500 -- A member of the IRT Task Force interviewed the President and CEO.

1530 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent (future Assistant Operations Manager) conducted a disciplinary meeting with the AO (AO #12) previously interviewed and suspended on March 16, 1992. This AO was suspended for a total of three days.

Saturday, March 21, 1992

-- -- A Shift Superintendent (future Assistant Operations Manager) accompanied AOs on two rounds.

Sunday, March 22, 1992

-- -- No pertinent activities are known to have occurred on this day.

Monday, March 23, 1992

- 0700 -- A Shift Superintendent (future Assistant Operations Manager) briefed the day crew on the status of the AO assessment. With the completion of this briefing, all operating crews had been briefed on the status of the AO assessment.
- 0800 -- A Shift Superintendent (future Assistant Operations Manager) briefed AOs returning from their suspension on the status of the AO assessment.
- 0900 -- The IRT Manager notified the Assistant Operations Manager and a Shift Superintendent (future Assistant Operations Manager) of the potential for two more missed Technical Specification surveillances regarding the CST. The missed surveillances took place on August 25, 1990, and December 22, 1990.
- 0912 -- A Shift Superintendent (future Assistant Operations Manager) called an IRT Task Force member to provide a summary of events that occurred on March 20 and 21, 1992.
- 1030 -- The Operations Training Manager and the Operations Training Supervisor briefed a Shift Superintendent (future Assistant Operations Manager) on the content of the AO remedial training program.
- 1150 -- The Assistant Operations Manager determined that the two missed Technical Specification surveillances were in fact three missed surveillances. Two CST surveillances were missed on August 25, 1990. The Assistant Operations Manager notified the Station Manager, on-shift Shift Superintendent, and the IRT Task Force of the three missed Technical Specification surveillances. This brought the total number of missed Technical Specification surveillances to six.
- 1330 -- Operations Management, the Employee Relations Manager, and a Shift Superintendent interviewed a Supervisory Control Room Operator who had missed the two August 25, 1990 CST Technical Specification surveillances when he was a Control Room Operator, and standing an AO watch. This Supervisory Control Room Operator (SCRO #13) was suspended for 96-hours pending further assessment. This became the thirteenth individual to be suspended.
- 1500 -- The Assistant Operations Manager had the Security Department rescind protected area access for the recently suspended Supervisory Control Room Operator.
- 1510 -- The Assistant Operations Manager briefed the NRC Senior Resident Inspector on the three recent missed CST Technical Specification surveillances and on the disciplinary meeting that was conducted on March 20, 1992.
- -- The Station Manager issued a memorandum (SS #59683) to all NHY managers and department supervisors regarding an update on the IRT assessment. This memorandum addressed the status of the IRT assessment, the status of the review for missed Technical Specification surveillances, disciplinary actions

taken to date, continuing IRT interviews for the purpose of determining root cause, and a schedule for issuance of the draft IRT report.

-- -- A member of the IRT Task Force conducted a follow-up discussion with one AO.

Tuesday, March 24, 1992

0900 -- The IRT Manager interviewed a Shift Superintendent (future Assistant Operations Manager).

1000 -- The IRT Manager interviewed the Assistant Operations Manager.

1030 -- A Shift Superintendent (future Assistant Operations Manager) called an IRT Task Force member to provide a summary of events that occurred on March 23 and 24, 1992.

1400 -- The IRT Task Force conducted a status meeting. Those in attendance included all but two team members. Discussions included a review of the draft table of contents, responsibilities for report sections, the draft problem statement, and the schedule for preparation of a rough draft. The meeting was adjourned at 1435.

-- -- NHV issued an update bulletin that discussed, in part, the status of the IRT assessment and the fact that one more AO [actually an SCRO] had been suspended. This bulletin also discussed the six missed Technical Specification surveillances.

-- -- A member of the IRT Task Force interviewed a Control Room Operator who had been an AO.

1600 -- The Regulatory Compliance Manager, Station Manager, and Assistant Operations Manager briefed the NRC Senior Project Manager, Project Directorate I-3, on the suspensions of twelve AOs and the one Supervisory Control Room Operator.

Wednesday, March 25, 1992

1000 -- Operations Management issued a night order on Technical Clarification TS-104 and a training handout on the CST. This Technical Clarification provides guidance on the determination of CST enclosure integrity.

-- -- A member of the IRT Task Force contacted a Unit Shift Supervisor to discuss thought processes regarding maintaining an adequate number of AOs on shift.

1300 -- The IRT Task Force conducted a status meeting. Those in attendance included all but one team member. Discussions included a status of all assessment

activities and draft conclusions regarding root cause and contributing causes. Brief discussion was also held on draft recommendations.

1600 -- The Station Manager, Maintenance Manager, Training Manager, Operations Training Manager, Operations Training Supervisor, a Unit Shift Supervisor, and a Shift Superintendent (future Assistant Operations Manager), met to discuss the AO remediation program and shift manning requirements.

1700 -- The Station Manager, Assistant Operations Manager, a Shift Superintendent (future Assistant Operations Manager), a Shift Superintendent, the Employee Relations Manager, and the Executive Director - Nuclear Production (via telephone) met to discuss disciplinary actions for the previously suspended Supervisory Control Room Operator.

Thursday, March 26, 1992

0830 -- The Executive Director - Nuclear Production, Station Manager, and Assistant Operations Manager met to discuss shift staffing and the AO remediation program.

-- -- A Shift Superintendent (future Assistant Operations Manager) called an IRT Task Force member to provide a status update for March 25, and 26, 1992, and to provide comments on the draft chronology.

1500 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent (future Assistant Operations Manager) conducted a disciplinary meeting with an AO who was previously suspended on March 7, 1992. This AO resigned from NHY.

1630 -- The Station Manager and the Assistant Operations Manager briefed the NRC Senior Resident Inspector on the disciplinary meeting conducted at 1500.

Friday, March 27, 1992

0750 -- The IRT Task Force conducted a status meeting. Those in attendance included all team members. Discussions included a status and action plan for drafting the IRT report. Discussion was also held on the three categories of AOs; those that always completed their rounds, those that occasionally missed rounds due to rationalization or honest mistakes, and those that were chronic offenders. Also discussed was the potential for a second root cause. This meeting was adjourned at 0815.

0815 -- The President and CEO, Executive Director - Nuclear Production, IRT Manager, two IRT Task Force Members, Assistant Operations Manager, a Shift Superintendent (future Assistant Operations Manager), Training Manager, Director of Licensing Services (via telephone), Director of Quality Programs, and a licensing engineer met to discuss a letter to be issued to the NRC

regarding the AO issue. On March 19, 1992, the NRC requested this letter be placed on the docket (see March 19, 1992, at 1500).

-- -- The Security Manager issued a memorandum (SS# 59750) to the IRT Manager regarding the request for additional information contained in an IRT Memorandum 92-005.

1300 -- The IRT Manager briefed the NRC Senior Resident Inspector on the status of the IRT assessment.

1430 -- The IRT Manager briefed the President and CEO and Executive Director - Nuclear Production on the status of the IRT assessment.

Approx.
1500 -- NHY issued a letter to the NRC (NYN-92036) regarding the AO performance concerns. This letter described NHY's actions regarding the AO performance concerns, the scope of the IRT review, short term actions including disciplinary actions, the basis for NHY's confidence that it is still safe to operate the plant, the process for remediation, a schedule for completing actions, and a commitment to share the results of the IRT study with the NRC.

1530 -- Operations Management, the Executive Director - Nuclear Production, Station Manager, Assistant Station Manager, the Employee Relations Manager, and a Shift Superintendent (future Assistant Operations Manager) conducted a disciplinary meeting with the Supervisory Control Room Operator (SCRO #13) who was previously suspended on March 23, 1992. This Supervisory Control Room Operator was suspended for two weeks retroactive to the initial suspension date, demoted to AO status, and was informed that his operating license would be terminated.

Approx.
1530 -- A member of the IRT Task Force distributed copies of the first draft of the IRT Report to all members of the IRT Task Force (except an Engineering Designer) and to two independent reviewers. The independent reviewers were the Director of Quality Programs and the Security Manager (Note: the Security Manager was provided a copy of the report on Monday, March 30, 1992; the Director of Quality Programs had returned from a vacation on Wednesday, March 25, 1992).

1700 -- The Assistant Operations Manager briefed the NRC Senior Resident Inspector on the disciplinary meeting that was conducted at 1530.

-- -- The President and CEO issued a memorandum (NHY #920191) to all employees and on-site personnel regarding the potential actions that can be taken by the NRC for both licensed and unlicensed personnel that engage in deliberate misconduct that causes, or would have caused a licensee to be in violation of any rule, regulation, order, limitation, term or condition of a license issued by the NRC.

Saturday, March 28, 1992

- 0700 -- The IRT Task Force conducted a status meeting. Those in attendance included all team members except an Engineering Designer. Discussions included potential issues and recommendations for all areas reviewed other than management effectiveness. This meeting was adjourned at approximately 1015.
- 0900 -- The Assistant Operations Manager and a Shift Superintendent (future Assistant Operations Manager), briefed the Operations Manager on the status of the last five weeks regarding the AO performance concerns. The Operations Manager returned from INPO on Friday, March 29, 1992.

Sunday, March 29, 1992

- -- No pertinent activities are known to have occurred on this day.

Monday, March 30, 1992

- 0700 -- The IRT Task Force conducted a status meeting. Those in attendance included all team members except an Engineering Designer. Discussions included potential recommendations regarding management effectiveness and a status for assembling a second draft of the report. This meeting was adjourned at 1005.
- Approx.
1100 -- A Shift Superintendent (future Assistant Operations Manager) call an IRT Task Force member to provide a status update for March 26 through March 28, 1992.
- 1100 -- The Training Manager, Operations Training Manager, Operations Training Supervisor, a Senior Simulator Instructor, Operations Manager, Assistant Operations Manager, and a Shift Superintendent (future Assistant Operations Manager) met to discuss the content of the AO remedial training program.
- 1200 -- The IRT Manager met with the President and CEO to provide a status update and to request a meeting on Monday, April 6, 1992.
- -- NHY issued a letter to the NRC (NYN-92039) to terminate the reactor operator license held by a Supervisory Control Room Operator (SCRO #13) who was previously found to have not fully completed a set of rover rounds. This Supervisory Control Room Operator was initially suspended on March 23, 1992.
- 1630 -- A member of the IRT Task Force interviewed the Executive Director - Nuclear Production.

Tuesday, March 31, 1992

- 0730 -- NHY management conducted a status meeting. Those in attendance included the Executive Director - Nuclear Production, IRT Manager, Operations Manager, Assistant Operations Manager, Station Manager, and a Shift Superintendent (future Assistant Operations Manager). Discussions at this meeting included an update on the status of the IRT assessment and the briefing to be provided to the NRC Senior Resident Inspector that same day.
- 1210 -- A Shift Superintendent (future Assistant Operations Manager) called an IRT Task Force member to provide a status update for March 30, and 31, 1992.

7.0 Attachments

See attached.

03:35 07MAR92

SEABROOK NUCLEAR STATION
SECURITY TRANSACTION LOG

05:12 02NOV91	07968	AO "X"	X0001	ENTRY	} 0400 Round
05:13 02NOV91	07968	AO "X"	X0001	EXIT	
05:23 02NOV91	07233		X0001	ENTRY	
05:28 02NOV91	07233		X0001	EXIT	
05:30 02NOV91	07233		X0001	ENTRY	
06:28 02NOV91	07233		X0001	EXIT	
06:29 02NOV91	07233		X0001	ENTRY	
07:25 02NOV91	07143		X0001	EXIT	
07:30 02NOV91	07143		X0001	ENTRY	
08:23 02NOV91	07143		X0001	EXIT	
08:24 02NOV91	07143		X0001	ENTRY	
08:52 02NOV91	07185		X0001	EXIT	
08:57 02NOV91	07185		X0001	ENTRY	} 0800 Round
09:00 02NOV91	01263	AO "Y"	X0001	EXIT	
09:02 02NOV91	01263	AO "Y"	X0001	ENTRY	
09:21 02NOV91	07143		X0001	EXIT	
09:23 02NOV91	07143		X0001	ENTRY	
10:19 02NOV91	07143		X0001	EXIT	
10:20 02NOV91	07143		X0001	ENTRY	
11:30 02NOV91	02867		X0001	EXIT	
11:31 02NOV91	02867				

Attachment 3.0.B-2

11/3/61

OPERATIONS DEPARTMENT
MOVING NO LOG
COMPUTER AVAILABLE

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DATE
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PARAMETER	MAX MIN	NUMERICAL UNITS	3000	0400	0800	1200	1500	2000	DISTURBANCES AND/OR REMARKS
CBA FANS	N/A N/A	SAT N/A							TS 3.7.6
FAY TANK AREA "A"	N/A N/A	SAT N/A							TS 3.8.1.1
DAY TANK AREA "B"	N/A N/A	SAT N/A							TS 3.8.1.1
DIESEL AREA "B"	N/A N/A	SAT N/A							TS 3.7.10, TS 3.8.1.1
STORAGE TANK AREA "B"	N/A N/A	SAT N/A							TS 3.8.1.1
DIESEL AREA "A"	N/A N/A	SAT N/A							TS 3.7.10, TS 3.8.1.1
STORAGE TANK AREA "A"	N/A N/A	SAT N/A							TS 3.8.1.1
BANK A N2 PRESSURE FI 4611	N/A 200	VAR PSIG							
BANK B N2 PRESSURE FI 4614	N/A 200	VAR PSIG							
COOLING TOWER FIBERS	N/A N/A	SAT N/A							TS 3.7.4, TS 3.7.10
CHLORINATION BUILDING	N/A N/A	SAT N/A							

REMARKS

Minimum requirements for SAT general inspections: normal fluid leakage; floor drains clear; no visible safety hazards or transient combustibles; idle equipment in standby condition or properly tagged out; general cleanliness normal noise and vibration levels; radiation areas clearly defined; fire and access doors shut where required; no unexpected alarms.

OPERATIONS DEPARTMENT
 REVIEW NO LOG
 COMPUTER AVAILABLE

PAGE 2 OF 5
 DATE
 PAGE 1-6

PARAMETER	MAX MIN	NORMAL UNITS	0000	0400	0600	1200	1600	2000	INSTRUCTIONS AND/OR REMARKS
CHLORINATION FLOW	NOTE A NOTE A	VAR GPH							NOTE A - PER CHEMISTRY
INTAKE/DISCHARGE TRANSITION STRUCTURE	N/A N/A	SAT N/A							
SERVICE WATER PUMP HOUSE	N/A N/A	SAT N/A							TS 3.7.4, TS 3.7.10
CIRC WATER PUMP HOUSE	N/A N/A	SAT N/A							
DIST-LOCAL/TEMP DM-TISL-3443	90 40	25 4F							
DIST LOCAL LEVEL DM-CISL-3441	380 200	VAR IN							
OIL SEP UNIT #2	N/A N/A	SAT N/A							
EPW PUMP ROOM	N/A N/A	SAT N/A							TS 3.7.1.2, TS 3.7.10
EPW PIPING TO "A" S/G REF. SS# 21791	N/A N/A	NOTE B N/A							TS 3.7.1.2
EPW PIPING TO "C" S/G REF. SS# 21791	N/A N/A	NOTE B N/A							TS 3.7.1.2
EPW PIPING TO "E" S/G REF. SS# 21791	N/A N/A	NOTE B N/A							TS 3.7.1.2

NOTE B) SAT condition - temperature on S/G side of the 4200 series valve is ambient (unless 1-4 only)

REMARKS

OPERATIONS DEPARTMENT
ROUTING NO LOG
COMPUTER AVAILABLE

PAGE 3 OF 5
DATE _____
MOSE 1-6

PARAMETER	MAX MIN	NORMAL UNITS	0000	0400	0800	1200	1600	2000	INSTRUCTIONS AND/OR REMARKS
EFW PIPING TO "C" S/G REF. SS# 21791	N/A N/A	NOTE A N/A							TS 3.7.1.2
EFW THROTTLE TRIP RESET	N/A N/A	RESET N/A							TS 3.7.1.2
CST VALVE ROOMS	N/A N/A	NOTE B N/A							TS 3.7.1.3
OIL SEP. VALVE #1	N/A N/A	SAT N/A							
GSD-ED-X-1A ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
GSD-ED-X-1B ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
GSD-ED-X-1C ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
CP-51 ALARM LIGHTS	N/A N/A	SAT N/A							
UNIT-ED-X-2B ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
UNIT-ED-X-2A ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
EAT-ED-X-3B ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1

REMARKS

NOTE A) SAT condition - Temperature on S/G side of the 4200 series valve is ambient (nodes 1-4 only)
NOTE B) SAT condition - No evidence of work activity that may compromise CST enclosure seal integrity, OD-V142 (Condensate low point suction) locked closed, OD-V154 (EFW-P-37A suction isolation) locked open, housekeeping sat.

OPERATIONS DEPARTMENT
ROUTING NO. LOG
COMPUTER AVAILABLE

PAGE 4 OF 5
DATE
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PARAMETER	MAX MIN	RESEL UNITS	0000	0400	0800	1200	1600	2000	INSTRUCTIONS AND/OR REMARKS
SAT-ED-X-3A ALARM PANEL	N/A N/A	SAT N/A							TS 3.8.1.1
145KV SWITCHYARD GENERAL AREA	N/A N/A	SAT N/A							SEE PAGE 1 FOR "SAT" REQUIREMENTS
DIESEL TANK "A" FUEL LEVEL	550 275	VAR GAL							TR7-3.7.9.1
FIRE TANK "A" LEVEL FP-1J-7541	42'4" 34	40 FT							TR7-3.7.9.1
OIL SEP VAULT #3	N/A N/A	SAT N/A							
DIESEL TANK "B" FUEL LEVEL	550 275	VAR GAL							TR7-4.7.9.1.2
FIRE TANK B LEVEL FP-1J-7550	42.5 28	40 FT							TR7-3.7.9.1
BAY "A" FIRE DIESEL (NOTE C)	N/A N/A	SAT N/A							
DC BATT VOLTS	29 24	27 VOLTS							TR7-4.7.9.1.3
BAY "B" HEATER PRESSURE FP-1J-7559	155 120	135 PSIG							
ELECT FIRE PUMP CTRL PAR ON; SUPERVISORY VOLTS NORMAL	N/A N/A	SAT N/A							

REMARKS

Minimum requirements for SAT pump operation: motor, bearing and pump housing temperatures normal; bearing oil levels and slinger operation normal; coupling guards in place; normal suction and discharge pressures; adequate gland seal and oil cooler water flows; no additional leakage.

NOTE C) Minimum requirements for SAT Fire Diesel - Diesel oil and water levels sat, pressure chart functional, fire tank makeup and actuating systems functional.

