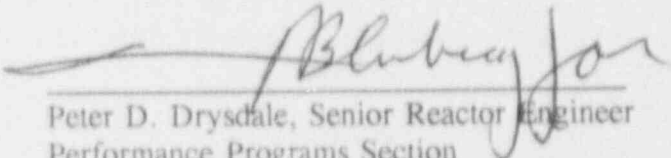
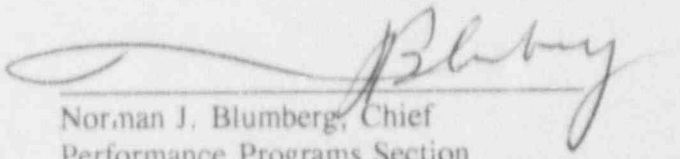


U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No.: 50-443/92-12  
License No.: NPF-86  
Licensee: Public Service Company of New Hampshire  
Post Office Box 300  
Seabrook, New Hampshire 03874  
Facility: Seabrook Station  
Inspection at: Seabrook, New Hampshire  
Inspection conducted: June 15 - 19, 1992  
Inspector: P. Drysdale, Sr. Reactor Engineer, DRS

Reviewed by:   
Peter D. Drysdale, Senior Reactor Engineer  
Performance Programs Section  
Operations Branch, Division of Reactor Safety

7/9/92  
Date

Approved by:   
Norman J. Blumberg, Chief  
Performance Programs Section  
Operations Branch, Division of Reactor Safety

7/9/92  
Date

Inspection Summary: An announced inspection was performed at the Seabrook Station on June 15 - 19, 1992 (50-443/92-12). The inspection was performed to follow-up licensee actions concerning maintenance program deficiencies and weaknesses identified during the special Maintenance Team Inspection conducted during January and February of 1991.

Results: The deficiencies concerning failure to follow procedures were adequately resolved and long term improvements to address procedure adherence were in progress. Corrective actions taken to resolve the deficiencies were adequate and measures to prevent a recurrence were taken. Maintenance program weaknesses were being addressed and improvements had been made. Programmatic weaknesses in the areas of procedure revisions and engineering support to maintenance were addressed and the situation significantly improved. The continuous upgrade of maintenance procedures will further enhance understanding of station

requirements by workers and supervisors and will promote a consistent application of work practices between the various maintenance departments. Tool control had improved noticeably since the maintenance inspection; however, additional long range measures are necessary to achieve plans for a broader improvement in tool control and equipment storage facilities.

## DETAILS

### 1.0 PERSONS CONTACTED

Attachment 1 provides a list of persons contacted during this inspection.

### 2.0 SCOPE

This inspection was performed to review corrective actions taken for deficiencies and improvements made in program weaknesses identified during the special Maintenance Team Inspection conducted at Seabrook from January 28 to February 8 and March 4 to March 8, 1991. Attachment 2 provides a list of documents reviewed during this inspection.

### 3.0 CORRECTIVE ACTIONS TO NOTICE OF VIOLATION

**(Closed) NOV 91-80-01:** During the maintenance team inspection, a violation of NRC requirements was identified. The following are five examples observed where procedures were not implemented as required or as delineated in station procedures:

**Example a:** NHY Maintenance Procedure MA 3.1 required that if a work request required partial implementation of a station procedure, the system engineer was to list the applicable steps on the work request. NRC inspectors identified examples of work requests where specific steps of partially implemented maintenance procedures were not listed on the work requests. This example involved a concern during the maintenance inspection that the technical requirements of maintenance work may not be adequately specified in some cases. Also, the specific scope or extent of work actually performed may not have been preserved in the official work record.

The licensee's written response to this example provided a change to procedure MA 3.1 to delete the requirement for system engineers to specify partial procedure sections on work requests. System engineers would still review all work requests; however, the revision permitted the engineer to determine on a case by case basis when partial section must be specified. The engineer's determination and actions now depend upon the complexity and frequency of the work performed. Subsequent to the MA 3.1 revision, the licensee also established detailed requirements in the Station Management Manual to document specific portions of maintenance and operating procedures that are only partially performed. The manual now includes instructions for actions required when a procedure deviation occurs through deletion of non-applicable steps. In these cases, the specific steps performed, or those omitted, must be clearly identified and retained in the official record of work actually performed. Appropriate requirements were also added into the manual to ensure that the proper supervisory or engineering reviews and approvals were obtained for partial procedure implementation.

Based upon these actions, this example has been adequately addressed and no further actions are required.

**Examples b and c:** Example "b" involved NHY Maintenance Procedure MD 0534.24 which required that an annual inspection of chain hoists be accomplished. The procedure also required an annual operational load test of chain hoists. During the Maintenance Team Inspection, 17 chain hoists checked out for use were without documentation of the required inspections and had not been load tested. Example "c" involved NHY Maintenance Procedure MD 0534.24 which required an annual inspection of lever operated hoists and also required an annual operational load test. During the Maintenance Team Inspection, 21 lever operated hoists had overdue inspections, 15 of which were checked out for use. Nine of these fifteen hoists were past due on their required periodic load tests. These items related to concerns during the maintenance inspection that lifting and handling equipment could be in use in the plant with deficient or hazardous physical conditions which would be identified by regular inspections. Such inspections are specified pursuant to industry standards contained in ANSI/ASME B30.21-1989, "Manually Lever Operated Hoists," ANSI/ASME B30.16, "Overhead Hoists," and ANSI/ASME B30.10-1987, "Hooks."

The licensee revised maintenance procedure MD 0524.25, "Program For Issuance, Repair, Testing, and Inspection of Rigging and Handling Equipment," to include instructions for tracking and controlling issued rigging equipment whose periodic inspection has expired or will expire within 31 days. Maintenance procedure MD 0534.21, "Inspection and Testing of Chain Hoists," was also revised to permit chain hoists to be inspected annually or prior to use (allowing some equipment to remain in storage in preparation for use during an outage when a full annual inspection would be performed just prior to use). MD 0534.24, "Inspection and Testing of Lever Operated Hoists," was also revised to permit lever operated hoists to be inspected annually or prior to use.

These instructions now assign to maintenance supervisors the responsibility to ensure that rigging and handling equipment not remain in the field if the inspection due date has past. In addition, the maintenance tool control specialist performs monthly reviews of the rigging and handling signout cards, identifies and records equipment presently signed out whose inspection due dates are within 31 days, and notifies cognizant department supervisors to report within 5 days on the disposition of the equipment. All affected equipment must be returned to the tool crib before the due date or must have a complete inspection performed prior to being returned to use.

The monthly listing produced by the tool control specialist provided the proper notifications to maintenance supervisors with equipment signed out under their responsibility. Some responses to his notices were not being received in a timely manner because much of the equipment was currently in radiological storage until the next refueling outage and was inaccessible for inspection. Some equipment could not be located and was designated as unaccounted for. These items were removed from the active inventory by the tool control specialist and designated as unavailable for use. Some discrepancies were noted in the inspection due dates indicated on tool crib records of equipment versus the dates contained on equipment tags; however, the number of occurrences was small and the tool control specialist was reconciling these differences. No equipment was in use with an overdue inspection. The

actions taken to address the deficiency related to equipment in use with a current inspection have been adequately resolved.

**Example d:** NHY Maintenance Procedure MA 4.11 required that all tool cribs be inventoried on an annual basis. The tool crib located on the 21-foot elevation of the turbine building was found not to have been inventoried in 1989 or 1990. The tool crib in the Radiological Control Area tunnel was not inventoried in 1990. Maintenance team inspectors were concerned that without a regular accounting of tools and equipment on hand, unnecessary work delays on plant equipment could occur, or improper tools could be substituted for maintenance work on safety related equipment.

The licensee performed a detailed inventory of all site tool cribs in June 1991 and again in June 1992. The results were compiled on a comprehensive matrix chart which specified all tools by nomenclature and size and listed the exact quantities of items contained in each crib. In preparation for the first refueling outage, an additional measure was taken to compile a list of specific tools and equipment required to perform the work identified for the outage. This listing separated tool requirements for work inside and outside the RCA. This listing was used to assure that adequate levels of specific tools and equipment were available for work during the outage. These actions were considered adequate to fulfill the requirements of MA 4.11 for annual inventories of all tool cribs. The program requirement to perform these inventories was appropriate as it existed. No additional actions were considered necessary.

**Example e:** New Hampshire Yankee (NHY) Records Management Manual (NYRM) required records management personnel to use a Delinquent Transmittal Form (NYRM Form 3-100) to notify the addressee that a controlled document transmittal form has not been signed and returned to the Records Management Department within ten working days. The Records Management Department personnel had not used the Delinquent Transmittal Form to document unsigned or unreturned controlled document transmittal forms sent to the Planning and Scheduling Department since January 1989. The consequence of this failure had the potential for work being performed with an incorrect procedure revision.

The Planning and Scheduling Department subsequently performed a detailed investigation of 111 work packages identified after the maintenance inspection with delinquent transmittal forms outstanding. The investigation revealed that in many cases, the work had already been completed before the revision was issued. Other cases existed where the applicable document was not used to perform the work, or the revision did not affect the technical aspects of the work. In no case did completed work or work in progress have to be repeated.

In addition to the above actions, the licensee made other program changes to improve the efficiency of processing document transmittals and delinquency notices. The Controlled Document Transmittal Form was modified to provide options for processing the forms depending upon the status of a work package potentially effected by the transmittal. Work packages which have the field work complete will be removed from the controlled document distribution system so that subsequent document revisions will not effect those packages. The

Records Management Manual was also revised to provide specific instructions to planners, schedulers, and work supervisors for processing document revisions and the transmittal forms. The current instructions require that work group supervisors determine if document changes are to be incorporated into packages while work is in progress or otherwise to provide written justification for continuing work under an old revision. The Records Management Department also now provides a 10 day overdue notice for work packages which were affected by a document revision but which had not yet updated.

The procedures governing work control at Seabrook (MA 3.1 and MA 3.2) have also been revised to reflect the responsibility of work group supervisors to incorporate revised controlled documents into work packages until all field work is complete (Status Code 16). The requirement for documented justification when performing work under previous procedure revisions was also added to the work control procedures.

The inspector discussed the above program changes with Records Management, Planning and Scheduling, and Maintenance Department personnel and determined that the changes were well understood and consistently practiced. Communications between these organizations regarding document and work package updates and transmittal notices appeared to be substantially improved. The inspector considered that these actions appropriately addressed these problems and established the means to prevent recurrences.

Based upon the actions taken to correct all examples above, this item is closed.

#### 4.0 SIGNIFICANT MAINTENANCE PROGRAM WEAKNESSES

Programmatic weaknesses representing potential problems or conditions were presented to management for evaluation and corrective action as appropriate. A response to the NRC was requested and appropriate actions were anticipated. These are described as follows:

**Item 1:** The process for updating maintenance procedures based on new or revised vendor technical manuals was not being accomplished in a timely manner. No station requirement existed to ensure maintenance procedures were updated in a timely manner (except for biennial reviews) after technical manual revisions were received. Maintenance team inspectors expressed concerns that significant changes in plant equipment or in their technical requirements for inspection and maintenance as provided in revisions to technical manuals should be reflected in maintenance procedures in a timely manner to ensure such requirements were met.

The licensee's initial response to this concern focused upon the existing processes for the receipt and review of vendor information to ensure that the controlled vendor manuals are properly updated in a timely manner. In addition, the licensee considered that the Operating Experience Review program established to review vendor technical bulletins, service information notices, NPRDS events, etc., was adequate to ensure that station procedures were updated as necessary. The biennial review process for maintenance procedures was

considered adequate to ensure that procedures properly reflected vendor technical manual requirements. However, the response did not address the specific concerns expressed by maintenance team inspectors that no mechanism existed to ensure that revised requirements in vendor technical manuals that affect maintenance, inspection, or testing specifications for equipment at Seabrook were translated into maintenance procedures in a timely manner, thus ensuring that such requirements were applied to current work.

Several weeks prior to this inspection, the Maintenance Department initiated a new procedure (MM 6.5) to provide guidelines and requirements to update Maintenance Group procedures and Repetitive Tasks Sheets to reflect new or revised vendor manual requirements. The draft version of this procedure was prepared for management approval during this inspection. This procedure contained new responsibilities for Maintenance Support Department supervisors to perform a formal review of vendor manual revisions to determine if they impact upon maintenance procedures. As written, the procedure would require new procedures to be written or existing procedures to be revised or deleted, as necessary. Station managers acknowledged the need to perform timely updates to maintenance procedures, if necessary, when revisions to equipment technical manuals are made.

Based upon a review of the instructions provided in the draft version of MM 6.5, the inspector considered that this concern will be adequately addressed if the procedure is substantially approved as written.

**Item 2:** An existing backlog of 1021 open engineering actions (technical document changes, modifications, requests for services, etc.) indicated an insufficient or inappropriate allocation of engineering resources to support plant maintenance needs. Engineering control of the priority system for completion of Requests for Engineering Services was not timely for Priority 3 Requests for Engineering Services (RESSs) related to maintenance. Maintenance team inspectors noted examples where the priorities assigned by the Maintenance Group for Engineering support were considerably inconsistent with the rankings assigned to maintenance related RESSs by the Engineering Department. Although inspectors recognized that Engineering support was provided to many plant organizations, the top ten requests for maintenance support did not appear to have an equivalent ranking by Engineering. These differences appeared partly related to interface or communication difficulties between the Engineering and Maintenance Departments.

The Engineering Department made considerable progress to work off the overall backlog of Priority 3 RESSs by resolving technical concerns, changing technical documents, producing design changes, etc. A reduction of approximately 60% in the total maintenance related RES backlog was achieved before September 1991. This level has remained relatively constant since then; however, the long range goals for Engineering is to maintain the total RES work load to approximately 500 (one half of the level during the maintenance inspection). The inspector discussed changes in the Engineering Departments approach to support of maintenance needs with department managers and reviewed the existing status of open work items. Current activities demonstrated significant improvement in the level of coordination

between Engineering and all site organizations regarding engineering support.

**Item 3:** During the replacement of a time delay relay, electrical maintenance personnel did not completely implement station procedures. Contrary to station procedure requirements, the technician took additional data and did not document it in the work package. The work document did not allow an independent observer to determine what activities actually were performed. The origin and basis for the requirements to record additional data and tasks were not available from station management and could not be determined. The expectations of station management were not known to the maintenance supervisors or technicians.

The licensee's written response did not directly address the stated program weakness which focused upon the lack of a documented basis for these station requirements. The absence of a clear understanding for these requirements by station management was manifested in a lack of consistent understanding of these requirements by individuals expected to implement them. This was revealed by the considerable attention paid during the maintenance inspection in interviews with maintenance workers, supervisors, managers, and QC inspectors. Discussions with numerous individuals clearly indicated that station personnel had inconsistent or no understanding of these specific expectations represented in the manual. In addition, station management was not able to articulate to inspectors the source of these expectations and how they were to be applied. The revision made to the Station Management Manual was only to state that taking data for repeatability was not considered to be an additional task [which did not need to be documented].

During this inspection, several maintenance workers and supervisors were interviewed to determine the level of understanding of the manual requirements with respect to documenting additional data or tasks. Again, considerably different views of the requirements and expectations were observed among the various maintenance departments. In some cases, supervisors were still not aware that these manual requirements existed or that they had recently changed. Most maintenance workers and supervisors stated that additional tasks and data, even if taken only for repeatability purposes, should and would be documented in maintenance work packages. Individual Maintenance Departments have been conducting periodic meetings to review station manual changes; however, not all personnel have attended these briefings.

The procedure used for installation of time delay relays was revised to specify that repeatability measurements should be taken and documented. In this case, the expectations for recording additional tasks and data had been clearly entered into the procedure used to perform work. A QC Supervisor and the Technical Projects Supervisor revealed that this reflected a general trend at the station to provide the expectations for the performance of work in the actual document used by workers and supervisors. This effort was apparent in various maintenance procedures which have been noticeably upgraded since the maintenance team inspection. Maintenance Support Department Supervisors responsible for maintaining procedures also demonstrated where this effort has been underway for several months as revisions are made.



The inspector considered that the effort to improve the clarity and quality of maintenance procedures in this manner is a positive step to improve the ability of workers and supervisors to consistently apply station requirements and to clearly understand management expectations. Continued efforts in this area appear to be warranted.

**Item 4:** Tool control and equipment storage were significant concerns due to undersized storage space, incomplete tool issue records, loss of tool accountability and tracking, and the use of improperly marked tools in the RCA.

The licensee documented the results of a tool program review by the Mechanical Maintenance Department Supervisor which concluded (post outage) that the tool control program has been able to maintain an adequate supply of tools and equipment to support daily maintenance activities. Some tools could not be decontaminated during the outage and were dedicated for future outage work; however, the specific numbers of tools and equipment in each tool crib, including those inside the RCA, have been inventoried and the amounts available for work outside the RCA have been designated. All tools dedicated to use inside the RCA have been color coded.

The inspector observed the current system which requires that sign out cards for tools and handling equipment list the type of equipment, its unique identifier number, date of issue, name of person receiving the equipment, the job where it is to be used, the date returned, and the periodic inspection due date, if applicable. This was considered to be a significant improvement in the record system used to maintain control of tools and equipment. However, difficulties were still evident with the loss of tools or with identifying their specific location in the plant. Maintenance managers discussed their current plans to develop a computerized tool control system and to improve station facilities used for equipment storage and issue. The plans represented significant improvements to the processes used for regular tool and equipment inventory tracking.

The efforts made in this area since the maintenance inspection have significantly improved the functions where program weaknesses were identified. However, this area continues to present a challenge to the Maintenance Department. Long range planning for improvements in facilities and inventory control has been initiated to deal with this general concern. The inspector considered that these efforts represent adequate progress in addressing this general weakness.

## 5.0 CONCLUSIONS

The inspector concluded that the corrective actions taken to resolve the deficiencies identified in the maintenance inspection were adequate and measures to prevent a recurrence in these areas had been taken. Programmatic weaknesses in the areas of procedure revisions and engineering support to maintenance were addressed and the areas were significantly improved. The effort to continuously upgrade maintenance procedures will further enhance understanding of work requirements and will promote a consistent application of work

practices between the various maintenance departments. Tool control was noticeably improved since the maintenance inspection; however, additional long range measures are necessary to achieve management's plans for a general improvement in tool control and storage.

#### 6.0 MANAGEMENT MEETINGS

The station management was informed of the purpose and scope of this inspection during an entrance meeting held onsite June 15, 1992. Maintenance and Engineering personnel listed in Attachment i were interviewed throughout the inspection and periodic reviews with management were conducted. The results and conclusions of this inspection were presented to station management at the exit meeting held onsite June 19, 1992.

##### Attachments:

1. Persons Contacted
2. Documents Reviewed

## ATTACHMENT 1

## Individuals Contacted

Seabrook Station

- \* R. Bergeron, Electrical Engineering Manager
- W. Diproffio, Station Manager
- G. Draper, Maintenance Mechanic
- \* B. Drawbridge, Executive Director - Nuclear Production
- \* L. Gehrke, Mechanical Maintenance Supervisor
- \* D. Iseman, Maintenance Support Supervisor
- F. King, Records Management Department Supervisor
- \* G. Kline, Technical Support Group Manager
- R. Lizotte, Administrative Services Manager
- \* M. McNamara, Maintenance Support Supervisor
- C. Molis, Planning and Scheduling Department Supervisor
- \* T. Murphy, Maintenance Support Department Supervisor
- \* V. Pascucci, Quality Control Department Supervisor
- J. Peschel, Executive Director - Regulatory Compliance
- \* J. Peterson, Maintenance Department Manager
- \* T. Pucko, NRC Coordinator
- \* P. Richardson, Training Manager
- \* B. Roach, Mechanical Maintenance Department Supervisor
- \* E. Sovetsky, Technical Projects Supervisor
- \* J. Vargas, Engineering Manager

Other licensee personnel were also contacted during this inspection.

United States Nuclear Regulatory Commission

- \* N. Dudley, Senior Resident Inspector, Seabrook
- \* A. MacDougall, Reactor Inspector, DRP

\* Attended exit interview held on June 19, 1992.

## ATTACHMENT 2

## Documents Reviewed

Station Administrative Procedures

MA 2.1 Maintenance Activities, Rev 10  
 MA 2.4 Maintenance Performance Monitoring, Rev 1  
 MA 3.1 Work Request, Rev 20  
 MA 3.2 Repetitive Task Sheets, Rev 12  
 MA 4.11 Tool Control, Rev 2  
 MM 6.5 Maintenance Support Department Vendor Manual Review, DRAFT

Station Operating Procedures

MD 0534.21 Inspection and Testing of Chain Hoists, Rev 2  
 MD 0534.24 Inspection and Testing of Lever Operated Hoists, Rev 2  
 MD 0534.25 Program for Issuance, Repair, Testing and Inspection of Rigging and Handling Equipment, Rev 2  
 MS 0513.12 Agastat D.C. TDDO Timing Relays Inspection, Testing, and PM, Rev 2

New Hampshire Yankee Procedures

12410 Receipt, Processing, and Approval of Vendor Documentation, Rev 1  
 12910 Operating Experience Review Program, Rev 5  
 17530 Reliability Centered Maintenance Program, Rev 0  
 32520 Restricted Use Materials List, Rev 0  
 35100 Reliability Centered Maintenance Analysis, Rev 0

Memoranda

MM# 035 Annual Inventory of Tools, 6/10/92  
 MA# 050 Annual Inventory of Tools, 7/2/91  
 SS# 55758 Delinquent Transmittal Notices  
 SS# 56790 Tools and Equipment Available for Refueling Outage, 6/26/91  
 SS# 58327 Evaluation of Tool Control Program, 11/20/91

Miscellaneous

Station Management Manual, Revs 30 - 33  
 Station Management Manual, Rev 34 DRAFT  
 Final Report - Attention To Detail Task Force, 11/1/91  
 Quality Assurance Surveillance Checklist/Report 92-00098, Request for Engineering Services, 6/15/92