

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

DOCKET NOS/REPORT NO: 50-336/94-10
50-423/94-10

FACILITY LICENSE NOS: DPR-65
NPF-49

LICENSEE: Northeast Nuclear Energy Company
P.O. Box 270
Hartford, CT. 06141-0270

FACILITY: Millstone Nuclear Power Station Units 2 & 3

LOCATION: Waterford, CT.

INSPECTION DATES: March 7-11, 1994

INSPECTOR: *J. H. Williams* 4/6/94
J. H. Williams, Sr. Operations Engineer Date
BWR Section, Operations Branch
Division of Reactor Safety

APPROVED BY: *Glenn W. Meyer* 4/12/94
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Division of Reactor Safety

Inspection Summary: Inspection conducted March 7-11, 1994 (Inspection Report 50-336/94-10 and 50-423/94-10)

Areas Inspected: A regional initiative safety inspection was conducted of the Millstone Units 2 and 3 preventive maintenance (PM) programs. The inspection consisted of observations of PM tasks being performed, discussions with facility personnel, and review of maintenance-related documentation.

Results: This inspection found that plant management was adequately involved in the PM programs. Several in-progress initiatives were noted that could strengthen the PM programs. These include the use of system engineers, the use of reliability-centered maintenance, and development of common procedures for the units. The PM programs were found to be managed and implemented by experienced personnel.

The inspector found that, for Unit 3, no PM tasks existed for a manual valve that supplies water to the low pressure safety injection pumps. Should the valve disk become separated from the stem (a low probability event) and block flow, the low pressure safety injection system would be inoperable. The facility indicated that they will assess the need for some type of PM activity for this valve. Their assessment will be reviewed in a future inspection.

No violations were identified.

DETAILS

1.0 INSPECTION SCOPE

This inspection was conducted to verify that PM activities were carried out in a satisfactory manner in accordance with ANSI 18.7-1976, Section 5.2.7.1, "Maintenance Programs." The mechanical and electrical PM programs at Units 2 and 3 were reviewed using the guidance of NRC Inspection Procedure 62700, "Maintenance Implementation." The inspection consisted of observations of PM tasks being performed, discussions with facility personnel, and review of documentation relating to maintenance.

2.0 INSPECTION FINDINGS

PM Management

The inspector discussed the PM program activities with a number of facility managers, engineers, and technicians. Based upon these discussions and related document reviews, the inspector determined that plant management was appropriately involved in the PM program.

The facility is in the process of implementing a system engineering program. When the systems engineers are fully staffed, the program should foster a system ownership attitude and should provide a stronger focus on PM program effectiveness for the system. Another program directed to improve PM involves the use of reliability-centered maintenance (RCM). These activities demonstrated management's support for the PM program.

The PM program is conducted differently at each unit according to unit specific PM procedures. In addition, there are a number of separate and independent groups performing PM tasks such as inservice testing (IST), vibration monitoring, surveillance testing, and lube oil analysis. The inspector concluded that the system engineers provide a means of drawing the various groups' efforts together.

PM Planning, Scheduling, and PMMS

The PM planning and scheduling process was handled by experienced and knowledgeable people at both units. The inspector noted that PM tasks get changed based upon maintenance experience and the reliability centered maintenance program. The facility is moving away from fixed time intervals for specific PM tasks. Trending information, diagnostics, equipment run time, etc., are being used more often to set the PM task time interval. The inspector noted that the weekly and monthly PM task to inspect the turbine-driven AFW pump bearings (Form 2701J-48) was recently revised to take credit for existing plant equipment operator inspections. Also, the facility plans to centralize all PM planning activities.

The inspector observed the licensee use of the Production Maintenance Management System (PMMS) to plan and schedule PM tasks, as well as provide maintenance history on selected

components. The PMMS is a computer-based system that provides the workers with important maintenance information. All workers observed using the PMMS demonstrated knowledge of PMMS operations.

As already noted, a number of separate groups are involved in maintenance activities and other activities relating to equipment condition and status. All information generated by these varied groups is not collected in one place. The Unit 2 maintenance department was developing a "Component Profile Sheet" that would pull all the information together in a computer based data collection system. The development of the system has temporarily stopped due to lack of personnel. The inspector reviewed information available on the system and determined that it would be a useful system when development is completed.

The inspector selected 3 components for each unit (Units 2 and 3) to verify that PM tasks existed for the components. The components were selected based upon safety considerations and PRA analyses. Except for the valve described below, the components had PM tasks associated with them.

There were no PM tasks associated with a 24 inch butterfly valve (M3-3SIL*V001), which is locked open and supplies the low pressure safety injection pumps from the refuel water storage tank. If the valve disk became separated from the stem and blocked flow, the low pressure safety injection system would not be able to perform its intended safety function. Since this was a manually-operated valve, which is locked open, the licensee had not defined any programs to assess the valve's condition. Due to the critical function of the valve and the long lifetime involved, the inspector was concerned that no activities to assess the condition were defined.

This concern was discussed with the licensee. The licensee indicated that research would be conducted to determine if evaluations had been made in the past and the need to define an appropriate PM task would be assessed. The licensee determination of the need for a PM task on valve M3-3SIL*V001 and other similar valves will be reviewed in a future inspection and is an inspector followup item (IFI 423-94-10-01).

The licensee has a RCM program conducted by an engineering support group, which is independent for the unit. Plans call for RCM studies to be conducted on 30 systems at each unit. The criteria for selecting the systems to be studied has been developed. Two RCM studies for each unit has been completed. These studies will allow improvements to be made to the PM programs.

Both units have a process in place for trending and review of PM data such as vibration monitoring and lube oil analysis. The inspector reviewed level 1 and level 2 diagnostic reports for the W 480V Room Cooling Fan for unit 2. The licensee's review and trending led to corrective maintenance before failure occurred. Unit 2 monitors and trends about 150 pieces of rotating equipment. The inspector reviewed a memorandum dated 2/15/94, for unit 2, that listed IST results and flagged components that needed maintenance for the upcoming

outage. This was an example of the facility's proactive stance on maintenance. The overall effectiveness of the licensee's trending and review activities was not assessed.

PM Performance

The inspector observed the performance of the annual PM on the B DC switchgear room chiller and motor breaker. The work order (M2-93-03729) package that included the PM tasks (Forms 2701J-10 and 2701J-11) was reviewed. The technician performing the work was knowledgeable about the tasks and tagging requirements. He was thorough in his work. The tasks included electrical circuit checks, checking, and tightening connections, and cleaning components. No concerns were identified by the inspector.

The inspector observed a plant equipment operator (PEO) on his rounds (OPS FORM 2669-A-2) in the Unit 2 Auxiliary Building. The PEO inspected equipment for such things as normal conditions, monitored parameters, unusual noises or smells, temperature, and leaks. The inspector noted that the building was clean and well lighted. No fluid system leaks were observed. The material condition of the plant appeared good. Fasteners and supports were properly installed, and critical and sensitive equipment was protected. No concerns were identified.

Both units have about 140 PM tasks in the backlog category. Generally, PM tasks are assigned a low priority on the work orders, but if they are missed, management review can reassign a higher priority. The PM planners and schedulers were adequately tracking backlogged PMs.

3.0 CONCLUSIONS

Plant management is adequately involved in the PM program and provides the needed support to make the program work effectively. The PM activities observed were conducted by knowledgeable individuals and were properly completed.

The use of system engineers provides stronger direction to the PM activities on a systems basis. Likewise, the use of RCM focuses the PM tasks towards more reliable components and more efficient use of resources.

4.0 EXIT MEETING

An exit meeting was conducted on March 11, 1994. Personnel in attendance are listed below. The inspection findings described in this report were discussed. The facility representatives acknowledged the inspector's findings.

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W. Temple, Site Licensing
K. Murphy, QA Analyst
D. Hoisington, Maintenance Manager, Unit 3
C. Clement, Maintenance Engineering Services
R. Enoch, Unit 3 Staff
J. Becker, Unit 2 Operations Manager
S. Brinkman, Unit 2 Maintenance Engineering Supervisor
B. Duffy, Maintenance Manager, Unit 2
D. Harris, Licensing Engineer
E. Annimo, Supervisor, Mechanical Training
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P. Strickland, Manager, Technical Training
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