U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report 93-10 **License DPR-36**

Inspection At: Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Maine Yankee Atomic Power Company)

Conducted: April 28 through June 9, 1993

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Approved: _____ 7/6/93
W. J. Lazarus, Chief, Reactor Projects Section 3B Date

SCOPE

Resident inspection of operations, radiation protection, maintenance/surveillance, security, engineering/technical support, and safety assessment/quality verification.

OVERVIEW

Operations Maine Yankee continued to demonstrate safe, conservative plant operation during the reporting period. Operators carefully controlled access to a leaking manual Containment Isolation Valve. In addition, the shift supervisor performed a thorough brief of possible operations impact during the valve repair. An auxiliary operator demonstrated careful attention to procedural detail during a post-maintenance test of the turbine driven auxiliary feedwater pump. The shift operating supervisor demonstrated sound judgement in departing from the pump test procedure when he determined that the equipment required additional corrective maintenance. The inspectors found that the process for determining the need (or lack) of procedural control needed improvement.

Radiological Controls Radiological controls supervisors carefully monitored cleaning of the spent fuel pool heat exchanger.

Maintenance and Surveillance Maintenance staff carefully controlled preventive maintenance on emergency diesel generator DG-1B. The inspectors noted the positive contribution that resulted from the presence of supervisors during the DG-1B maintenance, and corrective maintenance of the auxiliary feedwater (AFW) pump steam pressure control valve. The inspectors noted, that the lack of acceptance criteria in the AFW post maintenance test was a possible area for improvement.

(OVERVIEW CONTINUED)

Security Overall, the security staff performance remained strong during the inspection period. The security staff found a security equipment locker closed, but not locked as required by procedures. In response, the staff immediately locked the locker and took appropriate corrective action. When the engineering staff found obsolete security related drawings outside the protected area, the security staff retrieved the drawings. Maine Yankee concluded that the availability of the obsolete security drawings outside the protected area did not impact the ability to implement the security plan. The NRC, Region I staff reviewed licensee response, and concluded that Maine Yankee did not violate regulatory requirements.

Engineering and Technical Support In response to a mispositioned shipping cask fastener discovered during fuel receipt and handling, the plant staff demonstrated a strong safety perspective and a questioning attitude. The inspectors identified a weakness in the procedure controlling fuel receipt and handling.

Safety Assessment and Quality Verification The inspectors noted excellent quality programs department staff oversight during preventive maintenance of the emergency diesel generator.

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DETAILS

1. OPERATIONS

On a daily basis, the inspectors verified adequate staffing, appropriate access control, adherence to procedures and Limiting Conditions for Operation, operability of protective systems, status of control room annunciators, status of radiation monitors, emergency power source operability, and operability of the Safety Parameter Display System (SPDS). Each week, the inspectors verified operability of selected Engineered Safety Features (ESF) trains and assessed the condition of the plant equipment, radiological controls, security and safety. The inspectors performed biweekly review of a safety-related tagout, chemistry sample results, shift turnovers, portions of the containment isolation valve lineup, the posting of notices to workers and operability of selected ESF trains. The inspectors evaluated plant housekeeping and cleanliness.

1.1 Broken Gland on Reactor Coolant Pump Seal Water Valve (SL-17) (71707)

On June 6, a Maine Yankee radiological controls technician discovered the packing gland on SL-17, the reactor coolant pump seal water supply filter differential pressure gage isolation valve, broken in half. The observed leakage from the valve packing gland was approximately one drop every three seconds. The broken packing gland presented both an operational concern, since reactor coolant run time without seal water is very short, and a personnel safety concern, as reactor coolant system pressure is approximately 2400 psi. The plant shift supervisor made an operability determination based on an evaluation by the plant engineering department that the valve was designed to operate with full system pressure on the backseat. In this configuration the valve packing would not be pressurized, and thus in a safer condition.

On June 9, Maine Yankee personnel verified that the valve was on the backseat and placed a clamp on the packing to prevent the packing from being expelled from the valve. The plant shift supervisor gave a thorough pre-job briefing which stressed personnel safety, necessary protective equipment, and contingency plans, should the valve fail during the evolution. The inspectors witnessed the planning stage and repair effort and determined that Maine Yankee demonstrated a strong safety perspective and excellent control of abnormal maintenance activities.

1.2 Operations Control of Post Maintenance Testing (71707)

On May 28, operators performed 3-1-5.3, Auxiliary Feed Pump P-25B Test, to demonstrate operability following corrective maintenance on the turbine driven auxiliary feedwater pump. Earlier that day, Instrument and Controls (I&C) technicians had replaced the controller for MS-P-68, the main steam pressure control valve, as a result of previously observed oscillations in main steam pressure. Section 3.2, below, contains a discussion of the controller replacement. Auxiliary operators properly cleared the hold tags associated with the completed maintenance, and initiated procedure 3-1-5.3. The auxiliary operator

performing the P-25B test adhered to the procedure very carefully during the initial pump alignment, functional verification of the overspeed trip mechanism, and through initial turbine warming.

During initial turbine warming, the I&C technicians discovered a substantial air leak at a fitting on the MS-P-168 valve operator. At the request of the technicians, operations personnel decided to abort the P-25B test to permit the technicians to repair the air leak. The auxiliary operator, at the request of the I&C technicians and at the direction of the Shift Operating Supervisor (SOS), manually opened MS-T-173, downstream of MS-P-168. The inspectors observed that procedure 3-1-5.3 did not control the operator's manipulation of MS-T-173. The SOS based his decision to open MS-T-173 on his knowledge of the system and its operation. When questioned by the inspectors, the SOS concluded that operation of MS-T-173 was within the skills of the trade, and therefore did not require procedural control. In addition, the SOS indicated that he had reached his conclusion after the fact. The SOS also indicated that P-25B was inoperable throughout the maintenance activity and the aborted test, and would remain inoperable until satisfactory completion of a post maintenance test (PMT).

The inspectors concluded that, in general, operations personnel used procedures adequately to carefully control the PMT. However, when I&C technicians requested the AO to open MS-T-173, the SOS directed the AO to open the valve without considering how to insure the action met the Technical Specification requirement for control of safety related activities. In this instance, the valve manipulation was within the operator's skills, however, Maine Yankee does not have clear guidance as to the scope of situations which may require a temporary procedure change (or generation of a procedure), rather than performing an evolution solely based on the operators' knowledge of the system. Maine Yankee management plans to evaluate the adequacy of guidance to operators and maintenance staff in this area.

2. RADIOLOGICAL CONTROLS

Inspectors routinely reviewed radiological controls including Organization and Management, external radiation exposure control and contamination control. The inspectors also monitored standard industry radiological work practices, and conformance to radiological control procedures and 10 CFR 20 requirements.

2.1 Radiological Controls of Heat Exchanger Cleaning (71707)

On June 9, Maine Yankee maintenance personnel commenced cleaning of the spent fuel pool cooling system heat exchanger in preparation for eddy current testing of the heat exchanger tubes. Radiological work permit (RWP) 5-97 controlled the task. The RWP effectively prescribed the required monitoring equipment and protective clothing. Radiological Controls supervisory personnel carefully monitored implementation of the RWP. The inspector observed proper controls and worker actions during the period of observation.

3. MAINTENANCE and SURVEILLANCE

The inspectors observed and reviewed maintenance and problem investigation activities to verify compliance with regulations, administrative and maintenance procedures, codes and standards, proper QA/QC involvement, safety tag use, equipment alignment, jumper use, personnel qualifications, radiological controls for worker protection, retest requirements, and reportability per Technical Specifications. The inspectors observed portions of the following activities:

- WO 93-1612, Clean and Parkerize Reactor Vessel Head Studs;
- WO 93-1577, DG-1A Maintenance;
- WO 93-1989, Seal Water System valve SL-17 temporary repair;
- Procedure 3-1-5.3, Auxiliary Feed Pump P-25B Test;
- Procedure 3.1.4, DG-1B Monthly Surveillance;
- Procedure 3-6.2.1.48, Radiation Monitor 6108 (Sample Area) Transfer Calibration;
- Procedure 3.1.6, Main Steam Excess Flow Check Valve Testing;
- Procedure 3-1.2.3, ECCS Routine Testing - Valve Testing; and
- Procedure 3-1.2.4, ECCS Routine Testing - HPSI Pump & Valve Testing

Maine Yankee personnel performed the observed maintenance and surveillance activities in accordance with station directives and procedures. Inspectors identified no deficiencies during the periods of observation.

3.1 Emergency Diesel Generator Maintenance (62703)

On May 18 Maine Yankee maintenance personnel performed Work Order (WO) 93-1577, preventive maintenance PM-26-A-G to clean and inspect airstart solenoids and inspect air line "Y" strainers in conjunction with procedure 5-78-1, "Diesel Generator Redundant Systems Check and Diesel Overspeed Trip Test" on emergency diesel generator DG-1A. Maintenance personnel incorporated Temporary Procedure Change 93-081 into the work package to clarify a step of the procedure dealing with the diesel governor. The licensee set up a Foreign Materials Exclusion zone to prevent foreign materials from remaining in the diesel after completion of maintenance. Mechanics performed maintenance in accordance with the procedure 5-78-1 in the presence of Quality Control inspectors and management. The inspectors verified with Maine Yankee Document Control that the plant staff used the current version of 5-78-1 for the maintenance. Maintenance workers performed the activity in a careful, controlled manner with maintenance supervision and quality control present during key portions of the task. This presence indicates maintenance management's efforts to improve the quality of station maintenance has shown positive results. Overall, plant staff completed the task effectively.

3.2 Turbine Driven Emergency Feedwater Pump Maintenance (62703)

On May 28, the inspectors observed post maintenance testing of the turbine driven emergency feedwater pump P-25B. Instrumentation and controls (I&C) technicians had replaced the controller, PIC-1106 for air-operated steam pressure control valve MS-P-168. The inspectors noted that I&C technicians carefully controlled the work using Work Order (WO) 93-1647. An I&C supervisor monitored the post maintenance test and provided guidance to the technicians. The inspectors noted that I&C supervisors have frequently been present during maintenance activities. The inspectors also noted that the post maintenance test, specified by Functional Test Instructions in the work package, did not specify acceptance criteria for the performance of MS-P-168. The I&C supervisor, however, provided specific guidance for acceptable operation of MS-P-168, and the technicians verified proper valve operation. The inspectors concluded that the presence of the supervisor during post maintenance testing was an excellent practice which contributed to proper maintenance. The inspectors also noted that lack of acceptance criteria in the Functional Test Instructions was an area for possible improvement. The licensee plans to review the practice of incorporating acceptance criteria in work packages for possible improvement.

4. SECURITY

The inspectors verified that security conditions met regulatory requirements and the requirements of the physical security plan, and complied with approved procedures. The checks included security staffing, protected and vital area barriers, vehicle searches and personnel identification, access control, badging, and compensatory measures when required. No discrepancies were identified.

4.1 Weapons Locker Found Unlocked (71707)

On April 28 at approximately 10:30 a.m., a Maine Yankee security supervisor found a weapons locker closed, but not properly locked. Security staff verified that all equipment was present. Security procedure 15-5.1, Security Patrols, requires security officers to check weapons lockers. A security officer last checked the locker at approximately 6:30 a.m. that morning. Security officers checked all other weapons lockers immediately, and found them secured.

The weapons locker was located inside the protected area where access was limited to station personnel and it was not apparent that the locker was not properly locked. When security department management interviewed the responsible security officer, he said he had checked to make sure the locking device was secure. Because of the current design of the weapons locker, the locking device may be locked with the door open. As a result of this incident, security officers on patrol now check both the locking device and the weapons locker door. The licensee stated that the design of the weapons locker will be improved as a long term corrective action.

4.2 Control of Safeguards Information (71707)

On May 18, Maine Yankee Security personnel identified a situation involving several prints which appeared to contain safeguards information (SGI) that were not being properly controlled. The licensee stored several prints in the 345 kV relay building with access not restricted to prevent unauthorized disclosure of SGI information. Upon investigation, Maine Yankee identified additional copies of these drawings at the Central Maine Power (CMP) Company's corporate engineering headquarters as well as microfilm at CMP's contract archival storage facility.

All drawings were drafted in the 1975 through 1979 time frame. As such, much of the information contained on them was obsolete and/or incomplete. The licensee concluded, with one exception, that a potential adversary, even with the help of a knowledgeable insider, would not be aided by the information. For the exception, Maine Yankee immediately took compensatory measures to address the threat. The licensee presented their findings and conclusions to NRC Region I security experts. Based on the information provided, the NRC staff found the licensee's conclusions acceptable. Since these documents predate the Safeguards Rule, the information would not be of use to an adversary, and the licensee initiated prompt corrective actions, the NRC staff concluded there was no evident violation of NRC regulations or the Maine Yankee Security Plan.

4.3 Management Meeting (30702)

On May 27, 1993, the Manager-Administration and members of the Maine Yankee station staff met with Region I management at King of Prussia, Pennsylvania, to present a periodic update of Security program initiatives and ongoing program enhancements. This meeting was closed to the public due to the discussion of safeguards information that is withheld from public disclosure in accordance with 10 CFR 73.21. The meeting was beneficial for the staff and provided the forum for open and frank dialogue. Based on the licensee's sustained improving trend in the Security Department's performance, Region I management informed the licensee that further management meetings related to the matter were no longer necessary except as requested by the licensee.

4.4 Security Coverage of New Fuel Handling (71707)

The inspectors observed the security coverage of the new fuel handling on several occasions during the inspection period. The security officers exhibited a professional manner and were attentive to their duties and knowledgeable of the task.

5. ENGINEERING and TECHNICAL SUPPORT

5.1 Observation of Receipt of New Fuel (71707)

On several occasions during the inspection period the inspectors observed the receipt handling of new fuel on site from the vendor, Combustion Engineering. Station procedure 5-64-4, New Fuel Handling, controlled the task. Station reactor engineering personnel provided excellent supervisory oversight. Radiological controls technicians surveyed all new fuel prior to unloading from the shipping containers. The inspectors observed that the work activities were deliberate and noted a questioning attitude when workers identified an improperly positioned shipping cask fastener. After consulting the fuel vendor's field engineer, workers concluded that the fastener did not pose a safety problem. Workers inspected the fuel, and found no indication that the fastener had come in contact with the fuel. The inspectors concluded that the workers demonstrated excellent safety perspective and a questioning attitude.

During observations of fuel handling on June 9, the inspectors noted that plant staff used the same copy of procedure 5-64-4 for fuel receipt on several occasions spanning several weeks. The procedure incorporates attachments used by plant staff to document fuel receipt activities, and the plant staff completed separate copies of the attachments for each activity. The inspectors noted, however, that the procedure required documented completion of the prerequisites for fuel receipt in the body of the procedure, not on an attachment. The procedure did not require that plant staff verify the prerequisites prior to handling fuel in each instance of receipt of a fuel shipment. The inspectors verified that the licensee met the prerequisites for fuel receipt on June 9. Although the lack of verification of the prerequisites had no safety implications in this instance, plant management stated that they plan to review the current practices for multiple uses of plant procedures to insure adequate verification of prerequisites.

5.2 (Closed) Open Item VIO-50-309/92-01-01, Review of Modifications (92702)

On February 9, 1992, prior to plant restart, station personnel cross-tied motor control centers (MCCs) 13A and 14A, to permit pre-outage maintenance on electrical bus 13. Plant personnel had previously cross-tied these buses on February 8, resulting in a plant trip. Station engineering personnel performed a load analysis review and indicated that the circuit breaker setting could be changed from 480 amperes to 600 amperes. The engineer did not recognize that the change of circuit breaker trip setting constituted a temporary modification and required a 10 CFR 50.59 review.

In response to this violation, Maine Yankee management conducted a complete review of the engineer's actions and determined this was an isolated incident. The basis for this determination is that there are plant procedures in place to direct the actions of the electrical engineer. The failure to perform a 10 CFR 50.59 screening was an error in judgement on the engineer's part. Engineering management counselled the engineer to evaluate amended

work orders for the possibility that the change incorporates a temporary modification to the system. Engineering department management also discussed the matter with department personnel to ensure they understood the event and the proper course of action.

The inspector concluded Maine Yankee's corrective actions were appropriate to resolve the issue. This item is closed.

6. SAFETY ASSESSMENT and QUALITY VERIFICATION

6.1 Quality Programs Department Observation of Maintenance (40500)

On May 18 Maine Yankee Quality Programs Department (QPD) personnel provided quality control oversight during a maintenance activity on Emergency Diesel Generator DG-1A. A QPD supervisor monitored the inspection activities of two QPD personnel, one of whom was in a training to qualify as a mechanical systems inspector. The inspectors determined that the QPD personnel were knowledgeable of the task, the quality control requirements, and the applicable quality control hold points in the maintenance work package.

7. ADMINISTRATIVE

7.1 Persons Contacted

During this report period, inspectors conducted interviews and discussions with various licensee personnel, including plant operators, maintenance technicians and the licensee's management staff.

7.2 Summary of Facility Activities

Except for condenser backwashing on May 21, Maine Yankee operated at 100% power throughout the inspection period.

Other inspections conducted during this inspection period included Operator Requalification (50-309/93-09) May 19-28, 1993, Emergency Plan Exercise (50-309/93-08) June 2-5, 1993, and Environmental Monitoring (50-309/93-12) June 7-18, 1993.

7.3 Interface with the State of Maine

Periodically, the resident inspectors and the onsite representative of the State of Maine discussed findings and activities of their corresponding organizations. No unacceptable plant conditions were identified.

7.4 Exit Meeting

Inspectors periodically held meetings with senior facility management to discuss the inspection scope and findings. At the conclusion of the inspection, the inspectors also presented a summary of findings for the report period.

During the inspection period the inspectors conducted backshift inspection on April 30, May 11, 27, 28, June 2 and 3.