

U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No.: 50-309/88-03
License No.: DPR-36
Licensee: Maine Yankee Atomic Power
83 Edison Drive
Augusta, Maine 04336
Inspection At: Wiscasset, Maine
Dates: February 4, 1988 to March 16, 1988
Inspectors: Cornelius F. Holden, Senior Resident Inspector
Richard J. Freudenberger, Resident Inspector
Approved By: Lowell E. Tripp 4/5/88
Lowell E. Tripp, Chief Date
Reactor Projects Section No. 3A

Summary: Inspection on February 4 to March 16, 1988 - Report Number
50-309/88-03

Areas Inspected: Routine resident inspections of plant operations including: followup on previous inspection findings, licensee event followup, operational safety verification, maintenance, surveillance, physical security, radiation protection and fire protection. The inspection involved 189 inspector hours by the resident inspectors including backshift inspections on February 19, 24 and March 2, 6, 11.

Results: No violations were noted. The Operations Performance Assessment Program was considered a strength due to the scope, corrective action and trending of the findings (Detail 13). SIMS item A-26 was closed in this report (Detail 11).

DETAILS

1. Persons Contacted

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

2. Summary of Facility Activities

At the beginning of the report period the plant was increasing power from seventy-five percent to full power, having completed secondary plant maintenance as well as turbine valve and main steam excess flow check valve testing. On February 4, a rapid power reduction was performed due to a leak in the electro-hydraulic control system (EHC) at the intercept valve from the "D" Moisture Separator Reheater (MSR). Power was stabilized at forty-nine percent while repairs of the EHC leak were conducted. The plant was returned to full power on February 5, and remained there for the rest of the report period except for a short power reductions on February 29, due to a dropped rod and on March 5 for turbine valve and main steam excess flow check valve routine surveillance testing.

3. Review of Licensee Event Reports (IP 90713)

The inspector reviewed the following Licensee Event Reports (LER) to determine that reportability requirements were fulfilled, immediate corrective action was taken, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

88-001 Plant trip on Heater Drain Tank Level Switch failure.

The plant tripped from full power on January 5, 1988 due to the failure of a float type level switch associated with the Heater Drain Tank. In this LER, the licensee committed to incorporating all Jo-Bell, float type, level switches which have control functions into the Preventive Maintenance Program by August 5, 1988. The inspector will review this commitment in a future inspection.

88-002 Unlocked Emergency Core Cooling System (ECCS) Valves.

On January 15, 1988, the licensee identified several valves associated with the component cooling heat exchangers which were not locked in position as required by the current interpretation of the plant's technical specifications. In this LER the licensee committed to a review of their locked valve policy and the submittal of Technical Specification change requests, if necessary by June 1, 1988. The inspector will review these items in a future inspection.

No violations were identified.

4. Followup on Previous Inspection Findings

- a. (Closed) IFI 50-309/87-21-01 Inspection Followup Item involving the control of keys for the Auxiliary Shutdown Panel (ASP). The inspector reviewed the availability of keys for the ASP. Since the ASP has alarm indication in the control room for control switches out of their normal position, the inspector determined that the current method used to control the ASP keys involving storage near the ASP panel is satisfactory.
- b. (Update) UNR 50-309/88-01-01 Unresolved Item regarding an error identified in the calorimetric calculation. The licensee's assessment of the impact of the calorimetric calculation is not yet complete. However, the licensee has committed to providing a report to the NRC including the details of the uncertainty calculations associated with the calorimetric. This item remains open pending the receipt and review of the above mentioned report.

5. Operational Safety Verification (IP 71707)

On a daily basis, during routine facility tours the following were checked: manning, access control, adherence to procedures and LCO's, instrumentation, recorder traces, protective systems, control room annunciators, radiation monitors, emergency power source operability, operability of the Safety Parameter Display System (SPDS), control room logs, shift supervisor logs, and operating orders. On a weekly basis, selected Engineered Safety Features (ESF) trains were verified to be operable. The condition of the plant equipment, radiological controls, security and safety were assessed. On a biweekly frequency the inspector reviewed a safety-related tagout, chemistry sample results, shift turnovers, portions of the containment isolation valve lineup and the posting of notices to workers. Plant housekeeping and cleanliness were also evaluated.

The inspector observed selected phases of the plant's operations to determine if the plant was being operated safely and in compliance with the NRC's regulations. The inspector determined that the areas inspected and the licensee's actions did not constitute a health and safety hazard to the public or plant personnel. The following are noteworthy areas the inspector reviewed:

- a. The licensee identified a spiking problem associated with Wide Range Channel A nuclear instrumentation. While troubleshooting this problem, the licensee determined that the spiking was caused by an intermittent connection in one of three fission chambers and its associated cabling. These three fission chambers are utilized in the Source Range nuclear instrumentation for Channel A. On a plant startup, when counts are sufficient, the nuclear instrumentation shifts to the Wide Range which uses one fission chamber. After

consulting the manufacturer, it was concluded that Source Range Channel A could be made operable with the faulted fission chamber removed from the circuit since the minimum sensitivity requirements are met with two fission chambers. The Wide Range Nuclear Instrument Channel A remains out of service. Wide Range Nuclear Instruments are used for Startup Rate protection between $10E-4$ and 10% power. While in this range, Channel A is placed in a tripped condition which meets the operability requirements of Technical Specifications Section 3.9. The inspector reviewed the requirements for the operability of the Source Range Nuclear Instrumentation, Wide Range Nuclear Instrumentation, communications with the vendor, Plant Operations Review Committee meetings and the troubleshooting and repair activities. The Nuclear Instrumentation fission chambers are accessible only during extended shutdowns, therefore the faulted Channel A chamber is scheduled for replacement during the next refueling outage. The inspector determined that the operability of the Source Range Channel A nuclear instrumentation was not affected.

- b. On February 4, 1988, a Nuclear Plant Operator (NPO) observed that none of the alarm windows on the Primary Auxiliary Building (PAB) alarm panel were lit. It was determined that the alarms associated with that panel were inoperable. The Main Control Board Alarms were not affected by this failure. The primary building NPO began performing hourly rounds, plant evolutions affecting the PAB alarm panel were minimized and a review of the alarm response procedures was conducted to ensure that parameters which usually cause an alarm on the PAB alarm panel were checked on a more frequent bases. Plant electricians were called in to repair the alarm panel. Repairs were completed on February 17, after the necessary parts were obtained.
- c. On February 4, 1988, a rapid power reduction was required when a test connection on the "D" Moisture Separator Reheater (MSR) intercept valve (MS-205) Electro-Hydraulic Control (EHC) system failed resulting in an EHC leak. The intercept valve went to a mid position necessitating the power reduction. Plant personnel were able to minimize the leakage rate until the leak could be isolated and repaired. Power was stabilized at forty-nine percent until repairs to the EHC system could be completed. The plant returned to 100 percent power on February 5, 1988.
- d. On February 12, 1988, the licensee notified NRC, Region I, that during the 1987 refueling outage, the Motor Operated Valve Actuation Testing System (MOVATS) had been employed in testing of motor operated valves and provided recommended torque limit switch settings. Subsequently, MOVATS had changed their recommendations to higher values for the same motor operated valves. The licensee had not

employed the originally recommended settings, choosing higher, more conservative values. Had the initially settings been employed, both trains of High Pressure Safety Injection might have been inoperable due to the possible failure of these valves to operate when required. A specialist inspector performed a detailed inspection of this area between February 29 and March 4, 1988. (Refer to NRC inspection Report 50-309/88-04).

- e. On February 17, 1988, at approximately 7:00 p.m. the plant operators became aware of problems with the commercial phone system. The dedicated lines to the NRC and the Maine State Police were tested and determined to be out of service. Contacts were made through the microwave service to the dispatcher to the State Police and the NRC. The local telephone company was contacted using the same method, and repairs were completed by 11:00 p.m. The security radio communications with the State Police were operable during this time.
- f. On February 23, 1988, a small leak from a temporarily repaired portion of the Refueling Water Storage Tank (RWST) Siphon heater return line was identified. The cause of the leak was the improper removal of the sealant connections on the leak repair device which had been recently installed by a contractor. The leakage was contained and sampled to verify its source. Repairs were made to stop the leakage. On February 24, 1988, an isolation valve on the same line was found to have a slight leak at one of its flanged connections. The RWST siphon heater and its supply and return lines are scheduled for refurbishment during the next refueling outage. The inspector will review the repairs to the siphon heater at that time.
- g. On February 24, 1988, the inspector witnessed a backshift fire drill. Response by the fire brigade was prompt. The control room was kept informed by the fire brigade team leader. Control room staffing was adequate while some of the operators participated as members of the fire brigade as required.
- h. On February 29, 1988, Control Element Assembly (CEA) 55 was dropped during the bi-monthly CEA exercise surveillance test. A power reduction was initiated and the rod was recovered within thirty minutes. Reactor parameters were verified to be within limits throughout and after the recovery of the CEA. As part of a comprehensive action plan initiated to identify and correct recent problems observed in the CEA drive mechanisms, the control circuitry to this rod was being monitored while it was being tested. Several possible causes for the problem with the rod were identified. A loose connection was later found in the lower gripper circuit for CEA 55. Another CEA exercise surveillance test was conducted on March 14, and completed satisfactorily.

- i. On March 10, 1988, a contractor working for the Lincoln County Sheriff's Office was performing maintenance to the Radio Repeater Control Unit to the Public Emergency Alert System (PEAS) located in the Sheriff's Office. This work resulted in an inadvertent actuation of the Wiscasset Siren at 2 p.m. At 2:46 p.m. there was another inadvertent actuation of all of the PEAS sirens which lasted between 6 and 10 seconds. These inadvertent PEAS actuations were announced on the Public Information Line and the NRC was notified using the Emergency Notification System in accordance with 10 CFR 50.72 B(2)(vi).
- j. On March 14, 1988, there was an inadvertent deluge valve actuation for one of the main transformers (X-1A). The plant operators took actions to verify that no fire existed, then reset the deluge valve. The cause of the actuation was determined to be deterioration of a tie wrap used to secure the manual pull station to the deluge system. Corrective actions included the consideration of a better closing device.

No violations or significant deficiencies were identified during the inspection and review of the above activities.

6. System Alignment Inspection (IP 71710)

Operating confirmation was made of the Emergency Feedwater System. Accessible valve positions and status were examined. Power supply and breaker alignment was checked. Visual inspection of major components was performed. Operability of instruments essential to system performance was assessed. No discrepancies were identified.

7. Plant Maintenance (IP 62703)

The inspector 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 following maintenance evolutions were reviewed:

<u>Discrepancy Report Number</u>	<u>Description</u>
0748-88	Emergency Diesel Generator (DG-1B) - Replace copper tubing on air start valve and solenoid with stainless steel tubing.
5437-87	Emergency Feedwater Pump (P-25C) - Oil leak repairs to the oil cooler for the pump bearings.

<u>Discrepancy Report Number</u>	<u>Description</u>
0765-88	Primary Vent Stack Air Particulate Detector (RM-6102X) - Repair malfunctioning paper drive.
0672-88	Resin Transfer Pump (P-108) - Replace pump

No violations or discrepancies were identified.

8. Surveillance Testing (IP 61726)

The inspector observed parts of tests to assess performance in accordance with approved procedures and Limiting Conditions for Operations, test results, removal and restoration of equipment, and deficiency review and resolution.

The following surveillances were reviewed:

<u>Procedure Number</u>	<u>Title</u>
3.5.8	Measurement of HPSI Valve Stem Stops - Quarterly Surveillance Procedure
3.1.8	CEA Exercises
3.5.1	Station Battery Readings - Weekly Surveillance

No violations were identified.

9. Observations of Physical Security (IP 71707)

Checks were made to determine whether security conditions met regulatory requirements, the physical security plan, and approved procedures. Those checks included security staffing, protected and vital area barriers, vehicle searches and personnel identification, outside area lighting, access control, badging, and compensatory measures when required. No discrepancies were identified.

10. Radiological Controls (IP 71709)

Radiological controls were observed on a routine basis during the reporting period. Areas reviewed included Organization and Management, external radiation exposure control and contamination control. Standard industry radiological work practices which involved conformance to radiological control procedures and 10 CFR Part 20 requirements were observed. Independent surveys of radiological boundaries and random surveys of nonradiological points throughout the facility were taken by the inspector. Additionally, Radiation Work Permit (RWP) 88-3-22 was reviewed in detail.

This RWP controlled the work associated with the resin sluice from a let-down demineralizer to the resin holdup tank and the refill of the demineralizer vessel with fresh resin. Portions of these evolutions were observed by the inspector. No violations were identified.

11. Low Temperature Overpressure Protection (LTOP) (SIMS A-26)

The inspector continued the review of the Low Temperature Overpressure Protection (LTOP) system at Maine Yankee. Previous inspections had reviewed the design and administrative control procedures. This inspection reviewed the training on equipment modifications and surveillance testing of the LTOP system.

Lesson plans were reviewed to determine the extent of training each of the operators received and how new operators are trained. Simulator sessions were reviewed and discussions were held with simulator instructors. Discussions were held with plant operators to determine their familiarity with the LTOP system. The inspector determined that the licensee's training program adequately covers the LTOP system and simulator sessions provide the operators with the practice necessary to operate the system.

Surveillance records were reviewed. Procedure 3-6.2.1.13, Control Channel Calibration Pressurizer Pressure Wide Range Control Channel, was reviewed. Routine review requirements were up to date. This surveillance is performed prior to the use of the LTOP system which typically is just prior to a refueling outage. No discrepancies were noted. This inspection closes TI 2500/19 and SIMS item A-26.

13. Licensee Self Assessments (IP 71707)

The inspector reviewed some of the licensee's systems for critical self assessments of performance. The purpose of these self assessments is to provide a mechanism to systematically identify, review and correct potential deficiencies or weaknesses in order to improve performance.

Procedure 1-200-6, Operations Department Performance Assessment Program (PAP), establishes the PAP for the Operations Department. A long range program schedule is developed from the assessment index and provides an overview of the assessment requirements for the year. Short range schedules are developed from the long range schedules and provide specific assessment assignments by week for the calendar quarter. For Operations Department assessments, individuals who are familiar with plant operations are used to conduct the PAP. All assessments are reviewed by the Manager, Operations Department. Corrective actions are tracked with closeouts routed through the Manager, Operations Department. Activities assessed

include routine operations activities, such as, log keeping, shift turn-overs, auxiliary operators rounds and crew simulator performance as well as administrative control systems, such as, white tag logs, required reading program and surveillance scheduling. For 1987, the Operations Department had conducted over 300 PAP's on Department activities. This program appears to identify and correct potential issues before they become problems. Corrective actions are thorough and are trended. The overall impact has been an improvement in the Operations Department.

15. Exit Interview (IP 30703)

Meetings were periodically held with senior facility management to discuss the inspection scope and findings. A summary of findings for the report period was also discussed at the conclusion of the inspection. The licensee did not identify 2.790 material.