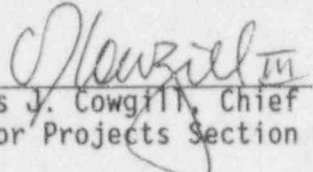


U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No.: 95-14
Docket No.: 50-333
License No.: DPR-59
Licensee: New York Power Authority
P.O. Box 41
Lycoming, New York 13093
Facility: James A. FitzPatrick Nuclear Power Plant
Location: Scriba, New York
Dates: June 25, 1995 through August 5, 1995
Inspectors: G. Hunegs, Senior Resident Inspector (SRI)
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Approved by:


Curtis J. Cowgill, Chief
Reactor Projects Section 1B, DRP

8/29/95
Date

INSPECTION SUMMARY: Routine NRC resident inspection of plant operations, maintenance, engineering, plant support, and quality assurance/safety verification.

RESULTS: See Executive Summary

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NOTE: The NRC inspection manual procedure or temporary instruction that was used as inspection guidance is listed for each applicable report section.

EXECUTIVE SUMMARY

James A. FitzPatrick Nuclear Power Plant Inspection Report No. 50-333/95-14

Plant Operations: A review of the overtime policy and use by the licensed reactor operators and individuals conducting safety related work was found to be in compliance with plant technical specifications.

Maintenance: Low pressure coolant injection motor operated valve power supply maintenance and troubleshooting activities were reviewed by the inspectors and found to be appropriate.

Engineering: Review of an engineering safety evaluation and supporting documentation provided information for the closure of open item 94-23-01, involving a turbine building high energy line break and its effect on safety related electrical equipment.

Plant Support: Review of a reportability determination by the site security staff was found to be appropriate, the investigation timely and of sufficient depth.

Safety Assessment/Quality Verification: Review of licensee event reports were found to be well written, concise, and accurate. Observations at a performance enhancement review committee meeting revealed that the process continues to be effective as management tool in providing guidance on investigations and evaluations of human performance events.

DETAILS

1.0 SUMMARY OF FACILITY ACTIVITIES

1.1 NYPA Activities

The plant operated at approximately 100% power for the entire period. Periodic power reductions were conducted to support control rod pattern adjustments. Elevated lake water temperature resulted in numerous entries into the abnormal operating procedure for high screenwell intake temperature and enhanced condenser vacuum monitoring. Hydrogen addition was increased during this inspection period requiring additional radiological surveys by the health physics staff because of the increase in the turbine building radiation levels.

Mr. Michael J. Colomb, General Manager for Support Services, has replaced Mr. Robert J. Barrett as the General Manager for Operations.

1.2 NRC Activities

A region based inspector conducted a review of the emergency preparedness program during the week of June 26, 1995.

Region based inspectors completed a two week review of engineering and technical support at both NYPA corporate headquarters and the J.A. FitzPatrick station during the weeks of July 10, and July 24, 1995.

Specialist inspectors from Region I reviewed the licensee's use of industry operating experience and operator work arounds during the week of July 17, 1995.

A region based inspector reviewed the physical security program during the week of July 24, 1995.

The inspection activities during this report period included inspection during normal, backshift and weekend hours by the resident staff. There were 7 hours of backshift (evening shift) and 4.5 hours of deep backshift (weekend, holiday and midnight shift) inspections during this period.

2.0 PLANT OPERATIONS (71707,93702,92901,62703)

2.1 Operational Safety Verification

The inspectors observed plant operation and verified that the facility was operated safely and in accordance with licensee procedures and regulatory requirements. Regular tours were conducted of the following plant areas:

- control room
- secondary containment building
- radiological control point
- electrical switchgear rooms
- emergency core cooling system pump rooms
- security access point
- protected area fence
- intake structure
- diesel generator rooms

Control room instruments and plant computer indications were observed for correlation between channels and for conformance with technical specification (TS) requirements. Operability of engineered safety features, other safety related systems and onsite and offsite power sources was verified. The inspectors observed various alarm conditions and confirmed that operator response was in accordance with plant operating procedures. Compliance with TS and implementation of appropriate action statements for equipment out of service was inspected. Plant radiation monitoring system indications and plant stack traces were reviewed for unexpected changes. Logs and records were reviewed to determine if entries were accurate and identified equipment status or deficiencies. These records included operating logs, turnover sheets, system safety tags and temporary modifications log. The inspectors also examined the condition of meteorological and seismic monitoring systems. Control room and shift manning were compared to regulatory requirements and portions of shift turnovers were observed. The inspectors found that control room access was properly controlled and that a professional atmosphere was maintained. Partial control room and in-plant walkdowns of several safety related systems were conducted.

The inspectors observed an acceptable level of performance during the inspection tours detailed above.

2.2 Overtime for Licensed Reactor Operators

The inspector conducted interviews with station management and reviewed records to verify compliance with Technical Specification (TS) requirements regarding the use of overtime. TS require that administrative procedures be developed and implemented to limit the working hours of unit staff who perform safety-related functions. The licensee utilizes administrative procedure (AP)-11.03, Control of Overtime, which in part, states that in general, employees are to work normal eight hour days, forty hours a week when the plant is operating. The procedures restrict overtime use to no more than 16 hours work in a 24 hour period; no more than 24 hours in 48 hours; and no more than 72 hours in a seven day period. Deviations from these requirements are allowed by the TS provided the Site Executive Officer or the General Manager of Operations authorizes the deviation and includes the reason the deviation is required. The inspector reviewed time keeping records and security documentation to verify compliance with the TS. The inspector determined that compliance with the TS was being met and that excessive overtime use was not found for the period reviewed.

3.0 MAINTENANCE (62703,61726,92902)

3.1 Maintenance Observations

The inspector observed and reviewed selected portions of preventive and corrective maintenance to verify compliance with codes, standards and Technical Specifications, proper use of administrative and maintenance procedures, proper QA/QC involvement, and appropriate equipment alignment and retest. The following activities were observed:

- WR NO: 95-04440 LPCI MOV Independent Power Supply B Inverter, Troubleshoot/repair cause of inverter trip in accordance with IMP-71.20. Performed on 7/17/95, reviewed on 7/18/95.

No concerns were identified during inspector review of the above activities.

3.1.1 Low Pressure Coolant Injection Independent Power Supply Inverter Trips

The "B" low pressure coolant injection (LPCI) motor operated valve (MOV) inverter tripped three times recently. The indications were the output and battery breaker opening and the AC input breaker remaining shut. The NRC noted that operators took the appropriate action to enter the limiting condition for operation in accordance with Technical Specification 3.9.F, "LPCI MOV Independent Power Supplies," and to place the LPCI MOV inverter bus on alternate feed as required by the alarm response procedure. The LPCI inverter bus provides an uninterruptable power supply to the recirculation system suction and discharge valves and three valves associated with the LPCI mode of residual heat removal.

The recent operating and maintenance history for the "B" LPCI MOV inverter is as follows:

On June 11, 1995, the "B" LPCI MOV inverter tripped. Instrumentation and Control (I & C) technicians found that the control power supply fuses were loose and the 120 volt (VAC) power supply differential was out of tolerance. The licensee determined that this combination could have caused the inverter trip with the indications that were observed and believed that this was the most likely cause of the inverter trip. The conditions were corrected, operating parameters were checked and found to be satisfactory and the inverter was returned to service.

On July 17, 1995, the "B" LPCI MOV inverter tripped a second time with the same indications as previously noted. A vendor representative performed troubleshooting and monitored other parameters and concluded that a particular logic card was suspect. The suspected card was replaced and the inverter was returned to service.

On July 30, 1995, the "B" LPCI MOV inverter tripped a third time with the same indications. With vendor assistance, more comprehensive troubleshooting was used and a faulty logic card was identified. The faulty card was causing voltage to drift, which resulted in the inverter tripping.

The NRC reviewed previous material history and discussed the troubleshooting efforts with the I & C supervisor. The NRC noted that scheduled functional checks were performed satisfactorily during the outage in December, 1994. Problems with the "A" LPCI MOV inverter have not been noted. Based on this review and discussions, and the nature of identifying defective logic cards, the inspector concluded that maintenance efforts to identify the cause were appropriate.

To monitor inverter performance, the licensee installed a recorder. The temporary modification control form indicated that the test equipment would not affect the function of the unit or its interface with other equipment. However, upon turning on the recorder, the "B" LPCI MOV inverter tripped immediately. The recorder was removed and the inverter was returned to service. The licensee wrote deviation and event report (DER) 95-1171 to investigate the reason that the installation of the recorder caused the inverter to trip. The licensee's review was not complete at the end of the inspection period. The inspector will continue to follow licensee actions for this issue.

3.2 Surveillance Observations

The inspector observed and reviewed portions of ongoing and completed surveillance tests to assess performance in accordance with approved procedures and Limiting Conditions for Operation, removal and restoration of equipment, and deficiency review and resolution. The following tests were reviewed:

- ST-4B, HPCI Pump and MOV Operability Test, performed and observed on 7/18/95.
- ST-26I (6 month ST), Reactor Water Cleanup Isolation Logic System Functional and Simulated Automatic Actuation Test, Rev. 18.
- ISP-66-1 Scram Discharge Instrument Volume High Water Level Instrument Functional Test/Calibration, performed and observed on 7/19/95.
- IMP-60 Seismic Recording System Functional Test, performed 7/18/95, reviewed on 7/19/95 including previous monthly checks of the system.

No concerns were identified during inspector review of the above activities.

4.0 ENGINEERING (37551,92903,71707)

4.1 Closed Unresolved Item (94-23-01); Turbine Building High Energy Line Break

During review of the Environmental Qualification Program, as part of the licensee's response to Information Notice 92-52, Barriers and Seals Between Mild and Harsh Environments, the licensee discovered that two assumptions in the high energy line break (HELB) analysis were incorrect. The first assumption was that the two electric switchgear rooms, which contain safety related equipment, were air tight. This assumption was necessary because the safety related equipment in the electric bays were not environmentally qualified for a harsh environment in accordance with 10CFR50.49. Subsequently the licensee determined that there is a fire damper in each electric bay that would allow the harsh environment (steam and hot gases) from a HELB in the turbine building to transmit into the electric bays. This event could result in two separate trains of safety related equipment to not perform their safety function. The second assumption made by the analysis was that there was no safety related equipment located in the turbine building except those items in

the electric bays. The licensee determined that the east and west cable tunnel cooling fan controls in panels 67HV-2A and 67HV-2B were susceptible to failure as a result of a HELB in the turbine building.

The inspector reviewed safety evaluation JAF-SE-95-014 Rev.2, Steam Line Break Effect on Essential Electrical Equipment in the East and West Electric Bay and the East and West Cable Tunnel and discussed the issue with plant personnel. The safety evaluation concluded that with the ventilation louvers and duct work to the turbine building open to a postulated HELB in the turbine building that a harsh environment does not exist in the electric bays. The calculated temperature rise in the electric bays was determined to be about 8 degrees fahrenheit with a humidity increase to 67 percent. The licensee also determined that the loss of cable tunnel cooling can be tolerated for 24 hours and that cold shutdown could be achieved following a HELB with in 24 hours. However the licensee concluded that the emergency diesel generator (EDG) cooling fans would have to be manually started following a HELB. This is required as the cable tunnel fans provide cooling air to the EDG switchgear rooms when the EDGs are not running. When the EDGs are running, the room fans start automatically and provide cooling air to the rooms. The inspector verified that the information was inserted into the abnormal operating procedure for a HELB in the turbine building. The inspector had no further questions this unresolved item is closed.

5.0 PLANT SUPPORT (71707,40500,92904)

On July 5 the licensee notified the inspector of an event involving the discovery of unsecured safeguards drawings by plant staff. The inspector reviewed the licensee's reportability determination, which was done in accordance with NRC Generic letter 91-03, Reporting of Safeguards Events. The generic letter states that compromise of safeguards information that could not significantly assist an individual in gaining unauthorized or undetected access to a facility need not be reported to the NRC operations center within one hour of discovery. The security investigation revealed that the folder containing the drawings were left out for a short period of time; the desk was located in a locked office; all office personnel are safeguards qualified and would observe any individual entering the office; and the area is located within the protected area and all badged personnel are screened in accordance with access control procedures. The inspector determined the reportability determination by the security staff to be appropriate, and the investigation was completed in a timely and thorough manner.

6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION (40500, 7551, 92700, 90712)

6.1 Review of Licensee Event Reports

The inspectors reviewed the following Licensee Event Reports (LERs) and found them to be well written, concise, accurate, and properly submitted for NRC staff review within the guidelines of 10 CFR 50.73:

LER 93-010, Technical Specification Plant Shutdown Due to Unidentified Leakage into Drywell, dated June 25, 1995.

This event was reviewed in NRC Inspection Report 50-333/95-11 dated July 21, 1995. Reactor coolant system leak rate in excess of Technical Specification limits resulted in a plant shutdown and declaration of an unusual event. Operators initiated a manual reactor scram to expedite reactor cooldown and depressurization. The cause was a packing leak on a normally open valve which had not been backseated. Corrective actions included the following:

- The valve was repacked with an improved packing material.
- Valve design and thermal expansion characteristics for normally open small manual valves were reviewed and several valves were backseated as appropriate. Required procedure changes to backseat valves were made.
- All valve packing leakage identified during the 1995 refueling outage vessel hydrostatic test was reevaluated and/or repaired.

The inspector concluded that licensee corrective actions were thorough.

LER 93-022, Vendor Design Deficiencies Allowing Exposed Resistors in the RPS Panels, dated November 29, 1993.

The safety significance and technical resolution of this problem were reviewed in earlier inspection reports (reference inspection reports 93-16, 93-24, and 93-28). LER 93-022 was examined during this inspection period to assess the timeliness of the licensee's handling of this problem. Based upon the documents reviewed by the inspector, the following chronology of events was developed:

- September 1993; the NYPA engineering and GE staffs were working on a reactor protection system (RPS) Design Basis Documentation (DBD).
- September 20, 1993; engineers working on the RPS DBD identified eight resistors (05A-R3A through H) in the RPS scram solenoid status indicating light circuit that were located outside the scram contactor box. Location outside of the contactor box made them vulnerable to an electrical "hot short" that could potentially result in some control rods not inserting on a scram signal. This discovery was documented in Design Documentation Open Item (DDOI) tracking sheet No. DDOI-RPS-005-028, dated 09/20/93, and prioritized on 10/8/93. Per LER 93-022, the engineering staff completed a preliminary operability review and concluded that the RPS system was operable and that a reportability review was commenced at that time.
- October 20, 1993; further field examinations of the RPS wiring circuits identified that some of the control power wiring between scram contactors in each logic train were not enclosed in conduit. Conflicting requirements for enclosure of these wires were identified and further evaluation by GE was requested.

- October 22, 1993; a planned shutdown and four week maintenance outage commenced.
- October 29, 1993; after further evaluation the engineering staffs concluded that the wiring between contactors should be enclosed by conduit and that the exposed wiring was similarly susceptible to "hot short" electrical faults. Another DDOI was issued to track this specific issue.
- October 31, 1993; the RPS was declared inoperable due to both the resistor and wiring configurations being susceptible to single failure due to a potential "hot short".
- November 18, 1993; RPS circuit modified prior to unit restart.
- November 29, 1993; LER 93-022 issued.

Based upon the above chronology and the information available at the time of this inspection, the inspector concluded that the NYPA engineering staff was slow in their investigation of this potential RPS electrical design concern after initial identification of the resistor "hot short" vulnerability. As evidenced by the above chronology, the plant operating configuration did not preclude field walkdowns of the RPS circuit on September 20 to examine the extent of other unprotected resistors, wiring, and control cable. The inspector also noted that the prioritization of DDOI No. JAF-RPS-005-028 after initial documentation was slow in light of the potential affect on the reactor protection system.

Although licensee actions were slow, the inspector concluded that the licensee appropriately dispositioned the issue and made the appropriate modifications to the reactor protection system. The inspector had no further questions or concerns. LER 93-022 is closed.

The inspector identified no additional concerns or problems with NYPA's response to these events.

6.2 Performance Enhancement Review Committee Meeting

The inspector attended a Performance Enhancement Review Committee (PERC) meeting on June 30 at which several deviation event reports (DERs) were discussed and root cause evaluations were presented. The meeting was chaired by the Site Executive Officer (formerly Resident Manager) and two General Managers and several other managers. One event discussed involved several DERs documenting problems discovered during power ascension following the last refuel outage in which the core monitoring system did not perform as expected. The inspector found the event root cause analysis to be thorough and of good quality. The PERC carefully examined the information presented and provided additional input to the amount and direction of the recommended corrective actions. The inspector noted that the PERC process continues to be effective.

7.0 MANAGEMENT MEETINGS (30702,71707)

7.1 Exit Meetings

At periodic intervals during the course of this inspection, meetings were held with senior facility management to discuss inspection scope and findings. In addition, at the end of the period, the inspectors met with licensee representatives and summarized the scope and findings of the inspection as they are described in this report. The licensee did not take issue with any of the findings reviewed at this meeting.