

U.S. NUCLEAR REGULATORY COMMISSION

Region I

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P.O. Box 41
Lycoming, New York 13093
Facility: James A. FitzPatrick Nuclear Power Plant
Location: Scriba, New York
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Approved by:



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Reactor Projects Section 1B, DRP

INSPECTION SUMMARY: Routine NRC resident inspection of plant operations, maintenance, engineering, and plant support.

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, Units 1 and 2

Inspection Report No. 50-333/93-14

Plant Operations:

Operations staff performance was good this inspection period particularly in response to the APRM downscale trip testing event. The subsequent declaration of an Unusual Event, power reduction, and successful surveillance testing were well executed. The NYPA root cause for this event remained to be completed and reviewed by the NRC staff. This is an unresolved item (URI 93-14-01). Corrective actions for violation 93-04-01, involving a post scram procedural non-compliance, were reviewed and found to be comprehensive. By separate correspondence, a violation of 10 CFR 55.25 was cited. An inspection report tracking number was assigned (VIO-93-14-02) to support NRC staff review of your completed corrective actions. An inspector walkdown of the core spray system identified that the system was properly lined-up and available in a standby configuration.

Maintenance:

The inspectors witnessed a variety of maintenance and surveillance activities during this inspection period and noted good performance by the plant staff.

Engineering:

Identification of the control room ventilation system potential single failure design issue by the NYPA staff was good. Inspector review of the compensatory measures found them to be appropriate. An unresolved item (URI 93-14-03) tracks the NYPA reanalysis of the control room habitability review conducted earlier for NUREG 0737, item III.D.3.4.

Plant Support:

Inspectors observations of the June 30 emergency plan drill noted good performance. Housekeeping in the reactor building crescent areas was observed to be poor. The protected area boundary was reviewed for land-borne vehicle bomb threat potential and found to be acceptable. Compensatory measures for installation of a new control room access were determined to be satisfactory. A review of NYPA's efforts to periodically update the FSAR to reflect changes to local area demographics and the offsite environment identified no specific program to capture those changes. The inspector identified that changes in these parameters are reflected in the emergency plan. NYPA acknowledged the need to review the program to update the FSAR in this area.

DETAILS

1.0 SUMMARY OF FACILITY ACTIVITIES

1.1 NYPA Activities

The plant operated at 100% power throughout the inspection period with two exceptions. On July 16, NYPA reduced power to approximately 50% and commenced flux tilt testing to localize a leaking fuel rod. Upon identification of the suspect fuel assembly, control rod 34-11, the four adjacent control rods were fully inserted to suppress the flux in that area. The reactor was returned to full power on July 19, 1993.

On July 29, NYPA determined that a reactor trip function was not being tested in the surveillance program. NYPA declared all average range power monitors (APRMs) inoperable, commenced an eight hour Technical Specifications required shutdown, and declared an Unusual Event at 10:30 a.m. The trip functions were tested satisfactorily and the Unusual Event was terminated at 1:53 p.m. The plant then returned to 100% power. (reference section 2.2.1 below)

On July 9, the B reactor water cleanup (RWCU) room was observed to be full of steam from a pump seal failure. The B RWCU pump was secured, but the A RWCU pump had just been replaced and was still unavailable. Consequently the plant had no RWCU flow. On July 11, the B RWCU was repaired and placed in service. The lack of RWCU flow for approximately three days had minimal impact on reactor water chemistry.

1.2 NRC Activities

Region based inspectors conducted an inspection of FitzPatrick's radiation protection program during the week of July 12, 1993.

Region based inspectors performed a confirmatory measures inspection during the week of July 12, 1993.

On July 28, the Region I Regional Administrator and other NRC representatives met with NYPA senior corporate and station managers to review the recent SALP report (50-333/92-99) and NYPA's initial response to that assessment. The meeting was held in the FitzPatrick Training Center and was open to public observation. Following the meeting the NRC staff was available to address questions from the public and media representatives.

On July 30, the Senior Resident Inspector participated in a panel discussion concerning Nuclear Energy and Nuclear Industry Regulations at the Oswego SUNY campus sponsored by the Elder Hostel Program. The New York Power Authority was also represented at the panel discussion which lasted approximately two and one-half hours. The panel discussions were moderated by SUNY Oswego Professor Carl Salvagan and attended by approximately twenty senior citizens.

The inspection activities during this report period included inspection during normal, backshift and weekend hours by the resident staff. There were a total of 240 hours of onsite inspection during this period, with 27.5 hours of backshift (evening shift) and 5.0 hours of deep backshift (weekend, holiday and midnight shift) inspection.

2.0 PLANT OPERATIONS (71707, 71710, 93702, 40500)

2.1 Followup of Events Occurring During Inspection Period

2.1.1 APRM Downscale Trip Testing Deficiency

On July 29, during a review of average power range monitor (APRM) surveillance procedures, NYPA determined that a reactor trip was not being tested. Specifically, the APRM downscale reactor trip in conjunction with an intermediate range monitor upscale or inoperative trip function was not being tested. The licensee declared all APRMs inoperative and commenced an eight hour Technical Specifications (TS) required shutdown in accordance with TS Table 3.1-1. The TS required shutdown also prompted the declaration of an Unusual Event at 10:30 a.m. A surveillance test to verify the operability of the trip functions in question, was written and properly approved. After the APRMs were all tested satisfactorily, the APRMs were declared operable and the Unusual Event was terminated at 1:53 p.m. The plant was subsequently returned to 100% power.

NYPA's overall response to this event was good. The assessment of the surveillance deficiency, initiation of shutdown, and entry into the emergency plan (Unusual Event) were conducted in a timely and professional manner. I&C and operations personnel provided excellent reactive support in generating an appropriate surveillance test. Management decisions were appropriately conservative throughout the event.

The inspector noted that on March 22, 1993, NYPA identified the fact that they were not functionally testing the APRM flow biased thermal trip. In response to this event, NYPA performed a review of the neutron monitoring Technical Specifications to ensure that all required surveillances were being performed. The inspector was concerned that this review did not identify the APRM downscale trip testing deficiency. NYPA shared this concern and at the conclusion of the inspection period NYPA was performing a critique to identify the root cause. In addition, NYPA plans to determine if there are any upgrades that would be appropriate for the ongoing logic system functional testing (LSFT) reviews. This item will remain unresolved (URI 93-14-01) pending completion of the root cause analysis and further NRC review of the LSFT upgrade process.

2.2 Followup of Previously Identified Items

2.2.1 (Closed) VIO 93-04-01: Post Scram Procedural Non-Compliance

In their April 29, 1993 response, NYPA agreed with the violation. This violation resulted from a failure to adequately verify the mode switch was in the SHUTDOWN position prior to resetting the scram. The mode switch was, in fact, in an intermediate position. In response to the violation, NYPA has revised Abnormal Operating Procedure (AOP)-1, Reactor Scram, to require verification that annunciator 09-5-1-33, "Mode SW in Shutdown Trip Bypassed", is in alarm prior to resetting the scram. This annunciator is positive indication that the mode switch is in SHUTDOWN. Additionally, since NYPA's post-trip critique did not identify this performance deficiency, NYPA has taken steps to strengthen this process. Specifically, Administrative Procedure (AP)-03.01, Post Transient Evaluation, was revised. The inspector reviewed the procedure and found it to be comprehensive. One of the most significant changes was the creation of a Post Transient Review Group (PTRG). The PTRG consists of individuals who were not involved in the transient. The PTRG is chartered to independently analyze the event, identify root causes, and recommend corrective actions. Overall, NYPA's response was prudent and appropriate. This violation is closed.

2.2.2 Change in Physical Status of Licensed Operators

By letter dated May 28, 1993, NYPA informed the NRC that on two occasions the physical status of licensed operators changed without the required notification being made to the NRC within 30 days per 10 CFR 55.25. Specifically, the licensed operators' vision fell below the requirements of ANSI/ANS-3.4-1983. In response to this issue, the NRC Region I staff issued a severity level IV violation (VIO 93-14-02) under separate correspondence, dated July 7, 1993. NYPA identified the apparent causes and corrective actions to the violation in their May 28, 1993 letter. Consequently, no response to the Notice of Violation was required. NYPA's corrective actions, when completed, will be reviewed in a future inspection.

2.3 Engineered Safety Feature System Walkdown - B Core Spray System

During the period July 6-9, 1993, the inspector conducted a detailed walkdown of the accessible portions of the B core spray system to verify operability. The walkdown included a review of the actual system configuration against the core spray flow diagram (Drawing FM-23A). Normal system lineups (i.e., valves, switches, power supplies) were verified correct using the core spray system operating procedure (OP-14). The system condition was found to be adequate including housekeeping, labeling, control of flammable materials, valve condition, system leakage, and instrumentation. Compliance with Technical Specifications was verified. Recent surveillance test results for procedures ST-3A (pump and valve

operability), ST-3J (initiation logic functional test), ST-3M (testable check valve testing), and ST-3P (flow rate and valve inservice test) were also reviewed by the inspector and found to be satisfactory. Additionally, a recent modification package (M1-93-339) affecting the core spray system was reviewed.

The inspector noted a possible gage indication discrepancy as a part of the system walkdown. The gage at 14PI-36B (CSP Pump B Suct Press Indic) indicated downscale. This was inconsistent with two other gages which sense core spray pump B suction pressure, 14PI-75B1 and 14PI-75B2, both of which indicated approximately 5 psig. This observation was relayed to the site staff for review. The inspector subsequently learned that a deficiency report was written against the identified problem and the gage was replaced.

The inspector also noted some minor disparities between the actual system configuration and the system drawing. Specifically, in addition to a root isolation valve which was shown on the system drawing, gage isolation valves and drain valves were noted at 14PI-36B (CSP Pump B Suct Press Indic) and at 14PI-101B (CSP Pump B Disch Press Indic), but were not indicated on the flow diagram nor were they listed on the system valve lineup in OP-14. Upon further review, the inspector learned that it was established NYPA drafting practice not to show detail beyond the first root isolation. For instrument gage lines which have pressure switches that provide alarm or control functions, the status of the gage isolation and possible drain valves downstream of the root isolation valve are verified prior to startup (following an outage of greater than 30 days) by the performance of procedure ST-40H, Instrument Valve and Instrument Root Valve Lineup. The inspector determined that no specific lineup exists for instrument lines with gages that provide an "indication only" function. As a result of the inspector's observation, NYPA has documented this condition in a deviation/event report and preliminarily intends to create a similar lineup procedure for "indication only" gages in safety-related systems.

The inspector learned that all pressure instruments and switches are calibrated with generic procedures that require isolating and restoring the instruments without identifying specific valves. The restoration lineup is then verified by a second individual and the instrument indication is checked to be consistent with plant conditions. The inspector identified no discrepancies in valve lineups and concluded that there were adequate controls on the positioning of gage isolation and drain valves. However, the inspector expressed concern that these valves do not receive formal valve lineups. The licensee acknowledged the inspector's concern and agreed to evaluate the practice.

In summary, the inspector concluded that the B core spray system was properly maintained. There were no observable problems impacting system performance or operability.

3.0 MAINTENANCE (62703, 61726)

The inspector observed and reviewed selected portions of the preventive and corrective maintenance, equipment troubleshooting, instrumentation calibrations, scheduled surveillance

testing, and post-work or post-modification testing. The inspector verified adherence to procedures, compliance with codes, standards, and Technical Specifications, proper use and control of maintenance and surveillance test procedures, proper Quality Assurance department involvement, appropriate supervisory or management oversight, and proper equipment restoration following the completion of work.

3.1 Maintenance and Surveillance Observations

The following activities were observed:

- Work Request 93/103699 - Troubleshooting of D emergency diesel generator (EDG) on July 6. The D EDG had been declared inoperable due to 200 kW load swings that were observed during surveillance testing. Troubleshooting was conducted by connecting diagnostic equipment to the diesel governor and attempting to replicate the load swings. The I&C supervisor and maintenance engineer were present and the test was well controlled, but the load swings were not replicated. The diesel was declared operable and placed on enhanced surveillance frequency.
- ISP 125A - HPCI Auto Isolation Instrument Functional Test/Calibration (ATTS) on July 19. No discrepancies were noted.
- ST-9D - 115 kV Reserve Power, Station Battery, on ESW Pump Inoperable Test on July 21. No discrepancies were noted.
- ST-34A - PCIS Group 2 Logic Functional and Simulated Automatic Actuation Test on July 30. Very good communications were observed. This surveillance requires coordination between several stations and was well conducted.

4.0 ENGINEERING (37700, 93702)

4.1 Control Room Ventilation Single Failure Vulnerability

On July 9, 1993, NYPA determined that the control room ventilation system was susceptible to a single failure. Specifically, while reviewing industry operating experience data concerning control room ventilation systems, NYPA identified that their system contains locked open bypass dampers around the inboard supply and exhaust dampers. These bypass dampers appear in the FSAR, but not the controlled system drawing. In addition, they were not lined up or manipulated in the ventilation system operating procedure. These bypass dampers appear to have been locked open since initial operation. Consequently, if the outboard ventilation valve should fail to close in a control room isolation, control room integrity would be breached. NYPA addressed this potential adverse condition by placing the control room ventilation control switch in "isolate". This shuts the supply and exhaust

dampers and provides make-up air through the emergency supply dampers and fan which have no bypasses. The control room ventilation system remains in this configuration pending further analysis, testing, or potential modification.

NYPA review also determined that their NUREG 0737, item III.D.3.4, Control Room Habitability, response did not show the bypass dampers on the ventilation figures or account for them in the leakage rate analysis. Additionally, the leakage rates for the isolation dampers used in the analysis were erroneous. Specifically, a value of 15 standard cubic feet per minute (scfm) leakage was used in the analysis. The actual value is 15 scfm per square foot opening or 180 scfm for the supply isolation dampers and 93.75 scfm for the exhaust dampers. NYPA plans to gather accurate leakage rate data through testing and reperform the control room habitability analysis. A revised NUREG 0737 control room habitability analysis submittal will then be made. The inspector reviewed the action plan to resolve this issue and concluded that NYPA's handling of this problem, to date, has been appropriate. An unresolved item (URI 93-14-03) has been assigned to this issue to track NYPA's reanalysis efforts and to ensure NRC followup and review of the results.

5.0 PLANT SUPPORT (64704, 81700, 82701, 83750, 93702)

5.1 Radiological Controls

During a plant tour on July 27, with the Region I Regional Administrator, among other areas, the east and west reactor building crescent areas were inspected. The inspectors noted that material and radiological conditions had declined from previous walk-throughs in these areas. Specifically, lighting was poor (burned out light bulbs), some small valve handles were loose or missing, dirt and debris was on the floor and protective clothing (cotton liners, gloves, booties, and rubbers) were required, when previous walk-throughs did not require them. The inspectors noted that these observations indicated a declining radiological performance and housekeeping trend in this area of the plant.

The Resident Manager and his staff acknowledged these observations and indicated appropriate actions would be taken to reverse this perceived performance trend and to improve housekeeping in the reactor building crescent areas.

5.2 Emergency Preparedness

On June 30, NYPA conducted a practice emergency plan drill with limited participation by offsite emergency response organizations. The inspector witnessed various aspects of the drill and noted that the simulator was used for the first time by the operations crew and drill coordinators. The use of the simulator appeared to have gone well. Plant Gaitronics (public address and alarms) cannot be initiated from the simulator, but the inspector noted good coordination between the control room crew and the drill crew to make the necessary plant-wide announcements. The inspector observed good overall performance by the plant staff for this emergency plan drill.

5.3 Security

5.3.1 Protected Area Boundary Walkdown

The inspector walked down the site protected area boundary including the temporary protected area boundary around the construction site for the new administration building. All boundaries were in accordance with the approved security plan and security guards were found to be fully alert and knowledgeable. One potential vulnerability was noted by the inspector and NYPA took immediate action to strengthen this area. In general, NYPA has a strong program for deterring protected area boundary penetrations.

5.3.2 New Control Room Access

On July 31, NYPA commenced construction activities to provide a control room access point from the new administration building. The inspectors reviewed compensatory fire protection and security measures with station management prior to the commencement of construction. The compensatory measures were subsequently verified by the inspector after the control room boundary was breached. The inspectors identified no problems with this activity.

5.4 Review of Temporary Instruction 2515/112 - Review of Temporary Instruction 2515/112, Licensee Evaluation of Changes to the Environs Around Licensed Reactor Facilities

The objective of this inspection was to determine what programs, if any, are being implemented to evaluate changes in population density or other changes to the site environment with respect to plant offsite response and the emergency plan and to determine if the Final Safety Analysis Report (FSAR) is being updated to reflect these changes. The inspector determined that the only procedural requirement for a site environs review is in administration procedure AP-02.03, Control and Distribution of Emergency Plan and Procedures, which requires an annual review of the emergency plan by the Emergency Planning Coordinator (EPC). This review would identify any changes that needed to be made to the emergency plan due to changes in the site environment. Based on interviews, the EPC remains cognizant of changes through informal discussions with Oswego County officials and Niagara Mohawk utility officials. Niagara Mohawk operates a two unit nuclear facility adjacent to FitzPatrick and the two utilities share information of mutual interest. Additionally, NYPA participates in periodic meetings with state and local officials to discuss emergency planning issues. Consequently, although there is no proceduralized or formal dedicated survey of the site environs, the EPC remains aware of the salient facts and annually decides, based on his judgement and experience, whether an update to the emergency plan is appropriate.

The inspector verified that updates based on changing demographics have been made and that these updates were forwarded to the NRC. For example, in February 1992, new evacuation travel time estimates were calculated based on 1990 census data. These new time estimates

include a scenario during Harborfest, which is a four-day annual waterfront festival started in 1988, which draws a large number of visitors to the area.

While the emergency plan has been updated, the FSAR has not. The original Chapter 2, Site and Environment, of the FSAR was issued in July 1972 and has not been updated since. The population estimates in the FSAR were projections based on 1970 census data, and no reviews have been conducted to determine if these projections are still adequate. NYPA intends to transfer the responsibility for updating Chapter 2 of the FSAR from licensing to the corporate emergency planning group. Corporate emergency planning has easier access to pertinent site environmental information and will update the FSAR with more current information.

At the conclusion of the inspection period, NYPA acknowledged the need to evaluate the necessity for a more formal program. However, the processes which are currently in place have been sufficient to address the changes in the local area environs.

6.0 REVIEW OF WRITTEN REPORTS (92700, 90712)

6.1 Special Report 93-004: Fire Barrier Penetration Seal Nonfunctional for Greater than Seven Days

This special report was submitted due to a penetration seal being inoperable for greater than seven days. On April 22, 1993, a fire barrier penetration seal between the turbine building and the West cable tunnel was opened as part of a plant modification. This penetration was assigned to a roving fire watch for periodic observation. On April 28, 1993, the seal was installed and the shift supervisor was informed that the seal was operable. The fire watch was secured, but it was subsequently determined that no post-work testing had been done. On April 29, review of the seal data sheets revealed that the penetration did not meet the required fill criteria. The firewatch was reestablished and the penetration was reworked and declared operable on May 3, 1993. NYPA's short term corrective action was to sensitize shift supervisors, Work Control Center personnel, and penetration sealers to the importance of post-work testing. NYPA's long term corrective action is the creation of a penetration breach permit system to establish stronger administrative controls for maintenance of fire seals. The inspector determined that NYPA's response to this issue was appropriate. However, the inoperable fire barrier penetration and the lack of compensatory firewatch for approximately 24 hours between April 28 and 29, is a violation of Technical Specification (TS) 3.12.F.2. Because this event was identified by the NYPA staff, of low safety significance, appropriately reported, and the corrective actions were prompt and thorough, this TS 3.12.F.2 violation was not cited in accordance with the provisions of 10 CFR 2, Appendix C, Section VII.B.1 of the Enforcement Policy.

6.2 LERs Reviewed

The following LER was reviewed:

- LER 93-009, Low Reactor Water Level Scram due to Feedwater Transient, dated May 19, 1993. This event was reviewed in inspection reports 93-10, section 2.3, and 93-12, section 2.3.

The inspector found the above LER written in clear and concise terms and NYPA's corrective actions, when warranted, appropriate and complete.

7.0 MANAGEMENT MEETINGS (30702, 71707)

As discussed in section 1.2 of this report, a public meeting between the NRC and NYPA was held on July 28, 1993 to discuss the SALP report (50-333/92-99).

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.