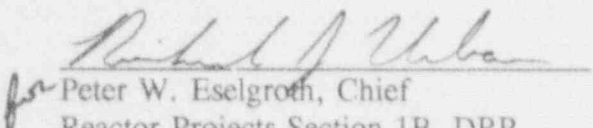


U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No.: 92-11
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: May 24, 1992 through June 27, 1992
Inspectors: W. Cook, Senior Resident Inspector
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Approved by:  7/23/92
for Peter W. Eselgroth, Chief Date
Reactor Projects Section 1B, DRP

Inspection Summary: Routine NRC resident inspection of plant operations, radiological controls, maintenance, surveillance, engineering and technical 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

NRC Region I Inspection Report No. 50-333/92-11

May 24, 1992 - June 27, 1992

Plant Operations

The unit was in a refueling outage with the core off-loaded throughout the inspection period. The inspectors noted that the auxiliary operators conducted thorough rounds and maintained complete and accurate logs. Also, NYPA followup of Information Notice 92-30 was considered to be appropriate. The inspectors noted good operator response to a loss of power to four 600 volt electrical busses.

Radiological Controls

Good adherence to proper radiological practices was observed during inspector monitoring of maintenance and operations activities. The inspectors noted good radiological control of drywell and refuel floor activities. NYPA's response to an incident involving radioactive contaminated material found outside the restricted area was prompt and thorough.

Maintenance

The inspectors noted acceptable performance in the area of maintenance. During inservice testing (IST) of piston check valves, NYPA discovered the disc return spring missing from two VELAN check valves in the A core spray keep-fill system. NYPA plans to expand the scope of the IST to include all VELAN check valves in the A and B core spray keep-fill systems. Resolution of this issue was not complete by the end of the inspection period. The inspector considered this an unresolved item (URI 92-11-01).

Surveillance

The inspectors noted acceptable performance in the area of surveillance testing.

Emergency Preparedness

Portions of an emergency preparedness practice drill were observed by the inspectors. The inspectors concluded that the drill was effective as a training exercise and that the post-drill critique was comprehensive. The inspectors noted good communication and coordination of activities in the Technical Support Center (TSC) and Emergency Operations Facility (EOF).

Executive Summary (Continued)

Security and Safeguards

The inspectors noted good performance in the area of security.

Engineering and Technical Support

The inspectors reviewed and closed two Diagnostic Evaluation Observations (DEOs) which were properly reviewed and resolved by NYPA staff. The inspectors found the safety evaluation prepared to support emergency diesel generator (EDG) ground testing to be thorough and the technical support provided by the corporate engineering staff on the matter to be good. The inspectors noted good site engineering participation in the resolution of high vibration problems with the A standby gas treatment fan.

Safety Assessment/Quality Verification

The inspectors reviewed a number of Licensee Event Reports (LERs) that were written and submitted in accordance with 10 CFR 50.73. However, both LERs were examples of events where untimely and/or ineffective corrective actions to previous similar events resulted in recurrence. The inspectors reviewed a number of departmental critiques and found them to be thorough. One critique involved the accidental removal from service of both reactor building ventilation radiation monitor sample pumps, contrary to Technical Specification 3.1. This violation was not cited because NYPA promptly identified, and thoroughly investigated and corrected the problem. The inspector concluded that station management's initiatives to minimize shutdown risk were effective and commendable.

The Plant Operations Review Committee meetings consisted of generally effective discussions and thorough reviews of topics presented. Observation of a monthly project meeting concluded the discussions were purposeful with broad participation by those in attendance.

DETAILS

1.0 SUMMARY OF FACILITY ACTIVITIES

1.1 NYPA Activities

During this inspection period, the plant remained in cold shutdown with the core off-loaded to support the 1992 refueling outage activities. Major work tasks completed or in progress during the inspection period included A and C emergency diesel generator maintenance, various motor operated valve maintenance and testing activities, ATTS relay replacement, and shroud head bolt replacement.

During the week of June 15, NYPA's FitzPatrick Results Improvement Program (RIP) Self-Assessment Team conducted a review of the status and effectiveness of RIP issues. The preliminary results of this review were discussed with NYPA's Nuclear Leadership Team on June 23.

1.2 NRC Activities

The inspection activities during this report period included inspection during normal, backshift and weekend hours by the resident staff. There were 18 hours of backshift (evening shift) and 16 hours of deep backshift (weekend, holiday and midnight shift) inspections during this period.

On May 28, NRC representatives met with NYPA staff at the NRC Headquarters in Rockville, Maryland to discuss the new FitzPatrick fire hazards analysis and potential exemptions necessary as a result of this analysis. The meeting was open to the public.

On June 9, the Regional Administrator, Region I, Thomas T. Martin, visited the facility to meet with the site General Managers and tour the plant. The visit also included brief discussions with NYPA senior management via teleconference and with several department supervisors regarding departmental improvement initiatives.

On June 12, the NRC issued Inspection Report 92-08 which outlined the results of the requalification program evaluation and examination conducted during the weeks of May 11 and May 18, 1992. Based on these results, and NYPA's corrective actions taken in response to Confirmatory Action Letter No. 1-91-010, the Region I Regional Administrator issued a letter on June 12 to NYPA management finding the IR requalification program satisfactory.

On June 12, NYPA management representatives met with NRC staff in the Region I office in King of Prussia, Pennsylvania, to discuss the FitzPatrick startup plan and schedule, and the self-assessment efforts being conducted by NYPA in preparation for startup from the 1992 refueling outage. This meeting was open to the public and was attended by two individuals representing Pacific Nuclear Corporation.

On June 16, NRC Region I issued the Systematic Assessment of Licensee Performance (SALP) for FitzPatrick. A management meeting was held with NYPA on June 29 at the FitzPatrick Training Center.

On June 24, an enforcement conference concerning fire protection program deficiencies and 10 CFR 50.9 issues regarding correspondence on the emergency service water system was held in the NRC Region I office in King of Prussia, Pennsylvania.

2.0 PLANT OPERATIONS (71707,71710,93702)

2.1 Routine Plant Operations Review

During the inspection period the inspectors observed control room activities including operator shift turnovers, shift crew briefings, panel manipulations and alarm response, and routine safety system and auxiliary system operations conducted in accordance with approved operating procedures and administrative guidelines. The inspectors made independent verification of safety system operability by review of operator logs, system markups, control panel walkdowns and component status verifications in the field. Discussions were held with operators and technicians in the field to assess their familiarity with current system status and personnel response to events during the inspection period. In addition, during plant tours, inspectors reviewed routine radiological control practices. The activities inspected were acceptable.

2.1.1 Operational Safety Verification

The inspector conducted partial control room and in-plant walkdowns of the following systems:

- B and D emergency diesel generators
- A and B standby liquid control
- B emergency service water
- B core spray

No significant problems were noted.

2.2 Engineered Safety Feature Walkdown of B Core Spray System

On June 25, 1992, the inspectors conducted a detailed walkdown of the accessible portions of the B core spray system to verify availability. Normal system lineups (i.e., valves, switches, power supplies) were verified correct using Operating Procedure (OP)-14 and core spray system flow diagrams. The system condition was found to be adequate including housekeeping, labeling, control of flammable materials, valve/system leakage, and instrumentation. Minor disparities between the flow diagram and actual system configuration were noted; however, the inspector concluded that the B core spray system was properly maintained with no observable problems impacting system performance or availability.

2.3 Information Notice 92-30 Followup

On June 4, the Resident Manager discussed with the inspector the final results of their audit of auxiliary operator logs and plant tours (reference inspection report 50-333/92-09). The Resident Manager stated that no evidence was found of auxiliary operators (AOs) falsifying their log sheets or not performing their required rounds.

During this period, the inspectors accompanied a number of different auxiliary operators on their rounds. The purpose of accompanying AOs on their rounds was to determine if practices of individuals performing these rounds and log entries are such that there is a potential for record falsification to occur (reference NRC Temporary Instruction (TI) 2515/115 and Region I TI 92-01). The inspectors noted that the AOs conducted thorough rounds and maintained complete and accurate logs. The AOs were knowledgeable of plant and system status and were familiar with acceptable equipment operating parameters and conditions. The AOs were also knowledgeable of management expectations regarding the maintenance of complete and accurate logs and adherence to procedures. The inspectors reviewed previous log sheets for the specific rounds and found no inconsistent or inaccurate entries. The inspector considered NYPA's initial response to Information Notice 92-30 to be appropriate.

The inspector noted that a Diagnostic Evaluation Team (DET) observation had not been corrected and continues to hinder the AOs during their performance of rounds. Specifically, the reactor building AOs were required to enter contaminated areas twelve times to complete the rounds, five of which were only to verify that high radiation area doors were locked. Each of these entries into contaminated areas requires the AO to change into and out of protective clothing and then frisk for contamination. This process is time consuming, is not a good ALARA (as low as reasonably achievable) practice, and detracts from the AO's ability to effectively monitor plant equipment performance. The inspector discussed this observation with the Resident Manager and his staff. They agreed to review this concern and take appropriate action.

2.4 Diagnostic Evaluation Team Observation Followup

2.4.1 (Closed) DEO.OPS.041

This diagnostic evaluation observation identified that the site evacuation and fire alarms in the main control room were too loud. The Diagnostic Evaluation Team (DET) was concerned that the high noise level of the alarms could distract operators and impact their ability to utilize emergency operating procedures to communicate, monitor, and evaluate the plant's response during an emergency. On May 29, 1992, the inspector witnessed the weekly performance of Operating Procedure F-OP-63, Intra-Plant Communication System. During this test, NYPA measured the auditory signal intensities of the fire, station, and evacuation alarms in the control room. The auditory intensity of these alarms were measured as follows:

<u>Alarm</u>	<u>Auditory Intensity (dBA)</u>
Fire	78-81
Station	78
Evacuation	78

The maximum intensity specified in Section 6.2.2.6, Signal Intensity, of NUREG 0700, Guidelines for Control Room Design Reviews, specifies auditory signal intensities should not exceed 90 decibels, except for the evacuation signals, which may be up to 115 decibels. The inspector reviewed NYPA's results recorded during the performance of F-OP-63, and concluded that they were within the guidelines of NUREG 0700. DEO.OPS.041 is closed.

2.5 Partial Loss of Onsite Power

On June 23, 1992, at 5:46 a.m., 4160 volt AC non-vital power supply breaker No. 10340 tripped, causing a loss of power to four 600 volt electrical busses primarily associated with non-vital loads in the reactor and turbine buildings. Normally, this breaker supplies busses L13, L23, L33 and L43; however, at the time of the breaker trip, L33 and L43 were being supplied through a cross-tie to busses L34 and L44, respectively. Additionally, busses L13 and L23 were cross-tied to busses L14 and L24, respectively, due to supply breaker maintenance in progress. Loss of power to these busses caused a loss of both trains of reactor building cooling water pumps, both trains of reactor building cooling fans, both trains of spent fuel pool cooling pumps, and power to the site's security computer. Loss of reactor building cooling water and cooling fans caused an actuation of the emergency service water system and a secondary containment isolation, as expected. These required a four-hour non-emergency notification to the NRC per 10 CFR 50.72 due to automatic actuation of engineered safety features. The loss of cooling to the spent fuel pool was not an immediate concern because the plant has been shut down for over six months and decay heat was low, even with the core completely off-loaded. Appropriate compensatory measures were taken for the degraded security systems, and site access for non-essential personnel was suspended for several hours.

Maintenance troubleshooting revealed the problem to be associated with a fault in the transformer (T5) supplying busses L13 and L23 (due to the cross-tie). The transformer was isolated and power was restored to all systems by the middle of the afternoon. At the end of the inspection period, plant management was evaluating either rewinding or replacing the damaged transformer. Plant personnel suspect that the transformer (original plant equipment) possibly failed due to being overloaded. Due to this concern, plant personnel are closely monitoring other associated transformers for potential overload conditions.

The inspectors were in the control room shortly after the transformer failure and concluded that the operators responded to the event appropriately. They verified proper plant response and took actions as necessary, made the appropriate notifications, isolated the effected busses for maintenance troubleshooting, and restored power to the busses in an orderly, well-planned, and prioritized manner. Since spent fuel pool cooling was a primary concern, the associated busses for restoration of this system were the first priority. The temperature of the spent fuel pool was monitored during the loss of cooling period, with no increase observed. Additionally, the inspectors observed good plant management involvement in control room activities, especially with regards to possible Emergency Plan entry, which was not necessary for this event.

3.0 RADIOLOGICAL CONTROLS (IP 71707)

The inspector observed routine radiological work practices during observation of various maintenance and operations activities and in routine tours of the plant. In general, radiological workers appeared well-trained and were observed to be using appropriate radiological work practices (i.e., bagged tools and other items, as required, maintained work areas clean, removed protective clothing properly, dosimetry worn properly, and radiological postings obeyed). The health physics technicians were observed to generally give good pre-job briefings and maintained close surveillance over the work activities in their assigned areas. The radiological work areas, in general, were well maintained (i.e., clean with appropriate radiological postings). However, the inspector noted instances when the protective clothing laundry receptacles were overfilled at the radiological control points. The inspector informed station management of the condition and prompt corrective action was taken.

3.1 Drywell Radiological Controls

During a tour of the reactor and turbine buildings on June 5, the inspector conducted an independent radiation survey of the drywell control point area. Using a site radiological and environmental services (RES) department hand-held radiation survey meter (RSO-50), the inspector measured radiation dose rates at the entrance to the drywell, the control point desk, the control point step-off pad, and within the boundaries of the contaminated staging area at the entrance to the drywell. The measured radiation dose rate readings were all two mR/hr or less. No radiation streaming was identified. The inspector reviewed a June 2, 1992 radiation/contamination survey with the responsible RES day-shift supervisor and confirmed that the most recent survey data was the same. The inspector noted good contamination control

practices at the control point and good radiation protection staff oversight of activities. Satisfactory radiological conditions were noted during the remainder of the tour of the restricted area. Tour observations were discussed with the RES superintendent.

On June 19, another inspector reviewed the contamination control practices at the drywell control point and the radiation protection staff oversight of activities within the drywell. The radiologically controlled area was found to be generally well-maintained with clear and appropriate radiological postings. The access point to the contaminated area was well-marked and provided the necessary receptacles for contaminated trash and used protective clothing. The inspector noted good contamination control practices at the control point. Pre-job briefings conducted by the radiation protection staff at the drywell control point were excellent. These briefings included thorough review of the Radiation Work Permit requirements, the radiation/contamination surveys, and designated ALARA areas within the drywell. The inspector reviewed work activities on all elevations of the drywell and determined that radiation protection staff oversight of activities in the drywell was appropriate. No unacceptable conditions were noted.

3.2 Refuel Floor Activities

The inspector observed portions of the reactor shroud head bolt replacement being performed in accordance with modification package F1-86-122. The process involved removal of the existing shroud head bolts from the reactor cavity, transport of these bolts to the spent fuel pool for storage, and installation of new shroud head bolts. The individuals performing this evolution were briefed on the dose rates expected from the shroud head bolts and instructed of measures to be taken to ensure that their exposure was ALARA. Furthermore, a camera surveillance system was installed to assist radiation protection and work supervisory personnel monitor the evolution from a remote location in accordance with ALARA principles. The inspector observed that two radiation protection technicians provided timely dose rate information during the bolt replacement process. Another radiation protection technician provided oversight of refuel floor activities and refuel floor access control. An INPO radiation protection specialist provided assistance with contamination control and dose rate reduction efforts. The inspector observed good job planning and a generally careful and cautious approach to coordinating this evolution. The radiation protection technicians were observed to give good pre-job briefings and maintained close surveillance over the work activities. The inspector concluded that the workers and radiation protection technicians were working well together to ensure safe and appropriate radiological work practices during this evolution.

3.3 Radioactive Material Found Outside the Restricted Area

On June 3, 1997, a maintenance mechanic discovered that scaffolding erected in the residual heat removal service water (RHRSW) pump room to support maintenance on RHRSW strainer 10STR-5A had "radioactive material" stickers affixed to it. Recognizing that the RHRSW pump room is not a restricted area, and thus should be free of radioactive material, the mechanic immediately notified the Radiological Controls and Environmental Services (RES) department. Radiological surveys were conducted and the results indicated that the scaffolding was indeed contaminated (< 1000 dpm/100 cm²; up to 600 cpm (corrected)-fixed). The contaminated scaffolding was disassembled and returned to an acceptable storage area. Radiological surveys of the individuals responsible for erecting the scaffolding and numerous unrestricted areas identified no spread of contamination as a result of this event. Furthermore, an extensive inspection of the site resulted in no additional cases of radioactive material located in an unrestricted area. The root cause analysis and corrective action plan was being documented in Radiological Incident Report 92-032. Although the root cause analysis and corrective actions were not complete before the end of the inspection period, the inspector noted that the investigation and corrective actions taken to date were prompt and thorough. In addition, management attention to radiological controls performance concerns was evident and appears to be well-focused.

3.4 Previously Identified Inspection Items Followup

3.4.1 (Closed) Violations 90-12-02 and 90-12-03

These violations were issued in connection with an incident that involved personnel contaminations while handling a high specific activity liquid Na-24 tracer source. The violations cited failure to prepare adequate procedures, failure to follow existing procedures, and failure to instruct the workers in proper precautions to take when handling the source.

NYPA has modified the manner in which such projects are planned and implemented. The modifications involved better reviews of the proposed work, better ALARA reviews, and improved worker training and briefing. Implementation of similar special projects will be reviewed during future inspections to ensure that these corrective actions resulted in programmatic improvements. These violations are closed.

3.4.2 (Closed) Violation 90-17-01

This violation was issued because NYPA had improperly suspended parts of their radiation and contamination surveillance program due to personnel shortages. The immediate corrective action was to resume implementation of the suspended parts of the program. Long term corrective actions involved review of the Radiation Protection Manual and the applicable implementing procedures to ensure that necessary deviations from procedural requirements are properly justified and approved. This violation is closed.

3.4.3 (Closed) Violation 90-17-02

This violation cited the failure to have certain radiological controls procedures reviewed by the Plant Operations Review Committee (PORC), as required by Technical Specifications. NYPA has modified their review process to ensure that procedures are reviewed by PORC. Procedures directly affecting work in the radiological controls areas were reviewed first by PORC. These procedures included radiation work permit generation, the radiological surveillance program, conduct of surveys, and similar procedures. The remaining procedures will be reviewed by PORC as they undergo the routine periodic review and revision. Approximately 60 procedures have gone through this process, to date. Progress in this area will continue to be monitored during future inspections. This violation is closed.

3.4.4 (Closed) Violation 90-17-03

This violation cited the failure to specify the required monitoring frequencies on some radiation work permits (RWPs) used for work in high radiation areas. The immediate corrective action was to specify these frequencies on the affected RWPs. Long term actions involved modifying the RWP program to include these requirements. This violation is closed.

4.0 MAINTENANCE (IP 62703)

4.1 Observation of Maintenance Activities

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 QC involvement, and appropriate equipment alignment and retest. The following activities were observed:

- Work Request 501405, C emergency diesel generator, power assembly. This work request was initiated to perform a complete power assembly overhaul on the C emergency diesel generator. Various portions of this maintenance activity were observed. The inspector noted that WACP 10.1.23, System Internal Cleanliness Control, was appropriately implemented during this maintenance task. Procedure compliance and work practices were acceptable.
- Work Request 84116, C emergency diesel generator, air start motor exhaust lines. This work request was initiated to remove the air start motor exhaust lines. These lines had been previously retired in place. Various portions of this maintenance activity were observed. Procedure compliance and work practices were acceptable.

4.2 Missing Springs in Core Spray Systems Check Valves

On May 28, 1992, NYPA performed MP 59.45, Maintenance Procedure for Piston Check Valves (IST), on the A core spray holding pump (keep-fill) minimum flow check valve 14 CSP-62A and discovered that the disc return spring was missing. Plant drawing 11825-6.38-12, Rev. F identifies 14CSP-62A as a valve manufactured by VELAN (Model W5-234B-2TY) and shows a disc return spring installed. Because of the discrepancy between the drawing and actual valve internal configuration, the scope of the inservice testing was expanded to include a similar VELAN check valve in the A core spray keep-fill system, 14CSP-76A, and the corresponding valves in the B core spray keep-fill system. NYPA subsequently performed MP 59.45 on 14CSP-76A and discovered that the disc return spring for this valve was also missing. NYPA initiated an investigation to identify the root cause and evaluate the safety significance of the missing disc return springs. The scope of the inservice testing has been further expanded to include all (8) similar VELAN check valves in the A and B core spray keep-fill systems. Furthermore, eleven similar VELAN piston check valves in other plant systems have been inspected during the 1992 refueling outage with no spring deficiencies noted. Adverse Quality Condition Report (A.QCR) 92-222 was initiated by NYPA to document the root cause analysis and corrective actions. Resolution of this issue was not completed by the end of the inspection period. Pending completion of NYPA actions and NRC review, this is an unresolved item (URI 92-11-01).

5.0 SURVEILLANCE (61726)

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:

- ISP-94, Reactor Protection System Electrical Protection Assembly Functional Test/Calibration.
- ISP-150AR, RCIC (ATTS) Relay and Transistor Replacement Trip Card Lead Inspection and Functional Test.
- OP-63, Intra-Plant Communication System
- ST-7D, Standby Gas Treatment Fan and Valve Exercising (IST).

During the observation of these activities and review of the test records, the inspector verified the proper performance of the surveillance, the use and adherence to approved procedures, the required administrative controls, and the calibration of test equipment. The inspector independently verified test data, where practicable. The level of supervisory oversight, the detail of the test review process, the documentation of material and procedural deficiencies, and corrective action implementation were also reviewed for adequacy. The inspector identified no significant findings and concluded that these activities were effective with respect to meeting the safety objectives of the surveillance program.

6.0 EMERGENCY PREPAREDNESS

On June 10, 1992, plant personnel conducted an emergency preparedness practice drill. The drill was used as a training exercise for personnel new to certain key positions. Portions of this drill were observed by the inspectors from the Technical Support Center (TSC) and the Emergency Operations Facility (EOF). The drill began at approximately 7:00 a.m., and was concluded at approximately 1:00 p.m. A drill critique was held after the conclusion of the drill. The inspectors noted that the scenario developed at a fairly slow rate, as intended, which created a good pace for training purposes. Plant management concluded that the drill was successful as a training exercise since personnel performed well in positions new for them. However, they noted that more work should be done by management, especially those new in some positions, to ensure that events will be handled more efficiently and effectively.

The inspectors concluded that the drill challenged the personnel involved and was effective as a training exercise. The post-drill critique was comprehensive, with good involvement from personnel involved. In the TSC, the inspectors noted that status boards were effectively used, updated and displayed. This was previously noted as an area for improvement during the 1991 annual emergency preparedness exercise on August 7, 1991, as noted in NRC Inspection Report 50-333/91-13. Additionally, the inspectors observed that the TSC Manager effectively used the plant paging system to frequently update plant personnel on conditions in the plant and actions being taken to address them. In the EOF, the inspector noted that the Emergency Director (ED) displayed good command and control. The ED held frequent meetings with the General Managers and EOF staff to ensure that information was accurate and up-to-date. The ED also gave frequent and detailed EOF staff briefings. EOF personnel made good use of safety parameter display system (SPDS) data and status boards for accident assessment. The inspector noted that NYPA effectively utilized the drill to enhance the communication, coordination, and evaluation processes among the ED and EOF staff members; several of which were new in their roles.

7.0 SECURITY AND SAFEGUARDS (71707)

The inspector monitored the searching of packages and personnel entering the protected area on several occasions. The inspector conducted a walkdown inspection of the protected area barrier including the protected area fence around the construction site for the ongoing construction of the new administrative building. The inspector also monitored security access control for the drywell. The inspector concluded all areas reviewed were acceptable with the required security force support for the monitored activities.

8.0 ENGINEERING AND TECHNICAL SUPPORT (93702)

8.1 Diagnostic Evaluation Team Observation Followup

8.1.1 (Closed) DEO.ENG.026

This diagnostic evaluation observation identified degraded intake flow reversal capability due to excessive sand and silt deposit buildup in the reverse flow tunnel, inadequate surveillance of the reverse flow gate, and inadequate design of the crane used to reposition the intake gates. By letter dated February 18, 1992, NYPA committed to remove the sand and silt from the reverse flow tunnel during the 1992 refueling outage. NYPA also committed to perform a test designed to verify operability of the intake gates, place the system in the reverse flow lineup, and evaluate the feasibility of using reverse flow for thermal backwashes to kill zebra mussels in the intake. Future intake inspections, cleaning, and periodic surveillance testing will be conducted to maintain the operability of the reverse flow tunnel. NYPA also concluded that the non-safety related power supply for the intake gate crane is part of the plant's original design and is acceptable because reverse flow capability is not a safety-related function. This reverse flow design feature, although not reconsidered by NYPA or the NRC to be a part of the plant's design basis, provides operational flexibility in the event that large masses of ice are drawn into the intake structure and block over 90% of the intake area.

NYPA conducted the de-silting operation in accordance with Work Request 88348. NYPA de-silted the reverse flow tunnel, a large portion of the circulating water forebay and back bays (service water, RHR service water, emergency service water, and fire protection). Subsequent testing will verify reverse flow system operability prior to startup from the 1992 refueling outage.

The inspector concluded that NYPA has completed a satisfactory review of this issue and that the corrective actions are appropriate. Furthermore, the NRC Office of Nuclear Reactor Regulation (NRR) reviewed NYPA's evaluation of the adequacy of the power supply for the intake gate crane and determined it was acceptable. DEO.ENG.026 is closed.

8.1.2 (Closed) DEO.ENG.015

This diagnostic evaluation observation identified that temperature control valve (TCV) 67TCV-142 has excessive external corrosion. This TCV is designed to regulate cooling water flow through cooling coil E-14 in the east electric bay. However, to maximize flow through cooling coil E-14, a jumper (No. 87-304, dated September 14, 1987) has been installed which maintains the valve in the open position. The inspector also noted that since 67TCV-142 will no longer be used to regulate cooling water flow, a modification (M1-88-049) is being prepared to permanently remove the valve from service.

NYPA maintenance personnel inspected 67TCV-142 and determined that it is in good condition with no indications of structural degradation. The inspector independently verified the condition of the valve and concluded that NYPA had completed a satisfactory review of this issue. DEO.ENG.015 is closed.

8.2 Emergency Diesel Generator Susceptibility to DC Grounds on the 125 VDC Distribution System

Each emergency diesel generator (EDG) is provided with a static excitation system and engine speed governor control system. The 125 VDC system supplies power to the engine speed controller on each EDG. The engine speed control is accomplished by an electro-hydraulic governor (Woodward EGB Type), a speed controller (Woodward EGM Type), and a speed pick-up sensor. In "Normal", the speed controller/governor system is isochronous and functions to maintain constant speed (frequency) and load share between two paralleled EDGs under varying load conditions. When operating in "DROOP", the EDGs are loaded by the grid and the function of the governor is to control EDG load as the grid holds EDG speed (frequency) essentially constant.

On May 6, 1992, NYPA concluded that all four emergency diesel generators were susceptible to failure in the event of grounds on their respective safety-related 125 VDC battery bus. Testing already performed by NYPA had shown that the EDGs, when paralleled to off-site power and with grounds on their speed controller 125 VDC supply, exhibit kilowatt oscillations (with frequency held constant). The oscillations may impact EDG reliability or result in improper operation of the electrical equipment being supplied. In order to quantify the effect of credible grounds on EDG performance, NYPA developed a special test procedure, STP-93M, EDG Full Load Test with Grounds on DC System. STP-93M was designed to provide data necessary to determine EDG susceptibility to grounds on the 125 VDC system and quantify the ground/oscillation relationship. Based on the results of this test, NYPA will determine appropriate corrective action. The inspector reviewed the nuclear safety evaluation (JAF-SE-92-098) prepared to support EDG testing in accordance with STP-93M. The inspector found this evaluation to be thorough and had no further questions. Furthermore, the inspector noted that technical support provided by the corporate engineering staff (NED-Electrical Group) in addressing this matter was good. Testing and resolution of this EDG ground concern was not completed by the end of the inspection period. This issue was being tracked as a core reload restraint by NYPA.

8.3 Performance Monitoring/Inservice Testing

On June 1, 1992, during bearing temperature and vibration surveillance testing on the A standby gas treatment (SBGT) fan, the performance engineering department (PED) found that fan vibration exceeded the vendor recommended shutdown level. The A SBGT fan was subsequently declared inoperable and maintenance activities were initiated in accordance with Work Request 095816. The PED attributed the high vibration condition to the loosening of the fan foundation nuts. Based on this analysis, maintenance activities were concentrated on checking the shims, tightening the foundation nuts, and applying lock-tite to the foundation mounting bolts to mitigate future loosening of the associated nuts. Post-maintenance testing was subsequently conducted on the fan in accordance with MP-72.1, Buffalo Forge Fan Maintenance. Fan bearing temperature and vibration measurements were found to be acceptable. The inspector found the maintenance and surveillance conducted on the A SBGT fan to be acceptable. The inspector also noted good engineering participation in the troubleshooting and maintenance efforts. The inspector discussed the long term corrective actions being planned by the PED to prevent recurrence of the vibration problem, and found them to be appropriate.

8.4 (Closed) Unresolved Item (90-02-06): Emergency Service Water Operability Concerns Based Upon Review of Generic Letter 89-13 and Observed Silting Problems

NYPA implementation of the recommendations of Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment, dated July 18, 1989, was reviewed in detail and documented in inspection report 92-81. Section 3.3 of the report summarizes the inspection findings in this area. The inspectors concluded that NYPA actions to ensure operability of the emergency service water system were acceptable and satisfy the recommendations stated in Generic Letter 89-13. This item is closed.

8.5 (Closed) Unresolved Item (90-01-06): Review of NYPA's Control on Industry Event Reports and Vendor Notifications

This item was initiated to identify a weakness in the prioritization and timely resolution of industry events and vendor notifications by the FitzPatrick staff. Since the identification of this unresolved item, a number of plant operating events have further demonstrated this weakness. The corrective actions generated from these events and further prompted by NYFA self assessments and third party evaluations include: the review, prioritization and scheduling of outstanding items; a commitment of resources to reduce the backlog of these reviews; and a re-evaluation of a selected sampling of previously closed operating event reviews. These corrective actions are due to be completed prior to plant restart and are being tracked by NYPA as a restart restraint. The NRC staff plans to assess the adequacy of these specific actions prior to unit startup. Consequently, this item is resolved. Assessment of NYPA closure of this issue will be documented in a subsequent report.

8.6 (Closed) Unresolved Item (90-01-07): NYPA to Assess How Corrective Actions for Non-reportable Events are Identified and Reviewed

This item was initiated to highlight a potential weakness in the FitzPatrick events review process. No formal mechanism was in place at the time to ensure non-reportable plant events were appropriately reviewed and assessed for corrective action. In May 1992, the General Manager, Support Services, implemented a screening and tracking program to address this area of problem identification and resolution. This new program was discussed with the inspectors and the events and issues captured by this program are a routine topic of discussion between site management and the resident inspector staff.

Items captured in this new program include operating reports, adverse quality condition reports, radiological incident reports, and contamination incident reports, among others. The status of items and newly generated reports are discussed by the Resident Manager and his direct reports daily. As a result, those items warranting additional management action to ensure proper NRC notification, root cause analysis and/or corrective action development to prevent recurrence are assigned for followup and tracked to final resolution and closeout.

This screening and tracking program is intended to become part of a comprehensive problem identification and resolution program planned to be implemented by NYPA by the end of 1992. This integrated program, as well as the screening and tracking program, are FitzPatrick Results Improvement Program (RIP) action plan items (reference management and organization items M01.3 and M09). The inspector found NYPA actions to address this unresolved item appropriate. This item is closed.

9.0 SAFETY ASSESSMENT/QUALITY VERIFICATION (71707, 93702)

9.1 Review of Licensee Event Reports (LERs) and Special Reports

The following LERs were reviewed and found satisfactory:

- 92-022-00, ASME Class III Pressure Tests Performed for 10 Minutes Vice 4 Hours, dated June 15, 1992.

On April 8, 1992, Quality Assurance (QA) identified a case of incorrect ASME Class III pressure testing of emergency diesel generator support systems (i.e., fuel oil and combustion air piping). Specifically, a 10-minute functional test, allowed by the ASME 1983 Edition, was used to inspect piping for leakage in lieu of a 4-hour inservice test as required by the version of the ASME code committed to within the plant inservice inspection (ISI) program (ASME 1980 with Winter 1981 addenda). Using the later edition of the ASME code was contrary to the surveillance requirements of Technical Specification 4.6.F.1. A similar test deficiency was identified by QA on July 1, 1991, and brought to the attention of NYPA management. However, inadequate corrective actions taken by the ISI coordinator resulted in the 1992 recurrence.

The inspector reviewed NYPA's corrective actions outlined in LER 92-022-00 and determined they were acceptable to address the identified ISI testing deficiencies. However, the inspector considered this 1991 event to be an additional example of untimely and/or ineffective corrective actions taken in response to QA identified deficiencies that were documented in NRC inspection report 92-80 and the NRC Diagnostic Evaluation Team report.

-- 92-025-00, Fire Watches Discontinued or Not Posted When Required, dated June 15, 1992.

During the period between May 1, 1992 and May 22, 1992, NYPA identified that on five occasions, personnel error, inadequate review of documentation, and/or an ineffective equipment status control system resulted in a failure to have a fire watch posted when required. During this period, the plant was shut down and in the cold condition for maintenance and refueling with all irradiated fuel in the spent fuel pool. The inspector reviewed several previous LERs and found that failures to have a fire watch posted when required were reported eight times (LERs 91-002, 91-008, 91-012, 91-017, 92-001, 92-006, 92-010, and 92-019).

The inspector determined that NYPA's corrective actions taken in response to those events were not adequate to prevent recurrence because the associated root cause analyses were too shallow to identify ineffective administrative control and management of the fire watch program as a root or contributing cause. NYPA's root cause analyses of LER 92-025-00 was thorough and identified broader programmatic deficiencies. The associated corrective actions were comprehensive and appeared to adequately address these deficiencies. The inspector considered NYPA's review to be thorough and complete.

9.2 Review of Critiques

9.2.1 JAF-QF-92-188, Critique of Refuel Floor Tool Accountability, dated June 17, 1992.

On June 16, while conducting a tour of the refuel floor, the plant operations manager noted that a pair of binoculars was still logged into the tool accountability area even though these binoculars had already been removed from the area. Further investigation of the Tool Control Log by the operations manager and a Quality Assurance (QA) inspection revealed numerous items logged into the area on various dates and not logged out. The operations manager questioned the adequacy of the Tool Accountability Program and a decision was made by station management to suspend refuel floor operations within the tool accountability area until an investigation and critique could be accomplished.

NYPA conducted an inventory review of the open (logged in, not logged out) items in the tool accountability area and all items were accounted for. Furthermore, a critique of the event, performed by the quality services supervisor, identified several weaknesses in the tool control program and provided recommendations to correct these weaknesses. Recommendations made in the critique included, but were not limited to: establish a single entry/exit point for all tools

and equipment; maintain separate logs for short-term and long-term tools and equipment; and conduct an inventory accountability surveillance at the end of each shift for short-term items and once per week for long-term items. These recommendations were endorsed by the PORC on June 20 and incorporated into Work Activity Control Procedure (WACP) 10.1.23, System Internal Cleanliness Control. Refuel floor operations within the tool accountability area was allowed to resume on June 22. The inspector concluded that NYPA's review and corrective actions were thorough and complete.

9.2.2 Critique IOPS-92-267 (LER 92-023-(X)), Loss of Both Reactor Building Vent Radiation Monitors Due to Operator Error, dated May 11, 1992 (June 4, 1992)

During the current refueling outage, while performing preventive maintenance lubrication of the reactor building ventilation effluent radiation monitor sample pumps, both sample pumps were inoperable for a period of nine minutes. This condition was contrary to Radiological Effluent Technical Specification, Section 3.1, which requires that the reactor building ventilation effluent flow path be continuously monitored for gaseous release to ensure that 10 CFR 20 limits are not exceeded. The cause of this event was attributed to personnel error. Specifically, an auxiliary operator assisting in the preventive maintenance activities, failed to restart the A sample pump prior to de-energizing the B sample pump. Safety significance was minimal because there were no core alterations or fuel movement in progress, and the secondary containment was not required during the nine minute period. Furthermore, the refuel floor ventilation effluent radiation monitors were operable at the time of this event. The inspectors considered NYPA's review to be thorough and complete. This Technical Specification violation will not be subject to enforcement action because NYPA's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the Enforcement Policy.

9.3 Shutdown Risk Management

The daily morning planning meeting is conducted to discuss priority work scheduled for that day, work schedule deviations, and the status of safety systems required by Technical Specifications. Another significant topic of discussion is shutdown risk management. Throughout the 1992 refueling outage, a compliment of emergency cooling, injection, and electrical power systems have been maintained available despite not being required by the Technical Specifications. The inspector observed that shutdown risk management was an integral factor in the scheduling of maintenance activities. On several occasions, maintenance activities on safety systems were postponed because the shutdown risk assessment determined that these activities were undesirable. For example, on one occasion, maintenance and testing on the emergency diesel generators were postponed by station management until predicted severe weather passed. The inspector concluded that station management's initiatives to minimize shutdown risk were effective and commendable.

9.4 Onsite Safety Review Committee Meeting

The inspector observed the Plant Operations Review Committee (PORC) meetings on June 3, June 18, and June 20, 1992. The inspector observed that the PORC members conducted generally effective discussion and a thorough review of the topics presented. The members maintained a critical safety perspective and did not accept proposed procedure revisions or Technical Specification amendment applications on face value. Furthermore, the PORC chairman was generally effective at ensuring that the discussions among the members remained focused during the review process. The use of the new telecommunication system in the PORC process to facilitate augmented engineering and licensing assistance from the corporate office was viewed as a good initiative. The inspector noted good adherence to the Technical Specification PORC quorum and station activity oversight requirements. No unacceptable conditions were noted.

9.5 Project Meeting

On June 17, the inspector attended the monthly project meeting. The project meetings are for corporate and station managers to periodically meet together on site to discuss their current and planned workloads for the purpose of direct face-to-face communications and ensure appropriate coordination and prioritization of effort. The meeting was well-attended by both staffs, including the executive vice president and the majority of his direct reports. Topics of discussion and presentations made during the June 17 meeting included, but were not limited to: outage status; financial status; modifications status; licensing issues; technical issues requiring resolution prior to unit startup; and fire protection improvement program status. Also, a special presentation was given by the Vice President - Nuclear Operations and the Resident Manager concerning the FitzPatrick startup plan and associated self-assessment initiatives. The inspector observed good discussions and broad participation by those in attendance. An emphasis on nuclear safety and improved interdepartmental communication and coordination was evident during discussions of outage activities and engineering modifications.

10.0 MANAGEMENT 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.