ENCLOSURE 1

FINAL REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

REPORT NO. 50-333/91-99

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

ASSESSMENT PERIOD: FEBRUARY 1, 1991 - APRIL 18, 1992

MANAGEMENT MEETING DATE: JUNE 29, 1992

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) is an integrated Nuclear Regulatory Commission (NRC) staff effort to collect observations and data and to periodically evaluate licensee performance on the basis of this information. The SALP process is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. SALP is to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to the licensee's management to promote quality and safety of plant operations.

An NRC SALP Board, composed of the staff members listed below, met on May 21, 1992 to review the collection of performance observations and data and to assess the licensee's performance at FitzPatrick. This assessment was conducted in accordance with the guidance in NRC Manual Chapter 0515, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section IV.D of this report.

This report is the NRC's assessment of the licensee's safety performance at FitzPatrick for the period of February 1, 1991 to April 18, 1992.

The SALP Board was composed of:

Chairman:

W. Hehl, Director, Division of Reactor Projects (DRP)

Members:

W. Lanning, Deputy Director, Division of Reactor Safety (DRS) (Part-time)
J. Durr, Deputy Director, Division of Radiation Safety and Safeguards (DRSS)
R. Capra, Director, Project Directorate I-1, Office of Nuclear Reactor Regulation (NRR)
C. Cowgill, Chief, Projects Branch No. 1, DRP
B. McCabe, Project Manager, NRR
W. Cook, Senior Resident Inspector, DRP
L. Bettenhausen, Chief, Operations Branch, DRS (Part-time)

Others in Attendance:

P. Eselgroth, Chief, Reactor Projects Section No. 1B, DRP
R. Plasse, Resident Inspector, DRP
R. Urban, Project Engineer, Branch No. 1, DRP
J. Tappert, Reactor Engineer, Projects Section 1B, DRP
E. King, Physical Security Inspector, DRSS
W. Pasciak, Chief, Facilities Radiation Protection Section, DRSS

II. SUMMARY OF RESULTS

II.A Overview

The performance of activities at FitzPatrick and the supporting functions provided by the NYPA corporate office for the day-to-day operation of FitzPatrick were conducted in a generally safe manner with respect to public health and safety. However, the level of performance in four functional areas was determined to be only adequate warranting increased NYPA management attention to ensure a continued acceptable level of performance. These four areas were Operations, Maintenance/Surveillance, Engineering/Technical Support, and Safety Assessment/Quality Verification. However, superior performance was demonstrated in the areas of Security and Emergency Preparedness. Improvement was noted in the area of Radiological Controls, however, the good performance observed in this area warrants appropriate management attention to ensure the level of performance in this area continues to improve.

In the area of Operations, overall performance declined from the previous assessment period. This decline in performance was attributed to generally poor management oversight of daily plant activities characterized by lack of action to resolve numerous control room and plant equipment deficiencies, poor oversight of operator requalification training and inadequate oversight and implementation of the fire protection program. In contrast, licensed operator performance was generally good, with minor performance problems involving procedural adherence and attention to detail.

Performance in the Radiological Controls functional area was observed to improve from the previous assessment. The Radiological and Environmental Services (RES) Improvement Plan implemented early in the assessment period resulted in some tangible enhancements in both programs and personnel performance. However, in a few areas, the licensee still demonstrated inconsistent performance.

Overall performance in the area of Maintenance and Surveillance was marked by strengths and several weaknesses resulting in a program that was only adequate. Significant weaknesses in the areas of equipment failure root cause analysis and the preventive maintenance program resulted in repetitive equipment problems this period. Plant material condition was generally poor. Initiatives implemented to enhance the preventive maintenance program were noted near the end of the period. Inservice inspection and inservice testing, along with the Technical Specifications surveillance testing program, continued to be fundamentally sound and well implemented programs

Emergency Preparedness and Security functional areas continued to demonstrate superior levels of performance. Management attention and support of these programs continued to be evident.

Engineering and Technical Support staff performance this assessment period was weak. In spite of efforts to improve in this area by restructuring the engineering organization and augmenting the existing staffs, poor communication and coordination within the organization resulted in weak engineering evaluations, inadequate review of industry events, and poor resolution of emergent safety issues. This poor engineering staff performance was further demonstrated by problems identified in the Appendix R safe shutdown area and in the mixed quality of licensing submittals.

Performance in the Safety Assessment/Quality Verification functional area again was rated only adequate. Near the end of the period, NYPA's commitment to improve overall performance at FitzPatrick and at the corporate office was evident through development of the FitzPatrick Results Improvement Program. However, observed performance did not represent discernible improvement over the entire assessment period.

II.B Facility Performance Analysis Summary

FUNCTIONAL AREA		Rating, Trend Last Period	Rating, Trend This Period
1.	Plant Operations	2	3
2.	Radiological Controls	3	2
3.	Maintenance/Surveillance	2	3↑
4.	Emergency Preparedness	1	1
5.	Security	1	1
6.	Engineering/Technical Support	2	3
7.	Safety Assessment/Quality Verification	3	3

Previous Assessment Period: October 1, 1989 through January 31, 1991

Present Assessment Period: February 1, 1991 through April 18, 1992

PERFORMANCE ANALYSIS

Operations

Analysis

This period this functional area was rated Category 2. Overall performance was good, there a number of automatic reactor scrams and other operational events which r rator inattention to detail. In some instances, corrective actions were ineffectiv urrence. Licensed operator performance was good with respect to understandi ised emergency operating procedures and indicated effective training.

Operations Perfor

Overall, operations pe ed and only rated adequate this assessment period. Operator performance wa owever, management oversight and support in this area were weak. Operating excellent communication and control during unit startups and forced shutdowns. ctor scrams occurred during the SALP period. Control room operators respond vents, with a few exceptions. Early in the period a recirculation pump runb f an uninterruptible power supply were competently and professionally hand ntrol of special evolutions such as the chemical decontamination effort was a d carefully executed.

In contrast to the above, a number of even nnel errors due to inattention to detail and lack of procedural adherence indic improve in this area were not fully successful. Early in the period, procedura failure to properly respond to annunciators contributed to an unmonitored rele . Inadequate control of a temporary modification (test gage), improper tagout tor, improper lineup of an emergency diesel generator fuel oil transfer syste to make appropriate notification for a 115 KV line outage were events of mino , but demonstrated inattention and poor procedural adherence by licensed operations crew members. Near the end of the assessment period, a residual h vas potentially damaged due to a lack of procedural adherence and inadequate a e by control room operators.

Operations management performance, including that of shift supervisor rating event followup and self critiques were much improved over last period. nd lessons learned were formally documented for broad dissemination and operations department. Corrective actions developed from these critique thorough and appropriately implemented. Notwithstanding, a variety of events an SALP period indicated performance lapses and insufficient management oversight. numerous control room and plant equipment deficiencies were allowed to languish

See Revision Sheet

III. PERFORMANCE ANALYSIS

III.A Plant Operations

III.A.1 Analysis

The previous SALP period this functional area was rated Category 2. Overall performance was good, however, there were a number of automatic reactor scrams and other operational events which were caused by operator inattention to detail. In some instances, corrective actions were ineffective in preventing recurrence. Licensed operator performance was good with respect to understanding and use of revised emergency operating procedures and indicated effective training.

Operations Performance

Overall, operations performance was mixed and only rated adequate this assessment period. Operator performance was generally good, however, management oversight and support in this area were weak. Operating crews demonstrated excellent communication and control during unit startups and forced shutdowns. No automatic reactor scrams occurred during the SALP period. Control room operators responded well to plant events, with a few exceptions. Early in the period a recirculation pump runback and a loss of an uninterruptible power supply were competently and professionally handled. Operator control of special evolutions such as the chemical decontamination effort was also well planned and carefully executed.

In contrast to the above, a number of events involving personnel errors due to inattention to detail and lack of procedural adherence indicated that efforts to improve in this area were not fully successful. Early in the period, procedural noncompliance and failure to properly respond to annunciators contributed to an unmonitored release of radioactivity. Inadequate control of a temporary modification (test gage), improper tagout of a radiation monitor, improper lineup of an emergency diesel generator fuel oil transfer system, and the failure to make appropriate notification for a 115 KV line outage were events of minor safety significance, but demonstrated inattention and poor procedural adherence by licensed and non-licensed operations crew members. Near the end of the assessment period, a residual heat removal service water pump was potentially damaged due to a lack of procedural adherence and inadequate annunciator response by control room operators.

Operations management performance, including that of shift supervisors, was weak. Operating event followup and self critiques were much improved over last period. Event critiques and lessons learned were formally documented for broad dissemination and training within the operations department. Corrective actions developed from these critiques were generally thorough and appropriately implemented. Notwithstanding, a variety of events and problems this SALP period indicated performance lapses and insufficient management oversight. For example, numerous control room and plant equipment deficiencies were allowed to languish without a

corrective action prioritization scheme. Some of these deficiencies (i.e., electro-hydraulic control pump oscillations, residual heat removal heat exchanger level problems, offgas system deficiencies, cleanup pump room high temperature, and radwaste processing problems) were insufficiently investigated or inadequately tracked to ensure proper resolution. Shift crew turnovers and log keeping were considered weaknesses and contributed to poor awareness by plant and corporate management of day-to-day problems and operating concerns. The untimely resolution of the electro-hydraulic control pump oscillation concern and repeat inadvertent containment isolation events due to keying radio transmitters in the control room, were evidence of poor communications between shift crews. Improvement in the operations management area was noted towards the end of the assessment period.

In April 1991, the licensed operator requalification program was found to be unsatisfactory based upon four of the twelve operators failing the written portion of the examination. These failures were attributed to weaknesses in the examination development process resulting from insufficient training resources. NYPA provided a sound basis for continued operations and identified short-term and long-term corrective actions. Although some individual knowledge and ability deficiencies were noted, no programmatic operator knowledge or ability weaknesses were observed. In June 1991, 12 licensed operators were administered a special written requalification examination and all passed. This confirmed the effectiveness of corrective actions to improve the examination preparation and validation process. However, one crew and two individual failures of the simulator portion of the re-examination identified certain EOP training deficiencies. During this re-examination process, it was noted that the NYPA training staff was appropriately critical of licensed operator performance.

A subsequent NRC review in December 1991 determined that EOP training had improved. This review also verified that the corrective actions committed to by NYPA had been satisfactorily completed. However, additional administrative deficiencies involving licensed operator maintenance of qualification and reactivation of licenses were identified. These problems and training deficiencies identified during the Diagnostic Evaluation Team inspection indicated insufficient management oversight of the requalification program. In spite of generally effective implementation of corrective actions, the overall adequacy of the program was not consistently demonstrated and the assurance of continued program quality was uncertain. The licensed operator requalification training program status at the end of this SALP period remained unsatisfactory; however, after the SALP period ended the program was reviewed by an NRC examination team which recommended that the program be declared satisfactory.

Operations department staffing levels were marginal. However, as a result of examination failures, NYPA changed the shift crew rotation from six to five crews. Five crew shift rotation was also exercised during extended outages to better support work activities. No problems were identified which impacted crew performance as a result of these changes. Short-term assistance (three contractors with previous licensed operator experience) was obtained for the operations management staff at the beginning of the refueling outage to support the reduction of the maintenance work backlog and to allow for more operations management oversight of the operator training programs. Initiatives to increase long-term operations department staffing were

funded near the end of the SALP period and were designed to increase minimum shift crew staffing and to allow for more rotational assignments. In addition, training department staffing levels were increased and more positions were funded. Also, near the end of the SALP period, a full-time operations department procedures upgrade group was put in place to reduce the procedure revisions backlog and to enhance the overall adequacy of department procedures.

Fire Protection

Fire protection and 10 CFR 50, Appendix R, safe shutdown programs received considerable attention during this assessment period by both NYPA and the NRC. Early in the assessment period, fire barrier penetration surveillance deficiencies were identified by the NRC. A Technical Specification required licensee triennial audit of the fire protection and Appendix R programs, completed in July 1991, identified a significant number of deficiencies, particularly in the area of safe shutdown design. In response to these concerns, NYPA formed a task force which developed a short-term and long-term corrective action plan to resolve the identified deficiencies. During September and October 1991, a preliminary review by the NRC Diagnostic Evaluation Team (DET) highlighted deficiencies in the fire protection and Appendix R programs. These deficiencies included faulty analyses, unreviewed potential for common mode failures, procedural problems, improper storage of flammables in safety-related areas, and a lack of adequate onsite resources to maintain and implement these programs.

The DET findings prompted an intensified effort to complete the ongoing reanalysis of the FitzPatrick Appendix R fire hazards analysis and safe shutdown design by NYPA corporate engineers and contractors. In March 1992, a special NRC team inspection was performed to assess the status of corrective actions, evaluate the fire protection program and to verify compliance with Appendix R. The Appendix R reanalysis and the proposed approach toward achieving compliance were judged to be comprehensive. However, at the end of the period, a number of issues involving Appendix R needed to be resolved prior to unit restart.

The March 1992 special NRC team inspection determined that implementation of the fire protection program was inadequate. The conditions that led to this conclusion included excessive transient combustibles in many areas of the plant, weak control of ignition sources, inadequacies in firewatch training and performance, and weaknesses associated with the fire brigade. NYPA was initially slow to respond to these identified problems, but eventually attacked them with considerable vigor by first halting work which involved ignition sources and then issuing a stop work order for all outage activities until significant improvements were made in the areas of combustible materials and ignition source controls. The special NRC inspection team identified a number of concerns ranging from inadequate analyses and failure to implement program requirements to ineffective corrective action for known fire protection program deficiencies. These concerns indicated a significant lack of management attention to the area of fire protection.

Summary

The overall utility performance in the operations area was rated only as adequate, with significant areas of weakness noted. Some operator procedural adherence and inattention to detail problems continued, but were fewer in number and less consequential this assessment period. Overall operations management oversight was weak. There was some improved event followup and corrective actions, but generally poor resolution of longstanding control room and plant equipment deficiencies. The licensed operator requalification program was determined to be unsatisfactory as a result of poor management oversight and stressed training staff resources. Subsequent corrective actions to improve the requalification program were good. Initiatives to increase operations department staffing were undertaken near the end of the period.

The fire protection program implementation was considered inadequate during this assessment period and was attributed to poor management oversight. However, NYPA identified deficiencies and corrective actions in the Appendix R safe shutdown area were observed to be appropriately scoped for resolution.

III.A.2 Performance Rating: Category 3

III.A.3 Board Comment:

The poor performance rating in this functional area was heavily influenced by the poor management oversight of day-to-day operations and fire protection. The SALP board acknowledges recent NYPA initiatives to improve both station and corporate management oversight of daily plant operations, but observed insufficient results to substantiate an improving trend.

III.B Radiological Controls

III.B.1 Analysis

The radiological controls program was rated Category 3 during the last assessment period. Strengths included good staffing levels during routine operations and improvement initiatives in the ALARA area. Weaknesses included poor procedure implementation, poor supervisory oversight of non-routine work, ineffective correction actions for recognized weaknesses, weak quality assurance and audit programs, poor worker ALARA practices, lack of radiological input during the design phases of modifications, and high cumulative personnel exposures.

Radiation Protection

Licensee management acknowledged the marginal state of the radiological controls program, and made a concerted effort to address the weaknesses noted during the previous assessment. Although there were improvements in most of these areas, many of the problems were not eliminated.

An independent contractor was hired to perform an overall assessment of the program and to recommend corrective actions. Many weaknesses were documented as a result of this assessment, and the identified items were incorporated into a comprehensive improvement program. Improved performance in the individual areas of the improvement program were monitored to assess progress, and changes were made when progress did not satisfy established goals.

Personnel in key management and supervisory positions were changed, and the new organization has made considerable progress. The department quality assurance and self-assessment functions improved. The self-assessment capability was strengthened by incorporation of a large assessment role for the corporate health physics group. Supervisory oversight continued to be weak and the radiological incident reporting function remained ineffective during the first part of this assessment period, but significant improvements were noted in both areas during the latter part of the period. The radiological incident analyses program became more complete and the corrective actions were comprehensive and programmatic. For example, the unplanned intakes of radioactive materials by workers removing insulation from the residual heat removal piping, were attributed to poor preparation, failure to follow prescribed ALARA actions, and inadequate supervisory oversight. NYPA assessment of this incident resulted in major changes in the ALARA review process and in pre-job briefings. The investigations following two other incidents led to significant changes in the high radiation area key control system and changes in the organization at the upper supervisory levels. The new approach to incident investigation and resolving perceived problems was much more effective and evidence of improved site and corporate management oversight.

The training program for radiation workers and health physics technicians was improved significantly by developing better course material and by strengthening the practical factors part of these programs. Contractor technicians hired for outage work were carefully screened and generally were more experienced and more professional in conduct. These efforts resulted in significant improvements in worker and technician performance, and workers were observed to follow proper procedures and good practices. Control of work activities by supervisors and technicians was also found to have improved significantly.

The licensee made significant ALARA program improvements, both at the site and th corporate levels. The site ALARA organization was improved by the addition of personnel and by establishing a new ALARA function in the form of ALARA planners whose role was to assist the various plant departments in integrating the ALARA function into their daily work activities and procedures, and also to assist these departments in their planning efforts. There was a significant improvement in the staff's effort to reduce dose by making major changes in schedules. For example, work in radiation areas was postponed until reductions in reactor power levels resulted in lower radiation fields in the work areas. Major work was also postponed in the drywell until decontamination efforts reduced the radiation fields in the work areas, even though this resulted in significant delays in outage schedules. These efforts resulted in lower cumulative personnel doses. The corporate health physics group developed stronger programs to ensure incorporation of ALARA into design changes produced at the corporate level. They have also developed a stronger program aimed at reducing cobalt-containing components in the plant, and accomplished some reduction in such components. These programs have only recently been developed and have not been fully implemented. Representation of ALARA within the planning organization was minor. Efforts in plant water chemistry were strong. Plans were put in place this assessment period to use depleted zinc in place of natural zinc in the zinc injection program in an effort to reduce radiation fields and radioactive waste generated by the activation of natural zinc. This effort was viewed as a positive dose reduction initiative.

Radwaste and Transportation

The radwaste/transportation program successfully shipped evaporator bottoms, resins, compacted and non-compacted trash and control rod drive de-watered filters during this assessment period. However, it was noted that the administrative program deteriorated in quality during the first part of this assessment period. Several important deviations from procedural requirements were noted, such as failure to report changes in the Process Control Program (PCP), as required by Technical Specifications, and failure to formally approve certain procedures, as required by the PCP, and failure to review contractor procedures, as required by station policies. Training was not regularly updated to reflect the current state of the industry, and training records were, in some cases, not closely reviewed by the responsible supervisors to ensure proper implementation of the training program. Most of these problems were addressed during the latter part of this assessment period, but the effectiveness of these improvements have not yet been assessed. The shipping function of the program continued to be good, with good record-keeping and good quality assurance and surveillances.

Radiological Environmental Monitoring Program (REMP), Radioactive Effluent Controls Program, and Confirmatory Measurements

New York Power Authority (NYPA) continued to implement an effective REMP at the FitzPatrick site. NYPA implemented an excellent QA/QC program to assure the quality of the REMP sample analysis. The meteorological monitoring program was well implemented with operable, calibrated and well maintained instrumentation.

Effective radioactive liquid and gaseous effluent control programs were implemented during the assessment period. Good radiological calibration techniques were implemented for radioactive liquid and gaseous effluent radiation monitors. NYPA experienced some minor difficulties in meeting acceptance criteria for several electronic calibrations for the gaseous monitors. However, corrective actions were appropriate. The air cleaning systems were tested and were well maintained. Based on confirmatory measurements made by the NRC following the unplanned release of radioactive materials to the site environs and during a subsequent routine inspection, NYPA demonstrated an effective program for measuring radioactivity concentrations in process, effluent and environmental samples.

The Quality Assurance audits were thorough and of good technical depth to assess the programmatic performance of the effluents, environmental and radiochemistry programs. Findings were resolved as appropriate and in a timely manner.

During this assessment period, NYPA developed a program to decontaminate onsite soil and assess the dose implications of the residual soil activity. Review of this program indicated that NYPA's efforts to decontaminate the soil were acceptable and effective and the assessment of the dose implications were thorough.

Summary

Although problems remained in the radiological controls program, considerable improvements were initiated and extensive effort was being maintained to implement a comprehensive improvement program. There was a clear intent to improve the program and a generally well-defined plan to assist in achieving that goal was in place. Administrative controls in the radwaste processing area were initially weak, but improvements were made in this area. The REMP and effluent controls programs were found to be effective.

III.B.2 Performance Rating: Category 2

III.B.3 Board Comment:

The SALP board noted that substantial resources and effort have been devoted by NYPA to improving previous marginal performance in this area. However, the board also notes that in some areas the licensee still demonstrated inconsistent performance and continued strong management attention is warranted to complete the process and sustain the improvements.

III.C Maintenance/Surveillance

III.C.1 Analysis

The previous SALP rated this functional area as Category 2. NYPA demonstrated generally good performance in maintenance, but problems existed in post-maintenance testing and technician work practices. Program improvements occurred in snubber testing and inservice testing. NYPA took effective actions to resolve high pressure coolant injection problems and continued to seek solutions to emergency service water problems. Surveillance testing was generally adequate, despite several examples of personnel failing to follow procedures and not addressing problems in a timely manner.

Maintenance

The maintenance staffing level remained stable this assessment period. In general, maintenance personnel were observed to be knowledgeable, experienced, and professional in their performance of plant maintenance activities. First line supervisors were observed directly involved in the daily maintenance activities which contributed to the quality of the work. The performance of maintenance personnel in response to significant plant events was good. Identification and resolution of hardware failures involving low pressure coolant injection (LPCI) valves, and reactor protection system relays were handled properly by the maintenance and I&C departments. However, both of these events exemplified a number of maintenance and I&C department programmatic weaknesses discussed below. These specific weaknesses resulted in a forced outage to support the LPCI valve repairs and a delay in the refuel outage to resolve the operability of the reactor protection system.

In previous assessment periods, root cause analyses of equipment failures were shallow and resulted in ineffective problem resolution. NYPA took action to correct specific weaknesses, but failed to determine the underlying cause to prevent recurrent failures. In May 1991, two low pressure coolant injection valves suffered simultaneous complete failures. Both valves had long histories of corrective maintenance and such failures were the subject of industry operating events correspondence. Additional examples where inadequate root cause and corrective action determinations resulted in repetitive equipment failures during this assessment period included several safety-related, motor-operated valve deficiencies, shutdown cooling system isolation valve

motor trips, and several small bore pipe breaks. During this assessment period, the root cause evaluations for the low pressure coolant injection valve failures and the containment radiation monitor spurious actuations were judged to be thorough. Late in the period, NYPA implemented a number of improvement initiatives to the overall root cause evaluation process.
Overall performance of the preventive maintenance (PM) program was weak. In general, PM was conducted in accordance with procedures. However, there were a number of problems associated with the program. The PM program was too narrowly focused. Examples of plant equipment identified not to be in the PM program included: air-operated valves; solenoid-operated valves; fire protection system check valves; safe shutdown equipment transfer and control switches; and analog transmitter/trip unit system relays. Feedback from corrective maintenance and reliability trending of critical components (e.g., LPCI valve and motor operator problems) has typically not been incorporated into the PM program. Because root causes of equipment failures during previous assessment periods were infrequently identified, this resulted in inadequate preventive maintenance changes to prevent future equipment problems.

In addition to the weaknesses discussed above, some administrative and facilities weaknesses also impacted the overall effectiveness of the maintenance program. The work request backlog continued to increase and the maintenance department overtime rate was high this SALP period. As a result, the number of hours devoted to continuing maintenance training decreased. Also, the maintenance craft had limited work space for material staging and equipment repairs. However, material control improvements were noted. Specifically, a new warehouse, including associated facilities to support onsite commercial grade dedication activities, was completed and fully operational early in the period. Some spare parts availability and equipment obsolescence problems continued to impact the timeliness of certain corrective maintenance activities.

Performance of maintenance planning activities was mixed. The planning department's commitment to improve scheduling and coordination of outage activities was demonstrated by expanded resources in outage planning, supervision, and adherence to shutdown risk assessment recommendations. However, these efforts to improve were hindered by the complexities of the work package controls, poor coordination of ALARA reviews, poor work prioritization criteria and inconsistent engineering and technical support of planned and emergent work.

The inservice testing program for pumps and valves and the snubber maintenance and testing programs continued to function well. The inservice inspection program continued to be well planned and implemented. NYPA personnel involved in the inservice inspection program were noted to be knowledgeable and thorough in the performance of nondestructive examinations and results analysis. NYPA had also implemented an effective program to assess erosion/corrosion in various plant piping systems.

During this SALP period management issued administrative guidelines emphasizing procedural adherence expectations. As a result, procedural use and adherence, as well as the overall quality of procedures continued to improve. Notwithstanding, several safety-related activities were noted to have weak maintenance procedures. In addition, craft personnel sometimes failed to follow procedures. In cases where the maintenance procedure was weak for the existing task (e.g., low

pressure coolant injection valves corrective maintenance) supervisory or QA oversight ensured the work packages provided good technical detail for the maintenance performed. NYPA management continued to support improvements in this area through the management observation program instituted in December 1991. Initial implementation of this program was effective at identifying areas for improvement in the maintenance tasks observed.

The material condition and housekeeping of the plant was poor. Examples of poor material condition included: significant numbers of open work requests on safety-related systems; a large number of oil leaks; poor identification and labelling of plant components; and several examples of trash and combustible material observed in safety related areas. NYPA was implementing a long-term plant preservation program at the end of the SALP period. Completed areas (condenser vacuum pump rooms) showed significant improvement.

Surveillance

The surveillance testing program, in general, was appropriately implemented during the assessment period and contributed positively to the safe operation of the plant. Test personnel were knowledgeable and successful in completing technical specification surveillance tests within the specified frequencies. The surveillance program was effective in identifying equipment deficiencies and NYPA took appropriate actions in response to these deficiencies. One spurious scram signal while shut down was caused by an I&C department calibration of a reactor water level instrument. Spurious scrams caused by reactor water level instrument calibration have been a recurring problem due to the reference leg piping configuration and transmitter sensitivity. NYPA's action plan to resolve this problem was appropriate.

Performance of surveillance testing was generally good. Each department was responsible for and successful in scheduling, tracking, and performing their respective surveillance tests. Some performance problems were noted regarding surveillance test procedural adherence, similar to those problems mentioned in the plant operations functional area assessment. Several safety-related I&C department tests were observed to have procedure deficiencies. However, early in the assessment period, the I&C technicians only infrequently corrected the procedural deficiencies identified during testing. Improvement was noted in this area near the end of the SALP period.

Records of completed surveillance tests were well maintained. Component deficiencies identified during testing this SALP period were properly documented and appropriate corrective action initiated. Technical reviews of surveillance tests were generally good. However, some surveillance tests did not include specific setpoint tolerances or provide for steps to record the as-found or as-left conditions. NYPA has plans to develop a setpoint control program to address this concern.

Surveillance testing properly demonstrated the operability and availability of safety systems to perform their intended function, with some notable exceptions this assessment period. Periodic surveillance testing of the analog transmitter trip system and the reactor protection system did not provide suitable systems response time testing to monitor for system performance degradation. Also, periodic inservice testing of high pressure coolant injection, core spray, and reactor core isolation cooling containment isolation valves failed to verify that those valves could perform their intended design function. Post-maintenance and modification testing was generally good, although one isolated case was identified where an emergency diesel generator ventilation fan breaker was improperly restored after a modification and resulted in a subsequent fan failure.

Summary

NYPA demonstrated only adequate performance in maintenance, with several weaknesses impacting the overall effectiveness of the maintenance program. Weaknesses were identified in equipment failure root cause analysis, and in the overall adequacy of the preventive maintenance program although late in the period a number of improvement initiatives were implemented for the root cause evaluation process. The plant material condition was generally poor and the work request backlog continued to increase. Overall management of planning activities improved. However, job specific preplanning weaknesses and engineering inputs continued to hinder performance improvements. Material control improvements were noted, but spare parts availability continued to impact the timely completion of some maintenance activities. Maintenance and surveillance procedures were satisfactory and continued to improve. The inservice inspection, inservice testing, erosion/corrosion, and snubber maintenance and testing programs continued to function well. Similarly, the overall effectiveness of the surveillance testing program continued to be demonstrated in this period. The scheduling and performance of surveillance tests were generally good.

III.C.2 Performance Rating: Category 3, Improving

III.D Emergency Preparedness

III.D.1 Analysis

During the previous SALP, EP was rated Category 1. That rating was based on noteworthy management involvement, effective training, comprehensive and thorough audits/reviews, and a good relationship with State and Oswego county officials.

Emergency Preparedness

During this period, four plant events required emergency plan activation. An unmonitored release of radioactivity on March 18, 1991 led to a declaration of an Unusual Event and precautionary activation of the Technical Support Center (TSC) and Operations Support Center (OSC) to better coordinate and support the plant staff's response. NRC observation noted that actions were appropriate, prioritized, and effective. A second Unusual Event was declared due

to a 24-hour Technical Specification shutdown because of low pressure coolant injection inoperability. NRC review determined that EP response to this event was appropriate and timely. The third event was a Site Area Emergency at Nine Mile Point. NYPA responded to this event and NRC observation noted proper implementation of the emergency plan. The fourth event was an Unusual Event declared on November 27, 1991 due to a 24-hour Technical Specification shutdown because of inoperability of two primary coolant isolation valves. NRC review determined that EP response to this event was timely and appropriate.

The licensee staff performed well in the August 1991 full-participation exercise. The as-submitted scenario was appropriately challenging and was improved over the previous submittal in initial plant conditions, in-plant repair and corrective action information, and off-site radiological data. Station personnel readily recognized degrading exercise conditions. Positive interactions were noted among members of the Emergency Response Organization (ERO). No exercise weaknesses were identified. The more important areas identified for consideration for potential improvement were: control room ability to mitigate events simultaneously with other emergency duties; unapproved information being sent to the Joint News Center; and overly technical media briefings. The NYPA post-exercise critique was thorough. Overall, the ability to protect public health and safety was affirmed.

Station and corporate management effectively maintained emergency response qualifications, reviewed and approved emergency plan and procedure changes, participated in drills and exercises, and interfaced with state and local agencies. In addition, resources were committed to a new reception center in Onondaga County.

Emergency preparedness training was excellent. All ERO positions were filled at least three deep. EP training was the responsibility of a dedicated individual in the training department. Classroom training was conducted throughout the year. The training program was well-defined. Lesson plans were thorough, accurate, and properly controlled.

Administration of the drill/exercise program was good. Procedural controls for scenario development was good, but did not reflect all improvements made to the process. ERO members were not required to participate in drills/exercises to maintain certification, but walk-through training sessions were required if drill/exercise participation was not practicable. Rotation of players for drills/exercises was good. The licensee conducted three fully-integrated drills/exercises in 1991, meeting emergency plan requirements.

Emergency Action Level (EAL) classification provisions were assessed as good, with appropriate self-identified improvement initiatives evident. NRC review found that some EALs appeared overly restrictive, that is, some relevant parameters were disallowed by not being included. For example, the operators had difficulty declaring a Site Area Emergency for a simulated loss of coolant accident greater than make-up pump capacity because an associated criterion was to have an emergency core cooling system (ECCS) pump operating at maximum flow, and the running ECCS pump had been secured for valid reasons. Station operators had already identified associated EAL improvements and clarifications.

Emergency response facilities, equipment, supplies, and procedures were very well maintained. Administrative and emergency response procedures were generally well stated. The NYPA 10 CFR 50.54(t) review was appropriate in scope and content. Off-site interface results were provided to State and County officials. Site audits were thorough and effective. Review and audit reports received wide management distribution. Corrective actions were generally prompt and effective.

EP program administration was effective. The program was administered by the site Emergency Preparedness Coordinator (EPC). In addition, two full-time positions were assigned to EP at the site. The EPC was very proactive in ensuring close coordination between the site and corporate EP staffs. The corporate EP staff assisted with scenario development, special requests, and the off-site interface. NRC contact with Oswego County Representatives identified satisfaction with the NYPA interface.

Summary

Overall, NYPA implemented an effective EP program. Responses to actual events were proper and timely. Exercise performance was proficient; no exercise weaknesses were found, and areas identified for consideration for improvement were relatively minor. Management was effectively involved in ERO qualifications and drills, and in EP program oversight. EP training, audits, and reviews were NYPA strengths.

III.D.2 Performance Rating: Category 1

III.E Security

III.E.1 Analysis

During the previous assessment period, this area was rated Category 1, based upon a very effective security program with clear evidence of management attention.

During this assessment period, excellent corporate and site security management attention to and involvement in the security program continued. This was evident through the implementation of program improvements and enhancements. The more significant of the enhancements were two new X-ray machines for package searches, four new explosives detectors, four new security patrol vehicles, twenty-four new portable radios and the remodeling of the plant access control building. The licensee also remained active in industry groups involved in nuclear plant security matters.

The security program continued to be carried out effectively and in compliance with NRC regulations, as demonstrated by an excellent enforcement history. Plant security management maintained effective communications and excellent rapport with other plant groups. The station provided instrumentation and controls technicians to perform corrective maintenance and testing. Corrective maintenance was carried out promptly in accordance with a prioritization schedule to reduce the impact of equipment problems on the security program. In addition, a preventive maintenance program was being established to minimize equipment problems further. The effectiveness of the maintenance efforts was reflected by minimal security department overtime.

The training program was well developed and administered by a staff of experienced and knowledgeable professionals. The tactical firearms training course, which was initiated during the previous SALP period, was fully implemented during this period in conjunction with training on upgraded firearms. Early in this period, a problem was identified with the maintenance of requalification training records. NYPA promptly and effectively corrected the problem. Interviews of security officers indicated that the training received was effective and directed to ensuring that the security objectives were being properly met. Security officers displayed high morale and were knowledgeable of their post assignments and responsibilities.

Weaknesses identified during the previous period, i.e., response force training, assessment aids, access control, and testing and maintenance, were being addressed. As noted above, the improvements in the training, access control, and testing and maintenance programs have significantly enhanced the effectiveness of those programs. Additionally, enhancements of the assessment program were also underway.

Based on the initial inspection of the Fitness-for-Duty (FFD) program during this period, it was determined that the development and implementation of the program were aggressive, comprehensive, and directed toward public health and safety. Management support for the program was demonstrated by the high quality of the facilities and personnel responsible for program implementation. NYPA promptly investigated and properly dispositioned all FFD positive test results identified during the period for both NRC reportable and non-reportable events.

The NRC-required audit of the security program was comprehensive in scope and performance-based. NYPA contracted the services of a nuclear security consultant to provide technical expertise to the Quality Assurance audit team. Corrective actions on findings and recommendations identified during the audit were prompt and effective. Additionally, NYPA continued the initiative of self-assessments and appraisals to provide oversight of security program implementation and personnel performance. A review of the quarterly security event reports indicated that these initiatives were effective.

Event reporting procedures were clear and consistent with NRC reporting requirements. No prompt reportable security events occurred during the period. Loggable events were appropriately analyzed, tracked and corrective actions were timely and effective, where appropriate.

NYPA submitted two revisions to its Physical Security Plan under the provisions of 10 CFR 50.54(p). The revisions were technically sound and reflected well-developed policies and procedures.

Summary

NYPA continued to maintain a very effective and performance-based security program. Management support and effective program oversight continued to be evident throughout the period. The efforts expended to upgrade the security program and to resolve discrepancies before they became problems demonstrated NYPA's commitment to maintain a high quality program.

III.E.2 Performance Rating: Category 1

III.F Engineering/Technical Support

III.F.1 Analysis

This area was previously rated as Category 2. Overall performance was good, but there were areas of inconsistent performance. Improvement in the technical services department appeared to be hindered by the demand on that group to address prior engineering weaknesses. Good performance was noted in the areas of corporate sponsored modifications, site performance engineering and systems engineering. Concerns continued in the control of the engineering work backlog and the control of drawings.

During this assessment period, the engineering organizations, both the on-site technical services and the off-site and on-site corporate engineering organizations, performed poorly. NYPA's engineering reorganization, implemented early in the assessment period, established a single design authority in the corporate engineering department, a new site engineering group and realigned the technical services department. Although, this reorganization was a good initiative, it remained ineffective in improving engineering performance due to poor integration, communication and coordination among the newly organized engineering and technical services groups. Management overview did not readily detect and correct these coordination and communication problems. As a result, engineering performance in a number of emergent safety issues was poor this assessment period. Engineering improvement was also slowed by the need to re-perform engineering evaluations for previously identified and inadequately resolved deficiencies and the need to address the backlog of operating event reviews, engineering work requests, and adverse quality condition reports. However, late in the assessment period, NYPA performed a self-assessment of its engineering organizations and developed a number of initiatives to improve performance in this area.

The performance of the corporate engineering department was inconsistent during this assessment period. The corporate engineering staff was slow to become involved and adequately resolve operability concerns such as the low pressure coolant injection battery inverters and the analog transmitter/trip unit system relay service life and response time testing concerns. The fire protection program was determined to be inadequate because of numerous weak or non-existent engineering evaluations. Examples included: no high impedance fault analysis; failure to adequately account for spurious actuation vulnerabilities; Appendix R safe shutdown design deficiencies; and inadequacies in the fire suppression and detection system. These deficiencies demonstrated engineering management commitment and support of the fire protection and Appendix R programs was deficient. In contrast, several programs were effective because of quality engineering review and oversight. For example, the intergranular stress corrosion cracking inspection and repair program was comprehensive and effective. The zebra mussel task force has been innovative and proactive in its effort to prevent potential bio-fouling.

While the technical services department was effective in conducting technical evaluations for some plant problems, examples of inadequate engineering reviews occurred. Excellent system engineering support was noted for the identification and evaluation of design deficiencies concerning the emergency service water system return piping serving the emergency diesel generators and the undocumented electrical suppression assembly found installed in the primary containment high radiation monitor circuitry. The system engineering analyses of the flex wedge gate valves in the residual heat removal system were comprehensive and of high quality. Good system engineer involvement was also noted in routine surveillance and maintenance activities. The performance engineering group continued to be a strength as demonstrated by its proactive heat exchanger performance testing and inservice testing program activities. However, the technical services staff conducted various engineering reviews which were not comprehensive or effective in preventing recurrence or identifying the existing deficiency. Examples of such reviews included the evaluation of small-bore piping failures; the evaluation of the flow reversal capability of the ultimate heat sink; and the analyses supporting operability of the low pressure coolant injection (LPCI) battery inverters under design-basis conditions. In addition, the initial technical services evaluation of the analog transmitter trip unit system relay failure lacked the coordination and integration of the site and corporate engineering staffs to develop an adequate technical resolution for this important safety issue. Corporate and site engineering coordination problems also contributed to an unplanned deferral and substantial revision of a modification that had been issued to install new residual heat removal and emergency service water system strainers. Similar concerns were also evident in the resolution of the quality assurance classification for the safety related service water system pump room ventilation fan.

There were a number of significant design and configuration control deficiencies identified during this assessment period which highlighted weaknesses in addressing issues described in generic industry operating experience correspondence. Examples included: design errors in core spray minimum flow valve and HPCI and RCIC pump suction valve logic resulted in these valves being incapable of the remote manual primary containment isolation feature outlined in the technical specifications and FSAR; system design deficiencies contributed to an unmonitored

release of radioactive material; design of several 10 CFR Part 50, Appendix R systems and components was inadequate to ensure safe shutdown and fire protection capability; and inadequate control of the service life requirements for relays in the analog transmitter/trip unit system and emergency diesel generator fuel oil transfer system resulted in potential degraded performance of these safety systems. NYPA engineering reviews were inadequate to ensure proper identification and resolution of these concerns at the FitzPatrick plant and contributed to several instances of degraded system performance. Drawing controls also continued to be weak. Plant drawings were often found to be out of date and frequently in error. However, no significant deficiencies were noted.

The quality of engineering support for licensing actions processed by the NRC staff during this assessment period was mixed. Several licensing actions were well supported, technically sound, and resulted in timely resolution of the requested actions or safety issues. The following are examples of sound engineering support for licensing actions: the technical specification amendment of RHR flow requirements during surveillance testing; the technical evaluation to support the recirculation piping weld overlay inspection and repair program; the inspection and repair reports regarding the IGSCC program; and the information provided to resolve NRC questions concerning the hardened wetwell vent issue. In contrast, there were examples where NYPA's engineering support for licensing actions was weak. A number of submittals did not provide adequate technical support for the NRC staff to complete safety evaluations without the need for substantial additional information. Examples of these submittals included the technical specification amendments supporting a single setpoint for the safety/relief valves and the 10 CFR Part 50, Appendix J program changes. Also, design measurements to support the addition of storage racks in the spent fuel pool were inaccurate and the engineering evaluations to support an emergency service water surveillance test contained incorrect assumptions. The engineering support for a meeting with the NRC regarding the proposed Inconel 82 temperbead weld overlay repair technique was also weak.

Inadequate engineering management support and overview of the engineering organization contributed to many of the examples of poor performance stated above and continued to be a concern of the NRC. The inability of the engineering staff to meet licensing workload demands was provided by NYPA as a basis for requesting a six month extension to update the FSAR. Recognition of staffing limitations and resultant work load prioritization changes are evidence of engineering management's awareness of these problems. NYPA began to address these issues late in this assessment period as part of the FitzPatrick Results Improvement Program and has committed substantial resources to resolve programmatic weaknesses and staffing deficiencies. For example, NYPA completed a self-assessment of the effectiveness of engineering and technical support staffs and programs. As a result, the engineering staff was in the process of developing several new initiatives. These initiatives included an improved work backlog prioritization process, an improved design control process, and the development of a formal training program for engineering and technical support staff. Although these initiatives were considered positive, their effectiveness in improving performance could not be assessed because of their implementation late in the SALP period.

Summary

Despite management effort to improve engineering performance by adding permanent engineering staff positions and making various organizational changes, the overall engineering staff performance continued to decline during a major portion of this assessment period. While good performance was noted in certain engineering staff and technical support group efforts, weak engineering evaluations, inadequate review of industry experience correspondence and poor communication between site and corporate engineering staffs resulted in instances of programmatic degradation and design control deficiencies. Furthermore, the technical services department continued to be hampered by existing work backlog and previously weak engineering resolution of past problems.

III.F.2 Performance Rating: Category 3

III.G Safety Assessment/Quality Verification

III.G.1 Analysis

The previous SALP rated this functional area as Category 3 with an overall decline in performance noted. Plant personnel were knowledgeable in their areas of responsibility, and applied a safety-conscious approach to plant operation. However, there was evidence that programs, which are designed to ensure that problems are completely and effectively addressed, suffered from a lack of thoroughness and coordination, which impacted negatively on organizational effectiveness. This resulted in an increased number of personnel errors, and the inability to identify and resolve equipment problems in a timely, thorough, and effective manner. The Quality Assurance (QA) program was marginally effective in its identification, control, and correction of some issues.

NYPA implemented several senior management changes during this assessment period. These changes resulted in a renewed commitment to improve performance at FitzPatrick. For example, the recognition of performance problems precipitated development and implementation of the 1992 Business Plan and the FitzPatrick Results Improvement Program (RIP). These efforts demonstrated an acknowledgement of broader programmatic concerns, and a willingness and commitment to address them. NYPA also implemented a significant site management reorganization which replaced the Superintendent of Power position with three General Managers. The NRC recognized this reorganization as an initiative designed to improve management oversight at FitzPatrick; however, because of the limited time this new organization has been in effect, its affect on overall performance has not been demonstrated.

In addition to the FitzPatrick RIP and the 1992 Business Plan, other NYPA initiatives were noteworthy. For example, senior management's decision to maintain the unit shut down on two separate occasions to thoroughly address technical and programmatic concerns demonstrated a commitment to safety. NYPA's shutdown risk management efforts were also commendable. The chemical decontamination of the recirculation system piping significantly improved radiological conditions in containment and demonstrated NYPA's commitment to reduce worker radiation exposure.

Self-assessment efforts remained generally weak and insufficient to provide objective and thorough assessments to management. However, when management attention was focused on the self-assessment process, improved assessment quality was noted. For example, self-assessments did not detect significant programmatic degradation of the fire protection, licensed operator requalification, radwaste processing, operating experience review, and engineering programs. Initial assessment of the analog transmitter/trip unit system (ATTS) relay failure was not thorough. However, after the issue was raised to a high level, NYPA management attention became focused and a thorough and self-critical assessment of the problem was performed. Significant management attention also resulted in excellent review of the 10 CFR Part 50, Appendix R deficiencies. Additionally, an improved self-assessment management effort resulted in tangible improvements in the radiological control program.

NYPA personnel exhibited an inconsistent approach to identification, root cause review, and resolution of problems. Weaknesses in these processes were compounded by the failure of management to adequately define and communicate its expectations regarding standards of performance. On several occasions, NYPA exhibited a comprehensive, safety-conscious approach to resolve deficiencies. For example, efforts to resolve failures of the low pressure coolant injection (LPCI) injection valves and hydraulic locking problems with flex-wedge gate valves were thorough and well-coordinated. The coordination among site departments in identifying appropriate corrective actions and site cleanup following the unmonitored release event was excellent. In contrast, poor procedural adherence, the failure of management to ensure adequate system design and procedures, and poor communication during efforts to resolve problems with the radwaste concentrator were the primary causes of the unmonitored release event. Identification and resolution of fire protection program deficiencies were inadequate. Resolutions of the core spray minimum flow valve isolation logic deficiency and the NRC Maintenance Team Inspection identified weaknesses were untimely. In general, in instances where NYPA management attention was focused and management's expectations for standards of performance were communicated, the root cause assessment and corrective actions were good.

NYPA was ineffective in utilizing industry experience to identify and resolve potential safety concerns. This ineffectiveness contributed to the failure of NYPA to be proactive in assessing the applicability of generic industry information to the FitzPatrick plant and resulted in instances of degraded safety system performance. Ineffective utilization of industry experience contributed to the unmonitored release of radioactive effluents, the degradation of the ATTS relays, the inability of the core spray minimum flow valves to meet their primary containment isolation function, and the degradation of several motor operated valves. Initiatives have been taken via the FitzPatrick RIP to address the industry experience review deficiencies.

During this assessment period, QA generally performed adequate audits but had limited success at assuring the correction of identified deficiencies and did not receive the upper management support needed to do so. Thorough and effective QA audits of the water chemistry, radiation protection, and effluent monitoring programs were noted. A newly implemented performance-based QA surveillance program appeared to be more responsive to non-routine activity quality oversight needs, and recommendations made during these surveillances were considered performance enhancements. In many instances, QA audits adequately identified deficiencies but were ineffective in assuring rigorous and complete technical resolution of the identified concerns. This led to continued or recurring problems, particularly in the areas of fire protection and training.

The onsite and offsite safety review committees, PORC and SRC, respectively, continued to perform thorough reviews of issues and exhibited a strong safety perspective, with some notable exceptions. One exception to the typically thorough PORC review of plant events was the ATTS failed relay review which missed several significant safety issues. Meetings of both committees facilitated open discussion of issues and exchange of perspectives. During this assessment period, improvement was evident in the effectiveness of the SRC to facilitate communication and cooperation between NYPA's nuclear plants. Furthermore, the SRC's review of significant events at each nuclear facility served as an effective method to ensure that "lessons learned" were shared.

A significant number of NYPA licensing submittals were generally acceptable and supported prompt resolution of the requested actions or safety issues. However, inadequate engineering support for several licensing actions hindered NRC review and evaluation. Also, instances of poor communication among the site, engineering, and licensing staffs, and inadequate staffing of licensing engineers, adversely affected the quality and timeliness of some licensing actions. NYPA initiatives begun late in the assessment period to improve management oversight, attention to detail, and communication between departments have resulted in higher quality submittals, including the updated FSAR and technical specifications related to fire protection requirements.

Licensee Event Reports (LERs) continued to provide clear descriptions and appropriate details of the subject events. However, the root cause analyses and corrective actions, although generally adequate, occasionally reflected a less than comprehensive review. For example, LER 91-[illegible] "Inadequate Turbine Building Ventilation Sampling," reflected a lack of thoroughness in NYPA's review of the event and an inadequate corrective action plan. Reportability determinations were generally accurate and telephone notifications made pursuant to 10 CFR 50.72 were comprehensive and permitted the NRC Operations Officer to clearly understand the events. However, on one occasion, a shift supervisor failed to report an event involving depressurized standby liquid control system accumulators as required by 10 CFR 50.72.

Summary

Overall performance in this functional area remained adequate; yet, several weaknesses impacted NYPA's effectiveness in consistently ensuring quality performance. NYPA's commitment to improve performance at FitzPatrick and the corporate office was demonstrated by the development of the 1992 Business Plan and the FitzPatrick RIP. However, observed performance throughout this assessment period did not represent discernable improvement. Even though personnel continued to reflect a safety-conscious attitude, limited success by NYPA management to establish adequate standards of performance generally resulted in products of inconsistent quality. Several events this assessment period demonstrated that NYPA management did not ensure effective oversight of plant activities and self-assessment efforts. These events resulted from poor communication and coordination between departments, the failure of certain programs to satisfy regulatory requirements, and corrective actions that were not always timely or effective. The QA program had limited impact on effecting performance improvements.

III.G.2 Performance Rating: Category 3

IV. SITE ACTIVITIES AND EVALUATION CRITERIA

IV.A Licensee Activities

FitzPatrick began the SALP period operating at full power. The unit was shut down March 8, 1991, to commence a mid-cycle maintenance outage. NYPA commenced unit restart March 17, 1991, however, the unit was shut down from 3.5% power due to an unmonitored radiological release to the environs.

The unit was restarted on April 13, 1991 and achieved full power April 19, 1992. On May 7, 1991, the unit was shut down due to inoperability of the A and B trains of the low pressure coolant injection mode of residual heat removal. Unit restart was delayed due to NYPA identification of a number of 10 CFR 50, Appendix R safe shutdown fire protection concerns.

The unit was restarted on August 18, 1991, and operated at full power until November 27, 1991, when NYPA shut down the unit to resolve core spray containment isolation operability concerns.

On December 6, 1991, NYPA management notified the NRC of its intent to maintain the facility shut down until completion of the 1992 refueling outage (commenced January 11, 1992) due to several Appendix R fire protection concerns. The unit remained shut down through the end of the assessment period.

IV.B NRC Inspection and Review Activities

Two NRC resident inspectors were assigned to FitzPatrick during the assessment period. NRC team inspections were conducted in the following areas.

-- Diagnostic Evaluation Team conducted between September 16, 1991 and October 18, 1991.

-- Compliance with Appendix R and Fire Protection Program Inspection conducted between March 9, 1992 and March 20, 1992.

-- Emergency Preparedness Emergency Action Level Review conducted between March 23, 1992 and March 27, 1992.

-- An emergency service water Safety System Function Inspection was commenced the week of April 13, 1992 and completed the week of April 27, 1992.

IV.C Unplanned Shutdowns, Plant Trips and Forced Outages

	Date	Power Level	Root Cause	Functional Area
1.	3/17/91	3%	Personnel Error/ Deficient Design	Operations, Engineering, & Technical Support

An unmonitored release of radioactive material from the radioactive waste concentrator via the auxiliary boiler manual vent to the site environs resulted in a plant **shutdown**. Causal factors included procedure inadequacies, procedure non-adherence, and deficient design providing the potential unmonitored release flow path.

2.	5/7/91	100%	Inadequate Preventive Maintenance	Maintenance/ Surveillance & Technical Support

An unplanned **shutdown** was made to repair inoperable valves in both low pressure coolant injection sub-systems of the residual heat removal system. Based on not being able to complete repairs within the allotted Technical Specification twenty-four hour time frame, NYPA management directed a plant shutdown be conducted.

3.	11/27/91	100%	Deficient Design	Safety Assessment/ Quality Verification

An unplanned **shutdown** due to core spray minimum flow valve operability concerns. The existing design could not meet Technical Specification remote manual primary containment isolation capability. NYPA shut down the unit to allow a design modification.

On December 6, NYPA management notified the NRC of its intent to maintain the facility shutdown until completion of the 1992 refueling outage (commenced January 11) due to several Appendix R fire protection concerns. The unit remained shut down through the end of the assessment period.

IV.D SALP Evaluation Criteria

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

1. Assurance of quality, including management involvement and control;

2, Approach to the identification and resolution of technical issues from a safety standpoint;

3. Enforcement history;

4. Operational events (including response to, analysis of, reporting of, and corrective action for);

5. Staffing (including management; and,

6. Training and qualification effectiveness.

Based upon the SALP Board assessment, each functional area evaluated is classified into one of three performance categories. The definitions of these performance categories are:

Category 1: Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a superior level of performance. NRC will consider reduced levels of inspection effort.

Category 2: Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a good level of performance. NRC will consider maintaining normal levels of inspection effort.

Category 3: Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in an acceptable level of performance; however, because of the NRC's concern that a decrease in performance may approach or reach an unacceptable level, NRC will consider increased levels of inspection effort.

Category N: Insufficient information exists to support an assessment of licensee performance. These cases would include instances in which a rating could not be developed because of insufficient licensee activity or insufficient NRC inspection.

The SALP report may include an appraisal of the performance trend in a functional area for use as a predictive indicator. Licensee performance during the assessment period is examined to determine whether a trend exists. Normally, this performance trend would only be used if both a definite trend is discernable and continuation of the trend would result in a change in performance rating.

The trend, if used, is defined as:

Improving: Licensee performance was determined to be improving during the assessment period.

Declining: Licensee performance was determined to be declining during the assessment period and the licensee had not taken meaningful steps to address this pattern.

ENCLOSURE 2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

JUN 16 1992

Docket No. 50-333

Mr. Harry P. Salmon, Jr.
Resident Manager
New York Power Authority
James A. FitzPatrick Power Plant
Post Office Box 41
Lycoming, New York 13093

Dear Mr. Salmon:

Subject: Initial Systematic Assessment of Licensee Performance (SALP) Report No. 50-333/91-99

An NRC SALP Board conducted on May 21, 1992, reviewed and evaluated the performance of activities at the FitzPatrick Nuclear Power Plant for the period of February 1, 1991 through April 18, 1992. The enclosed Initial SALP Report documents the results of this assessment.

This SALP period was characterized by mixed performance. Poor site and corporate management, engineering, and technical support staff oversight of day-to-day plant operations coupled with poor maintenance programs, resulted in system operability concerns which caused three forced plant shutdowns and a number of fire protection program deficiencies. The latter prompted senior management to keep the unit shut down through the start of the 1992 refueling outage. Performance in the four areas of Operations, Maintenance/Surveillance, Engineering/Technical Support, and Safety Assessment/Quality Verification was considered only adequate and warranted further NYPA management attention.

NYPA senior management response to recognized performance weaknesses resulted in a commitment to a comprehensive improvement program with initial implementation towards the end of the SALP period. Accordingly, few tangible results were achieved this assessment period, with the exception of observed improved performance in the Radiological Control area. Performance improvement initiatives in this area were in place during a large portion of the assessment period. Along with Radiological and Environmental Services department management and organizational changes and other programmatic improvements, enhancements in ALARA and general radiation worker performance were noted. Security continued to exhibit a superior level of performance and as evidenced by the excellent execution of the Emergency Plan for actual and simulated events this period, the Emergency Preparedness organization also remained at an outstanding performance level.

A management meeting to discuss the SALP evaluation has been scheduled for June 29, 1992, at the FitzPatrick site. This meeting will be open for public observation. At the SALP meeting you should be prepared to discuss our assessments and your plans to improve performance. The meeting is intended to be a candid dialogue wherein any comments you may have regarding our report may be discussed. Additionally, you may provide written comments regarding our assessments within 20 days after the meeting.

Shortly after this SALP evaluation period ended, between May 11 and 22, 1992, an NRC evaluation of the FitzPatrick operator requalification program was conducted. The NRC examination team identified no failures and have recommended that the requalification program be declared satisfactory. By separate correspondence, dated June 12, 1992, I have found that your requalification program meets the Commission's regulatory requirements and is considered to be satisfactory.

Your cooperation with us is appreciated.

Sincerely,

Thomas T. Martin
Regional Administrator

Enclosure: Systematic Assessment of Licensee Performance (SALP) Report No. 50-333/91-99

cc w/encl:
J. Brons, President
R. Beedle, Executive Vice President
J. Gray, Director, Nuc' ar Licensing - BWR
G. Goldstein, Assistant General Counsel
Department of Public Service, State of New York
State of New York, Department of Law
Supervisor, Town of Scriba
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New York, SLO Designee
The Chairman
Commissioner Rogers
Commissioner Curtiss
Commissioner Remick
Commissioner DePlanque
Institute for Nuclear Power Operations (INPO)
K. Abraham, PAO - RI (30)

ENCLOSURE 3

SALP Management Meeting Attendees

N. Avrakotos, Emergency Preparedness Manager, New York Power Authority (NYPA)
R. Beedle, Executive Vice President - Nuclear, NYPA
R. Capra, Director, Project Directorate I-1, Office of Nuclear Reactor Regulation (NRR)
M. Colomb, General Manager - Site Support, NYPA
R. Converse, Vice President - Nuclear Support, NYPA
W. Cook, Senior Resident Inspector - FitzPatrick
C. Cowgill, Chief, Projects Branch No. 1, Division of Reactor Projects (DRP)
J. DeRoy, Maintenance Manager, NYPA
P. Eselgroth, Chief, Reactor Projects Section No. 1B, DRP
N. Gannon, Radiological Controls and Environmental Services Manager, NYPA
J. Gray, Jr., Director, Nuclear Licensing - BWR, NYPA
C. Hehl, Director, DRP
W. Josiger, Vice President - Nuclear Operations, NYPA
D. Kieper, Instrumentation and Controls Manager, NYPA
D. Lindsey, General Manager - Maintenance, NYPA
R. Liseno, General Manager - Operations, NYPA
R. Locy, Operations Manager - NYPA
B. McCabe, Project Manager, NRR
R. Plasse, Resident Inspector - FitzPatrick
D. Ruddy, Site Engineering Manager, NYPA
H. Salmon, Jr., Resident Manager - FitzPatrick, NYPA
G. Tasick, Quality Assurance Manager, NYPA
T. Teifke, Security and Safety Manager, NYPA
K. Vehstedt, Technical Services Manager, NYPA
S. Zulla, Vice President - Nuclear Engineering, NYPA

ENCLOSURE 4

James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
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315 342-3840

NewYork Power Authority

Harry P. Salmon, Jr.
Resident Manager

July 20, 1992
JAFP-92-0551

United States Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Dear Sir:

Attached is the New York Power Authority response to the James A. Fitzpatrick Systematic Assessment of Licensee Performance (SALP) Report (No. 50-333/91-99).

The Power Authority agrees with the NRC assessment of performance. Considerable effort and resources have been devoted to development and implementation of the Results Improvement Program (RIP) which is intended to correct the root causes of the decline in performance. The Authority believes the improvements seen near the end of the SALP period are indicative of the effectiveness of the Results Improvement Program and many other initiatives. The Authority is committed to improve performance at James A. FitzPatrick through capital improvements, management changes, engineering organizational changes, the Nuclear Generation Business Plan and the Results Improvement Program.

HARRY P. SALMON, JR.

HPS:MJC:cmc

Attachment

cc: U.S. Nuclear Regulatory Commission
Region I

Office of the Resident Inspector

Mr. Brian C. McCabe

9207280017

OPERATIONS

The Power Authority agrees with the Operations section of the SALP Report. The observations discuss similar strengths and weaknesses as those documented in the FitzPatrick Plant Self Assessment. The FitzPatrick Self Assessment, in conjunction with the Diagnostic Evaluation Team Report, formed the basis for the James A. FitzPatrick Results Improvement Program (RIP). The weaknesses and deficiencies mentioned in the diagnostic report are being corrected by actions tracked in either the RIP or the Nuclear Generation Business Plan.

Control Room Operator performance continues to be a strength. The Control Room teams responded well to plant events. Recognizing limited operating time, there were no automatic scrams during the SALP Period. Events were well documented with appropriate lessons learned and corrective actions as a result of improved critiques.

The procedure improvement committee has developed a writers guide, which has been approved and implemented. This guide will add clarification and consistency to all plant procedures. Additionally, administrative procedures that guide plant personnel on the use of procedures were approved and implemented.

Operations staffing has been increased by the addition of nine engineers to provide on shift support and Shift Technical Advisor (STA) qualification. Additional non-licensed operators have been added to the staff to support the next license class. A license class is currently in progress that is expected to provide an additional six SROs and six ROs to operations after the October examination. The next license class will start January, 1993 and will include eight SROs and eight ROs, this will provide the additional licenses needed to staff the rotating positions discussed in the report.

During this SALP Period, personnel errors resulted in several events. Attention to detail has been, and is, continuing to be emphasized to operations personnel. Critiques of operational events are being initiated at lower thresholds. Lessons learned are presented to department personnel to reduce the probability of reoccurrence. There is increased attention on procedure use. All Operations Department procedures have been reviewed and expected level of use has been identified. Shift management and plant management have included procedure use in their observations and oversight.

Control Room and plant deficiencies are being reduced in number. The Nuclear Generation Business Plan and Results Improvement Program include tracking methods and goals to increase awareness and reduce the number of deficiencies.

Additional guidance and training on expected standards of shift turnovers, log keeping, and shift communication has been provided to the operating crews. Improvement has been noted and increased management oversight through management observations is expected to maintain this area on an improving trend.

The report noted that several deficiencies were insufficiently investigated or inadequately tracked which caused delays in timely resolution. A formal method of LCO tracking has been initiated. The Results Improvement Program includes actions to improve equipment status control. This action is being investigated and will include a troubleshooting log of actions taken, an improved method of equipment status information available to the Shift Supervisor, and a method of clearly identifying Maintenance items with a high Operations priority.

The Licensed Operator Requalification Training Program was judged to be unsatisfactory following the administration of requalification examinations in April 1991. Subsequently, the ability to successfully develop, validate and administer the written examinations was demonstrated in June, 1991 in a special examination which was passed by all twelve operators who participated. Additional training and evaluation in the use of emergency operating procedures, upgrade of the existing examination bank used for the annual examinations and more frequent use of NRC style examinations during routine training were initiated. Additional contract instructional support has been obtained for the operator training programs. Detailed staffing studies are in progress to determine the long term steady manpower requirements.

During the first several months of 1992, significant emphasis was placed on formal evaluations of the crews. In addition to the training staff, evaluators from operations management, upper plant management, and other utilities were used. Teamwork and communications were stressed and operator performance was tracked and reported. Significant improvement in operator performance was noted in all areas. All operators passed the NRC administered requalification examinations. Of the remaining operators, the only recorded failure was for one reactor operator in the simulator portion of the examination. This individual was remediated and successfully re-evaluated.

During the diagnostic evaluation and a subsequent inspection of the Operator Training Program, problems were noted with missed training or failure to maintain watchstanding proficiency. The root cause of these problems was a lack of management oversight and insufficient procedural controls.

All training and watchstanding records were reviewed to determine the extent of the problems. Operators who were delinquent in watchstanding proficiency were restricted from licensed duties until the required watches under instruction were completed. All training attendance deficiencies were identified and missed training was completed by the end of 1991. An Operations Department procedure has been implemented to control the maintenance, deactivation, and reactivation of licenses. Procedural controls for tracking and reporting operator attendance and absence have been strengthened.

Training attendance and absences are tracked and reported on a weekly basis, with updates at the end of each training cycle. Attendance is tracked and reported through use of an automated database. Many of the training attendance deficiencies were for staff licenses who were not assigned to a shift and were thus not scheduled to attend training at a particular time. Staff license training in the simulator is now conducted in separate sessions for which the individuals' attendance is scheduled. As of June 22, no Licensed Operator Training attendance deficiencies exist.

RADIOLOGICAL CONTROLS

The Power Authority agrees with the Radiological Control section of the SALP Report. Radiological controls will continue to improve using the plan put in place in 1991. The original Radiological Upgrade Program, the Nuclear Generation Business Plan, and the Rad Health and Chemistry Assessment Program have been, and will continue to be included in improving station performance. The Power Authority's radiological oversight and assistance program is managed out of the White Plains Office and uses radiological personnel from Headquarters, IP-3, and JAF, as well as experienced professionals from outside the Authority.

The existing evaluation process for radiological performance has been enhanced by root cause training for radiological personnel using the site corrective action process to focus management attention to this area and performance trending and analysis. The radiological incident reporting process continues to identify program improvement opportunities.

The Power Authority has been encouraged by improvements in worker and technician performance in the radiological area. This improved performance is attributed to the Training Department's Enhanced Radiological Workers Training Program, the Operations, Maintenance, and Instrument and Control Department's effective use of the ALARA Planners, the worker feedback mechanisms provided by the ALARA Suggestion Program, and tailgate training sessions. These programs continue to be monitored for further improvement.

The station ALARA program has been improved with the Engineering Department's use of the Design Review Manual. The manual was developed by the Rad Health and Chemistry group using successful industry experience as a model. Modifications are being developed today that incorporate features that will reduce exposures during plant operations.

The Cobalt Reduction Program has been updated; source term reduction has been included on the Headquarters/Site Working groups routine agenda. The ALARA Planning role has been expanded by assigning an ALARA Planner to the scheduling group. This provides an opportunity to schedule ALARA initiatives to a particular system window in addition to those initiatives assigned on a job specific basis. Programs used at other utilities are being reviewed for additional opportunities to improve.

The Chemistry Group continues to perform effective support of station operations. The Headquarters/Site Chemistry Working group effectively coordinates the chemistry and effluent control program improvements by coordinating activities of JAF and Headquarters Office personnel as well as external support. The Chemistry Working Group has been used as the model for the Radiological Working Group which started meeting in May of this year. There is every reason to expect the same success with the Radiological Working Group that has been experienced with the Chemistry Working Group.

The Chemistry group has done extensive work with the Electric Power Research Institute for using the Enhanced Zinc Injection process to further reduce plant radiation level for maintenance activities.

The Radiological Environmental Services (RES) Department's report format was changed to require that changes to the Process Control Program (PCP) be included with the semi-annual effluent report. This requirement was added to AP-1.10, Process Control Program.

Power Authority Procedures (RPP-15, RPP-17, and RPP-18) mentioned in the Process Control Program are now Plant Operations Review Committee (PORC) approved documents. Contractor procedures addressed in the Process Control Program are now all PORC approved.

A formal upgrade of the Radwaste Systems Training Program will be in place prior to Cycle 7 of the current year. The Radwaste Shipping and Handling Training Program is still under development. It will be completed and implemented by October 19, 1992.

The Power Authority appreciates the recognition of improvements in radiological controls and will continue to aggressively pursue further improvements to achieve superior performance at FitzPatrick.

MAINTENANCE/SURVEILLANCE

The Power Authority agrees with the SALP Report in the area of Maintenance/Surveillance, and are encouraged an improving trend is noted.

In the area of Technical Support of Maintenance, staffing has been increased so that we may better assess equipment failures and improve root cause analysis of those failures.

To improve Root Cause Analysis an Operations Review Group has been established to track the review and corrective actions for in-house events. In addition an Operating Experience Improvement Plan has been developed to improve necessary initiatives resulting from industry events.

A Maintenance Engineering Staff was established, primarily to review equipment failures so that actions will be taken to prevent recurrent plant deficiencies. Improved training in root cause analysis has been provided, especially in assessing causes of equipment failures.

In order to improve our Preventative Maintenance Program (PMP), the staff devoted to expanding the scope of our PM program has been increased (tripled). Items to be added include air operated valves, solenoid valves, fans, compressors, heat exchangers, important manual valves, and Instrument & Control equipment.

Incorporating feedback from corrective maintenance activities into the PM program is a primary responsibility of the previously mentioned Maintenance Engineering Staff.

The Power Authority is committed to improving maintenance planning activities, which will help us reduce our backlog of work. During the 1992 Refuel Outage we have centralized our scheduling function. This has improved coordination of work groups. Similarly, we are working on centralizing our work planning function to improve work package development so that planned work packages are ready to work and can be efficiently accomplished.

During this outage many plant equipment improvements have been made, including the overhaul of all remaining safety related motor operated valve (MOV) operators and many non-safety MOVs.

A plan to reduce oil leaks was developed and has been worked throughout the outage.

Controls of combustible material in the plant has been improved and monitoring increased to ensure these controls are maintained.

The Power Authority has begun a long term plant preservation program, as you noted.

A procedure (PSO-60) exists which defines the current Plant Labeling Program. The present goal is to label plant components such as pumps, motors, valves, control and electrical panels, transformers, breakers, instruments, instrument racks, and other major equipment in accordance with standards recommended by the Institute for Nuclear Power Operation by the end of 1992. This would involve about 35,000 labels.

Currently, a little more than 10,000 labels have been purchased or manufactured on site and distributed for installation. About 6,000 labels have been installed.

The present emphasis is on labeling components in normally inaccessible areas, such as drywell, steam tunnel, and various condenser and heater bay areas.

A contracted organization with labeling experience has been selected to assist in the labeling effort.

The Power Authority agrees that the Inservice Testing Program continues to function well. A critical input to the success of the program is a coordinated effort of the Operations and Technical Services Departments. The overall strength of the Program also reflects the quality of the Authority-initiated independent assessment performed in 1990.

Additional program enhancements have been identified, since this self-assessment, which are targeted to:

1. Improve Program Consistency and Effectiveness

   - Develop an IST Basis Document
   - ECCS Pump Curve Verification
   - Surveillance Test Bases Calculation/Matrix
   - Addition of Non-ASME Components to the Performance Engineering's Planned Component and System Monitoring Program

2. Simplify Work Process to Improve Productivity for Both Technical Services and Operations Departments

   - Develop a Post-Work Test Matrix for IST Components for the Work Center
   - Power-Operated Valve Study Implementation (Reduce Procedure Changes for Operations)
   - IST Monitoring Point Labeling Enhancement (More Clearly Identify all IST Vibration Points for Surveillance Testing)

As observed, the overall quality of our procedures continues to improve, as well as our practices regarding procedure use and adherence. These are continuing areas of emphasis with our maintenance personnel.

The Power Authority agrees with the positive comments regarding the overall knowledge, experience, and professionalism of our maintenance personnel and involvement of our First-Line Supervisors.

The improvements described are designed to provide these professionals with the program support that's needed to continue to improve Maintenance results at James A. FitzPatrick.

In the area of surveillance, the Power Authority acknowledges the NRC's recognition that the surveillance testing program contributed to the safe operation of the plant during the assessment period. It is realized that continued improvement is necessary in this area.

The Instrument & Control Department is committed to improving procedures and making necessary changes when they are identified. Approximately 300 procedures have been improved in the Instrument & Control Department during 1992. These changes include: developing new procedures, correcting procedures, procedure enhancements, revisions, and human factors improvements. A Senior Technician and an engineer review new procedures and revisions prior to issuance. Many of the procedure enhancements are being identified by technicians during pre-job planning.

The Instrument & Control Department and Corporate Instrument & Control Engineering are developing a setpoint/tolerance control program. The foundation for this program is the 24 month refuel cycle project. Calculations for 60 safety-related instrument loops have been completed and Instrument & Control procedures are being updated as necessary.

An upgraded periodic surveillance testing program is being implemented to response time test the necessary system channels. This testing is in accordance with the proposed Technical Specification change recently submitted to the NRC.

EMERGENCY PREPAREDNESS

The James A. FitzPatrick Nuclear Power Plant has and will continue to maintain a superior and effective Emergency Preparedness program. Management's strong involvement both onsite and offsite, especially with Oswego County officials, will be unabated. Program implementation and development will continue with strong leadership and clearly directed by Authority management.

Improvements are planned for this program that include use of the simulator, upgraded EALs, additional training, and Joint News Center changes. These improvements are being done both to improve FitzPatrick's program and to respond to concerns addressed by the NRC.

The Power Authority reaffirms its commitment to improve and to maintain a superior and effective program.

SECURITY

The Power Authority appreciates the NRC recognition of the Security Program's continued superior performance. The Authority has strived to provide the best possible Nuclear Security to James A. FitzPatrick, as well as the general public.

The Authority agrees with the comments regarding the Security Department's excellent enforcement history, aggressive Fitness for Duty Program, close cooperation with outside agencies, excellent Maintenance and Instrument and Control support, dedicated Security personnel who firmly believe in the team concept, and pride in our organization.

The Security Department maintains a pro-active attitude in identifying small problems and solving them before they become significant.

The department self-assessment program, has enabled us to take a critical look at ourselves and to find ways to continually improve our performance.

The NRC's recognition of our efforts in improving training, access control, equipment maintenance and assessment aids is appreciated.

The Power Authority and the Security Department are totally committed to improving program performance.

ENGINEERING/TECHNICAL SUPPORT

The Power Authority recognizes the need to improve performance in the engineering and technical support area. The desirability of performing an independent assessment of engineering was identified prior to the Diagnostic Evaluation Team and incorporated in Engineering Improvement Plans, i.e. at the time of the reorganization of the Technical Services Department and the creation of the Site Engineering Department. These improvement plans represented a consensus of the Technical Services Department, the Site Engineering Department, and the White Plains Nuclear Engineering Division.

The physical reorganization of the Technical Services Department and the creation of the Site Engineering Department became effective on the 8th of August 1991. As with any reorganization of that magnitude, a finite time period to fully complete the reorganization is required.

The SALP report notes concerns evident in the resolution of the QA classification for the Safety Pump Room ventilation fans. The fans were returned to Category 1 status in 1991 based on engineering review of the original plant design.

The Power Authority concurs with the SALP report that a number of the high-profile technical issues currently being addressed date back to the original plant design. The Power Authority also agrees that a portion of today's technical issues should have been addressed and resolved in a more timely manner through proper implementation of a quality Operating Experience Review Program. A comprehensive program plan has been developed and is being implemented to upgrade the JAF industry Operating Experience Program. The plan, which includes both short and long term aspects, will insure timely and effective use of industry experience, as well as management oversight and awareness of the effectiveness of the Program. Key elements of the Program are as follows:

- elimination of backlog of Operating Experience documents
- review of previously dispositioned high priority items
- identification of departmental points of contact
- elevation of overdue reviews and corrective actions to higher levels of management (similar to the AQCR process)

A thorough performance-based audit of the Operating Experience Program (by an independent contractor working with the JAF Quality Assurance Department) was initiated. The findings of that audit have been factored into the overall Operating Experience Improvement Plan.

An independent assessment of our Appendix J Program was initiated. Based on past success with the IST Program, it is our belief the on-going independent assessment will result in the enhancement of the Appendix J Program.

This Appendix J self-initiated assessment will be followed by development of a program basis document. This basis document will provide our staff with a tool to ensure continued compliance with the regulation.

Similar efforts are also being undertaken to improve usage and effectiveness of our NRADS Program. A self-assessment has also been performed and an action plan is being formulated to improve program usage, timeliness and increase productivity. This work encompassed corporate responsibilities in this area.

Engineering has also initiated "Organizational and Programmatic Root Cause" training for key managers. Senior management (i.e. EVP, VP's and Resident Manager) has already attended a seminar on this subject given by Dr. Chong Chiu. Similar training on this subject was just completed for selected JAF supervisors.

The SALP Report on Engineering/Technical Support covers many areas and organizations that provide support of the James A. FitzPatrick Plant. The last 12 to 18 months has been a very difficult and challenging time for engineering. The communications between engineering organizations at James A. FitzPatrick (JAF) and White Plains Office (WPO) have greatly improved and further improvements are underway. The effort by engineering to support both originally planned work and emergent work during this time frame has been and continues to be enormous.

As discussed in the SALP Report, communication and coordination between the various Engineering and Technical Support groups shows weaknesses. Provided below are the initiatives undertaken to improve the communications and coordination of the engineering and technical support of JAF.

An engineering meeting is held on a monthly basis to discuss engineering issues pertaining to JAF. Representatives of Corporate Engineering, Technical Support and Licensing groups are present at the meeting. The format of this meeting is being changed to ensure that all engineering inputs to licensing issues are discussed. In addition to the engineering meeting, twice a

week the engineering supervisors from the site and corporate office discuss (via telecons), major issues which affect JAF and coordinate the actions of each organization. This has resulted in more timely resolutions of problems and improved cooperation between the groups.

A description of the project team concept for modifications has been issued and reviewed and is in the process of being formatted into a Nuclear Engineering Administrative Procedure. The use of project teams has been very successful in the review and approval of the emergent modifications in the area of fire protection and other modifications required for startup.

The refinement of the definition of engineering and technical support responsibilities has been initiated and a Nuclear Administrative procedure has been drafted. A working group has been formed to input specifics into the responsibilities of the various organizations. This group has met numerous times. The output of this effort will be clearly defined roles for organizations providing technical support to FitzPatrick.

The Power Authority has commenced an assessment of the corporate engineering organizations and the interface with engineering organizations at the site. This effort will build on the completed assessment of the Technical Services Department.

Significant progress in Engineering has been made in the control of the existing engineering backlog. Additional resources (dedication of NYPA staff with contractors and Architect/ Engineers) have been applied to reducing the backlog. An Architect/Engineer has been contracted to reduce the Design Equivalent Modification (DEM) backlog to a level that is manageable by the permanent NYPA staff. A plan and schedule has been developed and work is progressing very well. The effort to close out modifications is ahead of schedule and proceeding in an excellent manner. We have also dedicated personnel to reduce the temporary modifications.

For the remaining engineering backlog items and other engineering work tasks (work requests, document change requests, Operating Experience Reports, major and minor modifications), a monthly report is issued to track the outstanding items and the trend.

Increases in the staffing levels of both corporate and site engineering groups, previously approved by Authority management, have been expedited and in many cases already implemented.

The staffing increases have allowed the strengthening of expertise in specialized areas including electrical analysis, seismic analysis, HVAC, fire protection and Appendix R. A new group has been added to the Corporate Engineering organization

which has programmatic responsibility for fire protection and Appendix R .

An independent assessment of the drawing control process was performed. Based on this report, improvements to the drawing process will be implemented.

To assist in the implementation of the modifications required contracts have been established with five Architect/Engineers (A/E) and increased support from the original design A/E, Stone & Webster. This allows our Nuclear Engineering and Design (NED) staff to concentrate on engineering issues including development of conceptual designs for modifications. To support the review of the modifications being prepared by the A/E's, we have provided additional space and established project teams to review the mods. This process has improved the quality and timeliness of reviews.

Nuclear Engineering and Design has been given the responsibility of reviewing and accepting on behalf of the Authority, design documents generated by the outside organizations. This ensures the work generated by others meets Authority standards and is consistent with the design basis of the plants.

Another area that is being improved to supply management support and overview is the implementation of the prioritization process for engineering work. A process for review of work has been established and a working group has been meeting approximately twice a week for the last six months. This group, in addition to prioritizing the backlog, is working on the prioritizing of newly identified issues. The prioritization group consists of representatives from various site departments including Site Engineering and Technical Services.

The Training Departments at both James A. FitzPatrick and White Plains Office have developed training requirements for engineering support personnel in accordance with Institute of Nuclear Power Operations guidelines. This will improve the qualifications of both James A. FitzPatrick and White Plains Office engineering staff.

A planning group has been established with Nuclear Engineering consisting of a NYPA Planning Manager and four planners (presently contractors). This group has the responsibility of planning and scheduling engineering activities assigned to the Nuclear Engineering Division and ensuring integrated and coordinated support to both Nuclear Facilities.

SAFETY ASSESSMENT/QUALITY VERIFICATION

The Power Authority has implemented, and is improving, a self assessment process. The process includes management observations of ongoing work, training, and plant tours. In addition, individual departments have or are implementing self assessment procedures.

An integrated assessment program has been developed and is being implemented by the White Plains Operations and Maintenance Department.

The Operations Review Group has been established to review plant internal deviations, conditions, and events. Each morning the Operation Review Group reviews deficiencies from the various reporting systems, determines significance, and present findings to the plant leadership team (i.e. Resident Manager and General Managers). This assures the plant leadership team is aware of problems and issues so that resources can be appropriately directed.

The Operational Review Group oversees and assists in critiques and root cause evaluations. The group reviews proposed corrective action to assess effectiveness. Corrective actions are entered in the action tracking system and tracked to completion.

Causal factors are being tracked, and will be evaluated for adverse trends and program related problems. NYPA requested, and received an assist visit from the Institute of Nuclear Power Operations to evaluate this program. Recommendations from that visit are being incorporated.

The Power Authority is committed to improve the review of and response to operating experience, both internal by the Operational Review Group, and external by Technical Services (as described earlier).

The Power Authority agrees with the NRC observations concerning licensing. The Authority is committed to achieving a superior level of performance in this area.

At the beginning of the SALP period, there were seven licensing engineering positions in the White Plains Office which were dedicated to the FitzPatrick Plant. Five new licensing engineer positions have been approved and one has been filled. Of the five new positions, two will be at the supervisory engineer level. The addition of these supervisory positions will reduce the Director's over-involvement in day-to-day activities. This

will allow him to spend more time on improving licensing activities and processes. It will also help to make his review of submittals to the NRC more independent.

In addition to these new positions, two interns have been added to the staff and an additional intern may be added in the near future. Four full time contract engineers have been added to the staff. Three of these engineers are dedicated to the technical specification backlog. One is dedicated to fire protection issues.

The total licensing staff for the FitzPatrick Plant now includes eight permanent Power Authority engineers and four contractors. Four permanent vacancies will be filled in the near term with contractors. This will bring the total number of licensing engineers to sixteen. In addition, the staffing includes the Director, Nuclear Licensing - BWR and interns.

The professional qualifications of the nuclear licensing staff are also being improved. The licensing staff now includes one senior engineer who is a former SRO at the Fitzpatrick Plant, one engineer who is SRO certified at FitzPatrick, and one engineer who recently completed Reactor Operator Systems Training. Three of the eight permanent Authority engineers now have systems training equivalent to that required for an operators license. In addition, the Director, Nuclear Licensing - BWR was SRO certified at Fitzpatrick.

Additional training is being given to the licensing staff. One licensing engineer will attend a two week training course on FitzPatrick administrative procedures and work control processes at the plant. In addition, this engineer plus three others will attend a four week systems training course at the FitzPatrick Plant in July and August of this year.

The Authority is taking several actions to improve the quality of licensing documents transmitted to the NRC. First, a root cause evaluation will be performed of licensing submittals which were sent to the NRC and which contained inaccurate information. This root cause will be performed independently by a contractor or the Authority's Quality Assurance Department. This root cause evaluation will identify the underlying reasons for the inaccuracies and determine what are the appropriate actions that need to be taken to improve licensing submittals.

The Authority is also taking action in related areas which will improve the quality of our submittals. First, the additional licensing staffing will reduce the workload of the individual engineers and thereby improve the quality of their work. The Authority is also increasing the plant specific training being given to the licensing engineers.

The Authority is making numerous improvements in the Engineering Departme . These efforts will improve the overall quality of engineering work and will also improve the quality of engineering done in support of licensing submittals.

The Authority is also improving the concurrence cycle used to review and approve submittals to the NRC. The list of reviewers is being focused on those individuals who have expertise that they can bring to bear on the subject, or who have a stake in the c mmitments being made to the NRC. The list of reviewers will be shortened if possible. Individual responsibilities for review and verification of information being provided to the NRC will be designated. Reviews will be conducted in parallel to give the reviewers more time to evaluate the document. Standards will be established for documentation required to support input into licensing submittals. The Authority will also check with other utilities to see how the concurrence cycle may be improved. Lessons learned from this effort will also be included in revisions to the concurrence cycle. When this effort is complete, the formal procedure for the concurrence cycle will be revised and the appropriate personnel will receive training.

Additional changes are being considered for the onsite concurrence cycle for licensing submittals developed in the headquarters office. The Authority also plans to have complex proposed technical specification changes presented to PORC by the licensing engineer who prepares them. This will reduce the possibility of misunderstandings and miscommunications which could effect the quality of the proposed technical specification change.

Nuclear Licensing is currently developing a mission statement. Although not complete, the mission statement formally recognizes Nuclear Licensing's responsibility to ensure that information provided by the Authority to the NRC is complete and accurate. Performance plans for Licensing engineers will be updated to contain the key elements of the mission statement when it is completed.

The Authority is adding a verification function to the licensing section, which will be performed by one licensing engineer on a full time basis. This engineer will be responsible for reviewing selected licensing submittals and performing the following tasks:

1. Verifying the accuracy and quality of the information provided; and,

2. Verifying that the commitments are satisfied.

A working group has been established to better define the role of engineering and technical support. The Director, Nuclear Licensing - BWR is a member of this working group.

Licensing is improving communications with the plant and with engineering. One of the new licensing engineer positions will be permanently stationed at the FitzPatrick Plant. This engineer will report to the Director, Nuclear Licensing - BWR in the White Plains Office and will attend daily meetings, planning meetings, and key staff meetings at the plant on a regular basis. He will keep the Director, Nuclear Licensing - BWR apprised of emergent issues as they arise. In addition, headquarters licensing engineers may rotate up to the FitzPatrick plant in one or two week intervals. Licensing is participating on an active basis in project teams created in the engineering division.

Licensing is also represented at the monthly engineering meetings which take place at the FitzPatrick Plant. Monthly licensing meetings will be part of the monthly engineering meeting or a separate meeting scheduled the same day. Licensing will also be participating in the twice weekly conference calls between the engineering organizations at FitzPatrick and the White Plains Office.

In the past, a weekly directors meeting was held in the White Plains Office. This meeting will be reinstituted, but on a more formal basis to make it more productive.

Licensing also attends the monthly Project Meeting held at the FitzPatrick Plant and the White Plains Office Morning Meeting. This meeting is used to highlight the daily or weekly support needed by licensing from other parts of the organization.

Licensing has completed a review of all outstanding licensing issues and has identified those whose resolution is required prior to plant startup. In addition, all outstanding proposed technical specification changes have been formally reviewed and prioritized. Several proposed technical specification changes have been identified as required prior to startup. The NRC has been notified of these.

Formal guidance has been provided to the licensing staff concerning the need to promptly review and resolve licensing issues. All licensing staff have been required to read this guidance and it has been discussed at a licensing staff meeting.

A new Action Item Tracking System has been developed for use in the Nuclear Generation Department. Nuclear licensing will assume responsibility for this system and use it to assure timely resolution of licensing issues. In addition, licensing will develop a computerized commitment tracking system to be used for

the recording and tracking of permanent commitments to the NRC and other outside organizations. The combination of these two systems will improve licensing's ability to identify and resolve issues in a timely manner.

The Quality Assurance Department has made the commitment to continuous improvement. Ongoing improvements include performance monitoring in all SALP functional areas through performance based audits and surveillance.

QA of engineering programs has been completed by industry authorities.

There has been increased performance based surveillances of maintenance activities and surveillance testing.

Enhanced operations monitoring is being performed by a former FitzPatrick Operator (audits and surveillances). Also, a Quality Assurance Engineer has been attending Senior Reactor Operator training for the past year. Upon returning from training, this person will develop and implement a comprehensive plant operations monitoring program.

The use of an industry authority for assessing radiological controls has been very effective and continues. A Senior Quality Assurance Engineer with extensive supervisory experience in radiation protection and chemistry has been added to the Quality Assurance Department. This person will develop and implement a comprehensive radiological controls monitoring program.

Monitoring the performance of Emergency Preparedness and Security continues through surveillance and audits. Industry authorities are used to thoroughly evaluate and further enhance these already superior areas.

The Power Authority commitment to identifying and resolving deficiencies is clear. The implementation of the Business Plan, Results Improvement Program, Departmental Self Assessments, Nuclear Generation Department Action Item Tracking system and the FitzPatrick Operations Review Group were all initiated late in the SALP period.

Training of plant personnel in root cause analysis, creation of the Operations Review Group, and plant leadership team daily review of emerging issues provide a rigorous review of issues and more effective corrective actions to preclude recurrence.

There has been improvement in the process for escalating issues to appropriate levels of management by the Quality Assurance Department. Management support and dedication of resources to identify and resolve deficiencies and more in depth technical

review by Quality Assurance has resulted in more effective and timely corrective action.

Management involvement in the corrective action process has improved. The Senior Vice President of Appraisals and Compliance Services and the Executive Vice President of Nuclear Generation meet monthly to discuss corrective action. Weekly Management meetings of the Resident Manager, General Managers, and Department Heads with the Quality Assurance Manager are held to discuss the status of corrective actions. Bi-weekly reports to management indicating the status of correcting action are distributed.

The improvements evident to the NRC late in the assessment period are indicative of Power Authority commitment to improve overall performance.

ENCLOSURE 5

Final SALP Report Revision Sheet

PAGE	LOCATION	NOW READS	SHOULD READ
4	Third Paragraph Ninth Line	residual heat removal pump	residual heat removal service water pump

Basis: The wrong pump was listed.