INITIAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

REPORT NO. 89-99

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNITS 1 AND 2

ASSESSMENT PERIOD: MARCH 1, 1989 to FEBRUARY 28, 1990

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) Program is an integrated NRC staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance on the basis of this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC's assessment of the facility's performance in each of seven functional areas.

An NRC SALP Board, composed of the staff members listed below, met on April 5, 1990, to review the observations and data on performance, and to assess the performance of the Niagara Mohawk Power Corporation (Niagara Mohawk) at Nine Mile Point, Units 1 and 2, in accordance with NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Attachment 1 to this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of Niagara Mohawk's safety performance at Nine Mile Point Units 1 and 2 for the period March 1, 1989 through February 28, 1990.

The SALP Board for Nine Mile Point Units 1 and 2 was composed of:

Board Chairman

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

Board Members

R. Capra, Director, Project Directorate No. I-1, Office of Nuclear Reactor Regulation (NRR)
B. Cook, Senior Resident Inspector
R. Gallo, Chief, Operations Branch, Division of Reactor Safety (DRS)
M. Knapp, Director, Division of Radiological Safety and Safeguards (DRSS)
J. Linville, Chief, Reactor Project Branch No. 1, DRP
R. Martin, Project Manager, NRR
G. Meyer, Chief, Reactor Projects Section No. 1B, DRP

Other Attendees (Part-time)

C. Anderson, Chief, Plant Systems Section, DRS
R. Bellamy, Chief, Facilities Radiological Safety and Safeguards Branch, DRSS
R. Bores, Chief, Effluents Radiation Protection Section, DRSS
C. Conklin, Senior Emergency Preparedness Specialist, DRSS
R. Conte, Chief, Boiling Water Reactor Section, DRS
T. Dexter, Physical Security Inspector, DRSS
T. Dragoun, Senior Radiation Specialist, DRSS
R. Laura, Resident Inspector (Full-time)
R. Temps, Resident Inspector (Full-time)

II. SUMMARY OF RESULTS

II.A Overview

Despite good intentions and extensive planning, the progress at Nine Mile Point Units 1 and 2 was limited. The high standards and corresponding Category 1 ratings established in the security and emergency preparedness areas were maintained, the Category 2 rating in radiological controls continued, and the quality of engineering work improved sufficiently to merit a Category 2 rating. However, the efforts to correct programmatic problems in the plant operations and maintenance/surveillance areas did not result in sufficient overall improvements in these areas to warrant changes in the previous Category 3 ratings. The inability to improve significantly was further reflected in a repeat Category 3 rating with an improving trend in the assurance of quality/safety assessment area.

In the plant operations area, progress was noted; training problems regarding Unit 1 licensed operators were resolved, and Unit 2 was continuously operated for a significant time period. However, the Unit 2 operator requalification training program was rated unsatisfactory, and some of the Unit 1 operator training problems found earlier were repeated. Further, at both units the incidence of personnel errors and poor control of equipment was high and resulted in numerous operational events.

Good progress occurred in the surveillance area. Thorough, extensive reviews of required testing and procedures formed the basis for better planning and implementation of Technical Specification testing, inservice testing, and inservice inspection. However, there was not significant progress in the maintenance area, and equipment problems and errors by maintenance personnel frequently resulted in operational events at Unit 1 and reactor scrams, safety system actuations, and unplanned outages at Unit 2.

The improved quality of some engineering work appeared to be a direct result of increased management involvement. However, a number of examples of ineffective engineering and technical support were noted.

There was an apparent turning point in Niagara Mohawk's approach to assuring quality. The Restart Action Plan was responsible for the better problem identification, more critical problem evaluation and self-assessment, and the establishment of programs and standards to promote and sustain good performance. The approach appeared to have enabled the improved results noted in the engineering and surveillance areas and the generally improving direction in most other areas. However, the performance in several areas remained at minimally acceptable levels, and the challenge for Niagara Mohawk management remains to utilize this better approach to produce improved results on a consistent basis in all aspects of plant operations.

II.B Facility Performance Analysis Summary

Functional Area	Last Period (3/1/88-2/28/89)	This Period (3/1/89-2/28/90)
Plant Operations		
Unit 1	3	3
Unit 2	3	3
Radiological Controls	2	2
Maintenance/Surveillance	3	3
Emergency Preparedness	1	1
Security	1	1
Engineering/Technical Support	3	2
Safety Assessment/Quality Verification	3 Improving	3 Improving

II.C Unplanned Shutdowns, Plant Trips, and Forced Outages

Unit 1

Unit 1 was in an extended shutdown throughout this assessment period. Some reactor protection system (RPS) actuations occurred while the plant was shutdown and are discussed in the Maintenance and Surveillance section.

Unit 2

1. Loose wires in the main generator potential transformer cubicle actuated a generator protection relay causing a turbine trip and a subsequent automatic reactor scram. Vibration had loosened the screws holding down the wires. The preventive maintenance (PM) instructions for the transformer were revised to include the screws and wires. The unit was shutdown for five days.

Date	Power	Root Cause	Functional Area
4/13/89	100%	Inadequate PM	Maintenance

2. During a turbine surveillance test, a licensed operator used a walkie-talkie near the electro-hydraulic control (EHC) cabinet and caused inadvertent turbine control and bypass valve movement. This created a pressure spike which resulted in an automatic reactor scram initiated by a high neutron flux trip. The unit remained shutdown for two days.

Date	Power	Root Cause	Functional Area
4/22/89	100%	Personnel error	Operations

3. An unexpected downshift of a reactor recirculation pump resulted in reactor operational conditions in the unacceptable area of the power-to-flow map. A manual reactor scram was initiated as specified by the operating procedures. Later evaluation determined that a power supply failure caused the downshift. The unit remained shutdown for 16 days for a scheduled two week maintenance and surveillance outage.

Date	Power	Root Cause	Functional Area
9/8/89	88%	Random equipment failure	NA*

4. An inappropriate isolation during preventive maintenance on the B condenser air removal pump resulted in the loss of condenser vacuum and an automatic reactor scram. The procedure did not caution that an interlock could affect another system, and maintenance personnel did not properly assess the plant impact of the maintenance. Also, operations personnel did not identify the error during their review. The unit remained shutdown for three days.

Date	Power	Root Cause	Functional Area
10/13/89	54%	Procedural deficiency	Maintenance

5. Niagara Mohawk initiated a plant shutdown due to increasing drywell floor drain leak rate. Inadequate control of steam loads and feedwater during the shutdown resulted in a core reactivity transient and an automatic reactor scram caused by an upscale trip of the intermediate range monitors (IRMs). The unit remained shutdown for seven days.

Date	Power	Root Cause	Functional Area
10/18/89	1%	Personnel errors	Operations

6. Niagara Mohawk initiated a plant shutdown to resolve high dissolved copper levels in the circulating water system. The acid used to control circulating water chemistry had leaked past closed isolation valves and inadvertently corroded the copper condenser tubes. Corrective actions included design modifications of the isolation valves. The unit remained shutdown for ten days until an agreement was reached with the New York State Department of Environmental Conservation about the discharge of the copper containing circulating water to the lake.

Date	Power	Root Cause	Functional Area
10/28/89	4%	Design deficiency	Engineering/Technical Support

7. An EHC malfunction caused the turbine bypass valves to open and the turbine control valves to close. This resulted in an increase in reactor pressure and a resultant automatic reactor scram due to high neutron flux signals. A ground introduced by a minor modification had apparently caused the malfunction. The unit remained shutdown for six days.

Date	Power	Root Cause	Functional Area
12/1/89	97%	Personnel error	Engineering/Technical Support

8. A reactor startup was terminated, and a plant shutdown was initiated due to excessive drywell leakage. A valve packing was found to be leaking and was replaced. The unit remained shutdown for eight days.

Date	Power	Root Cause	Functional Area
12/7/89	< 1%	Random equipment failure	NA*

9. Feed pump vibration and mechanical seal problems resulted in a plant shutdown. A common design problem in the feed pump internal components was identified that had not been found during numerous, previous repairs. The unit remained shutdown for 40 days.

Date	Power	Root Cause	Functional Area
12/25/89	60%	Inadequate troubleshooting	Maintenance

*NA indicates that no performance implications exist at this time.

III. PERFORMANCE ANALYSIS

III.A Plant Operations

III.A.1 Unit 1

The previous SALP report rated Plant Operations at Unit 1 as Category 3. Contributing to this rating were inappropriate operator attitudes toward training, weak operator proficiency regarding the emergency operating procedures (EOPs), and deficiencies in the licensed operator requalification training program. NRC was particularly concerned that station management had not been effective in identifying and correcting these deficiencies.

III.A.1.a Analysis

Overall, during this period, station management made substantial progress in addressing and correcting the concerns from the previous SALP report. However, other problems were noted relative to the evaluation of personnel performance, self-assessment capability and problem identification, and attainment of personnel performance at the level described in the Nuclear Division Standards of Performance.

The licensed operator requalification program improved. Management attention to licensed operator training significantly increased, and there was evidence that the operations department had taken responsibility for the quality of training. Additionally, operators demonstrated their acceptance of the responsibility for the quality of training, which was in contrast to their attitude towards EOP training noted in the last SALP period.

Operator use and proficiency with the EOPs greatly improved during this SALP period. A May 1989 inspection concluded that five of the six operating crews demonstrated a satisfactory level of performance in the use of the EOPs; however, one crew and one individual did not. Additionally, the command and control of the operating shifts represented a generic weakness regarding crew communications and the assignment of crew member duties. A September 1989 inspection concluded that both assessed operating crews demonstrated a satisfactory level of performance, but that two senior reactor operators (SROs) did not. The prior generic weakness in command and control was determined to be satisfactorily addressed; however, certain other generic weaknesses (inadequate assessment of power board losses, not using all available indications for diagnosis of events, and occasional slow recognition of plant trends) still existed, which indicated that corrective actions had not been totally effective. Further, Niagara Mohawk self-assessments prior to the NRC reviews had not found the operator problems or the generic weaknesses.

As the unit remained shutdown throughout the period, assessment of plant power operations was not possible. Nevertheless, licensed operators demonstrated improved performance in some other areas. For example, the operations staff's support of maintenance and surveillance activities was good, with only minor problems noted. Good teamwork and support existed for the numerous initial runs of inservice tests, inservice inspection hydrostatic tests and other special testing. Refueling operations were performed in a professional, appropriately paced and competent manner by the operators.

However, the above good performance contrasted with many events in which licensed operators performed poorly. These events consisted of: accidental flushing of a condensate demineralizer to radioactive waste processing due to a valve misalignment; emergency ventilation (EV) initiations due to procedural and personnel errors; EV initiations due to improper tagging control; improper control of source range monitor (SRM) bypass function during refueling operations over three shifts; and a valve misalignment of the reactor building closed loop cooling system. The SRM incident was noteworthy in that the improper position of the bypass switch was overlooked by the operators during loading of fuel assemblies and during two shift turnovers. These events were the result of causes which included operator knowledge deficiencies, poor communications, inadequate plant impact assessment, poor system status control, or inadequacies regarding administrative procedures. Lastly, licensed operator participation in the initial set of reload system walkdowns was judged to be poor, in that the operators failed to identify numerous plant deficiencies identified during later walkdowns.

Operations department management achieved a better approach to operations in some areas. Specifically, the October 1989 Integrated Assessment Team Inspection (IATI) determined that operations personnel had been well integrated into the planning and scheduling process, cooperation between the operations and training departments had improved (the interdepartmental committee had played a major role in this improvement), and management had increased its attention to the needs and effective utilization of employees, resulting in improved teamwork. Further, operators were not as isolated as they were noted to have been in the previous period. Operations management was sensitive to career development and had begun long range planning to enable more career opportunities. Licensed operator staffing was at minimal but acceptable levels.

However, operations management weaknesses were apparent in the improper control and tracking of overtime, the failure to verify adequacy of licensed operators medical examinations, poor communications with operators regarding the requalification examinations, and a weak investigation into the SRM incident. Further, operations management did not aggressively perform self-assessments, and the completed self-assessments were ineffective. Operations management emphasis on improving in the areas of operator training and EOPs appeared to have been beneficial in these areas but had resulted in less attention being paid to day-to-day activities. Although many of these events and problems were of low safety significance, cumulatively they indicated the need for more effective management oversight of daily operations.

Summary

The concerns of the last assessment involving operator training were adequately addressed as a result of increased management focus. However, the performance of licensed operators in the plant varied; good control of testing and refueling activities existed at times, but a number of minor events were caused by personnel errors. More effective management, particularly oversight of daily operations, appeared to be needed to raise overall operations department performance. Insufficient progress was demonstrated to warrant a change in the previous rating.

III.A.1.b Performance Rating

Category 3

III.A.1.c Recommendations

None

III.A.2 Unit 2

The previous SALP report rated Plant Operations at Unit 2 as Category 3. Personnel errors caused by inattention to detail or failure to follow procedural requirements had occurred at a high rate and had caused three reactor scrams. These errors had reflected station and corporate management's low expectations and acceptance of a low level of performance. The SALP Board recommended that Niagara Mohawk raise the performance expectations of the Unit 2 operations department and reduce the number of lit annunciators on the main control panels.

III.A.2.a Analysis

Overall, during this assessment period, the performance of the operations staff was inconsistent and demonstrated only limited progress. Unit 2 was continuously operated for 135 days during which time few personnel errors occurred. However, this good performance was contrasted with the unsatisfactory rating of the licensed operator requalification program, three automatic scrams caused by personnel errors, and a frequent, continued inability to control component and system status.

The Requalification Training Program for licensed operators was rated unsatisfactory. This was based on nine individual failures out of 24 on at least one portion of the examination. Also, two of six crews (recomposed for examination purposes) were determined to be unsatisfactory on the simulator. Individual performance and knowledge deficiencies were noted. Further, weaknesses in the examination process implemented by Niagara Mohawk contributed to the unsatisfactory rating. For example, the written test examination for the second week of the requalification examination did not reflect the generic NRC staff comments incorporated on the first week's examination.

Niagara Mohawk's initial written response to the examination results did not address why the training and operations departments had failed to identify the problems in its requalification program prior to the NRC-administered examinations. Also, it appeared that a complete root cause analysis may not have been performed without prompting by NRC. The major contributor to the identified performance problems appeared to have been unclear management expectations, in that crew roles during emergency situations were not clearly defined. Also, feedback by both training and operations departments and other oversight groups during preparatory evaluations had been ineffective. It was noteworthy that these factors were also NRC concerns at Unit 1 in the same functional area during the previous assessment period.

Three of the six reactor scrams were attributed to personnel error. An operator used a walkie-talkie near the radio transmission sensitive EHC cabinets causing turbine control valves to close and an automatic reactor scram. An inadequate plant impact assessment for preventive maintenance on a condenser air removal pump breaker resulted in a loss of condenser vacuum and an automatic reactor scram. During a controlled plant shutdown, an automatic reactor scram occurred due to poor control of steam loads. These scrams could have been prevented by more care and attention being paid to the impact of the operator action on the unit.

Several personnel errors resulted in poor control of components and systems. The most severe was when valves in the reactor water cleanup system were left out of their normal position, resulting in an uncontrolled discharge of reactor coolant to the liquid waste processing system. Also, a service water bay unit cooler with a known deficiency was improperly returned to service without repairs completed. A Division III switchgear room cooler was declared operable following maintenance, even though it was not energized and no post-maintenance test had been performed. An inadequate plant impact assessment for the tagging of the generator hydrogen system resulted in the unexpected loss of hydrogen pressure indication in the control room and a plant shutdown. Collectively, these errors indicated continuing problems with operator attention to detail and poor planning, as identified in the previous SALP.

Notwithstanding the above problems, Unit 2 operators displayed an overall conscientious attitude towards safety, licensed training, and the resolution of concerns brought to their attention by NRC. This safety perspective and improved problem identification was demonstrated on several occasions. While closely monitoring containment pressure indications during a routine evolution, a control room operator identified that suppression pool/drywell vacuum breakers were improperly set. Operator responses to a recirculation pump trip at 88% reactor power demonstrated their ability to quickly assess the event and carry out appropriate emergency response actions. During a surveillance test, the questioning attitude of an operator identified an incorrect leak test methodology for diesel generator air start system check valves.

Limited progress was made in reducing the large number of lit annunciators in the control room. Towards the end of the assessment period an engineering task force manager was assigned, and better progress tracking methods were established. In the related area of operator responsiveness to alarms, improvement was noted and operators routinely responded to alarms in a timely manner. This improved responsiveness appeared to have resulted in part from an increase in operations department management presence in the control room and involvement in daily activities. This increased management attention to assure effective corrective action was observed in other areas.

Niagara Mohawk adequately implemented the requested actions of NRC Bulletin 88-07 and Supplement 1, regarding potential power oscillations. However, the following inadequacies were noted: a revised procedure included an entry condition that was not understood by all licensed operators; the interviewed operators did not fully understand the recent procedure revision; and several procedures did not contain appropriate cautions. It appeared that the Niagara Mohawk verification process was insufficient to ensure that licensed operators understand procedure changes and the procedure review process was not comprehensive. Later, when an unexpected downshift of a reactor recirculation pump resulted in the reactor operating in the restricted area of the power-to-flow map, the operators acted promptly and correctly to manually scram the reactor.

Many meaningful initiatives were implemented to improve the operations department, but frequently had not been in place long enough to demonstrate results. Examples included establishing and filling a new Deputy Station Superintendent position to provide increased management oversight of plant activities and operator training; improved departmental goals for performance; operator incentive programs based on operational performance; installation of annunciator response cards on the front and rear control panels; revised, detailed auxiliary operator round sheets; computerized tagging system; relocation of the tagging control desk to the rear of the control room to minimize congestion and noise in the control panel area; plant labeling improvements; and video surveillance systems used to monitor inside high radiation areas. These initiatives demonstrated management's desire to improve the control room environment, as well as, overall performance.

Staffing in the operations department was adequate; however, licensed operator career development alternatives and rotational assignments were limited by the lack of extra licensed staff. Because of the requalification training program concerns and normal attrition, the shift crew rotation was reduced to five crews, each with two SROs. Fourteen licensed operator candidates (seven ROs and seven SROs) were in the training program at the end of the assessment period. Operations management appeared responsive to staffing concerns.

Summary

The Unit 2 operations performance was inconsistent and showed limited improvement over the previous assessment period. Operational events caused by poor control of components and systems continued at a high rate. The Unit 2 licensed operator requalification program was rated unsatisfactory, based on the poor performance of operators. Progress on lit annunciator reduction was slow. Meaningful initiatives were established but had yet to demonstrate results.

III.A.2.b Performance Rating

Category 3

III.A.2.c Recommendations

None

III.B Radiological Controls

The previous SALP report rated Radiological Controls as Category 2. There was steady improvement in the overall program but radiation protection (RP) management oversight was weak. However, Niagara Mohawk initiatives were expected to improve the accountability and oversight of ongoing work. The SALP Board recommended that Niagara Mohawk place more emphasis on Unit 1 decontamination.

In this assessment period the RP area was reviewed during the IATI, and radwaste/transportation and environmental/effluent controls were each reviewed once.

III.B.1 Analysis

Radiation Protection

Overall, during this assessment period, radiation protection performance remained acceptable, with limited progress in reducing contaminated areas, upgrading ALARA (as low as reasonably achievable) performance, and oversight of ongoing work. The Restart Action Plan (RAP), an overall Niagara Mohawk assessment of management problems associated with the 1988 shutdown of Unit 1, appeared to result in increased attention to improving radiation protection programs.

The control of ongoing work improved. Walk-around audits by management and teams of first line supervisors resulted in improved adherence to radiological controls practices. Management involvement and control in assuring quality in RP programs improved. Also, audits by the corporate RP group and contractor audits sponsored by the Safety Review and Audit Board (SRAB) improved and became effective in assessing program weaknesses. Management emphasis of problem identification had improved this area, but resolution of the identified problems lagged at times.

The control of contamination and radiation improved. For example, the RP department initiated a structured analysis of the recurrent problem of unlocked high radiation area doors and other recurring site RP problems, as well as industry events. This resulted in better resolution of RP issues. For example, manual contamination friskers were replaced with modern automated equipment. Decontamination of the turbine and reactor buildings reduced the number of personnel contamination events and improved the access to equipment. The control of hot particles on the refueling floor was upgraded. Although there were improvements, some resolutions did not fully address the root cause of the problem. For example, there did not appear to be an effort to upgrade valve packings and to use live loading on valves at Unit 1, thereby addressing the source of low level contamination in some plant areas. Also, the major decontamination of Unit 1 reactor systems was postponed.

Staffing and organization were strong. The staffing level was expanded last period by the addition of a chief technician position to improve control of field work. Since then the staffing level remained stable. Most personnel had many years of service onsite. All supervisory positions were filled with Niagara Mohawk employees, except for the superintendent, chemistry and radiation protection. Also, a new, highly experienced individual was hired midway through the period to fill the ALARA supervisor position vacated last period.

ALARA performance was weak and needed more visible support of upper management. Management improved the use of goals as a tool to focus personnel and equipment changes towards achieving specific objectives, but there were no management goals clearly reflecting the need for site-wide support of RP programs. Also, the relationship between the RP department goals and the broader station and corporate goals was often not clear. For example, there was no 1989 corporate ALARA goal. This could have diminished the priority of RP related improvements. The Unit 1 goal of about 800 man-rem did not represent an aggressive attempt to reduce exposure. In addition, although the final determination had not been made, it appeared that this goal had been exceeded. It also appeared that little effort was made to reduce the source term and to adjust the major planning of work to ensure the goal would be met. Reasonable efforts appeared to have been made during the work performance to reduce exposure. In response to NRC concerns, management established a 1990 corporate ALARA goal of 506 man-rem.

The problem concerning the radwaste processing building subbasement being used for liquid radwaste storage was brought to the attention of the NRC during this SALP period; however, the event occurred several years ago with weak corrective actions initially taken to achieve a timely cleanup. The more recent Niagara Mohawk actions have demonstrated good management oversight and provided for a deliberate, cautious, and well supervised cleanup of this area.

Effluent, Environmental Monitoring, Radwaste and Transportation

Niagara Mohawk had continual problems with the operability of effluent monitors, especially at Unit 2, and corrective actions were not effective. For example, the gaseous effluent monitoring system (GEMS) remained inoperable during most of the assessment period, placing Niagara Mohawk in an almost continuous Limiting Condition for Operation. Niagara Mohawk also failed to take timely action in the repair of some effluent systems. For example, at Unit 1, the service water effluent radiation monitor was declared inoperable for five months before Niagara Mohawk placed the required modification to this system on its repair and maintenance schedule. This programmatic weakness was further evidenced by the five Licensee Event Reports (LERs) related to the effluent monitoring systems issued during the assessment period.

In contrast to the above effluent monitor problems, Niagara Mohawk continued to have strong radwaste and environmental monitoring programs. Niagara Mohawk continued to operate an extensive surveillance system for the collection and analysis of environmental samples and for verification of the meteorological instrumentation. All radwaste shipments were accepted at the low level burial sites without incident. Staffing within these areas remained stable, and the training program for radwaste workers continued to be a strength.

Radioactive waste operations were effectively controlled, except for one minor event in which improper annunciator response resulted in the overflow of the reactor building sump. Radwaste management was proactive in the effort to minimize and segregate radioactive waste and was observed to be actively involved in day-to-day activities in the plant.

The quality assurance (QA) program continued to be effectively implemented, through the use of audits, surveillances and quality control (QC), although the review of the effluent monitoring systems was an exception. Findings identified in audit reports and surveillances were typically resolved in a timely manner for these areas.

Summary

Overall performance remained good. Improvements were made in the reduction of contaminated areas, the control of ongoing work, and the ALARA control of work. However, upper management support of ALARA appeared to be weak. Niagara Mohawk continued to have problems with the operability of the effluent monitoring systems, especially at Unit 2, but radwaste and environmental monitoring programs remained strong.

III.B.2 Performance Rating

Category 2

III.B.3 Recommendations

None

III.C Maintenance and Surveillance

The previous SALP report rated Maintenance and Surveillance as Category 3. The site maintenance program was assessed to be effective; however, weaknesses were noted in management oversight of performance, effectiveness of corrective actions, and adequacy and compliance with maintenance procedures. Improvement was noted in the Unit 1 inservice inspection (ISI) program. Various procedural and personnel deficiencies were experienced during the implementation of the Unit 2 surveillance program. While ISI and inservice testing (IST) activities are reviewed in this functional area, the ISI and IST programs are assessed in the functional area of Engineering/Technical Support.

III.C.1 Analysis

Maintenance

Overall, during this assessment period, performance in the maintenance area was again weak. The inadequate control of maintenance activities, particularly at Unit 2, resulted in a high number of operational events. Weaknesses were noted in the areas of backlog reduction at Unit 2, proper diagnosis of equipment failures at both units, and unplanned shutdowns at Unit 2.

Numerous operational events at Unit 2 resulted from errors by maintenance personnel. These personnel errors resulted in a Technical Specification (TS) violation of electrical Division III operability requirements, a flooding event on the 250 foot elevation of the turbine building, numerous inadvertent safety system actuations, and an inadvertent traversing incore probe insertion. The majority of these errors were made during routine preventive maintenance. The causes of these errors were rooted in weak procedural adherence, poor procedure format, inadequate post-maintenance testing, poor plant impact assessments, and insufficient supervisory oversight. Some of the corrective actions taken by management included requiring the use of a plant impact sheet and a post-maintenance test sheet for each work package. As a long term measure, station maintenance procedures were being upgraded to include more concise procedural controls. These corrective actions appeared to be an appropriate approach.

Three unplanned outages at Unit 2 were maintenance related, and the absence of effective preventive and corrective maintenance was often involved. Poor procedural guidance on electrical preventive maintenance performed on a mechanical vacuum pump breaker directly caused a reactor scram. Inadequate preventive maintenance on loose wires in the main generator potential transformer cubicle caused a reactor scram. A forced outage resulted from inadequate troubleshooting on repetitive feedwater pump problems involving excessive vibrations and mechanical seal failures. These equipment problems resulted in unnecessary plant transients and protective system challenges. As demonstrated by the

above events, the maintenance department did not effectively maintain plant equipment to support reactor operation. Also, two valve packing leaks in the drywell, and a power supply failure in the recirculation pump control circuitry caused unplanned outages. The packing leaks and the power supply failure appeared to be random equipment failures without direct, adverse implications on the maintenance program. Nonetheless, these events were circumstantial evidence of weak maintenance.

With the Unit 1 reactor shutdown, a reactor scram was caused by the failure to properly plan a maintenance activity. Also, several events indicated the need to improve the timeliness and effectiveness of corrective actions, e.g., poor initial troubleshooting on problems related to a motor-generator set (which resulted in several reactor scrams and emergency ventilation initiations), lengthy troubleshooting of stroke time problems with a control valve for control room ventilation, and poor troubleshooting and repair of an emergency diesel generator (EDG) fuel transfer pump.

In the Special Team Inspection early in the assessment period, the NRC noted that to the extent that the maintenance program was effective, it depended largely on the skill and experience of the maintenance management and personnel and not on an established maintenance program. Accordingly, the team noted that the program appeared to be informal in some areas with a considerable risk of degradation if any of the key managers were to depart. Limited progress was made in establishing these programmatic aspects before the station maintenance superintendent chose another non-nuclear Niagara Mohawk job near the middle of the period. This loss of experience combined with the weak program, appeared to contribute to the above problems.

Later in the assessment period the IATI noted a strong and knowledgeable maintenance planning organization that scheduled all facets of the work activities. The IATI also noted that Niagara Mohawk management had implemented performance indicators and a new method for prioritizing work requests to ensure completion on a timely basis, especially for those work requests required to support reload and restart efforts at Unit 1. Realistic goals were set at Unit 1 for the reduction of the backlog of work requests and at the conclusion of this SALP period this goal had been achieved. However, the maintenance work request backlog at Unit 2 remained large and was not effectively addressed by station or corporate management. Work practices observed in the field by the IATI were generally carried out in a competent fashion. Good procedural adherence and teamwork was also noted by the IATI.

In an effort to improve the quality of the various maintenance procedures, a maintenance support group with a staff of 38 procedure writers was formed. This was a good example of management committing the necessary resources to achieve procedural and program improvements. Also, following NRC identification of problems with the post-maintenance testing (PMT) controls at Unit 2, Niagara Mohawk identified and addressed similar PMT deficiencies at Unit 1, another example of effective corrective action.

Some maintenance activities were well controlled. For example, the Unit 2 feedwater pump repairs were well controlled once the design problem was determined, and supervisory oversight of the repairs was evident.

However, several events called into question maintenance management efforts to improve oversight of day-to-day performance, as well as, effectiveness and timeliness of corrective actions. For example, maintenance management was largely responsible for the poor implementation of the initial set of reload system walkdowns at Unit 1. NRC identified numerous deficiencies in the walkdowns, which demonstrated poor preparation and oversight of the walkdowns by maintenance management and unit management. Also, Niagara Mohawk investigation of the Unit 1 reload SRM bypass incident was ineffective, in that it did not determine that electrical and I&C maintenance personnel had not adhered to tagging procedures while performing troubleshooting and repairs. Further, when brought to the attention of maintenance management, initial corrective actions were ineffective.

Improper diagnoses of equipment failures and repetitive failures again occurred at Unit 2 this assessment period. Examples included: hydraulic control unit nitrogen leakage; reactor core isolation cooling system aftercooler temperature monitor failures; standby gas treatment system isolation valve actuator problems; feedwater pump vibration and mechanical seal failures; and reactor water cleanup pump seal failures. These examples indicated poor root cause determinations of equipment failures.

In conclusion, regarding maintenance, although progress was made in some areas, the overall performance in maintenance did not improve. The quality of maintenance procedures improved, work was better prioritized, and the backlog of Unit 1 work requests was reduced. However, the number of maintenance-related scrams, safety system actuations, and unplanned outages at Unit 2 demonstrated that maintenance program was not fully effective. The maintenance program did not appear to analyze, plan, and execute the maintenance work in an effective manner to support the operation of Unit 2 and the repair and testing at Unit 1. Management was often not timely and effective regarding corrective actions and investigations of equipment and personnel problems. Maintenance department staffing appeared to be marginally acceptable based upon the inability to reduce the backlog at Unit 2.

Surveillance

Overall, during this assessment period, the surveillance area improved, most notably at Unit 2 compared to the minimally acceptable level of the previous period. The thorough review of Technical Specification (TS) requirements, previously done at Unit 2, was duplicated at Unit 1 and provided a basis for better planning and execution of the testing.

A major concern identified at Unit 1 near the end of the last period was that frequently performed surveillance tests were not followed step by step and that attached checklists were being used without reference to their written procedure. As corrective action, Niagara Mohawk provided site-wide training on proper procedural conduct with emphasis on strict adherence. This appeared to have been effective as evidenced by the large number of procedural changes initiated at both units to correct procedures, more tests stopped due to procedural concerns, and few instances of events related to poor procedural adherence.

One of the Unit 1 Restart Action Plan (RAP) commitments was to develop and implement a Unit 1 TS matrix for the purpose of tracking and scheduling TS required surveillances. Extensive development efforts by the regulatory compliance group took place this period, and substantial progress was made. This type of computer-based TS matrix had been developed and successfully implemented at Unit 2 during the previous assessment period.

An adjunct to the Unit 1 TS matrix program was the performance of technical reviews of the surveillance procedures themselves. At the end of the period, 100% of the procedures had been reviewed, and final compilation and evaluation of the results were under way. Niagara Mohawk's decision to perform a 100% review of existing surveillance procedures was justified by the fact that numerous minor deficiencies were identified and corrected as a result of this review. A few examples of inadequate test methodology were identified by Niagara Mohawk and other outside organizations. Overall, the test methodology and format for the resulting surveillance procedures were good. These two programs were comprehensive in nature and properly addressed previous deficiencies.

One area of concern at Unit 1 was the instrumentation calibration program for safety-related equipment. The NRC identified the failure to incorporate the emergency ventilation system 1 KW heater thermostat units in the calibration program. Concurrent review by Niagara Mohawk of the balance of plant and Technical Specification equipment instrumentation identified several other calibration deficiencies.

There was marked improvement in the performance of surveillance testing at Unit 2, particularly of the TS-required tests. There was only one inadvertent safety system actuation caused by personnel error while performing surveillance tests. Site-wide training was administered on procedural adherence, and surveillance test plant impact statements were greatly enhanced. During one unplanned outage, the maintenance organization took advantage of the available down time and successfully scheduled and completed 38 local leak rate tests. Local leak rate testing crews were formed using dedicated personnel from various crafts and departments. This approach proved to be successful and demonstrated effective teamwork.

The scheduling of Unit 2 surveillance tests improved, and missed surveillance tests were greatly reduced. Some minor surveillance test implementation problems occurred resulting in TS violations of minimal significance. A missed surveillance test occurred as a result of an operations shift check oversight, and another missed surveillance occurred as a result of a chemistry department oversight. In each case, appropriate corrective action was taken. Increased management oversight of the surveillance program was evident. Performance this period indicated that the corrective actions taken in response to the large number of missed surveillance tests during the previous assessment period were effective.

Both the Unit 1 and Unit 2 ISI programs were effectively implemented. The previously addressed ISI and IST areas demonstrated continued good testing performance.

In conclusion, regarding surveillance, good progress occurred in the surveillance area, and thorough, extensive reviews of testing formed the basis for better planning and implementation of Technical Specification testing, inservice testing, and inservice inspection. Implementation of the surveillance testing program at Unit 1 was effective. The Unit 2 Technical Specification surveillance program showed substantial improvement over the last assessment period. Increased management oversight of the program was evident.

Summary

Performance improved notably in surveillance; the Technical Specification testing programs were effective, and the previous improvements in inservice inspection and inservice testing continued. However, an ineffective maintenance program appeared to result in numerous maintenance-related operational events at Unit 2.

III.C.2 Performance Rating

Category 3

III.C.3 Recommendations

NRC: Perform a team inspection to assess maintenance performance during the Unit 2 refueling outage.

Niagara Mohawk: Reassess the adequacy of the maintenance program and management/supervisory oversight with respect to the continuing deficiencies.

III.D Emergency Preparedness

The previous SALP report rated Emergency Preparedness as Category 1, based on good Niagara Mohawk performance during the partial-participation exercise, good working relationships with State and local agencies, and progress in addressing items from the NRC emergency response facilities (ERFs) appraisal.

During the current assessment period, NRC review included observation of a full participation exercise, a routine safety inspection, and review of changes to the emergency plan and implementing procedures.

III.D.1 Analysis

Overall, during this assessment period, Niagara Mohawk continued the good performance in Emergency Preparedness. Performance during the emergency exercise was good, the good working relationships with State and local authorities were maintained, and effective corrective actions were taken for problems.

During the emergency exercise, good performance was noted in response to the accident scenario. Changes in plant conditions were readily observed by shift staff and used to classify emergency conditions properly. Positive interactions were demonstrated among emergency response organization (ERO) members, and effective coordination with State and local response personnel was observed. Interface with the NRC incident response team was effective. No performance weaknesses were identified, and only minor improvement areas were noted. Previously identified items were corrected and no items recurred.

The routine safety inspection examined all areas of the emergency preparedness (EP) program, including administration, EP and ERO staffing, ERFs and equipment, program changes, training, and independent audits. ERFs were maintained in a state of readiness, and the Site Emergency Plan (SEP) and implementing procedures were current. Procedure and program changes received the proper level of management review.

Site management was kept apprised of EP program activities through formal staff meetings and involvement in the routine activities of the EP staff. Senior managers maintained ERO position qualification, evaluated SEP and implementing procedure changes, participated in drills and exercises, and interfaced with Oswego County officials. Management attention to site activities was supportive, and management demonstrated a clear understanding of the issues.

The EP program was administered by the manager, emergency preparedness, who was responsible for all onsite and offsite activities. To implement all aspects of the program, nine full time technical and administrative positions were authorized. All positions were described and responsibilities were well defined. Personnel changes in the last calendar quarter of 1989 resulted in replacement of the manager, EP and two additional vacancies. Although this put a temporary

strain on existing EP staff, the major program functions were being adequately maintained, including maintenance of the SEP and implementing procedures, conduct of drills and exercises, maintaining emergency response facilities and equipment, and interfacing with offsite support groups. Good coordination existed among other site departments as personnel were drawn from operations and training staffs to aid in development of drill and exercise scenarios. Niagara Mohawk was actively working to fill vacancies with qualified candidates.

Emergency response training was performed by the training department and was generally effective. This included general employee training as well as qualifying individual members of the ERO to perform response functions. A training manual described the course requirements, training matrix, lesson plans, and course contents. The ERO was fully staffed and trained in key response functions. Improvements were made in the system for immediate notifications of ERO personnel. Following implementation of this new system, NRC walk-through scenarios revealed that training of shift personnel on the revised procedure had not been effective in all cases, and retraining was performed. Manual records of individual training were complete, and tracking of permanent records and all ERO requalifications was upgraded via computer database files.

Niagara Mohawk maintained the good working relationships with the local communities, the State of New York, and the FitzPatrick site staff in coordinating offsite emergency response activities. Following the full participation exercise, the Federal Emergency Management Agency (FEMA) identified several deficiencies regarding offsite preparedness, which concerned development of Emergency Broadcast System (EBS) messages, notification of hearing impaired persons, and training of offsite emergency workers. To address these findings, Niagara Mohawk worked closely and effectively with New York and Oswego County and resolved all deficiencies in a Niagara Mohawk supported remedial drill held in November 1989.

Niagara Mohawk showed a good ability to resolve technical issues. In response to NRC inspection findings, implementing procedures were issued via controlled distribution. Revisions were made in the areas of protective action recommendations for Emergency Directors and clarification of emergency action levels for fire related events. These corrective actions were effective, in that there was no repetition of these findings. Also, to address problems associated with obtaining and evaluating chemistry samples, an appropriate action plan was developed.

Niagara Mohawk audits met the requirements of 10 CFR 50.54(t), and a good understanding of EP program areas was exhibited by audit team members. Audits were adequate in scope, and corrective actions on recommendations identified during audits and self-assessments were timely.

Summary

Niagara Mohawk continued to implement an effective emergency preparedness program. Niagara Mohawk demonstrated good performance during the emergency exercise, good working relationships with State and local authorities, and effective corrective actions to identified problems. Personnel changes among EP staff did not appear to impact overall program implementation, and the training program was generally effective. An effective effort was provided in assisting the State of New York and Oswego County in resolving FEMA-identified exercise deficiencies.

III.D.2 Performance Rating

Category 1

III.D.3 Recommendations

None

III.E Security

The previous SALP report rated Security as Category 1. This rating was based upon Niagara Mohawk's implementation of an effective security program, which exceeded regulatory requirements and NRC-approved security plan commitments. The good performance was further demonstrated by Niagara Mohawk's initiatives to improve the program and to upgrade security systems.

During this assessment period, two routine, unannounced physical security inspections were conducted by region-based inspectors.

III.E.1 Analysis

Overall, Niagara Mohawk's high level of performance during the previous assessment period continued throughout this period. The performance of security personnel was excellent, and improvements were made to the security program, training, and equipment.

Upgrading and enhancements of systems and equipment continued. In particular, some aging intrusion detection equipment was replaced, and several assessment aids and security facilities were upgraded. In addition, facilities, such as the access control centers and security office buildings, were very clean and well maintained. The security organization was also assigned additional maintenance assistance, such that the maintenance staff was comprised of a full-time I&C staff consisting of three supervisors and fifteen technicians, three door hardware specialists, three engineers, and one planner. These technicians and specialists were instrumental in maintaining properly functioning and effective security systems and equipment. Repair of security equipment was generally accomplished within hours, and the repairs were effectively prioritized by the security supervisor. Planning and installation of system upgrades were effective, appropriately controlled and well thought-out.

Plant and corporate management continued to be actively involved in security matters as evidenced by excellent support for and cooperation with the security program upgrades and enhancements. Plant and corporate security management personnel also remained active in committees and organizations engaged in nuclear plant security matters. This involvement indicated interest in the program and support from upper level management.

The security manager and his staff were well trained and qualified security professionals with an excellent understanding of nuclear plant security objectives. It was also evident that the security supervisors had been delegated the necessary authority and discretion to ensure that the program was being carried out effectively and in compliance with NRC regulations.

The NRC-required annual audit of the security program was performed by Niagara Mohawk's Safety Review and Audit Board, augmented by security supervisors from other nuclear power plants. The audit was comprehensive in scope and depth. Niagara Mohawk continued to conduct self-assessments of the security program utilizing experienced plant security supervisory personnel and consultants. Corrective actions on findings and recommendations identified during the audit and the self-assessments were prompt and effective, with adequate follow-up to ensure their proper implementation. The NRC continued to believe that the self-assessment program that Niagara Mohawk established has been a major contributing factor in Niagara Mohawk's excellent enforcement history and performance.

A review of Niagara Mohawk's security event reports and reporting procedures found them to be well understood by security supervisors and consistent with NRC regulations. One event requiring a prompt report occurred, involving an unescorted visitor in the protected area. Niagara Mohawk took prompt and appropriate compensatory action and followed-up with effective corrective measures to prevent recurrence.

The security training program was administered by a highly qualified, full-time staff. The program was consistent with and exceeded the requirements of the NRC-approved Security Force Training and Qualification Plan. Security personnel were provided with a modern and well maintained physical fitness room, a simulator for training alarm station operators, and state-of-the-art training aids for hands-on training with excellent lesson plans. Security management also instituted an aggressive tactical training program for the armed security force members. In general, security force members were very knowledgeable of their post duties, procedures, and overall responsibilities.

The Security, Contingency and Training and Qualification Plans were reviewed, and no changes were noted that could have resulted in a degradation of Niagara Mohawk commitments.

Summary

Niagara Mohawk continued to maintain a very effective and performance-oriented program, and the security personnel performed up to the established high standards. The efforts to upgrade the operation and reliability of security systems were commendable and demonstrated Niagara Mohawk's commitment to maintaining a very effective and high quality program. The security training program was effective, very well administered, and continually improved. Management support was clearly evident in all areas of the day-to-day security operations and in the planning for upgrades and enhancements.

III.E.2 Performance Rating

Category 1

III.E.3 Recommendations

None

III.F Engineering and Technical Support

The previous SALP report rated Engineering and Technical Support as Category 3. There had been limited progress in resolving previous problems in the following areas: poor engineering management oversight of contractors; inconsistent performance by the engineering staff; slow resolution of design deficiencies; and significant deficiencies in the implementation of the training program.

III.F.1. Analysis

Overall, during this assessment period, Niagara Mohawk improved the overall quality of engineering work, both design work and plant support activities. The engineering staff resolved the previously identified design issues in an acceptable manner and improved the engineering support at the sites by introducing system engineers and increasing the site engineering group staff. Some engineering work needed improvement in quality or timeliness, including longer term initiatives. Control of contractors improved.

Niagara Mohawk management demonstrated a determination to improve their performance with the following: a program to address and resolve the underlying root causes of identified management deficiencies before the restart of Unit 1; a program to integrate and coordinate engineering activities; a multi-year program to recover and reconstitute the Unit 1 design basis; and a budget with significant resources for implementation of the above programs.

Several 125 vdc system design deficiencies had been identified by Niagara Mohawk during the previous SALP period. Initially, the resolution of these deficiencies was slow due to ineffective management attention. However, the technical deficiencies were effectively resolved when appropriate management attention was provided. Niagara Mohawk assigned a task force to coordinate the necessary engineering disciplines. The establishment of a task force appeared to be effective in resolving this issue and other Unit 1 issues.

Notable improvements were observed in design change activities. A number of corporate engineering activities and projects were conducted in a professional manner, but some weaknesses in other efforts were reflective of poor engineering support. Examples of good engineering work included the establishment of IST and ISI task forces to support all activities required to implement the 10 year interval of these programs; effective implementation of a program to resolve structural integrity concerns in the Unit 1 large bore pipe supports; a thorough evaluation of engineering analysis of the Unit 2 modification to inhibit the feedwater runback signal from the reactor recirculation controls system; and thorough evaluations of the Unit 1 fuel zone level common tap issue and the issue of average power range monitor (APRM) flow bias circuit isolation from computer circuits. Additionally, numerous specific design issues at Unit 1 were resolved in a thorough, acceptable manner.

However, poor performance in other areas demonstrated inconsistency in the ability of the corporate engineering staff to deliver quality work. Examples of these included: Site Operations Review Committee (SORC) rejection of a Unit 1 emergency ventilation design modification due to poor engineering conceptual design review, inadequate independent design review and lack of proper engineering coordination; inadequate initial engineering justification for continued use of Satin American trip coils for circuit breakers at Unit 1; inadequate review to establish harsh environmental qualification for several splice assemblies at Unit 1; and relief requests for Unit 1 ISI programs submitted to NRC in piecemeal fashion with poor justification for some requests. In these examples of poor performance, engineering management involvement appeared to have been less than the management involvement in the examples of better work.

The previous SALP identified problems with implementation of the training program for the nuclear engineering and licensing staff. The original program, which was established in late 1986, was not implemented due to insufficient classroom space and a shortage of instructors. In response to specific weaknesses identified by the NRC and Niagara Mohawk QA, specific training for nuclear engineering and licensing personnel was begun by Niagara Mohawk in March 1989. The program covered 13 specific areas selected by Niagara Mohawk based on experience and industry guidelines and was planned for completion in March 1990. Following this training, a broader based training program was planned for 1990 and beyond. Overall, Niagara Mohawk made progress in providing the needed training for the engineering staff. However, additional management attention is needed to assure timely implementation of the full scope of the training program.

To enhance plant safety and provide better direct plant support, Niagara Mohawk established the Integrated Priority System (IPS) with six levels of priorities. The IPS applied to planned work in the nuclear division and support organizations. All safety significant projects are Priority 1, and other work projects which affect safety systems are Priority 2. The effectiveness of the system was evidenced by the fact that all Priority 1 and 2 projects were on schedule and were reviewed on a weekly basis. The system for assigning priorities to plant modifications appeared to have the proper safety perspective.

Niagara Mohawk introduced system engineering groups to both units and approved additional positions in the site engineering group. These additional engineering resources improved the support of the plants and provided a closer working relationship between the engineering and operations personnel. Also, improved communications between engineering at Salina Meadows and onsite engineering was established by the presence of site engineering managers in the daily status meeting and telephone conference calls to discuss the plant status and design modifications. Examples of this improved support included good engineering work on the Unit 2 main feedwater pump repairs, Unit 2 circulating water system modifications, and Unit 1 core spray system testing.

However, in some instances, these site engineering resources were not effective. Specifically, Unit 2 circulating water system modifications were improperly initiated prior to completion of the safety evaluations, and modifications to the EHC system introduced a ground, which was later implicated in an EHC malfunction and subsequent reactor scram. Also, these engineering groups were slow in addressing problems regarding poor isolation valves for acid addition to Unit 2 circulating water and resolution of long standing temporary modifications. The acid addition valves resulted in an unplanned shutdown due high copper concentrations in the circulating water system.

Engineering management improved oversight of contractors. The offsite engineering group at Salina Meadows relied heavily on contractor personnel to support the engineering work; more than 50% of the engineering staff was from various contractor organizations, provided on an as needed basis. Based on the generally acceptable quality of the work, it appeared that these personnel had been properly supervised. Further, site engineering management assumed more responsibility for the control of contractors at the site, as evidenced by the well structured and well executed ISI, IST, and commercial grade equipment dedication programs.

The licensing group's understanding and interpretations of Technical Specifications (TS) were generally sound and conservative. However, one TS interpretation involving the Unit 2 high pressure core spray keep fill system was judged to be nonconservative by NRC and operations management, and subsequently was not used by operations.

Summary

Engineering and technical support performance generally improved. Much good engineering work occurred, but some engineering work needed improvement in timeliness and quality. Those technical issues which received increased management oversight were generally resolved more expeditiously and were of better quality than issues without such management involvement.

III.F.2 Performance Rating

Category 2

III.F.3 Recommendations

None

III.G Safety Assessment/Quality Verification

During the previous assessment period, Niagara Mohawk performance in the area of Safety Assessment and Quality Verification was observed to be inconsistent. This functional area was rated Category 3 with an improving trend. Numerous strengths and weaknesses were noted, including identified leadership deficiencies had begun to be corrected, problem identification was better, and event evaluations were more thorough, but responsibilities remained poorly defined, corrective actions were weak, and review of industry operating experience was inadequate. The SALP Board cautioned Niagara Mohawk to ensure that increased emphasis on Unit 1 did not result in insufficient attention to problems at Unit 2.

III.G.a. Analysis

Overall, during this assessment period, there was a better approach to assuring quality, but limited progress was demonstrated in producing consistent, good results. In general, the Niagara Mohawk programs to improve overall performance, embodied in the Restart Action Plan and Nuclear Improvement Plan, appeared to be comprehensive, and both conceptually and functionally adequate. This was evidenced by the success, although sometimes marginal, of the programs established to address the five underlying root causes.

Significant efforts were expended to upgrade the Niagara Mohawk approach to assuring the quality of operations. This effort was guided by the Restart Action Plan (RAP), which had analyzed the previous management deficiencies and determined the underlying root causes (URCs). As part of the RAP, new standards of performance for Niagara Mohawk management and working level personnel were established. Considerable evidence was found during this assessment period that Niagara Mohawk was striving to conduct its activities in accordance with the revised standards. Specifically, the implementation of the RAP was evaluated by the NRC's IATI midway through the rating period. The team concluded that there were no fundamental flaws in the RAP. Clear improvement was noted in three of the five underlying root causes of past management deficiencies. These three URCs were goal setting, organizational culture, and team work. Performance in the URCs of problem solving and standards of performance/self-assessment was weak, but showed some signs of improvement.

Performance in the functional areas of Security and Emergency Preparedness continued to be at the established high levels. Further, Niagara Mohawk demonstrated some progress in improving overall performance in the remaining functional areas. Many new initiatives and programs met with success or demonstrated a commitment to long term improvement. For example: the inservice inspection and inservice testing programs at both units; the large bore pipe support examination at Unit 1; improvements in Unit 1 operator EOP knowledge and usage; the development of computer-based TS surveillance matrices at both units; a detailed surveillance test review at Unit 1; and the staffing of systems engineers at both units.

In addition, there were instances of behaviors or actions which demonstrated Niagara Mohawk's implementation of the enhanced standards of performance. For instance, a Unit 2 station shift supervisor (SSS) was observed declining to implement a temporary modification for which no safety evaluation had been done. A decision was made to replace all of the Satin America Corporation circuit breakers prior to reload rather than place reliance on a justification for operation. Also, operators appropriately displayed a questioning attitude and identified several surveillance tests that needed improvement. Further, Niagara Mohawk identified a design error in the Unit 2 service water actuation logic and proceeded cautiously in the evaluation and resolution of the error.

In contrast to the above examples of improved performance, numerous events reflected continued poor performance, and some new initiatives were poorly implemented. For example: unsatisfactory Unit 1 initial reload systems walkdown procedure implementation; poor progress in reducing the numerous Unit 2 control room annunciators; numerous maintenance related events at Unit 2; poor performance on Unit 2 requalification examinations; slow resolution of 125 VDC system concerns at Unit 1; and unsatisfactory progress in reducing the large number of inoperable effluent and process radiation monitoring systems at both units. These examples of good and bad performance demonstrated the inconsistency in overall performance and the broad range of recent gains and continued performance concerns. However, an overall improving trend was noted.

Niagara Mohawk's Nuclear Division management staff was relatively unchanged. Two significant changes later in the period were the addition of a Unit 2 deputy station superintendent and a new director of regulatory compliance. The addition of a deputy station superintendent at Unit 2 was viewed as a positive step to more effectively deal with the numerous technical and personnel related issues at Unit 2 and to provide more direct, senior line management oversight. Increased staffing on the Unit 1 operations events assessment group and Unit 2 independent safety engineering group reflected a Niagara Mohawk commitment to reduce the industry events review backlog and become more proactive. Similarly, the development of the independent assessment group, reporting to the Executive Vice President, reflected a Niagara Mohawk commitment to improve self-assessments. The overall effectiveness of these recent changes could not be measured during this SALP period, but demonstrated good initiatives to improve station performance.

The onsite regulatory compliance group continued to be an asset to the day-to-day administration of operation of the station. Licensee Event Reports and Special Reports processed by this group were generally well written and timely. The Nuclear Commitment Tracking System managed by the group appeared to function properly. A new initiative under the cognizance of regulatory compliance was the Unit 1 Technical Specification (TS) Surveillance Matrix Program. This new program appeared to have gotten started well, with TS preparation for core reload in January 1990 properly verified.

Licensing issues were evaluated with varying degrees of effectiveness for different issues. The engineering and licensing organizations appeared to have difficulty in addressing needs beyond those necessary to support Unit 1 restart and the upcoming Unit 2 refueling outage. This was apparent from the extensions to complete the responses to NRC generic letters, on issues such as the hardened wet well vent, several TMI action item related Technical Specification changes, the instrument air system for Unit 1, and Technical Specification operational mode changes on Unit 2. On the other hand, Niagara Mohawk provided virtually all license amendment submittals to the staff sufficiently in advance of the requested action to allow a timely staff review. Niagara Mohawk generally provided advance notice to the NRC staff of expected schedule delays and their basis. Submittals ranged from marginal to detailed and thorough, also indicative of occasionally strained resources or insufficient management oversight.

Onsite (Site Operations Review Committee) and offsite (Safety Audit and Review Board) review committees have provided adequate oversight of licensed activities. The efficiency of the SORC and SRAB meetings appeared to be improving with better planning and preparation by the committee members and support staffs, although the SORC occasionally got bogged down in detailed technical reviews. Recent committee safety reviews appeared to be thorough and conservative.

The quality assurance department was generally effective. The QA operations surveillance program was well structured and effectively implemented and provided relevant performance data to station management. The QA audit group was severely understaffed early in the period, and the training program required improvement. Later in the period, a sample of QA audits appeared to serve effectively as one of the methods to identify problems.

Summary

The functional areas of Emergency Preparedness and Security continued to maintain the high standards of performance reflective of sound programs, good implementation and aggressive management oversight. The remaining functional areas again demonstrated inconsistency in performance, but an overall improving trend. There was an apparent turning point in Niagara Mohawk's approach to assuring quality, and performance improved in some areas. The improvement appeared to be based on better problem identification, more critical self-assessment, and the institutionalization of processes necessary to sustain good performance.

III.G.2 Performance Rating

Category 3 Trend: Improving

III.G.3 Recommendations

None

IV. SUPPORTING DATA AND SUMMARIES

IV.A Licensee Activities

During the majority of this assessment period Unit 1 remained shutdown and defueled. In January 1990, the core was reloaded following an extensive reverification of systems and procedure readiness by the station staff. Reload activities were conducted competently and professionally with only one minor error. By the end of the assessment period in February 1990, the unit was preparing for restart.

At the beginning of this assessment period, Unit 2 was in a prolonged mid-cycle maintenance and surveillance outage due to the necessity to repair and retest a number of containment isolation valves which failed their local leakage rate tests. Following the completion of this outage the unit was operated for a unit record 135 consecutive days between April and September 1989. Following this record run and planned maintenance outage the unit suffered a number of scrams and forced shutdowns due to personnel errors and equipment problems. These specific events are discussed further in Sections II.C. and III.A. of this report.

IV.B Direct Inspection and Review Activities

Three NRC resident inspectors were assigned to the site throughout the assessment period. Region based inspectors performed routine inspections throughout the assessment period. Several NRC team inspections were conducted in the following areas:

Unit 1

-- Restart Panel review of Restart Action Plan
-- Licensed Operator Requalification Program review
-- Operator Proficiency with EOPs followup (I)
-- Operator Proficiency with EOPs followup (II)
-- Annual EP Exercise (full Region I participation)
-- Allegation followup
-- SSFI followup
-- Special team to assess potential harassment and intimidation
-- Self-Assessment/Readiness for Restart Report review
-- Augmented Inspection Team - Radwaste Building 225 Spill
-- Integrated Assessment Team Inspection

Unit 2

-- Operator Requalification Examination
-- Operator Requalification Reexamination

IV.C Enforcement Activities

Unit 1

Number of Violations by Severity Level

Functional Area	V	IV	III	II	I	Total
Plant Operations		1	1			2
Radiological Controls			1			1
Maintenance/Surveillance		1				1
Emergency Preparedness						0
Security		1*				1
Engineering/Technical Support		2				2
Safety Assessment/Quality Verification		1				1
Totals		6	2			8

*Also issued to Unit 2 but not included in Unit 2 table

Unit 2

Number of Violations by Severity Level

Functional Area	V	IV	III	II	I	Total
Plant Operations		2				2
Radiological Controls						0
Maintenance/Surveillance		1				1
Emergency Preparedness						0
Security						0
Engineering/Technical Support						0
Safety Assessment/Quality Verification		1				1
Totals		4				4

IV.D Licensee Event Report Causal Analysis

Unit 1

This analysis includes LERs 89-02 through 89-17, 89-19, and 90-01, a total of 18 reports.

Functional Area	A	B	C	D	E	X	Total
Operations	6	1		2			9
Radiological Controls	1	1					2
Maintenance/Surveillance	1			3			4
Emergency Preparedness							0
Security							0
Engineering/Technical Support	2			1			3
Safety Assessment/Quality Verification							0
Totals	10	2	0	6	0	0	18

Cause Codes*

Type of Events

A.	Personnel Error	10
B.	Design/Man/Constr./Install	2
C.	External Cause	0
D.	Defective Procedure	6
E.	Component Failure	0
	Total	18

*Root causes assessed by the SALP Board may differ from those listed in the LER

The majority of the LERs were the result of various personnel errors. Attention to detail appeared to be a major contributor.

Unit 2

This analysis includes LER 89-08 through 90-04, a total of 39 reports.

Functional Area	A	B	C	D	E	X	Total
Operations	9			2	7	1	19
Radiological Controls	2			1	1	1	5
Maintenance/Surveillance	5	2		1			8
Emergency Preparedness							0
Security							0
Engineering/Technical Support		2		4			6
Safety Assessment/Quality Verification	1						1
Totals	17	4	0	8	8	2	39

Cause Codes*

Type of Events

A.	Personnel Error	17
B.	Design/Man/Constr./Install	4
C.	External Cause	0
D.	Defective Procedure	8
E.	Component Failure	8
X.	Other	2
	Total	39

*Root causes assessed by the SALP Board may differ from those listed in the LER

There were 25 fewer LERs issued this period than during the previous assessment period. However, there was still a large number of events caused by personnel error, indicating that the corrective actions taken for similar problems last assessment period were ineffective. The majority of the personnel errors were rooted in inattention to detail.

ATTACHMENT 1

SALP Evaluation Criteria

Licensee performance is assessed in selected functional areas, depending on whether the facility is under construction or operational. 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 resolution of technical issues from a safety standpoint;

3. Responsiveness to NRC initiatives;

4. Enforcement history;

5. Operational and construction events (including response to, analyses of, reporting of, and corrective actions for);

6. Staffing (including management); and

7. Effectiveness of training and qualification programs.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

Category 1. Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

Category 2. Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

Category 3. Licensee management attention to or involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimum regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

The SALP Board may assess a functional area to compare the licensee's performance during the last quarter of the assessment period to that during the entire period in order to determine the recent trend. The trend if used, is defined as:

Improving: Licensee performance was determined to be improving near the close of the assessment period.

Declining: Licensee performance was determined to be declining near the close of the assessment period.

A trend is assigned only when, in the opinion of the SALP Board, the trend is significant enough to be considered indicative of a likely change in the performance category in the near future. For example, a classification of "Category 2, Improving" indicates the clear potential for "Category 1" performance in the next SALP period.

It should be noted that Category 3 performance, the lowest category, represents acceptable, although minimally adequate, safety performance. If at any time the NRC concluded that the licensee was not achieving an adequate level of safety performance, it would then be incumbent upon NRC to take prompt appropriate actions in the interest of public health and safety. Such matters would be dealt with independently from, and on a more urgent schedule than, the SALP process.

ENCLOSURE 2

FINAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

REPORT NO. 89-99

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNITS 1 AND 2

ASSESSMENT PERIOD: MARCH 1, 1989 to FEBRUARY 28, 1990

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) Program is an integrated NRC staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance on the basis of this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC's assessment of the facility's performance in each of seven functional areas.

An NRC SALP Board, composed of the staff members listed below, met on April 5, 1990, to review the observations and data on performance, and to assess the performance of the Niagara Mohawk Power Corporation (Niagara Mohawk) at Nine Mile Point, Units 1 and 2, in accordance with NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Attachment 1 to this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of Niagara Mohawk's safety performance at Nine Mile Point Units 1 and 2 for the period March 1, 1989 through February 28, 1990.

The SALP Board for Nine Mile Point Units 1 and 2 was composed of:

Board Chairman

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

Board Members

R. Capra, Director, Project Directorate No. I-1, Office of Nuclear Reactor Regulation (NRR)
B. Cook, Senior Resident Inspector
R. Gallo, Chief, Operations Branch, Division of Reactor Safety (DRS)
M. Knapp, Director, Division of Radiological Safety and Safeguards (DRSS)
J. Linville, Chief, Reactor Project Branch No. 1, DRP
R. Martin, Project Manager, NRR
G. Meyer, Chief, Reactor Projects Section No. 1B, DRP

Other Attendees (Part-time)

C. Anderson, Chief, Plant Systems Section, DRS
R. Bellamy, Chief, Facilities Radiological Safety and Safeguards Branch, DRSS
R. Bores, Chief, Effluents Radiation Protection Section, DRSS
C. Conklin, Senior Emergency Preparedness Specialist, DRSS
R. Conte, Chief, Boiling Water Reactor Section, DRS
T. Dexter, Physical Security Inspector, DRSS
T. Dragoun, Senior Radiation Specialist, DRSS
R. Laura, Resident Inspector (Full-time)
R. Temps, Resident Inspector (Full-time)

II. SUMMARY OF RESULTS

II.A Overview

Despite good intentions and extensive planning, the progress at Nine Mile Point Units 1 and 2 was limited. The high standards and corresponding Category 1 ratings established in the security and emergency preparedness areas were maintained, the Category 2 rating in radiological controls continued, and the quality of engineering work improved sufficiently to merit a Category 2 rating. However, the efforts to correct programmatic problems in the plant operations and maintenance/surveillance areas did not result in sufficient overall improvements in these areas to warrant changes in the previous Category 3 ratings. The inability to improve significantly was further reflected in a repeat Category 3 rating with an improving trend in the assurance of quality/safety assessment area.

In the plant operations area, progress was noted; training problems regarding Unit 1 licensed operators were resolved, and Unit 2 was continuously operated for a significant time period. However, the Unit 2 operator requalification training program was rated unsatisfactory, and some of the Unit 1 operator training problems found earlier were repeated. Further, at both units the incidence of personnel errors and poor control of equipment was high and resulted in numerous operational events.

Good progress occurred in the surveillance area. Thorough, extensive reviews of required testing and procedures formed the basis for better planning and implementation of Technical Specification testing, inservice testing, and inservice inspection. However, there was not significant progress in the maintenance area, and equipment problems and errors by maintenance personnel frequently resulted in operational events at Unit 1 and reactor scrams, safety system actuations, and unplanned outages at Unit 2.

The improved quality of some engineering work appeared to be a direct result of increased management involvement. However, a number of examples of ineffective engineering and technical support were noted.

There was an apparent turning point in Niagara Mohawk's approach to assuring quality. The Restart Action Plan was responsible for the better problem identification, more critical problem evaluation and self-assessment, and the establishment of programs and standards to promote and sustain good performance. The approach appeared to have enabled the improved results noted in the engineering and surveillance areas and the generally improving direction in most other areas. However, the performance in several areas remained at minimally acceptable levels, and the challenge for Niagara Mohawk management remains to utilize this better approach to produce improved results on a consistent basis in all aspects of plant operations.

II.B Facility Performance Analysis Summary

Functional Area	Last Period (3/1/88-2/28/89)	This Period (3/1/89-2/28/90)
Plant Operations		
Unit 1	3	3
Unit 2	3	3
Radiological Controls	2	2
Maintenance/Surveillance	3	3
Emergency Preparedness	1	1
Security	1	1
Engineering/Technical Support	3	2
Safety Assessment/Quality Verification	3 Improving	3 Improving

II.C Unplanned Shutdowns, Plant Trips, and Forced Outages

Unit 1

Unit 1 was in an extended shutdown throughout this assessment period. Some reactor protection system (RPS) actuations occurred while the plant was shutdown and are discussed in the Maintenance and Surveillance section.

Unit 2

1. Loose wires in the main generator potential transformer cubicle actuated a generator protection relay causing a turbine trip and a subsequent automatic reactor scram. Vibration had loosened the screws holding down the wires. The preventive maintenance (PM) instructions for the transformer were revised to include the screws and wires. The unit was shutdown for five days.

Date	Power	Root Cause	Functional Area
4/13/89	100%	Inadequate PM	Maintenance

2. During a turbine surveillance test, a licensed operator used a walkie-talkie near the electro-hydraulic control (EHC) cabinet and caused inadvertent turbine control and bypass valve movement. This created a pressure spike which resulted in an automatic reactor scram initiated by a high neutron flux trip. The unit remained shutdown for two days.

Date	Power	Root Cause	Functional Area
4/22/89	100%	Personnel error	Operations

3. An unexpected downshift of a reactor recirculation pump resulted in reactor operational conditions in the unacceptable area of the power-to-flow map. A manual reactor scram was initiated as specified by the operating procedures. Later evaluation determined that a power supply failure caused the downshift. The unit remained shutdown for 16 days for a scheduled two week maintenance and surveillance outage.

Date	Power	Root Cause	Functional Area
9/8/89	88%	Random equipment failure	NA*

4. An inappropriate isolation during preventive maintenance on the B condenser air removal pump resulted in the loss of condenser vacuum and an automatic reactor scram. The procedure did not caution that an interlock could affect another system, and maintenance personnel did not properly assess the plant impact of the maintenance. Also, operations personnel did not identify the error during their review. The unit remained shutdown for three days.

Date	Power	Root Cause	Functional Area
10/13/89	54%	Procedural deficiency	Maintenance

5. Niagara Mohawk initiated a plant shutdown due to increasing drywell floor drain leak rate. Inadequate control of steam loads and feedwater during the shutdown resulted in a core reactivity transient and an automatic reactor scram caused by an upscale trip of the intermediate range monitors (IRMs). The unit remained shutdown for seven days.

Date	Power	Root Cause	Functional Area
10/18/89	1%	Personnel errors	Operations

6. Niagara Mohawk initiated a plant shutdown to resolve high dissolved copper levels in the circulating water system. The acid used to control circulating water chemistry had leaked past closed isolation valves and inadvertently corroded the copper condenser tubes. Corrective actions included design modifications of the isolation valves. The unit remained shutdown for ten days until an agreement was reached with the New York State Department of Environmental Conservation about the discharge of the copper containing circulating water to the lake.

Date	Power	Root Cause	Functional Area
10/28/89	4%	Design deficiency	Engineering/Technical Support

7. An EHC malfunction caused the turbine bypass valves to open and the turbine control valves to close. This resulted in an increase in reactor pressure and a resultant automatic reactor scram due to high neutron flux signals. A ground introduced by a minor modification had apparently caused the malfunction. The unit remained shutdown for six days.

Date	Power	Root Cause	Functional Area
12/1/89	97%	Personnel error	Engineering/Technical Support

8. A reactor startup was terminated, and a plant shutdown was initiated due to excessive drywell leakage. A valve packing was found to be leaking and was replaced. The unit remained shutdown for eight days.

Date	Power	Root Cause	Functional Area
12/7/89	< 1%	Random equipment failure	NA*

9. Feed pump vibration and mechanical seal problems resulted in a plant shutdown. A common design problem in the feed pump internal components was identified that had not been found during numerous, previous repairs. The unit remained shutdown for 40 days.

Date	Power	Root Cause	Functional Area
12/25/89	60%	Inadequate troubleshooting	Maintenance

*NA indicates that no performance implications exist at this time.

III. PERFORMANCE ANALYSIS

III.A Plant Operations

III.A.1 Unit 1

The previous SALP report rated Plant Operations at Unit 1 as Category 3. Contributing to this rating were inappropriate operator attitudes toward training, weak operator proficiency regarding the emergency operating procedures (EOPs), and deficiencies in the licensed operator requalification training program. NRC was particularly concerned that station management had not been effective in identifying and correcting these deficiencies.

III.A.1.a Analysis

Overall, during this period, station management made substantial progress in addressing and correcting the concerns from the previous SALP report. However, other problems were noted relative to the evaluation of personnel performance, self-assessment capability and problem identification, and attainment of personnel performance at the level described in the Nuclear Division Standards of Performance.

The licensed operator requalification program improved. Management attention to licensed operator training significantly increased, and there was evidence that the operations department had taken responsibility for the quality of training. Additionally, operators demonstrated their acceptance of the responsibility for the quality of training, which was in contrast to their attitude towards EOP training noted in the last SALP period.

Operator use and proficiency with the EOPs greatly improved during this SALP period. A May 1989 inspection concluded that five of the six operating crews demonstrated a satisfactory level of performance in the use of the EOPs; however, one crew and one individual did not. Additionally, the command and control of the operating shifts represented a generic weakness regarding crew communications and the assignment of crew member duties. A September 1989 inspection concluded that both assessed operating crews demonstrated a satisfactory level of performance, but that two senior reactor operators (SROs) did not. The prior generic weakness in command and control was determined to be satisfactorily addressed; however, certain other generic weaknesses (inadequate assessment of power board losses, not using all available indications for diagnosis of events, and occasional slow recognition of plant trends) still existed, which indicated that corrective actions had not been totally effective. Further, Niagara Mohawk self-assessments prior to the NRC reviews had not found the operator problems or the generic weaknesses.

As the unit remained shutdown throughout the period, assessment of plant power operations was not possible. Nevertheless, licensed operators demonstrated improved performance in some other areas. For example, the operations staff's support of maintenance and surveillance activities was good, with only minor problems noted. Good teamwork and support existed for the numerous initial runs of inservice tests, inservice inspection hydrostatic tests and other special testing. Refueling operations were performed in a professional, appropriately paced and competent manner by the operators.

However, the above good performance contrasted with many events in which licensed operators performed poorly. These events consisted of: accidental flushing of a condensate demineralizer to radioactive waste processing due to a valve misalignment; emergency ventilation (EV) initiations due to procedural and personnel errors; EV initiations due to improper tagging control; improper control of source range monitor (SRM) bypass function during refueling operations over three shifts; and a valve misalignment of the reactor building closed loop cooling system. The SRM incident was noteworthy in that the improper position of the bypass switch was overlooked by the operators during loading of fuel assemblies and during two shift turnovers. These events were the result of causes which included operator knowledge deficiencies, poor communications, inadequate plant impact assessment, poor system status control, or inadequacies regarding administrative procedures. Lastly, licensed operator participation in the initial set of reload system walkdowns was judged to be poor, in that the operators failed to identify numerous plant deficiencies identified during later walkdowns.

Operations department management achieved a better approach to operations in some areas. Specifically, the October 1989 Integrated Assessment Team Inspection (IATI) determined that operations personnel had been well integrated into the planning and scheduling process, cooperation between the operations and training departments had improved (the interdepartmental committee had played a major role in this improvement), and management had increased its attention to the needs and effective utilization of employees, resulting in improved teamwork. Further, operators were not as isolated as they were noted to have been in the previous period. Operations management was sensitive to career development and had begun long range planning to enable more career opportunities. Licensed operator staffing was at minimal but acceptable levels.

However, operations management weaknesses were apparent in the improper control and tracking of overtime, the failure to verify adequacy of licensed operators medical examinations, poor communications with operators regarding the requalification examinations, and a weak investigation into the SRM incident. Further, operations management did not aggressively perform self-assessments, and the completed self-assessments were ineffective. Operations management emphasis on improving in the areas of operator training and EOPs appeared to have been beneficial in these areas but had resulted in less attention being paid to day-to-day activities. Although many of these events and problems were of low safety significance, cumulatively they indicated the need for more effective management oversight of daily operations.

Summary

The concerns of the last assessment involving operator training were adequately addressed as a result of increased management focus. However, the performance of licensed operators in the plant varied; good control of testing and refueling activities existed at times, but a number of minor events were caused by personnel errors. More effective management, particularly oversight of daily operations, appeared to be needed to raise overall operations department performance. Insufficient progress was demonstrated to warrant a change in the previous rating.

III.A.1.b Performance Rating

Category 3

III.A.1.c Recommendations

None

III.A.2 Unit 2

The previous SALP report rated Plant Operations at Unit 2 as Category 3. Personnel errors caused by inattention to detail or failure to follow procedural requirements had occurred at a high rate and had caused three reactor scrams. These errors had reflected station and corporate management's low expectations and acceptance of a low level of performance. The SALP Board recommended that Niagara Mohawk raise the performance expectations of the Unit 2 operations department and reduce the number of lit annunciators on the main control panels.

III.A.2.a Analysis

Overall, during this assessment period, the performance of the operations staff was inconsistent and demonstrated only limited progress. Unit 2 was continuously operated for 135 days during which time few personnel errors occurred. However, this good performance was contrasted with the unsatisfactory rating of the licensed operator requalification program, three automatic scrams caused by personnel errors, and a frequent, continued inability to control component and system status.

The Requalification Training Program for licensed operators was rated unsatisfactory. This was based on nine individual failures out of 24 on at least one portion of the examination. Also, two of six crews (recomposed for examination purposes) were determined to be unsatisfactory on the simulator. Individual performance and knowledge deficiencies were noted. Further, weaknesses in the examination process implemented by Niagara Mohawk contributed to the unsatisfactory rating. For example, the written test examination for the second week of the requalification examination did not reflect the generic NRC staff comments incorporated on the first week's examination.

Niagara Mohawk's initial written response to the examination results did not address why the training and operations departments had failed to identify the problems in its requalification program prior to the NRC-administered examinations. Also, it appeared that a complete root cause analysis may not have been performed without prompting by NRC. The major contributor to the identified performance problems appeared to have been unclear management expectations, in that crew roles during emergency situations were not clearly defined. Also, feedback by both training and operations departments and other oversight groups during preparatory evaluations had been ineffective. It was noteworthy that these factors were also NRC concerns at Unit 1 in the same functional area during the previous assessment period.

Three of the six reactor scrams were attributed to personnel error. An operator used a walkie-talkie near the radio transmission sensitive EHC cabinets causing turbine control valves to close and an automatic reactor scram. An inadequate plant impact assessment for preventive maintenance on a condenser air removal pump breaker resulted in a loss of condenser vacuum and an automatic reactor scram. During a controlled plant shutdown, an automatic reactor scram occurred due to poor control of steam loads. These scrams could have been prevented by more care and attention being paid to the impact of the operator action on the unit.

Several personnel errors resulted in poor control of components and systems. The most severe was when valves in the reactor water cleanup system were left out of their normal position, resulting in an uncontrolled discharge of reactor coolant to the liquid waste processing system. Also, a service water bay unit cooler with a known deficiency was improperly returned to service without repairs completed. A Division III switchgear room cooler was declared operable following maintenance, even though it was not energized and no post-maintenance test had been performed. An inadequate plant impact assessment for the tagging of the generator hydrogen system resulted in the unexpected loss of hydrogen pressure indication in the control room and a plant shutdown. Collectively, these errors indicated continuing problems with operator attention to detail and poor planning, as identified in the previous SALP.

Notwithstanding the above problems, Unit 2 operators displayed an overall conscientious attitude towards safety, licensed training, and the resolution of concerns brought to their attention by NRC. This safety perspective and improved problem identification was demonstrated on several occasions. While closely monitoring containment pressure indications during a routine evolution, a control room operator identified that suppression pool/drywell vacuum breakers were improperly set. Operator responses to a recirculation pump trip at 88% reactor power demonstrated their ability to quickly assess the event and carry out appropriate emergency response actions. During a surveillance test, the questioning attitude of an operator identified an incorrect leak test methodology for diesel generator air start system check valves.

Limited progress was made in reducing the large number of lit annunciators in the control room. Towards the end of the assessment period an engineering task force manager was assigned, and better progress tracking methods were established. In the related area of operator responsiveness to alarms, improvement was noted and operators routinely responded to alarms in a timely manner. This improved responsiveness appeared to have resulted in part from an increase in operations department management presence in the control room and involvement in daily activities. This increased management attention to assure effective corrective action was observed in other areas.

Niagara Mohawk adequately implemented the requested actions of NRC Bulletin 88-07 and Supplement 1, regarding potential power oscillations. However, the following inadequacies were noted: a revised procedure included an entry condition that was not understood by all licensed operators; the interviewed operators did not fully understand the recent procedure revision; and several procedures did not contain appropriate cautions. It appeared that the Niagara Mohawk verification process was insufficient to ensure that licensed operators understand procedure changes and the procedure review process was not comprehensive. Later, when an unexpected downshift of a reactor recirculation pump resulted in the reactor operating in the restricted area of the power-to-flow map, the operators acted promptly and correctly to manually scram the reactor.

Many meaningful initiatives were implemented to improve the operations department, but frequently had not been in place long enough to demonstrate results. Examples included establishing and filling a new Deputy Station Superintendent position to provide increased management oversight of plant activities and operator training; improved departmental goals for performance; operator incentive programs based on operational performance; installation of annunciator response cards on the front and rear control panels; revised, detailed auxiliary operator round sheets; computerized tagging system; relocation of the tagging control desk to the rear of the control room to minimize congestion and noise in the control panel area; plant labeling improvements; and video surveillance systems used to monitor inside high radiation areas. These initiatives demonstrated management's desire to improve the control room environment, as well as, overall performance.

Staffing in the operations department was adequate; however, licensed operator career development alternatives and rotational assignments were limited by the lack of extra licensed staff. Because of the requalification training program concerns and normal attrition, the shift crew rotation was reduced to five crews, each with two SROs. Fourteen licensed operator candidates (seven ROs and seven SROs) were in the training program at the end of the assessment period. Operations management appeared responsive to staffing concerns.

Summary

The Unit 2 operations performance was inconsistent and showed limited improvement over the previous assessment period. Operational events caused by poor control of components and systems continued at a high rate. The Unit 2 licensed operator requalification program was rated unsatisfactory, based on the poor performance of operators. Progress on lit annunciator reduction was slow. Meaningful initiatives were established but had yet to demonstrate results.

III.A.2.b Performance Rating

Category 3

III.A.2.c Recommendations

None

III.B Radiological Controls

The previous SALP report rated Radiological Controls as Category 2. There was steady improvement in the overall program but radiation protection (RP) management oversight was weak. However, Niagara Mohawk initiatives were expected to improve the accountability and oversight of ongoing work. The SALP Board recommended that Niagara Mohawk place more emphasis on Unit 1 decontamination.

In this assessment period the RP area was reviewed during the IATI, and radwaste/transportation and environmental/effluent controls were each reviewed once.

III.B.1 Analysis

Radiation Protection

Overall, during this assessment period, radiation protection performance remained acceptable, with limited progress in reducing contaminated areas, upgrading ALARA (as low as reasonably achievable) performance, and oversight of ongoing work. The Restart Action Plan (RAP), an overall Niagara Mohawk assessment of management problems associated with the 1988 shutdown of Unit 1, appeared to result in increased attention to improving radiation protection programs.

The control of ongoing work improved. Walk-around audits by management and teams of first line supervisors resulted in improved adherence to radiological controls practices. Management involvement and control in assuring quality in RP programs improved. Also, audits by the corporate RP group and contractor audits sponsored by the Safety Review and Audit Board (SRAB) improved and became effective in assessing program weaknesses. Management emphasis of problem identification had improved this area, but resolution of the identified problems lagged at times.

The control of contamination and radiation improved. For example, the RP department initiated a structured analysis of the recurrent problem of unlocked high radiation area doors and other recurring site RP problems, as well as industry events. This resulted in better resolution of RP issues. For example, manual contamination friskers were replaced with modern automated equipment. Decontamination of the turbine and reactor buildings reduced the number of personnel contamination events and improved the access to equipment. The control of hot particles on the refueling floor was upgraded. Although there were improvements, some resolutions did not fully address the root cause of the problem. For example, catch basins are still extensively used to contain valve leakage.

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SEE REVISION SHEET

7/27/90

Staffing and organization were strong. The staffing level was expanded last period by the addition of a chief technician position to improve control of field work. Since then the staffing level remained stable. Most personnel had many years of service onsite. All supervisory positions were filled with Niagara Mohawk employees, except for the superintendent, chemistry and radiation protection. Also, a new, highly experienced individual was hired midway through the period to fill the ALARA supervisor position vacated last period.

ALARA performance for 1989 was good for Unit 1 at 464 man-rem and excellent for Unit 2 at 61 man-rem. Management improved the use of goals as a tool to focus personnel and equipment changes towards achieving specific objectives, but there were no management goals clearly reflecting the need for site-wide support of RP programs. Also, the relationship between the RP department goals and the broader station and corporate goals was often not clear. For example, there was no 1989 corporate ALARA goal. This could have diminished the priority of RP related improvements. Reasonable efforts appeared to have been made during the work performance to reduce exposure. In response to NRC concerns, management established a 1990 corporate ALARA goal of 506 man-rem.

The problem concerning the radwaste processing building subbasement being used for liquid radwaste storage was brought to the attention of the NRC during this SALP period; however, the event occurred several years ago with weak corrective actions initially taken to achieve a timely cleanup. The more recent Niagara Mohawk actions have demonstrated good management oversight and provided for a deliberate, cautious, and well supervised cleanup of this area.

Effluent, Environmental Monitoring, Radwaste and Transportation

Niagara Mohawk had continual problems with the operability of effluent monitors, especially at Unit 2, and corrective actions were not effective. For example, the gaseous effluent monitoring system (GEMS) remained inoperable during most of the assessment period, placing Niagara Mohawk in an almost continuous Limiting Condition for Operation. Niagara Mohawk also failed to take timely action in the repair of some effluent systems. For example, at Unit 1, the service water effluent radiation monitor was declared inoperable for five months before Niagara Mohawk placed the required modification to this system on its repair and maintenance schedule. This programmatic weakness was further evidenced by the five Licensee Event Reports (LERs) related to the effluent monitoring systems issued during the assessment period.

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was weak and needed more visible support of upper management. Ma the use of goals as a tool to focus personnel and equipment chan eving specific objectives, but there were no management goals the need for site-wide support of RP programs. Also, the rel the RP department goals and the broader station and corporate ot clear. For example, there was no 1989 corporate ALARA goal. diminished the priority of RP related improvements. The Un ut 800 man-rem did not represent an aggressive attempt to redu addition, although the final determination had not been made, it s goal had been exceeded. It also appeared that little effort e the source term and to adjust the major planning of work to en ld be met. Reasonable efforts appeared to have been made durin mance to reduce exposure. In response to NRC concerns, manageme 1990 corporate ALARA goal of 506 man-rem.

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In contrast to the above effluent monitor problems, Niagara Mohawk continued to have strong radwaste and environmental monitoring programs. Niagara Mohawk continued to operate an extensive surveillance system for the collection and analysis of environmental samples and for verification of the meteorological instrumentation. All radwaste shipments were accepted at the low level burial sites without incident. Staffing within these areas remained stable, and the training program for radwaste workers continued to be a strength.

Radioactive waste operations were effectively controlled, except for one minor event in which improper annunciator response resulted in the overflow of the reactor building sump. Radwaste management was proactive in the effort to minimize and segregate radioactive waste and was observed to be actively involved in day-to-day activities in the plant.

The quality assurance (QA) program continued to be effectively implemented, through the use of audits, surveillances and quality control (QC), although the review of the effluent monitoring systems was an exception. Findings identified in audit reports and surveillances were typically resolved in a timely manner for these areas.

Summary

Overall performance remained good. Improvements were made in the reduction of contaminated areas, the control of ongoing work, and the ALARA control of work. Niagara Mohawk continued to have problems with the operability of the effluent monitoring systems, especially at Unit 2, but radwaste and environmental monitoring programs remained strong.

III.B.2 Performance Rating

Category 2

III.B.3 Recommendations

None

to the above effluent monitor problems, Niagara Mohawk continued to radwaste and environmental monitoring programs. Niagara Mohawk perate an extensive surveillance system for the collection and ironmental samples and for verification of the meteorological All radwaste shipments were accepted at the low level burial dent. Staffing within these areas remained stable, and the radwaste workers continued to be a strength.

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SEE REVISION SHEET

Summary

Overall performance remained g nts were made in the reduction of contaminated areas, the control . and the ALARA control of work. However, upper management support ed to be weak. Niagara Mohawk continued to have problems with the the effluent monitoring systems, especially at Unit 2, but radw mental monitoring programs remained strong.

7/27/90

III.B.2 Performance Rating

Category 2

III.B.3 Recommendations

None

III.C Maintenance and Surveillance

The previous SALP report rated Maintenance and Surveillance as Category 3. The site maintenance program was assessed to be effective; however, weaknesses were noted in management oversight of performance, effectiveness of corrective actions, and adequacy and compliance with maintenance procedures. Improvement was noted in the Unit 1 inservice inspection (ISI) program. Various procedural and personnel deficiencies were experienced during the implementation of the Unit 2 surveillance program. While ISI and inservice testing (IST) activities are reviewed in this functional area, the ISI and IST programs are assessed in the functional area of Engineering/Technical Support.

III.C.1 Analysis

Maintenance

Overall, during this assessment period, performance in the maintenance area was again weak. The inadequate control of maintenance activities, particularly at Unit 2, resulted in a high number of operational events. Weaknesses were noted in the areas of backlog reduction at Unit 2, proper diagnosis of equipment failures at both units, and unplanned shutdowns at Unit 2.

Numerous operational events at Unit 2 resulted from errors by maintenance personnel. These personnel errors resulted in a Technical Specification (TS) violation of electrical Division III operability requirements, a flooding event on the 250 foot elevation of the turbine building, numerous inadvertent safety system actuations, and an inadvertent traversing incore probe insertion. The majority of these errors were made during routine preventive maintenance. The causes of these errors were rooted in weak procedural adherence, poor procedure format, inadequate post-maintenance testing, poor plant impact assessments, and insufficient supervisory oversight. Some of the corrective actions taken by management included requiring the use of a plant impact sheet and a post-maintenance test sheet for each work package. As a long term measure, station maintenance procedures were being upgraded to include more concise procedural controls. These corrective actions appeared to be an appropriate approach.

Three unplanned outages at Unit 2 were maintenance related, and the absence of effective preventive and corrective maintenance was often involved. Poor procedural guidance on electrical preventive maintenance performed on a mechanical vacuum pump breaker directly caused a reactor scram. Inadequate preventive maintenance on loose wires in the main generator potential transformer cubicle caused a reactor scram. A forced outage resulted from inadequate troubleshooting on repetitive feedwater pump problems involving excessive vibrations and mechanical seal failures. These equipment problems resulted in unnecessary plant transients and protective system challenges. As demonstrated by the

above events, the maintenance department did not effectively maintain plant equipment to support reactor operation. Also, two valve packing leaks in the drywell, and a power supply failure in the recirculation pump control circuitry caused unplanned outages. The packing leaks and the power supply failure appeared to be random equipment failures without direct, adverse implications on the maintenance program. Nonetheless, these events were circumstantial evidence of weak maintenance.

With the Unit 1 reactor shutdown, a reactor scram was caused by the failure to properly plan a maintenance activity. Also, several events indicated the need to improve the timeliness and effectiveness of corrective actions, e.g., poor initial troubleshooting on problems related to a motor-generator set (which resulted in several reactor scrams and emergency ventilation initiations), lengthy troubleshooting of stroke time problems with a control valve for control room ventilation, and poor troubleshooting and repair of an emergency diesel generator (EDG) fuel transfer pump.

In the Special Team Inspection early in the assessment period, the NRC noted that to the extent that the maintenance program was effective, it depended largely on the skill and experience of the maintenance management and personnel and not on an established maintenance program. Accordingly, the team noted that the program appeared to be informal in some areas with a considerable risk of degradation if any of the key managers were to depart. Limited progress was made in establishing these programmatic aspects before the station maintenance superintendent chose another non-nuclear Niagara Mohawk job near the middle of the period. This loss of experience combined with the weak program, appeared to contribute to the above problems.

Later in the assessment period the IATI noted a strong and knowledgeable maintenance planning organization that scheduled all facets of the work activities. The IATI also noted that Niagara Mohawk management had implemented performance indicators and a new method for prioritizing work requests to ensure completion on a timely basis, especially for those work requests required to support reload and restart efforts at Unit 1. Realistic goals were set at Unit 1 for the reduction of the backlog of work requests and at the conclusion of this SALP period this goal had been achieved. However, the maintenance work request backlog at Unit 2 remained large and was not effectively addressed by station or corporate management. Work practices observed in the field by the IATI were generally carried out in a competent fashion. Good procedural adherence and teamwork was also noted by the IATI.

In an effort to improve the quality of the various maintenance procedures, a maintenance support group with a staff of 38 procedure writers was formed. This was a good example of management committing the necessary resources to achieve procedural and program improvements. Also, following NRC identification of problems with the post-maintenance testing (PMT) controls at Unit 2, Niagara Mohawk identified and addressed similar PMT deficiencies at Unit 1, another example of effective corrective action.

Some maintenance activities were well controlled. For example, the Unit 2 feedwater pump repairs were well controlled once the design problem was determined, and supervisory oversight of the repairs was evident.

However, several events called into question maintenance management efforts to improve oversight of day-to-day performance, as well as, effectiveness and timeliness of corrective actions. For example, maintenance management was largely responsible for the poor implementation of the initial set of reload system walkdowns at Unit 1. NRC identified numerous deficiencies in the walkdowns, which demonstrated poor preparation and oversight of the walkdowns by maintenance management and unit management. Also, Niagara Mohawk investigation of the Unit 1 reload SRM bypass incident was ineffective, in that it did not determine that electrical and I&C maintenance personnel had not adhered to tagging procedures while performing troubleshooting and repairs. Further, when brought to the attention of maintenance management, initial corrective actions were ineffective.

Improper diagnoses of equipment failures and repetitive failures again occurred at Unit 2 this assessment period. Examples included: hydraulic control unit nitrogen leakage; reactor core isolation cooling system aftercooler temperature monitor failures; standby gas treatment system isolation valve actuator problems; feedwater pump vibration and mechanical seal failures; and reactor water cleanup pump seal failures. These examples indicated poor root cause determinations of equipment failures.

In conclusion, regarding maintenance, although progress was made in some areas, the overall performance in maintenance did not improve. The quality of maintenance procedures improved, work was better prioritized, and the backlog of Unit 1 work requests was reduced. However, the number of maintenance-related scrams, safety system actuations, and unplanned outages at Unit 2 demonstrated that maintenance program was not fully effective. The maintenance program did not appear to analyze, plan, and execute the maintenance work in an effective manner to support the operation of Unit 2 and the repair and testing at Unit 1. Management was often not timely and effective regarding corrective actions and investigations of equipment and personnel problems. Maintenance department staffing appeared to be marginally acceptable based upon the inability to reduce the backlog at Unit 2.

Surveillance

Overall, during this assessment period, the surveillance area improved, most notably at Unit 2 compared to the minimally acceptable level of the previous period. The thorough review of Technical Specification (TS) requirements, previously done at Unit 2, was duplicated at Unit 1 and provided a basis for better planning and execution of the testing.

A major concern identified at Unit 1 near the end of the last period was that frequently performed surveillance tests were not followed step by step and that attached checklists were being used without reference to their written procedure. As corrective action, Niagara Mohawk provided site-wide training on proper procedural conduct with emphasis on strict adherence. This appeared to have been effective as evidenced by the large number of procedural changes initiated at both units to correct procedures, more tests stopped due to procedural concerns, and few instances of events related to poor procedural adherence.

One of the Unit 1 Restart Action Plan (RAP) commitments was to develop and implement a Unit 1 TS matrix for the purpose of tracking and scheduling TS required surveillances. Extensive development efforts by the regulatory compliance group took place this period, and substantial progress was made. This type of computer-based TS matrix had been developed and successfully implemented at Unit 2 during the previous assessment period.

An adjunct to the Unit 1 TS matrix program was the performance of technical reviews of the surveillance procedures themselves. At the end of the period, 100% of the procedures had been reviewed, and final compilation and evaluation of the results were under way. Niagara Mohawk's decision to perform a 100% review of existing surveillance procedures was justified by the fact that numerous minor deficiencies were identified and corrected as a result of this review. A few examples of inadequate test methodology were identified by Niagara Mohawk and other outside organizations. Overall, the test methodology and format for the resulting surveillance procedures were good. These two programs were comprehensive in nature and properly addressed previous deficiencies.

One area of concern at Unit 1 was the instrumentation calibration program for safety-related equipment. The NRC identified the failure to incorporate the emergency ventilation system 1 KW heater thermostat units in the calibration program. Concurrent review by Niagara Mohawk of the balance of plant and Technical Specification equipment instrumentation identified several other calibration deficiencies.

There was marked improvement in the performance of surveillance testing at Unit 2, particularly of the TS-required tests. There was only one inadvertent safety system actuation caused by personnel error while performing surveillance tests. Site-wide training was administered on procedural adherence, and surveillance test plant impact statements were greatly enhanced. During one unplanned outage, the maintenance organization took advantage of the available down time and successfully scheduled and completed 38 local leak rate tests. Local leak rate testing crews were formed using dedicated personnel from various crafts and departments. This approach proved to be successful and demonstrated effective teamwork.

The scheduling of Unit 2 surveillance tests improved, and missed surveillance tests were greatly reduced. Some minor surveillance test implementation problems occurred resulting in TS violations of minimal significance. A missed surveillance test occurred as a result of an operations shift check oversight, and another missed surveillance occurred as a result of a chemistry department oversight. In each case, appropriate corrective action was taken. Increased management oversight of the surveillance program was evident. Performance this period indicated that the corrective actions taken in response to the large number of missed surveillance tests during the previous assessment period were effective.

Both the Unit 1 and Unit 2 ISI programs were effectively implemented. The previously addressed ISI and IST areas demonstrated continued good testing performance.

In conclusion, regarding surveillance, good progress occurred in the surveillance area, and thorough, extensive reviews of testing formed the basis for better planning and implementation of Technical Specification testing, inservice testing, and inservice inspection. Implementation of the surveillance testing program at Unit 1 was effective. The Unit 2 Technical Specification surveillance program showed substantial improvement over the last assessment period. Increased management oversight of the program was evident.

Summary

Performance improved notably in surveillance; the Technical Specification testing programs were effective, and the previous improvements in inservice inspection and inservice testing continued. However, an ineffective maintenance program appeared to result in numerous maintenance-related operational events at Unit 2.

III.C.2 Performance Rating

Category 3

III.C.3 Recommendations

NRC: Perform a team inspection to assess maintenance performance during the Unit 2 refueling outage.

Niagara Mohawk: Reassess the adequacy of the maintenance program and management/supervisory oversight with respect to the continuing deficiencies.

III.D Emergency Preparedness

The previous SALP report rated Emergency Preparedness as Category 1, based on good Niagara Mohawk performance during the partial-participation exercise, good working relationships with State and local agencies, and progress in addressing items from the NRC emergency response facilities (ERFs) appraisal.

During the current assessment period, NRC review included observation of a full participation exercise, a routine safety inspection, and review of changes to the emergency plan and implementing procedures.

III.D.1 Analysis

Overall, during this assessment period, Niagara Mohawk continued the good performance in Emergency Preparedness. Performance during the emergency exercise was good, the good working relationships with State and local authorities were maintained, and effective corrective actions were taken for problems.

During the emergency exercise, good performance was noted in response to the accident scenario. Changes in plant conditions were readily observed by shift staff and used to classify emergency conditions properly. Positive interactions were demonstrated among emergency response organization (ERO) members, and effective coordination with State and local response personnel was observed. Interface with the NRC incident response team was effective. No performance weaknesses were identified, and only minor improvement areas were noted. Previously identified items were corrected and no items recurred.

The routine safety inspection examined all areas of the emergency preparedness (EP) program, including administration, EP and ERO staffing, ERFs and equipment, program changes, training, and independent audits. ERFs were maintained in a state of readiness, and the Site Emergency Plan (SEP) and implementing procedures were current. Procedure and program changes received the proper level of management review.

Site management was kept apprised of EP program activities through formal staff meetings and involvement in the routine activities of the EP staff. Senior managers maintained ERO position qualification, evaluated SEP and implementing procedure changes, participated in drills and exercises, and interfaced with Oswego County officials. Management attention to site activities was supportive, and management demonstrated a clear understanding of the issues.

The EP program was administered by the manager, emergency preparedness, who was responsible for all onsite and offsite activities. To implement all aspects of the program, nine full time technical and administrative positions were authorized. All positions were described and responsibilities were well defined. Personnel changes in the last calendar quarter of 1989 resulted in replacement of the manager, EP and two additional vacancies. Although this put a temporary

strain on existing EP staff, the major program functions were being adequately maintained, including maintenance of the SEP and implementing procedures, conduct of drills and exercises, maintaining emergency response facilities and equipment, and interfacing with offsite support groups. Good coordination existed among other site departments as personnel were drawn from operations and training staffs to aid in development of drill and exercise scenarios. Niagara Mohawk was actively working to fill vacancies with qualified candidates.

Emergency response training was performed by the training department and was generally effective. This included general employee training as well as qualifying individual members of the ERO to perform response functions. A training manual described the course requirements, training matrix, lesson plans, and course contents. The ERO was fully staffed and trained in key response functions. Improvements were made in the system for immediate notifications of ERO personnel. Following implementation of this new system, NRC walk-through scenarios revealed that training of shift personnel on the revised procedure had not been effective in all cases, and retraining was performed. Manual records of individual training were complete, and tracking of permanent records and all ERO requalifications was upgraded via computer database files.

Niagara Mohawk maintained the good working relationships with the local communities, the State of New York, and the FitzPatrick site staff in coordinating offsite emergency response activities. Following the full participation exercise, the Federal Emergency Management Agency (FEMA) identified several deficiencies regarding offsite preparedness, which concerned development of Emergency Broadcast System (EBS) messages, notification of hearing impaired persons, and training of offsite emergency workers. To address these findings, Niagara Mohawk worked closely and effectively with New York and Oswego County and resolved all deficiencies in a Niagara Mohawk supported remedial drill held in November 1989.

Niagara Mohawk showed a good ability to resolve technical issues. In response to NRC inspection findings, implementing procedures were issued via controlled distribution. Revisions were made in the areas of protective action recommendations for Emergency Directors and clarification of emergency action levels for fire related events. These corrective actions were effective, in that there was no repetition of these findings. Also, to address problems associated with obtaining and evaluating chemistry samples, an appropriate action plan was developed.

Niagara Mohawk audits met the requirements of 10 CFR 50.54(t), and a good understanding of EP program areas was exhibited by audit team members. Audits were adequate in scope, and corrective actions on recommendations identified during audits and self-assessments were timely.

Summary

Niagara Mohawk continued to implement an effective emergency preparedness program. Niagara Mohawk demonstrated good performance during the emergency exercise, good working relationships with State and local authorities, and effective corrective actions to identified problems. Personnel changes among EP staff did not appear to impact overall program implementation, and the training program was generally effective. An effective effort was provided in assisting the State of New York and Oswego County in resolving FEMA-identified exercise deficiencies.

III.D.2 Performance Rating

Category 1

III.D.3 Recommendations

None

III.E Security

The previous SALP report rated Security as Category 1. This rating was based upon Niagara Mohawk's implementation of an effective security program, which exceeded regulatory requirements and NRC-approved security plan commitments. The good performance was further demonstrated by Niagara Mohawk's initiatives to improve the program and to upgrade security systems.

During this assessment period, two routine, unannounced physical security inspections were conducted by region-based inspectors.

III.E.1 Analysis

Overall, Niagara Mohawk's high level of performance during the previous assessment period continued throughout this period. The performance of security personnel was excellent, and improvements were made to the security program, training, and equipment.

Upgrading and enhancements of systems and equipment continued. In particular, some aging intrusion detection equipment was replaced, and several assessment aids and security facilities were upgraded. In addition, facilities, such as the access control centers and security office buildings, were very clean and well maintained. The security organization was also assigned additional maintenance assistance, such that the maintenance staff was comprised of a full-time I&C staff consisting of three supervisors and fifteen technicians, three door hardware specialists, three engineers, and one planner. These technicians and specialists were instrumental in maintaining properly functioning and effective security systems and equipment. Repair of security equipment was generally accomplished within hours, and the repairs were effectively prioritized by the security supervisor. Planning and installation of system upgrades were effective, appropriately controlled and well thought-out.

Plant and corporate management continued to be actively involved in security matters as evidenced by excellent support for and cooperation with the security program upgrades and enhancements. Plant and corporate security management personnel also remained active in committees and organizations engaged in nuclear plant security matters. This involvement indicated interest in the program and support from upper level management.

The security manager and his staff were well trained and qualified security professionals with an excellent understanding of nuclear plant security objectives. It was also evident that the security supervisors had been delegated the necessary authority and discretion to ensure that the program was being carried out effectively and in compliance with NRC regulations.

The NRC-required annual audit of the security program was performed by Niagara Mohawk's Safety Review and Audit Board, augmented by security supervisors from other nuclear power plants. The audit was comprehensive in scope and depth. Niagara Mohawk continued to conduct self-assessments of the security program utilizing experienced plant security supervisory personnel and consultants. Corrective actions on findings and recommendations identified during the audit and the self-assessments were prompt and effective, with adequate follow-up to ensure their proper implementation. The NRC continued to believe that the self-assessment program that Niagara Mohawk established has been a major contributing factor in Niagara Mohawk's excellent enforcement history and performance.

A review of Niagara Mohawk's security event reports and reporting procedures found them to be well understood by security supervisors and consistent with NRC regulations. One event requiring a prompt report occurred, involving an unescorted visitor in the protected area. Niagara Mohawk took prompt and appropriate compensatory action and followed-up with effective corrective measures to prevent recurrence.

The security training program was administered by a highly qualified, full-time staff. The program was consistent with and exceeded the requirements of the NRC-approved Security Force Training and Qualification Plan. Security personnel were provided with a modern and well maintained physical fitness room, a simulator for training alarm station operators, and state-of-the-art training aids for hands-on training with excellent lesson plans. Security management also instituted an aggressive tactical training program for the armed security force members. In general, security force members were very knowledgeable of their post duties, procedures, and overall responsibilities.

The Security, Contingency and Training and Qualification Plans were reviewed, and no changes were noted that could have resulted in a degradation of Niagara Mohawk commitments.

Summary

Niagara Mohawk continued to maintain a very effective and performance-oriented program, and the security personnel performed up to the established high standards. The efforts to upgrade the operation and reliability of security systems were commendable and demonstrated Niagara Mohawk's commitment to maintaining a very effective and high quality program. The security training program was effective, very well administered, and continually improved. Management support was clearly evident in all areas of the day-to-day security operations and in the planning for upgrades and enhancements.

III.E.2 Performance Rating

Category 1

III.E.3 Recommendations

None

III.F Engineering and Technical Support

The previous SALP report rated Engineering and Technical Support as Category 3. There had been limited progress in resolving previous problems in the following areas: poor engineering management oversight of contractors; inconsistent performance by the engineering staff; slow resolution of design deficiencies; and significant deficiencies in the implementation of the training program.

III.F.1. Analysis

Overall, during this assessment period, Niagara Mohawk improved the overall quality of engineering work, both design work and plant support activities. The engineering staff resolved the previously identified design issues in an acceptable manner and improved the engineering support at the sites by introducing system engineers and increasing the site engineering group staff. Some engineering work needed improvement in quality or timeliness, including longer term initiatives. Control of contractors improved.

Niagara Mohawk management demonstrated a determination to improve their performance with the following: a program to address and resolve the underlying root causes of identified management deficiencies before the restart of Unit 1; a program to integrate and coordinate engineering activities; a multi-year program to recover and reconstitute the Unit 1 design basis; and a budget with significant resources for implementation of the above programs.

Several 125 vdc system design deficiencies had been identified by Niagara Mohawk during the previous SALP period. Initially, the resolution of these deficiencies was slow due to ineffective management attention. However, the technical deficiencies were effectively resolved when appropriate management attention was provided. Niagara Mohawk assigned a task force to coordinate the necessary engineering disciplines. The establishment of a task force appeared to be effective in resolving this issue and other Unit 1 issues.

Notable improvements were observed in design change activities. A number of corporate engineering activities and projects were conducted in a professional manner, but some weaknesses in other efforts were reflective of poor engineering support. Examples of good engineering work included the establishment of IST and ISI task forces to support all activities required to implement the 10 year interval of these programs; effective implementation of a program to resolve structural integrity concerns in the Unit 1 large bore pipe supports; a thorough evaluation of engineering analysis of the Unit 2 modification to inhibit the feedwater runback signal from the reactor recirculation controls system; and thorough evaluations of the Unit 1 fuel zone level common tap issue and the issue of average power range monitor (APRM) flow bias circuit isolation from computer circuits. Additionally, numerous specific design issues at Unit 1 were resolved in a thorough, acceptable manner.

However, poor performance in other areas demonstrated inconsistency in the ability of the corporate engineering staff to deliver quality work. Examples of these included: Site Operations Review Committee (SORC) rejection of a Unit 1 emergency ventilation design modification due to poor engineering conceptual design review, inadequate independent design review and lack of proper engineering coordination; inadequate initial engineering justification for continued use of Satin American trip coils for circuit breakers at Unit 1; inadequate review to establish harsh environmental qualification for several splice assemblies at Unit 1; and relief requests for Unit 1 ISI programs submitted to NRC in piecemeal fashion with poor justification for some requests. In these examples of poor performance, engineering management involvement appeared to have been less than the management involvement in the examples of better work.

The previous SALP identified problems with implementation of the training program for the nuclear engineering and licensing staff. The original program, which was established in late 1986, was not implemented due to insufficient classroom space and a shortage of instructors. In response to specific weaknesses identified by the NRC and Niagara Mohawk QA, specific training for nuclear engineering and licensing personnel was begun by Niagara Mohawk in March 1989. The program covered 13 specific areas selected by Niagara Mohawk based on experience and industry guidelines and was planned for completion in March 1990. Following this training, a broader based training program was planned for 1990 and beyond. Overall, Niagara Mohawk made progress in providing the needed training for the engineering staff. However, additional management attention is needed to assure timely implementation of the full scope of the training program.

To enhance plant safety and provide better direct plant support, Niagara Mohawk established the Integrated Priority System (IPS) with six levels of priorities. The IPS applied to planned work in the nuclear division and support organizations. All safety significant projects are Priority 1, and other work projects which affect safety systems are Priority 2. The effectiveness of the system was evidenced by the fact that all Priority 1 and 2 projects were on schedule and were reviewed on a weekly basis. The system for assigning priorities to plant modifications appeared to have the proper safety perspective.

Niagara Mohawk introduced system engineering groups to both units and approved additional positions in the site engineering group. These additional engineering resources improved the support of the plants and provided a closer working relationship between the engineering and operations personnel. Also, improved communications between engineering at Salina Meadows and onsite engineering was established by the presence of site engineering managers in the daily status meeting and telephone conference calls to discuss the plant status and design modifications. Examples of this improved support included good engineering work on the Unit 2 main feedwater pump repairs, Unit 2 circulating water system modifications, and Unit 1 core spray system testing.

However, in some instances, these site engineering resources were not effective. Specifically, Unit 2 circulating water system modifications were improperly initiated prior to completion of the safety evaluations, and modifications to the EHC system introduced a ground, which was later implicated in an EHC malfunction and subsequent reactor scram. Also, these engineering groups were slow in addressing problems regarding poor isolation valves for acid addition to Unit 2 circulating water and resolution of long standing temporary modifications. The acid addition valves resulted in an unplanned shutdown due high copper concentrations in the circulating water system.

Engineering management improved oversight of contractors. The offsite engineering group at Salina Meadows relied heavily on contractor personnel to support the engineering work; more than 50% of the engineering staff was from various contractor organizations, provided on an as needed basis. Based on the generally acceptable quality of the work, it appeared that these personnel had been properly supervised. Further, site engineering management assumed more responsibility for the control of contractors at the site, as evidenced by the well structured and well executed ISI, IST, and commercial grade equipment dedication programs.

The licensing group's understanding and interpretations of Technical Specifications (TS) were generally sound and conservative. However, one TS interpretation involving the Unit 2 high pressure core spray keep fill system was judged to be nonconservative by NRC and operations management, and subsequently was not used by operations.

Summary

Engineering and technical support performance generally improved. Much good engineering work occurred, but some engineering work needed improvement in timeliness and quality. Those technical issues which received increased management oversight were generally resolved more expeditiously and were of better quality than issues without such management involvement.

III.F.2 Performance Rating

Category 2

III.F.3 Recommendations

None

III.G Safety Assessment/Quality Verification

During the previous assessment period, Niagara Mohawk performance in the area of Safety Assessment and Quality Verification was observed to be inconsistent. This functional area was rated Category 3 with an improving trend. Numerous strengths and weaknesses were noted, including identified leadership deficiencies had begun to be corrected, problem identification was better, and event evaluations were more thorough, but responsibilities remained poorly defined, corrective actions were weak, and review of industry operating experience was inadequate. The SALP Board cautioned Niagara Mohawk to ensure that increased emphasis on Unit 1 did not result in insufficient attention to problems at Unit 2.

III.G.a. Analysis

Overall, during this assessment period, there was a better approach to assuring quality, but limited progress was demonstrated in producing consistent, good results. In general, the Niagara Mohawk programs to improve overall performance, embodied in the Restart Action Plan and Nuclear Improvement Plan, appeared to be comprehensive, and both conceptually and functionally adequate. This was evidenced by the success, although sometimes marginal, of the programs established to address the five underlying root causes.

Significant efforts were expended to upgrade the Niagara Mohawk approach to assuring the quality of operations. This effort was guided by the Restart Action Plan (RAP), which had analyzed the previous management deficiencies and determined the underlying root causes (URCs). As part of the RAP, new standards of performance for Niagara Mohawk management and working level personnel were established. Considerable evidence was found during this assessment period that Niagara Mohawk was striving to conduct its activities in accordance with the revised standards. Specifically, the implementation of the RAP was evaluated by the NRC's IATI midway through the rating period. The team concluded that there were no fundamental flaws in the RAP. Clear improvement was noted in three of the five underlying root causes of past management deficiencies. These three URCs were goal setting, organizational culture, and team work. Performance in the URCs of problem solving and standards of performance/self-assessment was weak, but showed some signs of improvement.

Performance in the functional areas of Security and Emergency Preparedness continued to be at the established high levels. Further, Niagara Mohawk demonstrated some progress in improving overall performance in the remaining functional areas. Many new initiatives and programs met with success or demonstrated a commitment to long term improvement. For example: the inservice inspection and inservice testing programs at both units; the large bore pipe support examination at Unit 1; improvements in Unit 1 operator EOP knowledge and usage; the development of computer-based TS surveillance matrices at both units; a detailed surveillance test review at Unit 1; and the staffing of systems engineers at both units.

In addition, there were instances of behaviors or actions which demonstrated Niagara Mohawk's implementation of the enhanced standards of performance. For instance, a Unit 2 station shift supervisor (SSS) was observed declining to implement a temporary modification for which no safety evaluation had been done. A decision was made to replace all of the Satin America Corporation circuit breakers prior to reload rather than place reliance on a justification for operation. Also, operators appropriately displayed a questioning attitude and identified several surveillance tests that needed improvement. Further, Niagara Mohawk identified a design error in the Unit 2 service water actuation logic and proceeded cautiously in the evaluation and resolution of the error.

In contrast to the above examples of improved performance, numerous events reflected continued poor performance, and some new initiatives were poorly implemented. For example: unsatisfactory Unit 1 initial reload systems walkdown procedure implementation; poor progress in reducing the numerous Unit 2 control room annunciators; numerous maintenance related events at Unit 2; poor performance on Unit 2 requalification examinations; slow resolution of 125 VDC system concerns at Unit 1; and unsatisfactory progress in reducing the large number of inoperable effluent and process radiation monitoring systems at both units. These examples of good and bad performance demonstrated the inconsistency in overall performance and the broad range of recent gains and continued performance concerns. However, an overall improving trend was noted.

Niagara Mohawk's Nuclear Division management staff was relatively unchanged. Two significant changes later in the period were the addition of a Unit 2 deputy station superintendent and a new director of regulatory compliance. The addition of a deputy station superintendent at Unit 2 was viewed as a positive step to more effectively deal with the numerous technical and personnel related issues at Unit 2 and to provide more direct, senior line management oversight. Increased staffing on the Unit 1 operations events assessment group and Unit 2 independent safety engineering group reflected a Niagara Mohawk commitment to reduce the industry events review backlog and become more proactive. Similarly, the development of the independent assessment group, reporting to the Executive Vice President, reflected a Niagara Mohawk commitment to improve self-assessments. The overall effectiveness of these recent changes could not be measured during this SALP period, but demonstrated good initiatives to improve station performance.

The onsite regulatory compliance group continued to be an asset to the day-to-day administration of operation of the station. Licensee Event Reports and Special Reports processed by this group were generally well written and timely. The Nuclear Commitment Tracking System managed by the group appeared to function properly. A new initiative under the cognizance of regulatory compliance was the Unit 1 Technical Specification (TS) Surveillance Matrix Program. This new program appeared to have gotten started well, with TS preparation for core reload in January 1990 properly verified.

Licensing issues were evaluated with varying degrees of effectiveness for different issues. The engineering and licensing organizations appeared to have difficulty in addressing needs beyond those necessary to support Unit 1 restart and the upcoming Unit 2 refueling outage. This was apparent from the extensions to complete the responses to NRC generic letters, on issues such as the hardened wet well vent, several TMI action item related Technical Specification changes, the instrument air system for Unit 1, and Technical Specification operational mode changes on Unit 2. On the other hand, Niagara Mohawk provided virtually all license amendment submittals to the staff sufficiently in advance of the requested action to allow a timely staff review. Niagara Mohawk generally provided advance notice to the NRC staff of expected schedule delays and their basis. Submittals ranged from marginal to detailed and thorough, also indicative of occasionally strained resources or insufficient management oversight.

Onsite (Site Operations Review Committee) and offsite (Safety Audit and Review Board) review committees have provided adequate oversight of licensed activities. The efficiency of the SORC and SRAB meetings appeared to be improving with better planning and preparation by the committee members and support staffs, although the SORC occasionally got bogged down in detailed technical reviews. Recent committee safety reviews appeared to be thorough and conservative.

The quality assurance department was generally effective. The QA operations surveillance program was well structured and effectively implemented and provided relevant performance data to station management. The QA audit group was severely understaffed early in the period, and the training program required improvement. Later in the period, a sample of QA audits appeared to serve effectively as one of the methods to identify problems.

Summary

The functional areas of Emergency Preparedness and Security continued to maintain the high standards of performance reflective of sound programs, good implementation and aggressive management oversight. The remaining functional areas again demonstrated inconsistency in performance, but an overall improving trend. There was an apparent turning point in Niagara Mohawk's approach to assuring quality, and performance improved in some areas. The improvement appeared to be based on better problem identification, more critical self-assessment, and the institutionalization of processes necessary to sustain good performance.

III.G.2 Performance Rating

Category 3 Trend: Improving

III.G.3 Recommendations

None

IV. SUPPORTING DATA AND SUMMARIES

IV.A Licensee Activities

During the majority of this assessment period Unit 1 remained shutdown and defueled. In January 1990, the core was reloaded following an extensive reverification of systems and procedure readiness by the station staff. Reload activities were conducted competently and professionally with only one minor error. By the end of the assessment period in February 1990, the unit was preparing for restart.

At the beginning of this assessment period, Unit 2 was in a prolonged mid-cycle maintenance and surveillance outage due to the necessity to repair and retest a number of containment isolation valves which failed their local leakage rate tests. Following the completion of this outage the unit was operated for a unit record 135 consecutive days between April and September 1989. Following this record run and planned maintenance outage the unit suffered a number of scrams and forced shutdowns due to personnel errors and equipment problems. These specific events are discussed further in Sections II.C. and III.A. of this report.

IV.B Direct Inspection and Review Activities

Three NRC resident inspectors were assigned to the site throughout the assessment period. Region based inspectors performed routine inspections throughout the assessment period. Several NRC team inspections were conducted in the following areas:

Unit 1

-- Restart Panel review of Restart Action Plan
-- Licensed Operator Requalification Program review
-- Operator Proficiency with EOPs followup (I)
-- Operator Proficiency with EOPs followup (II)
-- Annual EP Exercise (full Region I participation)
-- Allegation followup
-- SSFI followup
-- Special team to assess potential harassment and intimidation
-- Self-Assessment/Readiness for Restart Report review
-- Augmented Inspection Team - Radwaste Building 225 Spill
-- Integrated Assessment Team Inspection

Unit 2

-- Operator Requalification Examination
-- Operator Requalification Reexamination

IV.C Enforcement Activities

Unit 1

Number of Violations by Severity Level

Functional Area	V	IV	III	II	I	Total
Plant Operations		1	1			2
Radiological Controls			1			1
Maintenance/Surveillance		1				1
Emergency Preparedness						0
Security		1*				1
Engineering/Technical Support		2				2
Safety Assessment/Quality Verification		1				1
Totals		6	2			8

*Also issued to Unit 2 but not included in Unit 2 table

Unit 2

Number of Violations by Severity Level

Functional Area	V	IV	III	II	I	Total
Plant Operations		2				2
Radiological Controls						0
Maintenance/Surveillance		1				1
Emergency Preparedness						0
Security						0
Engineering/Technical Support						0
Safety Assessment/Quality Verification		1				1
Totals		4				4

IV.D Licensee Event Report Causal Analysis

Unit 1

This analysis includes LERs 89-02 through 89-17, 89-19, and 90-01, a total of 18 reports.

Functional Area	A	B	C	D	E	X	Total
Operations	6	1		2			9
Radiological Controls	1	1					2
Maintenance/Surveillance	1			3			4
Emergency Preparedness							0
Security							0
Engineering/Technical Support	2			1			3
Safety Assessment/Quality Verification							0
Totals	10	2	0	6	0	0	18

Cause Codes*

Type of Events

A.	Personnel Error	10
B.	Design/Man/Constr./Install	2
C.	External Cause	0
D.	Defective Procedure	6
E.	Component Failure	0
	Total	18

*Root causes assessed by the SALP Board may differ from those listed in the LER

The majority of the LERs were the result of various personnel errors. Attention to detail appeared to be a major contributor.

Unit 2

This analysis includes LER 89-08 through 90-04, a total of 39 reports.

Functional Area	A	B	C	D	E	X	Total
Operations	9			2	7	1	19
Radiological Controls	2			1	1	1	5
Maintenance/Surveillance	5	2		1			8
Emergency Preparedness							0
Security							0
Engineering/Technical Support		2		4			6
Safety Assessment/Quality Verification	1						1
Totals	17	4	0	8	8	2	39

Cause Codes*

Type of Events

A.	Personnel Error	17
B.	Design/Man/Constr./Install	4
C.	External Cause	0
D.	Defective Procedure	8
E.	Component Failure	8
X.	Other	2
	Total	39

*Root causes assessed by the SALP Board may differ from those listed in the LER

There were 25 fewer LERs issued this period than during the previous assessment period. However, there was still a large number of events caused by personnel error, indicating that the corrective actions taken for similar problems last assessment period were ineffective. The majority of the personnel errors were rooted in inattention to detail.

ATTACHMENT 1

SALP Evaluation Criteria

Licensee performance is assessed in selected functional areas, depending on whether the facility is under construction or operational. 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 resolution of technical issues from a safety standpoint;

3. Responsiveness to NRC initiatives;

4. Enforcement history;

5. Operational and construction events (including response to, analyses of, reporting of, and corrective actions for);

6. Staffing (including management); and

7. Effectiveness of training and qualification programs.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

Category 1. Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

Category 2. Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

Category 3. Licensee management attention to or involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimum regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

The SALP Board may assess a functional area to compare the licensee's performance during the last quarter of the assessment period to that during the entire period in order to determine the recent trend. The trend if used, is defined as:

Improving: Licensee performance was determined to be improving near the close of the assessment period.

Declining: Licensee performance was determined to be declining near the close of the assessment period.

A trend is assigned only when, in the opinion of the SALP Board, the trend is significant enough to be considered indicative of a likely change in the performance category in the near future. For example, a classification of "Category 2, Improving" indicates the clear potential for "Category 1" performance in the next SALP period.

It should be noted that Category 3 performance, the lowest category, represents acceptable, although minimally adequate, safety performance. If at any time the NRC concluded that the licensee was not achieving an adequate level of safety performance, it would then be incumbent upon NRC to take prompt appropriate actions in the interest of public health and safety. Such matters would be dealt with independently from, and on a more urgent schedule than, the SALP process.