

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

INSPECTION REPORT 50-220/84-13

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

ASSESSMENT PERIOD: MAY 1, 1983 THROUGH APRIL 30, 1984

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION, UNIT I

BOARD MEETING DATE, JUNE 18, 1984

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant construction and operation.

A NRC SALP Board, composed of the staff members listed below, met on June 18, 1984 to review the collection of performance observations and data to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee's safety performance at Nine Mile Point Unit 1 for the period May 1, 1983 through April 30, 1984.

SALP Board for Nine Mile Point Unit 1:

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- J. H. Joyner, Chief, Nuclear Materials and Safeguards Branch
- H. B. Kister, Chief, Project Branch No. 2
- S. J. Collins, Chief, Projects Section No. 2C
- S. D. Hudson, Senior Resident Inspector, Nine Mile Point Unit 1
- R. A. Hermann, Licensing Project Manager, Office of Nuclear Reactor Regulation (NRR)
- D. B. Vassallo, Chief, Operating Reactors Branch No. 2, NRR

II. CRITERIA

Licensee performance is assessed in selected functional areas, depending whether the facility is in a construction, preoperational, or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Special areas may be added to highlight significant observations.

One or more of the following evaluation criteria were used to assess each functional area.

1. Management involvement and control in assuring quality
2. Approach to resolution of technical issues from a safety standpoint
3. Responsiveness to NRC initiatives
4. Enforcement history
5. Reporting and analysis of reportable events
6. Staffing (including management)
7. Training effectiveness and qualification

However, the SALP Board is not limited to these criteria and others may have been used where appropriate.

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

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety or construction is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective so that satisfactory performance with respect to operational safety or construction is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety or construction is being achieved.

III. SUMMARY OF RESULTS

During the previous assessment, licensee performance in the areas of outage management and maintenance were highlighted as examples of strong management control exhibited during the lengthy recirculation system piping replacement program. Additionally, improvements in the radiation protection area were noted which resulted in an improved performance from Category 3 to Category 2.

The high availability record of the Nine Mile Point-Unit 1 site tends to indicate that existing programs for operations, maintenance and surveillance are basically sound. However, during the current assessment, as in the previous period in which plant operations were considered, significant violations were cited in the Operations functional area. We are concerned that operator and technician awareness during routine safety-related duties exhibit a less than adequate appreciation for completeness of duties, identification of problems and recognition of the responsibility to assess and implement corrective actions.

Licensee corrective actions to date in this area have not been fully effective as exhibited by recent findings in the area of control room operators not noting higher than normal nuclear instrument readings which brought into question the instruments operability, and discovery of a nuclear instrument channel in the bypass position during refueling operations.

A decline in the category conclusion for the Maintenance and Modification area resulted from the reviews. The previous assessment was based predominantly on the recirculation system piping replacement effort. During the current period, the licensee's operational maintenance and modification programs exhibited several examples of procedural inadequacies and failure to perform required analysis.

The assessment also documented continued strong plant performance in the areas of fire protection, security and safeguards, refueling and outage management, and licensing activities.

The licensee's radiation protection program continues to exhibit improved performance. Licensee representatives appear to be responsive to NRC concerns, however, additional licensee emphasis in the area of thoroughness of job scope and implementing procedure reviews may be warranted.

<u>Functional Area</u>	<u>Category Last Period (May 1, 1982 - April 30, 1983)</u>	<u>Category This Period (May 1, 1983 - April 30, 1984)</u>	<u>Trend</u>
A. Plant Operations	2	3	Declined
B. Radiological Controls	2	2	Same
<ul style="list-style-type: none"> • Radiation Protection • Radioactive Waste Management • Transportation • Effluent Control and Monitoring 			
C. Maintenance and Modifications	1	2	Declined
D. Surveillance	Insufficient Basis*	2	----
E. Fire Protection/Housekeeping	1	1	Same
F. Emergency Preparedness	Insufficient Basis*	1	----
G. Security and Safeguards	1	1	Same
H. Refueling and Outage Management	1	1	Same
I. Licensing Activities	1	1	Same

* During the previous SALP period the routine and region-based inspection program was modified to emphasize the review of recirculation piping replacement activities and the associated radiological controls.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. The plant was returned to service in June 1983 following a 15 month outage to replace the Reactor Recirculation System Piping. During the assessment period, one forced outage occurred in July 1983 to repair several leaking valves and a Recirculation Pump seal inside the drywell. The plant then operated without a reactor trip until it was shutdown for a scheduled two month refueling outage on March 17, 1984. The plant remained shutdown at the end of the assessment period. Inspection efforts during this period consisted primarily of routine inspections conducted by the resident inspector.

During the previous assessment period the plant remained shutdown due to the recirculation pipe replacement effort. One level IV violation was issued for the failure to control lifted leads. The licensee exhibited involvement in enhancing the quality of operations, however, several examples of personnel lack of attention to detail were presented. The assessment concluded that the establishment of normal operating skills by the plant staff would be reviewed by the resident inspector during the routine inspection program.

During this assessment period several violations of Technical Specification Limiting Conditions for Operation were discovered which indicated a lack of attention to detail by the plant operators. In June 1983, a lock was found removed from the breaker for a core spray motor operated valve. In July 1983, the outer Reactor Building Track Bay Door was not sealed while the inner door was left open. In July 1983, two main steam line radiation monitors were found inoperable and the associated reactor protection trip system had not been placed in the tripped condition. These monitors were not operating as required during a period of four 8-hour operating shifts and yet prompt action to correct the condition was not initiated. In October 1983, a primary containment isolation valve connected to the torus was found to be open when it was required to be closed. This condition may have existed for up to 3½ months and was not recognized by plant personnel during their tours of the station. This deteriorating trend was highlighted by the issuance of two civil penalties inconjunction with two Severity Level III violations issued during the assessment period.

The licensee has implemented corrective action, however, after the licensee initiated an operator awareness to Technical Specification requirements, the resident inspector noted an example that the operators did not exhibit a conservative approach toward reactor safety during refueling. One day after the current assessment period during refueling operations the resident inspector noted that one intermediate range monitor did not appear to be responding normally. This condition was apparently present on the midnight shift when refueling began and yet no action was taken to determine the operability of the instrument or to correct the condition. These examples are indicitive of the

high percentage of issues identified by the NRC following reactor restart which reinforces the NRC's concern regarding alertness of the station personnel in identifying and correcting items that are of potential safety significance.

On occasion the licensee has shown a reluctance to report events or equipment failures. Examples are: a recent bomb threat, the discovery that several reactor vessel safety valve setpoints found out of tolerance, and the discovery of a missing fire barrier penetration seal. In these instances the licensee made the notification required by 10 CFR 50 only after the resident inspector identified the need of reporting to the licensee.

In order to further evaluate the cause of these events, on March 20, 1984 the NRC issued Enforcement Action (EA No. 83-137) including an order requiring an independent third party appraisal of the site and corporate management and development of recommendations which would increase corporate management involvement in plant activities to ensure increased personnel awareness of plant conditions. The deadline for submitting the plan for the independent management appraisal to the NRC had not yet been reached at the end of the assessment period.

Historically, the licensee has maintained a large, experienced staff of licensed operators and senior operators. Additionally, each operating shift is supplemented by three auxiliary operators dedicated to the operation of the radioactive waste building. This level of staffing should permit routine operations to be conducted properly without the excessive use of overtime. On several occasions during the assessment period, the operators demonstrated their skills by responding promptly to feedwater and turbine pressure transients in order to prevent a reactor trip. Licensee's management must ensure that the same level of operator attention is devoted to ensuring routine compliance with requirements of Technical Specifications.

During the assessment period, Operator Licensing Examinations were conducted at Nine Mile Point-Unit 1 on three occasions; June 1-3, 1983, September 6-9, 1983 and February 21-24, 1984.

During these three occasions a total of 31 Reactor Operator candidates and 13 Senior Reactor Operator candidates were examined. Results of the examinations have been consistently good, with 28 of the RO candidates receiving licenses and 12 of the SRO candidates receiving licenses.

Additionally, the NMP-Unit 1 1983 Annual Requalification examinations, which were conducted during the Assessment period, were reviewed by Region I staff. The exams were satisfactory.

Onsite Review Committee (SORC) activities were not evaluated during the assessment period.

2. Conclusion

Category 3, declined.

Although the licensee's plant availability factor indicates a good operating record, the attention to detail and awareness of plant conditions by operations personnel requires increased licensee attention.

3. Board Recommendation

Senior Resident to conduct, an evaluation of SORC and the Safety Review and Audit Board (SRAB) activities.

B. Radiological Controls

1. Analysis

There were five inspections conducted by radiation specialists which examined the licensee's radiation protection, transportation, and environmental monitoring programs. One of the five inspections was a special inspection of the licensee's installation of high density fuel racks. The Resident Inspector reviewed ongoing radiological control activities. During these reviews four violations were identified.

During the previous assessment period an improvement in licensee performance was noted resulting from well planned and support activities during the recirculation pipe replacement outage. Several minor violations were identified in the area of failure to adhere to radiation work permit requirements and source inventory.

During the current assessment period, the licensee installed high density fuel racks to increase the storage capacity for spent fuel. A NRC pre-installation inspection identified a number of radiological concerns. These included evaluation of radiation environment to be entered by divers and proper monitoring of exposure received. These findings were evidence of a lack of thoroughness in the licensee reviews. A follow-up inspection one month later, during rack installation, found that the licensee had adequately resolved these concerns prior to rack installation and the licensee's overall radiological controls for the installation had been upgraded. Licensee training of personnel involved with the installation made a positive contribution to the understanding of procedures and work with no personnel errors or procedure violations identified.

Examination of radiological controls during the refueling outage which commenced March 17, 1984 found that the licensee was effectively using engineering controls to limit intake of airborne radioactive material with the exception of one violation involving examples of adherence to radiation work permits and use of respiratory protection equipment. No significant personnel exposure resulted and the licensee implemented effective corrective actions in a timely manner.

Properly trained and qualified radiation protection personnel were found to be overseeing radiologically significant work. Radiation Protection Staffing was judged adequate to support outage work. The licensee augmented the plant staff with qualified, trained contractors.

The licensee's performance of radiological surveillance (e.g., radiation, contamination surveys) during the outage was acceptable. Survey records were complete, well maintained and available.

Reviews of licensee ALARA Program implementation identified a continued strong level of pre-work planning of high man-rem outage tasks. This

is attributed in part to the recent transfer of a corporate ALARA Engineer to the site. One example of the licensee not taking advantage of a recent Technical Specification change allowing remote monitoring (e.g. via TV camera) of high radiation area access control points resulted in the placement of the drywell access control point in a 3 millirem/hour field. Additional ALARA staffing positions have been approved by the licensee and should allow for review of these tasks and preclude future problems in this area.

Licensee actions on commitments made in response to outstanding NRC Health Physics Appraisal findings were reviewed. The licensee implemented the majority of the commitments to upgrade the quality of the radiation protection protection in a timely manner and is in the process of completing long term commitments.

The licensee has implemented appropriate procedures for control of Radioactive Waste Management activities. Violations in the licensee's Radioactive Waste Management Program are rare.

Examination of radioactive waste transportation activities identified three minor violations. The first violation involved failure to determine the radioactive decay heat load of the contents of a transport package and failure to ensure that the contents of a transport package was within package radioactivity limits. This violation was attributed to procedure deficiencies. The procedures were revised in a timely manner to preclude recurrence. The second violation involved failure to train a QA technician in applicable regulatory requirements. This technician was responsible for overseeing radwaste transportation activities. This violation was attributed to inadequate licensee controls to ensure that properly trained personnel oversee radwaste quality assurance activities. The licensee initiated timely training of the individual and has strengthened controls for this activity. The third violation involved failure to include radwaste transport packages as an item to be overviewed by the quality assurance program. This violation was attributed to licensee oversight. The licensee initiated action to include transport packages in the quality assurance program. The violations were not indicative of a breakdown in programmatic controls but rather are attributable to a lack of attention to detail in the areas cited. Licensee records of radioactive waste shipments were generally well maintained except as noted above.

The licensee is implementing an effective Effluent Monitoring and Control program. Audits of its environmental sampling contractors were found to be complete, timely, and thorough. The audits covered the implementation and adequacy of the procedures employed by the contractors.

The licensee has reported radiological environmental monitoring events promptly, completely, and in conformance with Technical Specification requirements. The events reported were of minor safety significance.

The licensee's liquid effluent releases were well within Technical Specifications. The calculated off site doses using these sample results were insignificant.

2. Conclusion

Category 2, same.

Licensee upgrades in this functional area continue, a positive trend is evident. Management support in this area is required for continued progress.

3. Board Recommendation

Maintain routine inspection program.

C. Maintenance and Modifications

1. Analysis

The resident and region-based inspectors examined selected maintenance and modifications. No programmatic inspection of maintenance was conducted during the current assessment period. During these reviews two violations were identified in the area of modification reviews.

During the previous assessment period the predominant effort in this functional area was the replacement of the recirculation system piping. Positive administrative steps had been taken to control corrective maintenance and establish dedicated maintenance coordinator positions. No violations were identified in the Maintenance area. Four minor violations were identified in the Extended Outage Work function area involving three procedural concerns and one example of failure to control material over the reactor vessel. Overall, the licensee exhibited strong performance in these areas.

During the current assessment period several weaknesses were noted which contributed to the issuance of two violations. Weaknesses were noted in the areas of: modification control, control and review of vendor manuals and maintenance procedures, post maintenance retesting requirements, control of limited shelf items, and thoroughness and depth of responses to NRC initiatives.

One Level IV violation involved the failure to perform a piping system analysis prior to making a modification to the containment spray system. The other Level V violation involved the failure to perform an independent design review of a modification to the emergency condenser vents.

The review of maintenance activities has raised several concerns about the licensee's ability to ensure the quality of work performed. Following overhaul of a scram outlet valve, no maintenance testing was planned until the licensee was questioned by the inspector. This situation still exists eventhough corrective actions from the previous SALP period resulted in a major revision to the administrative procedure which controlled corrective maintenance. The licensee agreed to time the valves as per the vendor manual recommendations. In a second instance, a maintenance procedure was found to reference a vendor's manual that had been superseded ten years earlier. Additionally, an improperly performed preventive maintenance activity on the emergency diesel generator during the current refueling outage led to the failure of the engine's turbocharger. An inadequate procedure appears to have contributed to the error. The licensee plans to review post maintenance testing and control of vendor manuals as part of their response to NRC Generic Letter 83-28, "Required Actions based on Generic Implications of Salem ATWS Events".

During reviews of maintenance activities, the resident inspector noted a weakness in the control of limited shelf life items. The inspector

identified to the licensee Q.C. inspector that a component which was beyond its listed shelf life had apparently just been installed in a valve being repaired. Although the Q.C. inspector was aware of this concern, he completed the job documentation without resolving the issue until prompted again by the resident inspector.

The licensee's corrective action responses to NRC initiatives are at times lacking in thoroughness or depth. An example of this concern was the licensee's corrective actions resulting from NRC identified radiographic reporting errors and the licensee's failure to include additional reports in his review, some of which were subsequently found by the NRC to contain similar errors.

The station management appears to be committed to a comprehensive program of mechanical and electrical preventative maintenance. This has contributed to the high degree of plant reliability exhibited during the last operating cycle. Licensee management continues to support increased staffing. For example, the number of maintenance mechanics has been increased by 75% and the number of electricians has doubled during the assessment period. The staffing increase is a positive step. Increased management attention may be warranted to prevent personnel errors due to the large influx of new people into the department.

2. Conclusion

Category 2, decline.

The licensee's transition to operational maintenance from the extended outage has resulted in examples of inadequate reviews in the areas of design modifications, spare part acceptability and post maintenance testing. Based on the above findings, attention to the concept of providing a quality product in conjunction with completed maintenance activities is required.

3. Board Recommendation

Maintain routine inspection program.

D. Surveillance

1. Analysis

One programmatic inspection of this area was conducted by the resident inspector in addition to his routine reviews of surveillance testing. One inspection of the containment integrated leak rate test program was conducted by a region-based inspector. During these reviews, one Level III violation was identified. Additionally, an inadequate surveillance procedure contributed to a Level III violation as discussed in Functional Area A.

During the previous assessment period many surveillance tests were not required to be conducted since the reactor core was off-loaded to the spent fuel pool to support recirculation pipe replacement. Prior to plant start-up in June 1983 the licensee reestablished the routine operational surveillance schedule.

During the current period, one violation was identified concerning the failure to measure the closure times of the Emergency Condenser Condensate Return Isolation Valves as required by Technical Specifications. This violation contributed to the civil penalty assessed by EA 83-147. When the violation was initially identified to the licensee, he did not respond immediately to test the valves. Additionally, the licensee identified one failure to perform a surveillance test. As part of the corrective actions implemented to ensure the station's surveillance procedures meet the requirements of Technical Specifications, the licensee is conducting a complete programmatic review of this area.

The licensee has determined that inadequate instructions in a return-to-service portion of a surveillance procedure directly contributed to the failure to maintain a primary containment isolation valve closed. This violation resulted in a civil penalty. The licensee is addressing this concern as part of his programmatic review of surveillance testing.

The inadequate review of a surveillance test by the licensee directly contributed to his failure to detect two inoperative main steam line radiation monitors and take the actions required by Technical Specification. This issue was previously discussed in Section IV.A.

Efforts have been made to improve performance in specific surveillance areas. For example, the licensee appears to have a good program for performing both local and the integrated containment leak rate tests.

2. Conclusion

Category 2, no previous period conclusion.

The examples of NRC findings in this area indicate a lack of attention to detail. The improper closure time surveillance did not result in a violation of valve closure time requirements, however, in conjunction with the missed surveillance finding, exhibits the necessity for operators to understand the requirements behind routine surveillance. The open torus containment valve and the inoperable main steam line monitors are discussed in Section IV.A. and although were contributed to by surveillance procedure inadequacies, are considered operationally oriented. Increased licensee attention in conjunction with functional area A. corrective actions is warranted in this area.

3. Board Recommendation

Maintain routine inspection program.

E. Fire Protection/Housekeeping

1. Analysis

During the current assessment period, one programmatic inspection was performed by a team of two region based inspectors. The resident inspector also examined fire protection activities on a routine basis. One Level V violation was identified.

During the previous assessment period one Level V violation was identified for failure to post a required fire watch. A strong performance during the extended outage resulted in no major fires and aggressive housekeeping activities. Items identified by the NRC in previous inspections are being adequately addressed by the licensee. Additionally the licensee was responsive to the resident inspectors concern over controls for fire barrier penetrations. The licensee promptly issued an administrative procedure to control the breaking of all fire barriers and has completed approximately 50% of the program to upgrade deficient fire barriers. One violation was identified during a routine tour when the resident inspector found an unsealed cable penetration through a rated fire barrier for which a fire watch was not posted. In their follow-up to this event the licensee discovered that the design of the cable penetration was not adequate to provide the required 3 hour fire rating. This design error affected hundreds of penetrations in the Reactor Building to Turbine Building wall. Although the licensee immediately posted the required fire watches it indicates the design of the cable penetrations had not been properly evaluated by the licensee.

The on site fire brigade consists of five shifts of five professional firefighters. Due to the inadequate design of the cable penetrations, auxiliary operators have been assigned as fire watchers to supplement the fire brigade and the use of temporary employees is being contemplated to relieve excessive overtime. The licensee also employs three supervisors and a full time training instructor devoted to fire brigade training.

The licensee commitment to a quality fire protection program is evident by the staffing, training, and modifications made in response to 10CFR50, Appendix R. During the assessment period, Technical Specifications which address these modifications were issued.

2. Conclusion

Category 1, same.

Continued management support to this area is evident. Licensee actions to date in response to the fire barrier penetration finding have been comprehensive.

3. Board Recommendation

Maintain routine inspection program.

F. Emergency Preparedness

1. Analysis

During the assessment period, there were two announced inspections of emergency preparedness activities. No violations were identified.

During the previous assessment period one inspection of the prompt notification system was conducted. No violations were identified. An exemption from the annual exercise requirement was granted and the exercise was delayed until September, 1983. A follow-up inspection was performed during the period May 16-20, 1983, to determine the licensee's status of corrective actions on the 24 Appendix A items and 35 Appendix B items identified during the August 17-28, 1981, appraisal of the licensee's emergency preparedness program. The inspection determined that licensee had completed corrective actions on all the items identified during the Emergency Plan Implementing Appraisal (EPIA).

During the annual emergency exercise on September 28, 1983, the licensee demonstrated the capability to implement their Emergency Plan and Implementing Procedures in a manner to adequately protect the health and safety of the public. Activities observed by the NRC team as thoroughly planned and efficiently implemented included: personnel being knowledgeable in assignments and emergency procedures; and timely notifications to off-site agencies. However, areas identified which require licensee improvement were: coordination between the licensee and State of New York concerning dose projections, habitability surveys in the EOF and OCS, and more involvement by OSC personnel in completing repair actions. General findings by FEMA-Region II found that objectives of the exercise were satisfied by New York State and local response agencies.

As demonstrated by their EPIA corrective actions, the licensee has been responsive to NRC initiatives and acceptable resolutions were generally proposed. Timeliness for correction of the Appendix A and B deficiencies identified in the EPIA was excellent.

The licensee will conduct the next annual exercise in October, 1984.

2. Conclusion

Category 1, same.

3. Board Recommendation

Maintain routine inspection program.

G. Security and Safeguards

1. Analysis

During the previous assessment period two region-based and routine resident inspections were conducted in this area. No violations were identified.

One unannounced physical protection inspection was performed during the assessment period by a region-based inspector. Routine resident inspections continued throughout the assessment period. No violations were identified by these inspections nor did the licensee report any violations or submit any safeguards event reports.

Strong management control continued in this area as evidenced by no violations of regulatory requirements during the appraisal periods.

Licensee improvements in this area include erection of a chain link fence in the owner controlled area to serve as a remote barrier to the protected area and expansion of security facilities with an addition to the second floor of the access control building consisting of a kitchen, conference room, training room, and administrative offices for the training supervisor and staff which demonstrates corporate management's continued involvement in site security program.

Plans and procedures were continually evaluated by security management to ensure that they provided an effective method of meeting regulatory requirements. All procedural changes were reviewed and approved by the Supervisor, Nuclear Security and all policy changes were approved by corporate management. Training records were complete, however, their arrangement and file methods need improvement to facilitate easy retrieval and review. An effort is underway to computerize training, administrative, and maintenance records. Equipment and software requirements have been identified and the system is expected operational by late summer of 1984.

Two consultants participated with corporate auditors in conducting an extensive and timely annual audit.

The licensee responses to NRC initiatives are sound, realistic, and represent an earnest attempt to meet the spirit of requirements. As an example, during the last inspection, the adequacy of compensatory measures at the scene of construction of the access control building was questioned. Immediate temporary corrective action was taken and within 24 hours an additional guard post was provided by the licensee to address the inspectors concerns.

Corporate level management has been responsive to any security weakness or areas where improvement could be made. Major program violations are rare and there have been none cited since February 1979.

Potential reportable events receive the prompt attention of security management. Most past events have been related to hardware. The recently installed larger security computer system should further enhance security system reliability.

Security positions, including management positions, are well defined and personnel are aware of their responsibilities. Adequate staffing levels and preplanning precludes the routine use of overtime. Corporate management's interest and involvement in site activities is borne out with the allocation of nine instrument and control (I&C) technicians to the security function in August 1983; assignment of two additional security investigators; creation of a new position, Supervisor of Training, Nuclear Security, and the proposed addition of an additional training instructor.

The training and qualification plan is fully implemented. Training and qualification effectiveness has been enhanced with the creation of a fifth shift, which permits training of an entire shift every five weeks. This schedule provides up to 400 hours of training time each year.

2. Conclusion

Category 1, same.

3. Board Recommendations

Conduct minimum inspection program.

H. Refueling and Outage Management

1. Analysis

During the current cycle outage which commenced March 17, 1984 the resident inspector witnessed portions of the reactor core off-loading and reloading operations. (Reloading was performed after the assessment period). The licensee also performed a significant amount of in vessel operations during the current assessment period to support the examination of nuclear instrumentation dry tubes and control rod drive stub tubes. One violation was identified involving failure to follow procedures for control of material over the reactor vessel.

During the previous SALP period limited refueling operations were conducted due to the length of the work to support replacement of the Recirculation System piping. A separate functional area, Extended Outage Work, was reviewed during the assessment period. Aggressive management controls and preplanning were evident. The refueling operations monitored were conducted efficiently and safely.

During the current assessment period the core was off loaded and in vessel inspections confirmed control rod drive stub tube cracking. Additionally cracks were noted in the nuclear instrumentation dry tubes. Piping inspections conducted during the outage resulted in discovery of core spray pipe indications and a high pressure feedwater pipe crack.

The licensee aggressively pursued resolution to these concerns and conducted efficient outage planning to accommodate effective repairs. Additional inspections were conducted in each area of concern in excess of NRC requirements.

Prior to commencing the reloading operation, the licensee prepared a master checklist of surveillance tests and preventative maintenance items that needed to be completed. The inspector verified that the master list addressed all items required by Technical Specifications; and on a sampling basis, confirmed the items had been properly completed. One example of the operators' lack of attention to safety-related indications during refueling is discussed in the Operations functional area, Section IV.1.A.

The licensee conducted extensive verifications of systems lineup and status prior to resumption of plant operations. Operator staffing during the outage was adequate.

During the assessment period there were no Licensee Event Reports concerning refueling and one violation of a fuel handling procedure concerning control of material over the open reactor vessel was noted. The licensee has taken action to improve the administrative controls in this area.

The licensee continues to exhibit strong preoutage planning and the ability to comprehensively address and resolve technical issues noted during outage activities.

2. Conclusion

Category 1, same as previous period conclusion for extended outage work.

3. Board Recommendation

Maintain routine inspection program.

I. Licensing Activities

1. Analysis

Niagara Mohawk performs a great deal of the engineering work to support licensing for the facility in house. The utility management has an awareness of the various licensing issues by virtue of its extensive experience in the industry, technical expertise and active participation in Owner's group and professional organization activities. Licensee management usually takes actions in a timely manner to ensure issues are properly addressed; the most recent example of this is the response to the stub tube cracking problem.

Evaluation from the Technical Reviewers indicate a sound technical understanding of most issues; we believe that Niagara Mohawk's rather large well qualified engineering staff, in concert with an astute licensing staff, assures that most engineering work, either done in house or performed under its direction by contractors, adequately addresses complex technical issues. Frequent plant visits and excellent communication between the licensing, engineering, and plant personnel enhance the ability of the corporate staff to reach sound technical decisions.

Progress by the licensee in reaching resolution for issues such as Fire Protection, Equipment Qualification, Containment Vent and Purge, Appendix J, 9737 items and RETS support our determination. In particular, the licensee safety analysis reports and the programs themselves for Fire Protection and Equipment Qualification were rated very high by the staff. Both of these major programs were characterized by the reviewers as among the best submitted. The RETS reviewer comments for this attribute were: "Plant personnel clearly understood the issues, were technically sound and thorough in their approaches, and were cooperative in resolving problems". Very few TMI 0737 items remain unresolved for the plant and good progress is being made on 0737 - Supplement 1 items. The licensee, over the past year, has worked closely with staff in providing information and analysis to reach acceptable resolution on MPA issues (containment vent and purge and Appendix J) that have been complex and difficult.

Open and effective communications channels exist between the NRC and Niagara Mohawk licensing staffs. Effective dialogue between the staffs promote prompt and technically sound responses to NRC initiatives. The licensee meets all established commitment dates or provides a written submittal explaining the circumstances and establishing a new firm date.

Conference calls with the staff are promptly established and include appropriate engineering, plant and/or contractor personnel. The Niagara Mohawk Licensing Engineer and/or his management promptly and effectively attempt to resolve issues. Licensee responsiveness to NRC initiatives were typified by actions taken with regard to stub tube problems,

equipment qualification, Appendix J and the spent fuel pool expansion and containment vent and purge issues. A further example of licensee responsiveness to NRC initiatives is demonstrated by the actions of Niagara Mohawk in preparatory work, planning and volunteering for the proposed pilot Integrated Safety Assessment Program.

Several discrepancies in the Technical Specifications were noted during the assessment period. Licensee Event Report 83-23 was promptly reported when a core spray pump suction valve was taken out of service. Technical Specifications listed the valve as a primary containment isolation although the FSAR basis for this requirement states that the valve is provided only as an isolation valve for maintenance. Based on the FSAR classification, the licensee nullified the LER and stated that the discrepancy in the Technical Specifications would be resolved via an amendment request. Prior to the reactor vessel hydrostatic test, the licensee noted one of the required scram signals prevented the performance of scram time testing. The scram signal did not contribute to reactor safety and conflicted with the requirement to complete the scram time testing at greater than 800 psi and prior to power operations. The licensee should thoroughly review his Technical Specifications to clarify these and other discrepancies which do not contribute to reactor safety by submitting appropriate amendment requests.

2. Conclusion

Category 1, same.

3. Board Recommendation

None

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Event Reports

1. Tabular Listing

Type of Events:

A. Personnel Errors	7
B. Design/Man./Constr./Install	6
C. External Cause	0
D. Defective Procedure	2
E. Component Failure	16
X. Other	11
Total	42

LER's Reviewed:

LER #83-06 to 83-46, 84-01 and 84-02.
83-23 was deleted by licensee.

2. Casual Analysis

Three sets of common mode events were identified.

- a. LER 83-15, 26, and 39 reported the failure of several main steam relief valve tailpipe temperature sensors. Action to correct these failures is scheduled for the current refueling outage.
- b. LER 83-45 and 46 reported the failure to review temporary changes to procedures. The licensee plans to strengthen administrative controls in this area to ensure that these reviews are completed within the required time period.
- c. LER 83-24, 36, 41, 42 and 43 reported instances when the reactor vessel fuel zone water level monitoring system was found out of service. To prevent further trips of the system, the licensee disconnected its input to the plant process computer. The licensee is pursuing a hardware change which will allow the system to be realigned to the computer without undesirable feedback.

B. Investigation Activities

None

C. Escalated Enforcement Actions

1. Civil Penalties

A civil penalty in the amount of \$40,000 was proposed on October 6, 1983 for the failure to take the actions required by Technical Specifications with two main steam line radiation monitors inoperable. This civil penalty was paid by the licensee on November 1, 1983.

A civil penalty in the amount of \$80,000 was proposed on March 20, 1984 for the failure to maintain a Primary Containment Isolation Valve closed and the failure to test the closure times of the emergency Condensate Return Valves. This civil penalty was paid by the licensee on May 4, 1984.

2. Orders

An Immediately Effective Order Modifying License was issued on March 20, 1984 that required the licensee submit a plan for an independent appraisal of site and corporate management and their functions to evaluate their effectiveness and to develop recommendations for the purpose of increasing corporate management involvement in plant activities to foster an attitude that will ensure increased personnel attentiveness to plant parameters and ensure strict adherence to procedures. This plan is due on May 20, 1984.

3. Confirmatory Action Letters

A Confirmatory Action Letter was issued on July 13, 1983 to ensure the ability of the Containment Spray System to withstand a seismic event was not compromised. It also required a review of other modifications completed within the last 2 years to ensure that their seismic analysis was properly performed.

D. Management Conferences

The SALP Management Meeting was held on site on July 28, 1983. An Enforcement Conference was held at the Region I Office on August 10, 1983 to discuss the failure to perform a seismic piping analysis, the failure to maintain secondary containment integrity, and the failure to trip the reactor protection system when two main steam line radiation monitors were inoperable.

An Enforcement Conference was held at the Region I Office on November 15, 1983 to discuss the failure to maintain primary containment integrity and the failure to measure the closure times of the Emergency Condenser Condensate Return Valves.

A management meeting was held at the NMPC corporate office on December 9, 1983 to discuss the recent Technical Specification violation with the President of NMPC.

A management meeting was held at the NRC Headquarters Office on March 27, 1984 to discuss corrective actions related to the March 20, 1984 civil penalty. The meeting involved the Director, Office of Inspection and Enforcement, the Regional Administrator, Region I, and NMPC was represented by Chairman of the Board and its President.

TABLE 1
TABULAR LISTING OF LERS BY FUNCTIONAL AREA
NINE MILE POINT NUCLEAR STATION, UNIT 1

<u>Area</u>	<u>Number/Cause Code</u>	<u>Total</u>
A. Plant Operations	6/A, 2/B, 5/E, 5/X	18
B. Radiological Controls	2/X	2
C. Maintenance & Modifications	1/B, 1/X	2
D. Surveillance	2/D, 10/E, 2/X	14
E. Fire Protection/Housekeeping	1/A, 1/B	2
F. Emergency Protection	2/B	2
G. Security and Safeguards	None	0
H. Refueling & Outage Management	1/B, 1/X	2
I. Licensing Activities	None	0
Total		42

Cause Codes:

- A - Personnel Error
- B - Design, Manufacturing, Construction or Installation Error
- C - External Cause
- D - Defective Procedures
- E - Component Failure
- X - Other

TABLE 2

INSPECTION HOURS SUMMARY (5/1/83 - 4/30/84)NINE MILE POINT NUCLEAR STATION, UNIT 1

	<u>HOURS</u>	<u>% OF TIME</u>
A. Plant Operations	515*	30*
B. Radiological Controls	291	17
C. Maintenance and Modifications	244	14
D. Surveillance	202	12
E. Fire Protection/Housekeeping	40	2
F. Emergency Preparedness	322	18.5
G. Security and Safeguards	61	3.5
H. Refueling & Outage Management	56	3
I. Licensing Activities	--*	-- *
Total	<u>1731</u>	<u>100%</u>

* Hours expended in facility license activities and operator license activities not included with direct inspection effort statistics.

TABLE 3

VIOLATIONS (5/1/83 - 4/30/84)

NINE MILE POINT NUCLEAR STATION, UNIT 1

Number and Severity Level of Violations

<u>Severity Level</u>	
Severity Level I	0
Severity Level II	0
Severity Level III	3
Severity Level IV	7*
Severity Level V	3
Deviation	0
Total	13

Violations Vs. Functional Area

<u>FUNCTIONAL AREAS</u>	<u>Severity Levels</u>					
	I	II	III	IV	V	DEV
A. Plant Operations			2	2		
B. Radiological Controls				3	1	
C. Maintenance				1	1	
D. Surveillance			1			
E. Fire Protection					1	
F. Emergency Preparedness						
G. Security & Safeguards						
H. Refueling & Outage Management *				1		
I. Licensing Activities						
Totals by Severity Level			3	7	3	

* Inspection report 84-07 describing an apparent Level IV violation had not been issued at the end of the assessment period.

(TABLE 3 Continued)

C. Summary

<u>Inspection Report No.</u>	<u>Inspection Date</u>	<u>Severity Level</u>	<u>Functional Area</u>	<u>Violation</u>
83-14	June 7-24, 1983	IV	A.	Failure to lock open breaker for core spray valve
83-16	July 12-15, 1983	IV	C.	Failure to perform piping analysis
		V	C.	Failure to perform independent design review
83-17	July 18-22, 1983	III	A.	Failure to trip a reactor protection channel with 2 main steam line radiation monitors inoperable
		IV	A.	Failure to seal the Reactor Building track bay door
83-24	October 1-31, 1983	V	E.	Failure to post a continuous fire watch
		III	A.	Failure to maintain primary containment isolation valve closed
83-26	November 7-10, 1983	IV	B.	Failure to comply with Certificate of Compliance for radioactive material packages
		IV	B.	Failure to train personnel in DOT and NRC regulations
		V	B.	Failure to include radioactive material packages in the Q.A. program

(TABLE 3 Continued)

83-29	November 9-10, 1983	III	D.	Failure to measure closure time for Emergency Condenser Condensate Return Valves
84-05	April 10-13, 1984	IV	B	Failure to follow radiation protection procedures
84-07	April 1-May 31, 1984 (report not yet issued)	IV	H	Failure to follow procedures for control of material over the reactor vessel

TABLE 4
INSPECTION REPORT ACTIVITIES (5/1/83 - 4/30/84)
NINE MILE POINT NUCLEAR STATION, UNIT 1

<u>Inspection Report No.</u>	<u>Inspection Hours</u>	<u>Areas Inspected</u>
83-10	116	Routine, resident
83-11	37	Security
83-12	62	Emergency Planning
83-13	53	Containment integrated Leak rate testing
83-14	54	Routine, resident
83-15	15	Plant shielding design review
83-16	49	Modification
83-17	19	Special, resident of plant operations
83-18	116	Routine, resident
83-19	---	Enforcement conference
83-20	103	Routine, resident
83-21	44	Environmental monitoring
83-22	260	Emergency preparedness
83-23	24	Security
83-24	80	Routine, resident
83-25	---	Enforcement conference
83-26	40	Transportation activities
83-27	110	Radiological controls

TABLE 4 (continued)

INSPECTION REPORT ACTIVITIES (5/1/83 - 4/30/84)NINE MILE POINT NUCLEAR STATION, UNIT 1

<u>Inspection Report No.</u>	<u>Inspection Hours</u>	<u>Areas Inspected</u>
83-28	113	Routine, resident surveillance program review
83-29	14	Surveillance testing
83-30	133	Routine, resident
84-01	18	Radwaste storage building
84-02	106	Routine, resident
84-03	24	Radiological controls
84-04	32	Modification
84-05	33	Radiological controls
84-06*	25	Fire protection
84-07*	46	Routine, resident outage activities

* Report not yet issued.

TABLE 5

LER SYNOPSIS (5/1/83 - 4/30/84)NINE MILE POINT NUCLEAR STATION, UNIT 1

<u>LER Number</u>	<u>Type</u>	<u>Summary Description</u>
83-06	30 day	Control Room walls do not meet seismic criteria
83-07 & 08	30 day	Wind direction sensor misaligned
83-09	30 day	Control Room vent system out of service (OOS) for modification
83-10	30 day	Core spray topping pump OOS for repairs
83-11	30 day	Main Steam relief valve failed to open
83-12 & 18	30 day	Emergency Condenser relay failed to de-energize
83-13	30 day	Breaker for Core Spray valve not locked open
83-14	30 day	Reserve power line OOS for construction at Unit 2
83-15, 26 & 39	30 day	Main Steam relief valves thermocouples drifting
83-16	30 day	Main Steam line radiation monitors found inoperable
83-17	30 day	HPCI pumps OOS for inspection
83-19 & 38	30 day	Missed surveillance tests
83-20	prompt	Failure to perform piping analysis
83-21	30 day	Emergency Condenser OOS for repairs
83-22	prompt	Failure to seal Reactor Building track bay door
83-23	voided	

TABLE 5 Continued

83-24, 36, 41, 42 & 43	30 day	Failure to fuel zone water level monitoring system
83-25	10 day	Failure to meet sensitivity requirement for radionuclides in fish samples
83-27	30 day	Exceeded maximum core thermal power
83-28 & 33	30 day	Hydraulic snubbers OOS for repairs
83-29	10 day	Cesium detected in shoreline sediment
83-30	prompt	Failure to station continuous fire watch
83-31	30 day	Weather station temperature detector out of calibration
83-32	prompt	Primary containment isolation valve found open
83-34	30 day	Improper opening of reactor building air lock doors
83-35	30 day	HPCI pump OOS for repairs
83-37	30 day	Core spray OOS for repairs
83-40	30 day	Failed main steam radiation monitor
83-44	prompt	Fire barrier penetration not sealed
83-45 & 46	30 day	Failure to properly review temporary changes
84-01	30 day	Failure of Type AK breakers
84-02	30 day	C.R.D. Stub Tube leak