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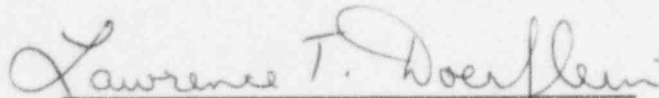
Facility: Nine Mile Point, Units 1 and 2

Location: Scriba, New York

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## EXECUTIVE SUMMARY

Nine Mile Point Units 1 and 2  
50-220/95-12 & 50-410/95-12  
April 23 - June 3, 1995

### PLANT OPERATIONS

During this inspection period, Nine Mile Point Unit 1 (Unit 1) operated at full power and Unit 2 completed a 55 day refueling outage. During main turbine startup testing, operators inserted a manual reactor scram after experiencing excessive turbine vibration. The operators event response was appropriate and well controlled. The post-scram assessment was thorough. Housekeeping in both units was observed to be good.

### MAINTENANCE

Maintenance activities were performed well. Specifically, the inspectors noted a good questioning attitude during the performance of the monthly flow test for the Unit 1 liquid poison system. The operators identified a potential problem, informed the control room, determined the cause, and took the appropriate actions to correct the problem.

### ENGINEERING

Neither the NRC inspectors nor NMPC were able to locate an engineering analysis to support the potential risk associated with temporary scaffolding near the Unit 2 liquid poison control tank. This was confirmed during a subsequent investigation by the Independent Safety Engineering Group.  
(URI 50-410/95-12-01)

The NRC issued a license amendment approving a 4.3% increase in the Unit 2 maximum reactor power. The inspectors attended the Station Operating Review Committee (SORC) meetings that addressed the power uprate and the associated implementation. Minor discrepancies identified during QA and ISEG reviews were corrected prior to the SORC meetings.

### PLANT SUPPORT

The inspectors noted that the security guards posted at access points for the Unit 2 drywell did not have written instructions as to the specific tasks related with each station, although the guards knew what was expected of them. Also, the inspectors noted an inconsistent response by the guards when responding to the intrusion alarm for the suppression pool door.

NMPC management attention was focused on reducing exposure during the Unit 2 refueling outage. Several jobs tracked well below their exposure projections. The inspectors considered the total exposure for the outage to be the result of good planning combined with an aggressive health physics personnel coverage of tasks.

**EXECUTIVE SUMMARY**  
(continued)

**SAFETY ASSESSMENT/QUALITY VERIFICATION**

Based on review of recent QA audits and inspections, and the Independent Safety Engineering Group (ISEG) investigations, the inspectors determined the quality of the QA and ISEG oversight activities, and the associated reports, continues to improve.

## DETAILS

### 1.0 SUMMARY OF ACTIVITIES

#### NMPC Activities

During this inspection period, Nine Mile Point Unit 1 (Unit 1) operated at full power throughout the period. Unit 2 was in a refueling outage during most of the period. Initial reactor startup from the outage occurred on May 28. On May 30, during main turbine startup testing, operators inserted a manual reactor scram after experiencing excessive turbine vibration. Subsequent inspection of the turbine and support systems identified no abnormal conditions. The reactor was again brought critical on June 1, and turbine testing continued. The refueling outage ended on June 2, when the generator was synchronized to the grid, resulting in an outage duration of 55 days.

#### NRC Activities

The resident inspectors conducted inspection activities during normal, backshift, and weekend hours. There were 14.5 hours of backshift inspection during this period. Specialist inspections conducted during the period included the areas of maintenance practices, radiological protection, and security. The results of these inspections will be documented and reported separately.

### 2.0 PLANT OPERATIONS (30702, 71707, 92901, 93702)\*

#### 2.1 Operational Safety Verification

The inspectors observed overall operation and verified that Niagara Mohawk Power Corporation (NMPC) operated the units safely and in accordance with their procedures and regulatory requirements. The inspectors conducted regular tours of all accessible plant areas. The tours included walkdowns of safety systems and components for leakage, lubrication, cooling, and general material conditions that might affect system operation.

#### 2.2 Housekeeping

The inspectors performed extensive tours of the reactor and turbine buildings for both units. Housekeeping in the Unit 1 reactor building (RB) was observed to be very good. No extraneous materials were noted. NMPC's continuing efforts to decontaminate longstanding contaminated areas in the RB were readily visible. This is a positive effort as it makes personnel access and egress much easier, especially for operations personnel while taking rounds. Housekeeping in the Unit 1 turbine building (TB) was also assessed to be very good.

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\* The NRC inspection manual procedure or temporary instruction that was used as inspection guidance is listed for each applicable report section.

Unit 2 was nearing the end of its current refueling outage. Despite this, the inspectors assessed that housekeeping in the RB was very good, and that efforts to clean up areas and remove scaffolding and other equipment from the RB were progressing well. Housekeeping in the TB was adequate, and cleanup efforts were in progress. Overall, the inspectors observed good plant housekeeping, including control and storage of flammable material.

### 3.0 MAINTENANCE (61726, 62703, 92902, 60705)

#### 3.1 Maintenance and Surveillance Observations

The inspectors observed maintenance and surveillance activities to ascertain if safety-related work was conducted according to approved procedures, the Technical Specifications (TSs), and the appropriate industry codes and standards. Observation of activities verified that: limiting conditions for operation (LCO) were satisfied, removal and restoration of equipment were controlled, administrative authorizations and tag outs were obtained, procedures were adequate, certified parts and materials were used, test equipment was calibrated, radiological requirements were implemented, system prints and wire removal documentation were used, quality control hold points were established, deficiencies were documented and resolved, and records were complete and accurate. In general, the activities observed and reviewed were effective with respect to meeting the safety objectives. No significant concerns were identified during the inspectors' review. The inspectors noted examples of very good performance, as discussed below.

#### 3.2 Unit 1 Liquid Poison Monthly Flow Test

The inspectors monitored the performance of the monthly flow test for the liquid poison system (N1-ST-M1, "Monthly Flow Test Liquid Poison, 11 and 12") and assessed that the test was performed in accordance with the surveillance procedure. The instrument and controls (I&C) and operations personnel were clearly knowledgeable about the test requirements and were proficient in its execution. The inspectors also observed proper radiological controls being exercised by the test personnel and that radiation protection personnel provided timely coverage when requested.

The inspectors verified that the most recent revision to N1-ST-M1 was used and that the test equipment specified by the procedure was within calibration. The test was performed successfully on the #11 liquid poison pump. However, during the five minute flow stabilization period for the #12 liquid poison pump, the operators noted that they were having difficulty maintaining a steady pump discharge pressure reading on the test gauge. Although not required by the procedure, the operators noted that the pressure on the test gauge was deviating significantly from the local installed pressure indicator. When the deviation reached a 75 psi difference, the test was halted. Further investigation revealed that vibrations at the test gauge connection had caused the test gauge dial face to rotate. This resulted in the observed deviation in discharge pressures. The operators informed the control room of the problem and the liquid poison system was returned to its normal configuration.

The SSS declared a no-test for the #12 liquid poison pump. Even though test results were satisfactory, the SSS also declared #11 pump a no-test, since the same test gauge had been used. A second calibrated test gauge was obtained, attached using a flexible connector to minimize vibration, and the test was performed with satisfactory results.

The inspectors noted that the operators performing the test demonstrated a good questioning attitude in that they identified a potential problem, informed the control room, determined the cause, and took the appropriate actions to correct the problem. The inspectors had no further questions.

### 3.3 Unit 2 Reactor Scram During Turbine Testing

On May 30, 1995, the operators manually tripped the reactor in response to increased main turbine vibration. Prior to the event, Unit 2 was performing post refueling outage power ascension testing on the main turbine following the replacement of three of three low pressure rotors. Turbine vendor representatives were present and monitoring the tests.

On May 30 at about 2:00 p.m., while increasing turbine speed to about 1550 rpm, the vibration on bearing #6 (one of the "B" low pressure rotor's journal bearings) exceeded the administrative limit of 14 mils. Control room operators tripped the turbine to reduce vibrations below the administrative limit to prevent turbine rotor bowing. During the turbine coastdown, vibrations at various locations increased in amplitude up to approximately 30 mils. To minimize potential damage to the turbine due to the high vibration, the reactor was manually scrammed from about 15 percent power so that main condenser back pressure could be increased (break vacuum) to expedite the slow down of the turbine.

The plant responded as designed and the operators immediately implemented the scram recovery procedures to stabilize the plant in a hot shutdown condition. The inspectors observed the operators response to the high turbine vibrations and subsequent scram. In addition, the inspectors reviewed NMPC's post-scram assessment and observed portions of the startup. The operators event response was appropriate and well controlled, the post-scram assessment was thorough, and the startup evolution was deliberate and professional.

## 4.0 ENGINEERING (37551, 92903)

### 4.1 Unit 2 Standby Liquid Control Tank Scaffolding

Scaffolding is erected around the Unit 2 standby liquid control tank to facilitate access to the work control station at the top of the tank. The scaffolding was initially erected at least two years ago and was left in place. The inspectors were unable to locate an engineering analysis that evaluated the potential safety risk associated with temporary scaffolding near a safety related system.

The inspectors discussed this concern with the director of the Unit 2 independent safety engineering group (ISEG) and noted that ISEG had not reviewed the scaffolding program. Their subsequent investigation confirmed

that no engineering analysis existed. In addition, the procedure for the control of scaffolding (N2-MAP-MAI-301) requires an evaluation of scaffolds installed around safety related equipment for greater than sixty days.

The scaffolding was scheduled to be replaced with a permanent structure during the current refueling outage. However, the installation was delayed until later this year. The inspector noted that the ISEG investigation was ongoing at the conclusion of the period. NMPC has initiated an evaluation of the scaffolding. Pending NRC review of the results of the NMPC safety evaluation and the ISEG investigation, this item will remain unresolved.  
(URI 50-410/95-12-01)

#### 4.2 Unit 2 Power Uprate Amendment

On April 28, 1995, the NRC issued an amendment to the Unit 2 license and technical specifications (TSs) approving a 4.3% increase in maximum reactor power from 3323 megawatts thermal (Mwt) to 3467 Mwt. During the current refueling outage, NMPC made changes to the appropriate operating procedures and plant systems to accommodate the power uprate, with plans to implement the uprate requirements before completion of the outage.

The inspectors attended the Station Operations Review Committee (SORC) meetings that addressed the power uprate amendment and the associated implementation of the power uprate. Inconsistencies between NMPC's numerous submittals in support of the amendment and the associated NRC safety evaluation that accompanied the final approved amendment were examined and determined to be minor in nature. In addition, SORC received reports from quality assurance (QA) and ISEG documenting their reviews of the amendment and the planned implementation. Minor discrepancies were identified during the QA and ISEG reviews and corrected prior to the SORC meetings.

The inspectors noted that the composition of the SORC was in accordance with the TS. The inspectors concluded that the discussions by the SORC members were thorough and comprehensive, and that conclusions of the NMPC staff were appropriately challenged. The inspectors had no further questions regarding the implementation of the power uprate amendment and will monitor performance during the subsequent plant startup.

#### 5.0 PLANT SUPPORT (71707, 71750, 92904)

The inspectors routinely monitor activities in the areas of radiation protection, chemistry, fire protection, and general housekeeping during tours. Minor weaknesses were discussed with the appropriate supervision, no significant deficiencies were noted.

##### 5.1 Security

During tours of the Unit 2 reactor building, the inspectors questioned the security guards posted at access points for the drywell as to their duties and responsibilities for their respective stations. Neither of the security posts had written instructions as to the specific tasks related with each station; although the guards knew what was expected of them.



The inspectors also noted that the intrusion alarm associated with the access point for the suppression pool alarmed frequently. Discussions with several of the guards in the area identified that while they reset the alarm, they did not visually verify that all personnel in the area were authorized. However, due to the environmental and radiological conditions in the area and the local access controls in place for radiation protection purposes, the inspectors determined the response of the guards was acceptable.

The inspectors discussed the above concerns with NMPC security management. Post specific duties were provided at each of the satellite security stations. In addition, the expectations for security response to door alarms was emphasized to all of the guards.

The inspectors concluded that the actions taken by management were appropriate and that the guards more clearly understand their responsibilities. The inspectors had no further questions.

## 5.2 Radiation Protection

During a tour of the Unit 2 turbine building, the inspectors observed several weaknesses in the radiological protection (RP) work practices in the "C" feedwater heater room. Specifically, the inspectors noted that numerous hoses, electrical lines, and lines from an acetylene torch rig, crossed the area boundary of a contaminated work area. The hoses and lines were not secured at the boundary to prevent the spread of contamination outside the area. The inspectors also observed plastic bags and several pieces of absorbent material overlapping the boundary, and the anti-contamination clothes collection bags were partially out of the zone. The inspectors informed radiation protection personnel of these observations. The inspectors later verified that appropriate actions were taken to correct the identified problems.

The inspectors also conducted a review of occupational exposure for the Unit 2 refueling outage. Prior to commencing the outage, NMPC had established an aggressive outage goal of 305 person-rem. An analysis of the work to be performed during the outage, as detailed in the Pre-Outage ALARA [as low as reasonably achievable] Report, identified an estimated 359 person-rem of occupational exposure to complete the anticipated work. On a weekly basis, the ALARA supervisor presented an exposure projection to senior management. The inspectors reviewed the projection of May 9, which indicated an exposure of 324.1 person-rem for the entire outage. While this was 7% above the goal of 305 person-rem, it was about 12% below the estimated exposure for the scope of work. Several jobs were tracking well below their exposure projections, including inservice inspections (ISI) inside the drywell bioshield, drywell snubber reduction, safety relief valve removal/replacement, and cleaning of the suppression pool. In addition, the reactor vessel disassembly required only 50% of the initial estimate. Several work activities had already exceeded their pre-outage estimate, including the ISI work in the reactor and turbine buildings, and the snubber functional testing in the drywell.

The inspectors considered the total exposure for the outage to be the result of good planning combined with an aggressive RP coverage of tasks. For

example, there were several recent events where the performance of radiological workers was less than expected. In each event, NMPC's RP staff identified the issues and initiated prompt corrective actions. The inspectors had no further questions in this area.

## 6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION (71707, 90712)

### 6.1 Licensee Event Report Review

The below Licensee Event Report (LER) was reviewed for accuracy and compliance with the requirements of technical specifications.

#### (Closed) LER 50-220/95-02

#### **Reactor Scram Caused by Failure of Generator Protective Relay**

On April 19, 1995, Unit 1 experienced a generator trip followed by a turbine trip and reactor scram. This event was discussed in detail in NRC inspection report 50-220/95-03. The LER accurately described the event and subsequent corrective actions. LER 50-220/95-02 is closed.

### 6.2 QA and ISEG Activities

The NRC inspectors meet regularly with the licensee's QA Manager and the ISEG Director. Ongoing activities are reviewed, and the results of recent QA audits and inspections, and ISEG investigations are discussed.

Based on these discussions and reviews, the inspectors determined that the reports are more detailed, compared to previous years, and the conclusions are appropriate to the area of emphasis. The inspectors concluded that the quality of the QA and ISEG oversight activities continues to improve.

## 7.0 PREVIOUSLY OPENED ITEMS (92901, 92902, 92903, 92904)

#### (Closed) 50-410/94-03-01: Leakage Past Unit 2 Pressure Isolation Valves

This item was opened to document differences between the high system pressure annunciator response procedures (ARPs) for the Division I and Division II residual heat removal (RHR) sub-systems; and to further evaluate NMPC's review of a phenomenon involving the pressurization of portions of the RHR system during normal operation.

The inspectors reviewed the two ARPs and noted that both now refer to Section H.16.0 of the normal operating procedure for actions to reduce RHR system pressure. Previously, only the ARP for Division II RHR referenced the procedure.

The inspectors also reviewed NMPC's engineering analysis, as documented in DER 2-94-0996, that investigated the pressurization phenomenon. NMPC concluded that the observed high pressure (greater than 300 psig) in Division II RHR was the result of pressure maintained in the system after the pump is secured. NMPC also concluded the condition was acceptable and that no corrective actions were required.

For Division I RHR, NMPC concluded that the loop is periodically pressurizing due to leakage past the steam condensing supply isolation valves. The inspectors note that this has been observed at many boiling water reactor plants and that several utilities, to prevent this, decided to blank off the steam condensing supply to RHR; however, this has not been done at Unit 2. NMPC concluded that the leakage past the valves is below the TS allowed leakage limits, and that adequate relief capacity exists to prevent system damage. Also, alarms alert the operators to the existence of a high pressure condition and instructions provide actions to reduce the pressure.

The inspectors review determined that the procedure changes were acceptable and that the engineering analysis was reasonable. This item is closed.

(Closed) 50-220/94-03-04: Water in the Unit 1 Cable Spreading Room

This item was opened to document concerns associated with the leakage of over 1000 gallons of ground water into the Unit 1 cable spreading room. The water leaked into the room through electrical penetrations in the area. The NRC concerns were: what systems or controls are routed through the penetrations, are the cables qualified for submergence, and why did previous corrective actions not eliminate the problem.

NMPC concluded that all of the cables that pass through the affected penetrations are non-safety related. Also, the cables are qualified for submersion. The inspector reviewed the supporting documentation with respect to water immersion. With respect to the effectiveness of previous corrective actions, NMPC indicated that the original seals were flame retardant but not waterproof. However, the newly installed seals are waterproof, to 3 psig, and have a caulking face on the seal material to further increase their pressure rating. The inspectors closed the item based on this information.

## 8.0 MANAGEMENT MEETINGS (30702)

At periodic intervals and at the conclusion of the inspection period, meetings were held with senior station management to discuss the scope and findings of this inspection. Based on the NRC Region I review of this report, and discussions held with Niagara Mohawk representatives, it was determined that this report does not contain safeguards or proprietary information.