

June 6, 2000

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, 2nd Floor
P.O. Box 63
Lycoming, NY 13093

SUBJECT: NRC's NINE MILE POINT INSPECTION REPORT 05000220/2000-002,
05000410/2000-002

Dear Mr. Mueller:

On May 13, 2000, the NRC completed an inspection of your Nine Mile Point Nuclear Station, Units 1 and 2. The enclosed report presents the results of that inspection. Preliminary results were discussed with Mr. J. Conway and other members of your staff on May 25, 2000.

NRC resident inspectors examined numerous activities as they related to reactor safety and compliance with the Commission's rules and regulations and with the conditions of your operating license. The inspection consisted of a selected examination of procedures and records, observations of activities, and interviews with personnel. There were no findings identified.

In accordance with 10CFR2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room and will be available on the NRC Public Electronic Reading Room (PERR) link at the NRC home page, <http://www.nrc.gov/NRC/ADAMS/index.html>.

Sincerely,

/RA/

Michele G. Evans, Chief
Projects Branch 1
Division of Reactor Projects

Docket Nos. 05000220, 05000410
License Nos. DPR-63, NPF-69

Enclosure: NRC's Nine Mile Point Inspection Report 05000220/2000-002, 05000410/2000-002

John H. Mueller

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 050000220, 050000410
License Nos: DPR-63, NPF-69

Report No: 050000220/20000-002, 050000410/2000-002

Licensee: Niagara Mohawk Power Corporation (NMPC)

Facility: Nine Mile Point, Units 1 and 2

Location: P. O. Box 63
Lycoming, NY 13093

Dates: April 2, 2000 - May 13, 2000

Inspectors: G. Hunegs, Senior Resident Inspector
R. Fernandes, Resident Inspector
B. Fuller, Resident Inspector

Approved by: Michele G. Evans, Chief
Projects Branch 1
Division of Reactor Projects

Summary of Findings
Nine Mile Point, Units 1 & 2
NRC Inspection Report 05000220/2000-002, 05000410/2000-002

The report covers a six-week period of resident inspection conducted per the NRC's Revised Reactor Oversight Process (Attachment 1). The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609.

There were no findings identified.

Report Details

SUMMARY OF PLANT STATUS

Nine Mile Point Unit 1 (Unit 1) began this inspection report period at 100 percent power in five-loop operation. On April 30, 2000, Unit 1 was removed from service for a scheduled outage to perform noble metals injection and repair turbine controls. Unit 1 was returned to service on May 9 and achieved 100 percent power on May 16.

Nine Mile Point Unit 2 (Unit 2) began this inspection report period shutdown, in a scheduled refueling outage. On April 18, 2000, the reactor was brought critical. Unit 2 was returned to service on April 20 and achieved 100 percent power on April 26. On May 3, Unit 2 began a plant shutdown required by Technical Specification (TS) 3.6.3.a due to the containment purge valves failing the local leak rate test (Reference event number 36967). An upstream valve was satisfactorily leak tested and verified closed and Unit 2 was able to exit the TS action statement and terminate the shutdown. The lowest reactor power level reached was 92 percent. Unit 2 was returned to 100 percent power on May 4 and remained there throughout the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted equipment alignment partial walkdowns primarily to evaluate the operability of selected trains or backup systems, with the redundant train or system inoperable or out of service. Walkdowns were also conducted on equipment recently realigned due to refueling outage activities and surveillance testing. The walkdowns included, as appropriate, consideration of plant procedures and reviews of documents to determine correct system lineups, and verification of critical components to identify any discrepancies which could affect operability of the redundant train or backup system.

The inspectors performed the following partial system walkdowns:

- 103 emergency diesel generator (EDG) (Unit 1)
- Switchgear associated with 103 EDG (Unit 1)
- Division 1 EDG (Unit 2)
- Switchgear associated with Division I EDG (Unit 2)

b. Issues and Findings

There were no findings identified.

1R05 Fire Protectiona. Inspection Scope

The inspectors routinely toured high fire risk areas in the plant, to assess Niagara Mohawk Power Corporation's (NMPC's) control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors utilized fire protection operating procedures to perform system standby condition status checks of the fire water system. The status of the fire and pressure maintenance pumps were verified. In addition, the fire hose reels were verified to be in standby status.

The areas inspected included:

- Control room (Units 1 & 2)
- EDG and switchgear rooms (Units 1 & 2)
- Relay room (Units 1 & 2)
- All accessible areas of the reactor building (Unit 2)
- All accessible areas of the drywell & suppression pool (Unit 2)
- Steam tunnel (Unit 2)

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessments and Emergent Work Controla. Inspection Scope

For the selected maintenance work orders listed below, the inspectors evaluated: (1) the effectiveness of the risk assessments performed before the maintenance activities were conducted; (2) risk management control activities; (3) the necessary steps taken to plan and control resultant emergent work tasks; and (4) the overall adequacy of identification and resolution of emergent work and the associated maintenance risk assessments.

- WO 00-3522 Removal of the liquid poison system from service (Unit 1)
- Not Applicable Removal of 115 kilo-volt (KV) line No. 6 from service (Unit 2)
- WO 00-3020-00 Removal of automatic depressurization system (ADS) tank No. 4 from service (Unit 2)
- WO 96-8784-00 Removal of reactor building exhaust damper from service to inspect and lubricate the actuators (due to failed surveillance testing) (Unit 2)
- WO 00-2726&2807 Troubleshoot and repair primary containment purge inboard and outboard containment isolation valves (Unit 2)

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions & Events

Division I Service Water System Non-essential Header Isolation (Unit 2)

a. Inspection Scope

On April 4, 2000, during routine operations in cold shutdown, the non-essential service water (SW) header isolation valves inadvertently closed. This resulted in all but one SW pump tripping on low flow and isolated SW to the reactor and turbine building closed loop cooling systems. Reactor and turbine building closed loop cooling water temperatures started to rise and operators took corrective action to minimize heat loads on the isolated systems. System temperatures subsequently stabilized. NMPC documented the event in Licensee Event Report (LER) 05000410/2000-006. (Reference event number 36862). The inspectors examined operating procedures and indications associated with the event, and interviewed the operators that were in the control room at the time of the occurrence. Additionally, the inspectors evaluated NMPC's troubleshooting efforts.

b. Issues and Findings

There were no findings identified. NMPC narrowed the cause to an intermittent failure of one of three components and replaced those components.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems, to assess: (1) the technical adequacy of the evaluations; (2) whether continued system operability evaluation was warranted; (3) whether other existing degraded systems adversely impacted the affected system or compensatory measures; (4) where compensatory measures were used, whether the measures were appropriate and properly controlled; and, (5) degraded system impact on TS limiting condition for operations and the risks significance in accordance with the significance determination process (SDP).

- Deficiency and Event Report (DER) 2-2000-1575: Unit 2 Division II EDG did not go into the normal five minute cooldown cycle when it was shut down and instead shut down immediately.
- DER 2-2000-1562: On April 25, 2000, the Unit 2 high steam flow instruments associated with isolation of the reactor core isolation cooling (RCIC) system exhibited erratic indications. Technical specification actions were taken to isolate the RCIC steam supply line. The RCIC system was declared inoperable and operators reported the event in accordance with 10 CFR 50.72 (reference event No. 36927, dated April 25, 2000). Additional analysis provided with DER 2-2000-

1562 showed that the erratic indications were acceptable and the RCIC system was subsequently declared operable.

- DER 1-2000-1724: Unit 1 control rod 10-23 had demonstrated degraded performance in that high drive water pressures were required to withdraw the rod past position 24.
- DER 1-1999-4049: Unit 1 EDG 102 and 103 degraded heat exchangers bolts.
- DER 1-2000-0733: Unit 1 containment spray pump 112 run at shut off head during surveillance.
- DER 2-2000-0653: Unit 2 Division I emergency battery 2BYS*BAT2A concerning battery cell separator deformation on two of the 60 cells.
- DER 2-2000-1245: Unit 2 service water system in operating modes 4 and 5 following the discovery of a design error in the system single failure analysis.

b. Issues and Findings

There were no findings identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

On March 28, 2000, Unit 2 identified that the service water system did not meet single failure requirements. The single failure would result in the closing of the non-essential service water isolation valves which could result in the loss of running service water pumps due to low discharge flow trips. On April 15, 2000, design change N2-00-020 was implemented to modify the control circuit logic of the non-essential service water isolation valves to correct the single failure condition. The inspector reviewed the design document change and associated safety evaluation to verify that the design bases, licensing bases and performance capability of the service water system was not degraded through the implementation of the modification. NMPC reported the issue in LER 05000410/2000-005, Service Water System Does Not Meet Single Failure Requirement.

b. Issues and Findings

There were no findings identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance test (PMT) procedures and associated testing activities for selected risk significant mitigating systems to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness, consistent with the design and licensing basis documents; (4) test instrumentation had current calibrations, range and accuracy for the application; (5) tests were performed, as written, with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were

properly controlled; (7) test equipment was removed following testing; and, (8) equipment was returned to the status required to perform its safety function.

- Post modification testing was performed to verify stable operation of the Unit 1 turbine control system from 0 to 100 percent power, including a reduction in power from 100 to 75 percent and return to 100 percent power. The inspectors reviewed the partially completed work package and procedure from the post modification testing of the turbine control valve cams. The work package was placed on hold during the testing due to flow variations occurring in the No. 15 recirculation pump loop. The test procedure had been completed through the ascension to 100 percent reactor power.
- The inspectors reviewed the completed work order and post-maintenance testing for the replacement of the positioner on valve FCV-29-134, the 13 feedwater pump flow control valve. The installed positioner feedback linkage had bound in the valve stem slot causing the attachment bolt to shear, disabling the feedback mechanism. The feedback mechanism served to prevent overtorque of the flow control valve into the valve seats. Improper feedback resulted in the flow control valve opening while the pump was secured.
- The inspectors observed the post-maintenance testing of the standby gas treatment system electric valve actuator on GTS*MOV28, decay heat cross tie valve, to verify that test activities confirmed the capability of the chiller to perform its design function at the completion of planned maintenance.

b. Observations and Findings

There were no findings identified.

1R20 Refueling and Outage

.1 Startup from Noble Metals Injection Outage (Unit 1)

a. Inspection Scope

The inspectors observed a portion of the reactor startup and approach to criticality following the outage conducted to perform noble metals chemistry injection.

b. Issues and Findings

There were no findings identified.

.2 Refueling Outage (Unit 2)

a. Inspection Scope

The inspectors reviewed the following activities related to the Unit 2 refueling outage for conformance to the applicable procedure and witnessed selected activities associated with each evolution. Surveillance tests were reviewed to verify TS were satisfied. The inspectors observed start-up activities in the control room to verify that TS, license conditions and other requirements, commitments and other administrative procedure prerequisites for mode changes were met prior to changing modes.

- shutdown cooling system operation
- refueling operations
- shutdown risk evaluations
- containment closeout
- reactor startup including the control of approach to criticality
- outage related surveillance tests

b. Issues and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed performance of surveillance test procedures and reviewed test data of selected risk significant structures, systems and components (SSCs) to assess whether the SSCs satisfied TS, Updated Final Safety Analysis Report, and licensee procedure requirements; and to determine if the testing appropriately demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions. The following tests were witnessed:

- N1-ST-R1, Control rod scram insertion time test (Unit 1)
- N1-ST-M1B, Liquid poison pump test (Unit 1)
- N2-OSP-RAS-R001, "A" residual heat removal pump and valves (Unit 2)
- N2-OSP-ICS-Q@002, RCIC turbine testing (Unit 2)

b. Issues and Findings

There were no findings identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The Unit 2 service water system pumps were provided with automatic protection to trip during low flow conditions. NMPC installed a temporary modification to preclude the low flow service water pump trip pending removal of the low flow trip. The inspector reviewed temporary modification 2000-008, "Service Water System Low Flow Trip Avoidance" to verify that the temporary modification did not affect the safety function of the service water system. The inspector reviewed the temporary modification, safety evaluation, Updated Final Safety Analysis Report and TS and reviewed the installation of the modification. The temporary modification was to throttle flow to the residual heat removal (RHR) heat exchanger to ensure that a sufficient system flow would exist so that the service water pumps will not trip automatically on low pump flow. The safety evaluation analyzed the acceptability of establishing a continuous flow path through the RHR heat exchangers to preclude the loss of the service water pumps. The inspector noted that service water is normally secured to the RHR heat exchanger and is aligned by remote manual motor operated valve operation from the control room. The temporary modification does not preclude operators from taking action to establish the necessary service water system flow rates through the RHR heat exchanger for accident situations.

b. Issues and Findings

There were no findings identified.

4. **OTHER ACTIVITIES [OA]**

4OA5 Other

- .1 (Closed) LER 05000410/2000-004: Division I Diesel Generator Special Report and Two Service Water System Isolations. The issue was previously addressed in NRC inspection report 05000410/2000-001. This LER is closed.
- .2 (Closed) LER 05000410/2000-005: Service Water System Does Not Meet Single Failure Requirement. This LER is closed. (Reference section 1R17)
- .3 (Closed) LER 05000410/2000-006: Division I Service Water System Isolation of the Non-essential Portions. This LER is closed. (Reference Event Number 36862 and section 1R14)

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Conway, Vice President, Nuclear Generation and other members of licensee management at the conclusion of the inspection on May 25, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was received.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Abbott, VP Nuclear Engineering
 J. Conway, VP Nuclear Generation
 L. Hopkins, Unit 1 Plant Manager
 J. Mueller, Senior VP and Chief Nuclear Officer
 M. Peckham, Unit 2 Plant Manager
 C. Terry, VP Quality Assurance Nuclear

ITEMS OPENED, CLOSED, AND DISCUSSED

Items Closed

05000410/2000-004	LER	Division I Diesel Generator Special Report and Two Service Water System Isolations. (Section 4OA5.1)
05000410/2000-005	LER	Service Water System Does Not Meet Single Failure Requirement. (Section 4OA5.2)
05000410/2000-006	LER	Division I Service Water System Isolation of the Non-essential Portions. (Section 4OA5.3)

LIST OF ACRONYMS USED

ADS	Automatic Depressurization System
DER	Deficiency and Event Report
EDG	Emergency Diesel Generator
KV	Kilo-volt
LER	Licensee Event Report
NMPC	Niagara Mohawk Power Corporation
PMT	Post-Maintenance Testing
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SDP	Significance Determination Process
SSC	Structures, Systems and Components
SW	Service Water
TS	Technical Specification
Unit 1	Nine Mile Point Unit 1
Unit 2	Nine Mile Point Unit 2

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues with low to moderate safety significance, which may require additional NRC inspections. YELLOW findings are more serious issues with substantial safety significance and would require the NRC to take additional actions. RED findings represent issues with high safety significance with an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.