

March 9, 2001

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 05000220/2000-011,  
05000410/2000-011

Dear Mr. Mueller:

On February 10, 2001, 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 February 23, 2001.

NRC 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.

Based upon the results of this inspection, the inspectors identified three issues of very low safety significance (GREEN). Two of these issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as Non-cited Violations (NCVs), consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000, (65FR25368). If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at the Nine Mile Point Nuclear Power Plant.

Mr. John H. Mueller

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Sincerely,

/RA by  
William A. Cook  
Acting For/

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 05000220/2000-011, 05000410/2000-011

cc w/encl:

G. Wilson, Esquire

M. Wetterhahn, Winston and Strawn

J. Rettberg, New York State Electric and Gas Corporation

P. Eddy, Electric Division, Department of Public Service, State of New York

C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law

J. Vinqvist, MATS, Inc.

W. Flynn, President, New York State Energy Research  
and Development Authority

J. Spath, Program Director, New York State Energy Research  
and Development Authority

T. Judson, Central NY Citizens Awareness Network

Mr. John H. Mueller

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M. Evans, DRP

J. Shea, RI EDO Coordinator

E. Adensam, NRR (ridsnrrdlpmlpdi)

P. Tam, NRR

D. Thatcher, NRR

J. Wilcox, NRR

G. Hunegs, SRI - Nine Mile Point

W. Cook, DRP

R. Junod, DRP

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**U.S. NUCLEAR REGULATORY COMMISSION  
REGION I**

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

Report No: 050000220/2000-011, 050000410/2000-011

Licensee: Niagara Mohawk Power Corporation (NMPC)

Facility: Nine Mile Point, Units 1 and 2

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

Dates: December 31, 2001 - February 10, 2001

Inspectors: G. Hunegs, Senior Resident Inspector  
R. Fernandes, Resident Inspector  
B. Fuller, Resident Inspector  
J. Noggle, Senior Health Physicist  
D. Silk, Senior Emergency Preparedness Inspector

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

## Summary of Findings

IR 05000220-00-011, 05000410-00-011; on 12/31 - 02/12/2001; Niagara Mohawk Power Corporation; Nine Mile Point, Units 1 & 2; Equipment alignment, fire protection, operability evaluations.

This inspection was conducted by the resident inspectors and two region based inspectors. The inspectors identified three GREEN findings, two of which involved Non-cited Violations. The significance of all findings is indicated by their color (Green, White, Yellow, or Red) and was determined by the "Significance Determination Process" (See Attachment 1). Findings for which the Significance Determination Process (SDP) does not apply are indicated by "No Color" or by the severity level of the applicable violation.

### A. Inspector Identified Findings

#### **Cornerstone: Mitigating Systems**

**Green.** The inspector identified a Non-cited Violation (NCV) involving the failure to maintain the tie rod gaps for the reactor building closed loop cooling system expansion joints within design specifications.

This finding was of very low safety significance, in that, the system remained operable and engineering analysis determined that the added loading was well with-in the allowed stress values. (Section 1R04)

**Green:** The inspector identified an NCV associated with ineffective corrective action for previous damper failures which contributed to the December 21, 2000, release of carbon dioxide into the reactor building through a fire damper that failed to function. Another NCV was identified involving the failure to follow general administrative procedure GAP-PSH-02 which resulted in a missed surveillance test that would have detected the faulted damper prior to it being required to function.

The fire damper failure to close was determined to be of very low safety significance because of the small percentage of carbon dioxide released from the switchgear room into the reactor building and because of the plant staff's actions and available procedures to mitigate this type of event. (Section 1R05)

**Green:** The inspector identified that the initial operability determination was not adequate to conclude that the emergency diesel generator (EDG) ventilation system would remain operable if the motor-operated dampers failed open, coincident with cold ambient temperatures. This finding was of very low safety significance, in that operating procedures provide sufficient guidance to monitor and control EDG room temperature and the dampers have demonstrated sufficient reliability. (Section 1R15)

## Summary of Findings (cont'd)

### B. Licensee Identified Violations

Violations of very low significance, which were identified by the licensee, have been reviewed by the inspector. Corrective actions taken or planned by the licensee appear reasonable. These violations are summarized in Section 4OA7 of this report.

## Report Details

### **SUMMARY OF PLANT STATUS**

Nine Mile Point Unit 1 (Unit 1) began this inspection report period at 100 percent power. With the exception of several planned power reductions for maintenance, Unit 1 remained at 100 percent power through the end of the inspection period.

Nine Mile Point Unit 2 (Unit 2) began this inspection report period at 100 percent power. With the exception of several planned power reductions for maintenance, Unit 2 remained at 100 percent power through the end of the inspection period.

#### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

#### 1R04 Equipment Alignment

##### .1 Partial Walkdown

##### a. Inspection Scope

The inspectors conducted equipment alignment partial walkdowns primarily to evaluate the operability of selected trains or backup systems, while the redundant train or system was inoperable or out of service. Walkdowns were also conducted on equipment recently realigned due to 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 walkdown:

- Unit 2 Reactor building closed loop cooling (CCP) system.

##### b. Issues and Findings

The inspector noted that the tie rod gaps for the CCP expansion joints were out of specification. The tie rods are provided to restrict joint expansion due to thermal conditions and limit movement to prevent the possibility of expansion joint damage or rupture. The affect of the inadequate tie rod configuration was evaluated using the significance determination process (SDP) and was determined to be of very low significance (GREEN). Engineering analysis demonstrated that the system remained operable and concluded that the added loading, due to the tie rod gaps being out-of-tolerance, was well with-in the allowed stress values. The failure to maintain the expansion joint tie rod gaps in accordance with established design specifications is a violation of 10 CFR 50, Appendix B , Criterion V, Instructions, Procedures, and Drawings. This violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). **(NCV 05000410/2000-011-01)** NMPC wrote deviation/event report (DER) 2-2000-0021 to address this issue.

The inspector noted that DER No. 2-1997-0144 documented a similar condition in that the face-to-face spacings on some reactor and turbine building closed loop cooling system, condensate storage and transfer system, and high pressure core spray system expansion joints were out-of-specification. The apparent cause was determined to be improper assembly and/or inadequate installation instructions. Accordingly, drawings and the associated vendor manual were revised to clarify installation requirements for the expansion joints. However, the reactor building CCP system expansion joint tie rod specifications and set-up instructions were not clarified.

## .2 Complete Walkdown

### a. Inspection Scope

The inspectors performed a complete walkdown of the emergency cooling (EC) system in Unit 1. The inspectors utilized the individual plant examination to identify the risk significant equipment to inspect and procedures to review. The inspector reviewed the system health report and maintenance rule status. The EC system common vent isolation valves 05-02 and 05-03 are currently maintenance rule (MR) category (a)(1) due to excessive leakage. EC isolation valve CKV-39-04 is MR (a)(1) for leakage. Open work orders and deviation/event reports (DERs) were reviewed to assess system material condition.

The inspectors performed a walkdown using plant drawings and checked for proper valve position and material condition of valves, piping and heat exchanger shells. The inspectors verified switch line-ups were in accordance with operating procedures. The inspectors reviewed several pipe supports and snubbers for correct hardware and configuration.

### b. Issues and Findings

No findings of significance were identified.

## 1R05 Fire Protection

### a. Inspection Scope

On December 21, 2000, during the inadvertent discharge of the carbon dioxide (CO<sub>2</sub>) fire suppression system at Unit 2, fire damper 2HVR-DMPF-22, located in the affected switchgear room in the reactor building, failed to close. This resulted in CO<sub>2</sub> migrating from the switchgear room into other reactor building spaces and a declaration of an Unusual Event (UE). (Also see Sections 1R14 and 1EP5 of this report.) The fire damper is designed to automatically close on either high temperature or upon an initiation of the CO<sub>2</sub> fire suppression system. The inspectors performed a visual inspection of the damper and other similar dampers to assess the material condition and operational status of fire barriers used to mitigate fire damage. In addition, the inspector reviewed fire damper maintenance and testing documentation.

### b. Issues and Findings

The damper failed to close because the trip mechanism was reassembled improperly subsequent to the last surveillance test. The inspector performed a walkdown with NMPC staff and found no other dampers latched improperly. The inspector noted that a similar event occurred during testing of the dampers in 1998. Corrective actions for the previous damper failure did not prevent recurrence, in that there was no positive method developed to ensure that the damper was properly assembled. The damper failure was considered to be a degradation of a fire protection feature and using the SDP was determined to be of very low safety significance (GREEN) because the CO<sub>2</sub> initiation was a spurious actuation and additional fire mitigation features were available.

The inspector determined that ineffective corrective action for previous damper failures constitutes a violation of 10CFR50, Appendix B, Criterion XVI, "Corrective Action." This violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). This issue was added to the licensee's corrective action program under DER No. 2-2000-4596. **(NCV 05000410/2000-011-02)**

Inspector follow-up identified that several fire dampers were not tested within their required 18-month frequency. The preventive maintenance and surveillance test (PM/ST) database provides administration controls for the performance and scheduling of maintenance and surveillance testing. NMPC determined that the last time the affected dampers were tested not all of the attachments to the fire protection system surveillance procedure were completed for each damper. The licensee determined that when the surveillance test was closed in the database it was not verified that the entire procedure (and attachments) had been satisfactorily completed. Consequently, despite the database reflecting a satisfactory completion of the test procedure in 2000, the affected dampers had not been properly tested since 1998.

General administrative procedure, GAP-PSH-02, Preventive Maintenance and Surveillance Test Database, Section 3.3, requires that the responsible department verify that the activity has been satisfactorily completed. The inspector concluded that the significance of this missed fire damper testing was more than minor, because had damper 2HVR-DMPF-22 been tested, it would have been identified that the trip mechanism was improperly set. The failure to follow the general administration procedure for entering information into the PM/ST database is a violation. This violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). This issue was added to the licensee's corrective action program under DER 2-2001-0033. **(NCV 05000410/2000-011-03)**

1R11 Licensed Operator Requalificationa. Inspection Scope

The inspectors reviewed the licensed operator requalification training activities to assess the licensee's training effectiveness. The inspector observed Unit 1 licensed operator simulator training on January 24, 2001. The inspector reviewed performance in the areas of procedure use, self- and peer-checking, completion of critical tasks, and training performance objectives. Following the simulator exercises, the inspector observed the training instructor's debrief and critique and reviewed simulator fidelity through a selective sampling process.

b. Issues and Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementationa. Inspection Scope

The inspectors reviewed performance based problems involving selected in-scope structures, systems, and components (SSCs) to assess the effectiveness of the maintenance program. Reviews focused on: (1) proper maintenance rule scoping, in accordance with 10 CFR 50.65; (2) characterization of failed SSCs; (3) safety significance classifications; (4) 10 CFR 50.65 (a)(1) and (a)(2) classifications; and, (5) the appropriateness of performance criteria for SSCs classified as (a)(2), and goals and corrective actions for SSCs classified as (a)(1). The inspectors reviewed the licensee's system scoping documents and system health reports. The following DERs were reviewed:

- DER 1-2000-1671 Emergency service water check valve failure (Unit 1).
- DER 1-2000-3692 H<sub>2</sub>O<sub>2</sub> check valve failure (Unit 1).
- DER 1-2000-4201 Reactor building door D-198 (Unit 1).
- DER 2-2000-1838 Failure of motor operated damper 2HVP\*MOD6D (Unit 2).

b. Issues and Findings

The inspector selected several DERs associated with Unit 2 emergency diesel generator (EDG) ventilation systems. A primary function of plant ventilation systems is to provide adequate environmental conditions for the functioning of plant equipment. To this extent, the three EDG rooms have independent ventilation systems designed to automatically maintain the space below the maximum design temperature of 125 degrees for efficient equipment operation when an EDG is operating. In addition, the updated final safety analysis report (UFSAR) states that the minimum design temperature of the EDG rooms is 65 degrees. Outdoor air is introduced into each room through air-operated dampers. Two 50% capacity vaneaxial fans, with associated

motor-operated dampers and duct work, discharge EDG room air to the atmosphere and/or recirculate air back to the room, depending upon the space temperature. Ventilation system operation maintains room temperature at approximately 85 degrees when a diesel is operating. There are two fans in each of the three EDG rooms and each fan has two motor-operated dampers (MODs) associated with it. Both the EDG and ventilation systems are scoped in the maintenance rule as high safety significant systems.

The inspector observed that NMPC uses two functional failures per train over a two-year period, as the performance criteria for entering (a)(1) status. The ventilation systems for all three EDGs is considered to have six trains; one fan and its associated discharge and recirculation motor-operated dampers are considered a train. The inspector observed that, as defined, NMPC could have as many as 12 MOD failures (one failure per train in two years) and the system not be placed in (a)(1) status. Consequently, the inspector concluded that the performance criteria does not appear reasonable. Further, the fans are each 50% capacity (not 100% capacity) therefore, a single fan or damper failure may render the affected train inoperable. NMPC acknowledged the inspector's observation and is evaluating possible changes to the scoping and reliability criteria.

The inspector observed that, if the outside temperature is low and one of the trains/MODs is inoperable, or otherwise removed from service, NMPC does not consider the out-of-service train to be unavailable. This does not appear to be consistent with other multi-train structures, systems, and components (SSCs) monitored by NMPC (i.e., service water system). NMPC acknowledged this observation and is reviewing their method for tracking SSC unavailability.

Lastly, the inspector identified that for some of the damper failures reviewed, the licensee did not conclude whether the failures were maintenance preventable (see DERs 2-2000-2241 and 2-1998-3602). In addition, the information provided by the vendor when MODs were returned from failure analysis was not consistently incorporated into the original DER package for evaluation as a potential maintenance preventable functional failure (MPFF) (reference DER Nos. 2-2000-1838 and 2-1998-0291). In the first case a relief set screw was not properly staked, thus allowing the screw to loosen. In the second case, foreign material introduced by the vendor resulted in motor failure. The inspector determined that adequate root causes were determined for most of the recent deficiencies.

The inspector concluded that the scoping definition and reliability criteria was inconsistent with other systems and that failures were not always investigated thoroughly. NMPC is reviewing these concerns to assess changes and the impact on its performance monitoring with regards to MR (a)(1) status. This issue remains unresolved. **(URI 05000410/2000-011-04)**

The inspector noted that NMPC routinely removes one ventilation train from service when outside ambient temperature is low, as allowed by operating procedure OP-57, "Diesel Generator Building Ventilation System." Paragraph (a)(4) of the maintenance rule requires, in part, that before performing maintenance activities, that an assessment of the increase in risk be made prior to performing the activities. It does not appear that

NMPC has performed (a)(4) assessments for these circumstances. Based upon this observation, NMPC is reviewing the Individual Plant Examination (IPE) to determine if there was any appreciable increase in risk, as a result of operating routinely with one train of EDG ventilation removed from service. This issue will be an unresolved item (URI) pending licensee determination of the risk impact of this maintenance activity. **(URI 05000410/2000-011-05)**

#### 1R13 Maintenance Risk Assessments and Emergent Work Control

##### a. Inspection Scope

For selected maintenance work orders (WOs), 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. The following WOs were reviewed:

- WO-99-09104-00-01, Place new fuel in spent fuel pool (Unit 1).
- WO-00-03925-00-02, Control room emergency ventilation (Unit 1).
- WO 01-00301, Sixth point feedwater heater emergency level control valve failure, 2HDH-LV26C (Unit 2).

##### b. Issues and Findings

No findings of significance were identified.

#### 1R14 Personnel Performance During Nonroutine Plant Evolutions and Events

##### a. Inspection Scope

On December 21, 2000, Unit 2 control room operators declared an Unusual Event (UE) related to an inadvertent CO<sub>2</sub> discharge into a switchgear room located in the reactor building. Following verification of safe oxygen levels in the reactor building and verifying that termination criteria were met, the UE was terminated. The cause of the CO<sub>2</sub> discharge was personnel error during maintenance activities conducted on the main fire protection system panel located in the Unit 2 control room. The inspector responded to the control room to observe operator response in coping with the event. The inspector reviewed operating and emergency plan procedures to determine if operator response was appropriate. The inspector also reviewed the post-event critique.

b. Issues and Findings

No findings of significance were identified. However, a related operator performance issue is discussed in Section 1EP5 of this report.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations affecting risk significant mitigating systems, to assess: (1) the technical adequacy of the evaluation; (2) whether continued system operability evaluations were 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) the degraded system's impact on technical specifications (TS) limiting condition for operations. The following DERs were reviewed:

- DER 1-2001-0281 Plant process computer changes indicated core thermal Power (Unit 1).
- DER 1-2001-0253 Debris found in spent fuel pool surge tank (Unit 1).
- DER 1-2001-0359 Mechanical pressure regulator hunting (Unit 1).
- DER 2-2000-4622 Potential additional water loads on high pressure core spray (HPCS) during loss of off-site power/loss of coolant accident (LOOP/LOCA) (Unit 2).
- DER 2-2000-2549 Potential defect in EDG ventilation damper hydramotor pump assemblies (Unit 2).

b. Issues and Findings

DER 2-2000-2549 was initiated as a result of a vendor's failure analysis concluding that there was potential for the damper motors (hydramotors) to fail, if an internal fastener was not properly restrained at the maintenance facility. The vendor had performed maintenance for NMPC and the affected hydramotors are used on each of the EDG ventilation system motor-operated dampers (a total of 12). An Operating Experience (OE) Report was initiated by the vendor and upon receipt, NMPC performed an operability determination (OD).

NMPC determined that there was no immediate operability concern with their MODs because the postulated failure mode would put the MODs in a safe position. The inspector determined that the technical basis for this conclusion was not adequate, in that the assumption that the MODs would fail in the safe (open) position was not a correct assumption. The inspector observed that the recirculation and discharge dampers work together to regulate the room temperature. The inspector postulated that if the dampers failed to the open position and the outside ambient temperature was low, there was potential for the room temperature to drop below the minimum temperature

for the EDG to remain operable. In addition, the inspector noted that the maintenance rule functional failure scoping criteria states that a failure of the recirculation MOD in any position is a functional failure.

NMPC initiated DER 2-2001-0665, "EDG ventilation OD not consistent with postulated events," and revised the original OD. The licensee's basis for concluding that the EDG remained operable was that the operating procedures provide sufficient guidance to monitor and control EDG room temperature and that the EDG ventilation dampers have demonstrated sufficient reliability. The inspector evaluated the licensee's initial (inadequate) operability determination for the EDG ventilation systems using the SDP. The Significance Determination Process (SDP) categorized this issue as having very low safety significance (GREEN), as supported by the revised OD that showed the EDG would remain operable under various damper failure positions. The licensee tracked this inspector finding in their corrective action program under DER 2-2001-0665.

#### 1R16 Operator Workarounds

##### a. Inspection Scope

The inspector reviewed operator workarounds at Unit 1 to determine if any had a potential adverse effect on the functionality of mitigating systems. Included in this review were the cumulative effects of operator workarounds on: (1) the reliability, availability, and potential for mis-operation of a system; (2) the potential increase in initiating event frequency or that could affect multiple mitigating systems; and (3) the ability of operators to respond in a correct and timely manner to plant transients and accidents.

##### b. Issues and Findings

No findings of significance were identified.

#### 1R17 Permanent Plant Modifications

##### a. Inspection Scope

The Unit 1 reactor building track bay door failed the leak test required to demonstrate operability of secondary containment. Deformation of the door had caused an excessive gap between the leaves of the door, rendering the neoprene seal ineffective. A permanent modification was installed, per design change No. 1S00564, to build-up the neoprene seal in the area of the deformation of the door to eliminate the gap. The inspector reviewed the design document change and associated applicability review to verify that the design bases, licensing bases, and performance capability of the secondary containment was not degraded through the implementation of the modification.

b. Issues and Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance testing (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.

- WO 01-00255-00 Remove/test/install tachometer on the No. 15 reactor recirculation motor generator (Unit 1).
- WO 00-06257-00-04 N1-PM-W9/N1-PM-C3 diesel fire pump (Unit 1).
- WO 01-00727-00 Replace mechanical seals on the reactor building closed loop cooling system booster pump No. 2CCP-P3A (Unit 2).
- WO 00-17547-00 Replace motor-operated damper Nos. 2HVP\*MOD6D and 1D, Division II EDG room ventilation fan exhaust and recirculation dampers (Unit 2).

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

- N1-ST-Q3 Rev 10, High Pressure Coolant Injection Train 11 Operability Test (Unit 1).

- N2-OSP-CSL-Q@002, Revision 3, Low Pressure Core Spray Pump and Valve Operability and System Integrity Test (Unit 2).

b. Issues and Findings

No findings of significance were identified.

1EP2 Alert and Notification System Testing

a. Inspection Scope

The inspector reviewed licensee documentation regarding the testing of the siren notification system. A bi-weekly silent test was observed at the county emergency operations center in which the two activation systems were checked. Siren testing and maintenance records were reviewed for completeness and trends.

b. Issues and Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing

a. Inspection Scope

The inspector reviewed the licensee's commitments for facility staffing and activation. The qualification records were reviewed to ensure that sufficient numbers of responders were available. The procedure for initiating ERO call-in was reviewed. Results from weekly pager tests and recent call-in drills were reviewed for timeliness and consistency.

b. Issues and Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspector reviewed recent changes to the emergency plan and affected implementing procedures to determine if the changes resulted in a decrease of effectiveness of the emergency plan. The licensee's 10 CFR 50.54(q) review process was assessed.

b. Issues and Findings

No findings of significance were identified.

1EP5 Emergency Preparedness Weaknesses and Deficienciesa. Inspection Scope

The inspector reviewed corrective actions identified by the licensee during quality assurance audits, drill reports, regular self-assessments, and from self-revealing problems resulting from surveillances, drills, and actual events. DERs assigned to the EP department were also reviewed to determine significance of the issues and to determine if there were any repeat problems. The inspector examined the 1999 and 2000 10CFR50.54(t) reviews to assess that the reviews satisfied regulatory requirements and if any repeat problems were identified.

b. Issues and Findings

During the December 21, 2000, UE as a result of the inadvertent CO<sub>2</sub> discharge, the licensee identified that control room personnel did not completely follow the procedure for evacuating the reactor building. Control room personnel appropriately entered Emergency Plan Implementing Procedure EPIP-EPP-05A, Local Area/Building Evacuation, but did not complete Attachment 1, Emergency Announcement. Specifically, they did not provide an egress route, per step 3.f, for personnel in the reactor building to avoid areas potentially affected by the CO<sub>2</sub> discharge. 10 CFR 50.54(q) states that licensees shall follow their Emergency Plan, which satisfies the planning standards prescribed by 10 CFR50.47 (b). Procedure EPIP-EPP-05A implements Section 6.7.1 (a) of the licensee's Emergency Plan.

This violation was considered to be more than minor because of the potential risk to personnel in the reactor building not being informed of a safe evacuation route. However, due to a reactor building evacuation announcement having been made and only a small percentage of the carbon dioxide released to the switchgear room escaping to the rest of the reactor building spaces, evaluation of this event via the Significance Determination Process determined this event to have been of very low safety significance (GREEN). This licensee identified failure to properly implement the Emergency Plan is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy, issued May 1, 2000, (65FR25368). This issue, and others related to this event, were entered into the licensee's corrective action program under DER Nos. 2-2001-0055, 2-2000-4596, C-2001-0056, C-2001-0057, and C-2001-0054. **(NCV 05000410/2000-011-06)**

1R53 Event Followupa. Inspection Scope

- .1 (Closed) Licensee Event Report (LER) 05000220/2000-01: Technical Specification Violation When Noble Gas Grab Sample Not Collected Within Time Frame Required by the Limiting Condition for Operation. On March 24, 2000, with stack effluent monitoring instrumentation inoperable, the licensee failed to comply with the limiting condition for operation specified in TS 3.6.14.b when a grab sample was not obtained within the twelve-hour time limit. The sample was obtained 38 minutes late. Licensee's risk

assessment and inspector evaluation of this issue using the Significance Determination Process identified this issue as very low safety significance (GREEN). Accordingly, this violation of TS 3.6.14.b is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy, issued May 1, 2000, (65FR25368). **(NCV 05000220/2000-011-07)** The inspectors reviewed the licensee's corrective actions and had no further concerns. This LER is closed.

- .2 (Closed) LER 05000220/2000-02: Service Water Check Valves Fail Reverse Flow Test. On May 5, 2000, during in-service testing, two service water system check valves failed to stop flow in the reverse direction due to binding in the pivot pins. The pins, bearing caps, and packing collars were cleaned and the valves repacked. The valves were then successfully tested. The cause of the failure was determined to be inadequate preventive maintenance. The check valves had last been successfully tested on October 10, 1999.

The check valves function to isolate the emergency (essential) service water system from the non-essential service water system, if a problem develops with the non-essential service water system. If the check valves failed to stop flow to the non-essential service water system, essential cooling water flow would be diverted from safety related components. The licensee's safety analysis credited operating procedure guidance and operator action to identify and resolve a postulated failed open check valves. Accordingly, the licensee's risk assessment and the inspector's evaluation of this issue using the SDP identified this issue as very low risk significance (GREEN). This LER is closed.

- .3 (Closed) LER 05000220/2000-05: Loss of Secondary Containment Due to Both Reactor Building Track Bay Doors Being Open Simultaneously. On November 29, 2000, the licensee identified that the inner roll-up door was partially open for a period of approximately 25 hours while the outer door was inoperable and open. Technical Specification 3.4.1.b requires secondary containment to be restored within four hours or initiate a shutdown and be in cold shutdown within 10 hours. This limiting condition for operation was not satisfied.

The cause of the loss of secondary containment was an inadequate procedure combined with door configuration and maintenance issues. The operating procedure was revised and a preventive maintenance task for checking track bay door limit switch operation will be developed by the licensee.

The licensee's probabilistic risk analysis and inspector evaluation using the SDP identified this event as having very low safety significance (GREEN). However, the failure to maintain secondary containment integrity and take the appropriate action to shutdown the reactor was contrary to TS 3.4.1.b. This licensee identified TS violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000, (65FR25368). **(NCV 05000220/2000-011-08)** This LER is closed.

2. **RADIATION SAFETY**  
Cornerstone: Occupational Radiation Safety

## OS2 ALARA Planning and Controls

### a. Inspection Scope

The effectiveness of ALARA planning was reviewed relative to preparations for the March 2001, Unit 1 refueling outage. Interviews with the Unit 1 and Unit 2 ALARA Supervisors were conducted with respect to the methodology for exposure estimating and tracking, Unit 1 ALARA initiatives, and currently planned outage shielding packages. Radiation protection planners, outage scheduling and management staff, and the civil/structural engineering manager were interviewed with respect to exposure reduction ALARA program elements. A detailed review of the five highest exposure jobs for the Spring 2001 refueling outage was performed. The corrective action program was sampled for proper resolution of radiation protection DERs between August 2000 and January 2001. The following documents were reviewed:

- Nine Mile Point Unit 2, Seventh Refueling Outage Radiation Protection Post-Outage Report
- ALARA Committee meeting minutes 1999-2000, December 20, 1999
- Unit 1 and Unit 2 annual dose goals for 2001
- Unit 1 Spring 2001 Refueling Outage job dose estimates and job exposure history data
- Procedure GAP-ALA-01, Rev. 8, "Site ALARA Program"
- Procedure GAP-PTM-03, Rev. 10, "Design Changes"
- Procedure S-RAP-ALA-0102, Rev. 5, "ALARA Reviews"
- Procedure S-RAP-RPP-0201, Rev. 8, "Preparation and Control of Radiation Work Permits"
- Deviation/Event Report Nos. 1-2000-3874, C-2000-4217, 1-2000-3718

### b. Issues and Findings

No findings of significance were identified.

## 4. **OTHER ACTIVITIES**

### 4OA2 Performance Indicator Verification

#### a. Inspection Scope

The inspector reviewed the licensee's process and data used to determine the values for the three emergency preparedness performance indicators (PI) which are: 1) Drill and Exercise Performance; 2) Emergency Response Organization Participation; and, 3) Alert and Notification System Reliability. The review assessed data collected in 2000. Classification, notification, and protective action opportunities were verified by reviewing selected scenarios and actual events. Attendance records for drill and exercise participation were reviewed. Details of the siren testing and data collection were discussed with individuals responsible for that program.

#### b. Issues and Findings

No findings of significance were identified.

40A6 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 February 23, 2001. 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 identified.

40A7 Licensee Identified Violations

The following findings of very low significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited Violations (NCVs).

<u>NCV Tracking Number</u>	<u>Requirement Licensee Failed to Meet</u>
05000410/2000-011-06	Control room personnel did not complete the procedure for evacuating the reactor building as specified in EPIP-EPP-05A, Local Area/Building Evacuation, Attachment 1, Emergency Announcement, in that they did not provide an egress route, as directed in step 3.f, for personnel in the reactor building to avoid areas potentially affected by the CO <sub>2</sub> discharge. (Reference Section 1EP5)
05000220/2000-011-07:	The licensee failed to comply with the limiting condition for operation specified in TS 3.6.14.b, when a grab sample was not obtained within the twelve-hour time limit. (Reference Section 1R53)
05000220/2000-011-08:	The licensee failed to maintain secondary containment integrity in accordance with TS 3.4.1.b. during a maintenance activity. (Reference Section 1R53)

**PARTIAL LIST OF PERSONS CONTACTED**Licensee

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

NRC

J. Trapp, Senior Reactor Analyst

**ITEMS OPENED AND CLOSED**Items Opened and Closed:

05000410/2000-011-01	NCV	Failure to maintain the expansion joint tie rod gaps in accordance with established design specifications.
05000410/2000-011-02	NCV	Inadequate corrective actions associated with fire dampers.
05000410/2000-011-03	NCV	Failure to follow procedure associated with fire damper surveillance test.
05000410/2000-011-06	NCV	Licensee failed to announce egress route when evacuating the reactor building during the December 21, 2000, carbon dioxide discharge event.
05000220/2000-011-07	NCV	Service water check valve fails reverse flow test associated with LER 2000-02.
05000220/2000-011-08	NCV	Loss of secondary containment due to both reactor building track bay doors being open simultaneously

Items Opened:

05000410/2000-011-04	URI	Potential increase in risk associated with removal of one EDG ventilation fan from service.
05000410/2000-011-05	URI	Inconsistencies associated with implementation of the maintenance rule for the EDG ventilation system.

Closed:

05000220/2000-01	LER	Technical Specification (TS) Violation When Noble Gas Grab Sample Not Collected Within Time Frame Required by the Limiting Condition for Operation.
05000220/2000-02	LER	Service Water Check Valves Fail Reverse Flow Test.
05000220/2000-05	LER	Loss of Secondary Containment Due to Both Reactor Building Track Bay Doors Being Open Simultaneously.

**LIST OF ACRONYMS USED**

ALARA	As Low As is Reasonably Achievable
CCP	Closed Loop Cooling
CO <sub>2</sub>	Carbon Dioxide
DER	Deviation/ Event Report
EAL	Emergency Action Level
EC	Emergency Cooling
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
HPCS	High Pressure Core Spray
IPE	Individual Plant Examination
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LOOP	Loss of Offsite Power
MOD	Motor Operated Damper
MPFF	Maintenance Preventable Functional Failure
MR	Maintenance Rule
NCV	Non-Cited Violation
NMPC	Niagara Mohawk Power Corporation
OD	Operability Determination
OE	Operating Experience
OP	Operating Procedure
PI	Performance Indicator
PM	Preventive Maintenance
PMT	Post-Maintenance Testing
SDP	Significance Determination Process
SSC	Structures, Systems and Components
ST	Surveillance Test
SW	Service Water
TS	Technical Specification
UE	Unusual Event
Unit 1	Nine Mile Point Unit 1
Unit 2	Nine Mile Point Unit 2
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

WO

Work Order

## ATTACHMENT 1

**NRC's REVISED REACTOR OVERSIGHT PROCESS**

The federal Nuclear Regulatory Commission (NRC) recently 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 and assessing 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:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"> <li>● Initiating Events</li> <li>● Mitigating Systems</li> <li>● Barrier Integrity</li> <li>● Emergency Preparedness</li> </ul>	<ul style="list-style-type: none"> <li>● Occupational</li> <li>● Public</li> </ul>	<ul style="list-style-type: none"> <li>● Physical Protection</li> </ul>

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 that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

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 varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

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. 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. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

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