



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I**  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 11, 2013

Mr. Christopher Costanzo  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

**SUBJECT: NINE MILE POINT NUCLEAR STATION - NRC INTEGRATED INSPECTION  
REPORT 05000220/2012005 AND 05000410/2012005**

Dear Mr. Costanzo:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on January 25, 2013, with Mr. Christopher Costanzo and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two findings of low safety significance (Green). One of these findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because the finding was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the NCV noted in this report, 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, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at Nine Mile Point Nuclear Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspectors at Nine Mile Point Nuclear Station.

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the

C. Costanzo

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Sincerely,

***/RA/***

Glenn T. Dentel, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-220, 50-410  
License Nos.: DPR-63, NPF-69

Enclosure: Inspection Report 05000220/2012005 and 05000410/2012005  
w/Attachment: Supplementary Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-220, 50-410

License Nos.: DPR-63, NPF-69

Report No.: 05000220/2012005 and 05000410/2012005

Licensee: Nine Mile Point Nuclear Station, LLC (NMPNS)

Facility: Nine Mile Point, Units 1 and 2

Location: Oswego, NY

Dates: October 1 through December 31, 2012

Inspectors: K. Kolaczyk, Senior Resident Inspectors  
D. Dempsey, Resident Inspectors  
E. Miller, Resident Inspectors  
S. Kennedy, Senior Resident Inspectors  
M. Schneider, Senior Resident Inspectors  
B. Sienel, Resident Inspectors  
E. Burket, Reactor Inspectors  
B. Dionne, Health Physicist  
P. Presby, Operations Engineer

Approved By: Glenn T. Dentel, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000220/2012005, 05000410/2012005; 10/01/2012 - 12/31/2012; Nine Mile Point Nuclear Station, Units 1 and 2, Equipment Alignment; Post Maintenance Testing.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified two Green findings, one of which was a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Initiating Events

- Green. A self-revealing Green finding (FIN) was identified for Nine Mile Point Nuclear Station, LLC. (NMPNS's) failure to develop adequate inspection requirements for the Unit 1 main transformer replacement. As a result, improper configuration of the main transformer current transformer's (CT) 11 and 12 bus bars went undetected. On October 29, 2012, the improper configuration of the CT bus bars combined with an electrical transient due to a lightning arrester collapse in the 345kV switchyard resulted in a reactor scram. Following the scram, an investigation revealed the improper configuration of the CT bus bars. NMPNS' took immediate corrective actions to correct the configuration of the CT 11 and 12 bus bars. NMPNS entered the issue into their corrective action program (CAP) as condition report (CR)-2012-009820.

This finding is more than minor because it adversely affected the design control attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The finding was evaluated in accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012. The inspectors determined that this finding is of very low safety significance (Green) because while the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The finding has a cross-cutting aspect in the area of human performance, work practices, because NMPNS did not ensure proper supervisory or management oversight of the Unit 1 main transformer replacement. Specifically, NMPNS failed to ensure proper oversight of the main transformer modification by not developing adequate inspection requirements, as required by NEP-DES-09, "Engineering Specification" [H.4(c)]. (Section 1R04)

### Cornerstone: Barrier Integrity

- Green. A self-revealing Green NCV of TS 6.4.1 occurred because NMPNS failed to develop an adequate post maintenance test (PMT) to determine operability of the 11 control room emergency ventilation system. Specifically, troubleshooting on December 2 failed to identify a cause of the failure and an inadequate PMT was performed to determine operability. As a result the degraded system was returned to service even though it did not meet all the

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requirements for operability. The limiting condition for operation (LCO) was exited incorrectly, and the issue was not identified and resolved until subsequent surveillance testing. Following subsequent surveillance testing, the degraded circuit was repaired and a successful PMT was performed. The issue was entered into NMPNS CAP as CR-2012-011027.

This finding is more than minor because it adversely affected the structure, system, and component (SSC) and barrier performance attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the operators in the control room from radionuclide releases caused by accidents or events. The finding was evaluated in accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A. The inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency only represented a degradation of the radiological barrier function provided for the control room. This finding has a cross-cutting aspect in the area of problem identification and resolution, because NMPNS failed to thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, if NMPNS would have identified the cause of the problem and performed an adequate PMT, the system would not have been restored with a degraded condition [P.1(c)]. (Section 1R19)

### **Other Findings**

One violation of very low safety significance or Severity Level IV that was identified by NMPNS was reviewed by the NRC. Corrective actions taken or planned by NMPNS have been entered into NMPNS' CAP. This violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period at 100 percent power. On October 17, 2012, operators reduced power to approximately 95 percent to remove the 12 recirculation pump from service. Power was returned to 100 percent later that day. On October 29, Unit 1 scrambled due to a loss of generator load when a lighting arrestor pole fell in the Scriba switchyard causing an electrical fault. On November 2, the plant was restarted and placed on the grid on November 3. On November 3, Unit 1 scrambled from 21 percent power on low reactor water level when the feedwater control system experienced a failure. On November 8, Unit 1 was restarted and the plant was placed on the grid on November 9. Power was returned to 100 percent on November 10. On November 12, reactor power was reduced to approximately 85 percent when high vibration levels were detected in the turbine lubricating oil system. On November 30, Unit 1 shutdown for a planned outage to investigate and repair the cause of the high vibrations associated with the turbine lubricating oil system. The plant was restarted on December 3 and was returned to 100 percent on December 5. On December 13, Unit 1 performed a controlled plant shutdown due to a failure to meet technical specification (TS) 3.3.3.a for primary containment allowable leakage. On December 19, Unit 1 was restarted, and the plant was placed on the grid on December 20. Power was returned to 100 percent on December 20. Unit 1 operated at or near 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent power. On October 27, operators reduced power to approximately 65 percent to perform a rod sequence exchange. On November 10, reactor power was reduced to 90 percent due to feedwater heater level control issues. On November 11, reactor power was reduced to approximately 20 percent in preparation for a planned maintenance outage, which was subsequently deferred at the request of the New York State Independent System Operator. Plant power was subsequently raised and was returned to approximately 90 percent on November 12 where it was held due to a high temperature condition on the neutral phase of the main transformer. On November 14, the reactor was shutdown to perform the planned maintenance outage which had been deferred on November 11. On November 18, the reactor was restarted and placed on the grid. Power was returned to 100 percent on November 20 and Unit 2 operated at or near 100 percent for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

1R01 Adverse Weather Protection (71111.01 - three samples)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of NMPNS' readiness for the onset of seasonal low temperatures for Units 1 and 2. The review focused on the Unit 1 intake structure and service water (SW) pump area, the Unit 1 fire protection system, and the Unit 2 SW system and emergency diesel generator (EDG) rooms. The inspectors reviewed the updated final safety analysis report (UFSAR), TSs, control room logs, and the CAP to determine what temperatures or other seasonal weather could challenge the systems, and to ensure NMPNS personnel had adequately prepared for these challenges. The

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inspectors reviewed station procedures, including NMPNS procedure NAI-PSH-11, "Seasonal Readiness Program," Revision 00700. The inspectors verified completion of the operations department cold weather preparation checklists contained in procedures N1-OP-64 and N2-OP-102, "Meteorological Monitoring," Revisions 00602 and 01102. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment. This constitutes two samples.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors performed a review of NMPNS' readiness for the onset of impending adverse weather conditions that involved the potential for high winds and rain at the NMPNS site on October 29 and 30, 2012. The review focused on the Unit 1 and Unit 2 operation department's preparations and response to the adverse weather conditions. As part of the review, the inspectors performed a walkdown of the NMPNS protected area and the Scriba switchyard, to verify NMPNS had removed items that could potentially become an airborne hazard during high wind conditions. The inspectors reviewed NMPNS procedure EPIP-EPP-26, "Natural Hazard Preparation and Recovery" Revision 00301, control room logs and interviewed operations department personnel to determine if NMPNS personnel had adequately prepared for the onset of adverse weather.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdown (71111.04Q – two samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Unit 1 technical support center ventilation system on October 9, 2012
- Unit 1 standby liquid control system on October 17, 2012

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, TSs, work orders (WOs), CRs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of

the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether NMPNS staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – one sample)

a. Inspection Scope

On November 16, the inspectors performed a complete system walkdown of accessible portions of the Unit 1 off-site power alternating current (AC) electrical power sources to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, drawings, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also verified proper breaker alignment and electrical protection schemes. The inspectors performed field walkdowns of accessible portions of the system to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related CRs and WOs to ensure NMPNS appropriately evaluated and resolved any deficiencies.

b. Findings

Introduction: A self-revealing Green finding (FIN) was identified for NMPNS's failure to develop adequate inspection requirements for the Unit 1 main transformer replacement during 1RFO21. As a result, improper configuration of the main transformer CT 11 and 12 bus bars went undetected. On October 29, 2012, the improper configuration of the CT bus bars combined with an electrical transient due to a lightning arrester collapse in the 345kV switchyard resulted in a reactor scram.

Description: In April of 2011, NMPNS replaced the Unit 1 main transformer as part of a modification, ECP-09-000185 "Replace Main Generator Step-Up Transformer." The new transformer was designed, manufactured, and installed by a third party vendor with oversight provided by NMPNS. Sections 6.0 and 7.0 of procedure NEP-DES-09, "Engineering Specifications" Revision 8 have requirements for installation, inspection, and testing. The requirements include specifying that procedures are prepared and approved to confirm correctness of installation and ability to function, and that electrical circuit, controls, and relay settings are correct. Although NMPNS personnel were sent to the third party vendor construction facility to inspect the main transformer, and personnel witnessed various testing during installation; procedures used by those providing oversight did not include all the necessary inspection requirements to confirm proper fabrication, installation, and completion of services. As a result, an error by the third party vendor went undetected when they failed to assemble bus bars for CT 11 and 12 with proper polarity as specified by nameplate drawing C-22342-C, "General Electric Transformer Nameplate Drawing," Revision 1.00 in ECP-09-000185.

On October 29, 2012, during high winds that resulted from Hurricane Sandy, a lightning arrester fell in the 345 kilovolt (kV) Scriba switchyard. The lightning arrester impacted

the 'A' electrical bus in the switchyard causing an electrical fault on line 8 which is one of two electrical supply lines from Unit 1 to the grid. The electrical fault was first sensed by the line 8 directional overcurrent relay 67N-1. Typically this relay is setup to be sensing electrical faults that exist between the Unit 1 main generator and the main transformer. However, due to the improper installation of main transformer bus bars for CT 11 and 12, the relay was sensing faults located between the switchyard and the main transformer. This allowed the directional overcurrent relay to detect the fault in the 345 kV Scriba switchyard. The actuation of the directional overcurrent relay caused the 86G-2 generator differential relay to actuate resulting in a generator trip. The generator trip resulted in a subsequent turbine trip followed by a reactor scram. Had the CT bus bars been installed correctly, the directional portion of the overcurrent relays would not have actuated and the plant would not have scrambled when the fault occurred in the Scriba switchyard.

Following the scram, an investigation revealed the improper configuration of the CT bus bars. NMPNS took immediate corrective actions to correct the configuration of the CT 11 and 12 bus bars. NMPNS has also entered the issue into their CAP as CR-2012-009820.

Analysis: The inspectors determined that NMPNS' failure to develop adequate inspection requirements as required by NEP-DES-09, is a performance deficiency that was within NMPNS' ability to foresee and correct and should have been prevented. This finding is more than minor because it is associated with the design control attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, contrary to NEP-DES-09, NMPNS did not develop adequate inspection requirements to ensure that the Unit 1 replacement transformer was properly assembled according to design specifications and therefore missed an opportunity to identify the improper configuration of CT 11 and 12 bus bars. As a result, when a lightning arrester fell in the 345kV switchyard, an electrical fault was detected due to directional overcurrent relays not being aligned in accordance with their design specification subsequently resulting in a reactor scram.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because while the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because NMPNS did not ensure proper supervisory or management oversight of the Unit 1 main transformer replacement. Specifically, NMPNS failed to ensure proper oversight of the main transformer modification by not developing adequate inspection requirements, as required by NEP-DES-09 [H.4(c)].

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. Specifically the primary components in this event, the bus bars for CT 11 and 12 of the Unit 1 main transformer, are not safety related. As such, the applicable engineering specification procedure is not governed by the requirements of Unit 1 TS 6.4.1 "Procedures." This issue was entered into the NMPNS CAP as CR-2012-009820. Because this finding does not involve a

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violation of regulatory requirements and has very low safety significance, it is identified as a finding. **(FIN 05000220/2012005-01, Failure to Develop Adequate Inspection Requirements for Main Transformer Modification Results in Reactor Scram)**

1R05 Fire Protection

.1 Resident Inspectors Quarterly Walkdowns (71111.05Q - five samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that NMPNS controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Unit 1 diesel generator 102 room, 261 foot elevation (fire area 20) on October 2, 2012
- Unit 1 diesel generator 103 room, 261 foot elevation (fire area 22) on October 2, 2012
- Unit 1, battery room 11, 277 foot elevation (fire area 17A) on October 4, 2012
- Unit 1, battery room 12, 277 foot elevation (fire area 17B) on October 4, 2012
- Unit 2, diesel fire pump room, 261 foot elevation (fire area 62) on October 11, 2012

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11 – four samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed Unit 1 licensed operator simulator training on October 23, 2012, which included a failure of a recirculation pump seal, increasing turbine vibration, a failure of control rods to insert, and a leak in the main steam system. The inspectors observed a Unit 2 licensed operator simulator annual exam on November 6, 2012, which included a failure of the reactor to scram and a main steam line break in the drywell. The inspectors evaluated operator performance during the simulated events and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classifications made by the shift manager and the TS action statements entered by the shift technical advisor.

Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed control room operations during planned surveillance testing of the control room ventilation system at Unit 1 on October 18, 2012, and planned maintenance on the 'A' residual heat removal at Unit 2 on October 18, 2012, respectively. The inspectors reviewed CNG-OP-1.01-1000, "Conduct of Operations" Revision 00800 and verified that procedure use, crew communications, and coordination of plant activities among work groups similarly met established expectations and standards. Additionally, the inspectors observed test performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

.3 Annual Review (71111.11A – one sample)

a. Inspection Scope

On December 17, 2012, a NRC region-based inspectors conducted an in-office review of results of Nine Mile Point-administered annual Unit 2 operating tests and comprehensive written examinations. The inspection assessed whether pass fail rates were consistent with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The review verified the following:

Unit 2

- Individual pass rate on the dynamic simulator test was greater than 80 percent (Pass rate was 98 percent)
- Individual pass rate on the job performance measures (JPMs) of the operating examination was greater than 80 percent (Pass rate was 98 percent)
- Individual pass rate on the written examination was greater than 80 percent (N/A – a comprehensive written examination was previously administered in 2011)
- More than 80 percent of the individuals passed all portions of the examination (96 percent of the individuals passed all portions of the operating examination)
- Crew pass rate was greater than 80 percent (Pass rate was 100 percent)

b. Findings

No findings were identified.

.4 Biennial Review (71111.11B - one sample)

a. Inspection Scope

The following inspection activities were performed on Unit 1 using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and Inspection Procedure Attachment 71111.11B, "Licensed Operator Requalification Program and Licensed Operator Performance."

Examination Results

On December 17, 2012, the results of the Unit 1 requalification examination for year 2012 were reviewed in-office to determine if pass fail rates were consistent with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance SDP." The review verified the following:

Unit 1

- Individual pass rate on the dynamic simulator test was greater than 80 percent (Pass rate was 100 percent)
- Individual pass rate on the JPMs of the operating examination was greater than 80 percent (Pass rate was 100 percent)
- Individual pass rate on the written examination was greater than 80 percent (Pass rate was 100 percent)
- More than 80 percent of the individuals passed all portions of the examination (100 percent of the individuals passed all portions of the operating examination)
- Crew pass rate was greater than 80 percent (Pass rate was 100 percent)

Written Examination Quality

The inspectors reviewed one reactor operator and one senior reactor operator biennial written examination administered during the 2012 examination cycle for qualitative and quantitative attributes as specified on Appendix B of Attachment 71111.11.

Operating Test Quality

JPMs and scenarios for two examination weeks were reviewed for qualitative and quantitative attributes as specified in Appendix C of Attachment 71111.11.

Licensee Administration of Operating Tests

The inspectors observed facility training staff administer dynamic simulator examinations and JPMs during the week of November 13, 2012. These observations included facility evaluations of crew and individual operator performance during the simulator examinations and individual performance of JPMs.

Exam Security

The inspectors assessed whether facility staff properly safeguarded examination material. JPMs, scenarios, and written examinations were checked for excessive overlap of test items.

### Remedial Training and Re-examinations

The inspectors reviewed remedial training packages and respective re-examinations.

### Conformance with License Conditions

License reactivation records and proficiency watch standing records were reviewed to ensure that Title 10 of the Code of Federal Regulations (CFR) 55.53 license conditions and applicable program requirements were met. The inspectors also reviewed a sample of records for requalification training attendance, and a sample of medical examinations for compliance with license conditions and NRC regulations.

### Simulator Performance

Simulator performance and fidelity were reviewed for conformance to the reference plant control room. A sample of simulator deficiency reports was also reviewed to ensure facility staff addressed identified modeling problems.

### Problem Identification and Resolution

The inspectors reviewed recent operating history documentation found in inspection reports, licensee event reports (LERs), NMPNS' CAP, and the most recent NRC plant issues matrix. NMPNS also reviewed specific events from NMPNS' CAP which indicated possible training deficiencies, to verify that they had been appropriately addressed. The resident staff was consulted for insights regarding licensed operators' performance.

#### b. Findings

No findings were identified.

### 1R12 Maintenance Effectiveness (71111.12 - two samples)

#### b. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on SSC performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance WOs, and maintenance rule basis documents to ensure that NMPNS was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR Part 50.65 and verified that the (a)(2) performance criteria established by NMPNS staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that NMPNS staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Unit 1 generator voltage regulator performance
- Unit 1 liquid poison system performance

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - five samples)a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that NMPNS performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that NMPNS personnel performed risk assessments as required by title 10 CFR Part 50.65(a)(4) and that the assessments were accurate and complete. When NMPNS performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unit 1, planned maintenance on the 102 EDG on October 10, 2012
- Unit 1, planned maintenance on 112 containment spray raw water pump on October 22 through October 26, 2012
- Unit 2, planned maintenance on Division II EDG on October 1 through October 7, 2012
- Unit 2, planned maintenance on the electric driven fire pump on October 11, 2012
- Unit 2, planned maintenance on the Division III battery on October 28, 2012

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - six samples)a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- Unit 1, slow closure of scram discharge volume vent and drain valves IV-44.2-16 and IV-44.2-17 on October 30, 2012
- Unit 1, operation of the amplidyne in automatic mode on November 10, 2012
- Unit 1, feedwater level control in single element mode on December 6, 2012
- Unit 1, water in 11 feedwater booster pump outboard bearing oil on December 10, 2012
- Unit 2, increase drywell leakage on October 24, 2012
- Unit 2, main transformer 2MTX-XM1A neutral bushing high temperature on November 16, 2012



The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to NMPNS evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by NMPNS. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 - one sample)

.1 Permanent Modifications

a. Inspection Scope

The inspectors evaluated a modification to the Unit 2 leakage detection system that was planned to be implemented by engineering change package EC-20080065-000, "Replace Riley Temperature Switches." The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the design change, including an investigation of the electromagnetic environment at the point of installation of the replacement switches. The inspectors also reviewed control room alarm response procedures and interviewed engineering and operations personnel to ensure that the procedures could be reasonably performed.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - five samples)

a. Inspection Scope

The inspectors reviewed the PMTs for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedures to verify that the procedures adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedures were consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedures had been properly reviewed and approved. The inspectors also witnessed the tests or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Unit 1, containment spray valve IV-40-31 auxiliary contactor replacement on October 23, 2012

- Unit 1, 112 containment spray raw water pump rotating element replacement on October 26, 2012
- Unit 1, main steam isolation valve IV 01-02 packing replacement on October 31, 2012
- Unit 1, feedwater level control ID23G ribbon cable replacement on November 5, 2012
- Unit 1, 11 control room emergency ventilation (CREV) system radiation monitor instrument channel test on December 5, 2012

b. Findings

Introduction: A self-revealing Green NCV of TS 6.4.1 "Procedures" occurred because NMPNS failed to develop an adequate PMT to determine operability of the 11 CREV system. Specifically, troubleshooting on December 2 failed to identify a cause of the failure and an inadequate PMT was performed to determine operability. As a result, the degraded system was returned to service even though it did not meet all the requirements for operability. The LCO was exited incorrectly and the issue was not identified and resolved until subsequent surveillance testing.

Description: On November 29, 2012, NMPNS Unit 1 performed N1-RPS-Q6, "Control Room Ventilation Radiation Monitor Instrument Channel Test," Revision 00801 for the 11 CREV system. The test involved using a radioactive source to simulate a high radiation condition, and to verify that the CREV system properly realigned to the accident mode of operation. When testing channel 11, operators placed the 11 CREV system into automatic and it was expected per step 8.3.10 of N1-RSP-6Q that the fan would automatically start upon receipt of the high radiation signal. However when the fan attempted to start, a loud noise was heard by operators causing them to shutdown the fan, declare the 11 CREV fan inoperable, and enter section 'E' of TS 3.4.5. "Control Room Air Treatment System" which requires that the inoperable CREV system be returned to operability within seven days.

NMPNS troubleshooting consisted of performing preventive maintenance (PM) on the breaker for the 11 fan along with a visual inspection of the 11 CREV fan. Following the PM of the breaker, on December 2, 2012, the 11 CREV Fan was successfully run for 15 minutes using N1-OP-49, "Control Room Ventilation System," Revision 02200 and the fan was declared operable.

On December 5, 2012, while RP technicians performed N1-RPS-Q6 for reactor protection system (RPS) channel 12, the 11 CREV fan exhibited the same behavior as it did on November 29, during testing for RPS channel 11. Operators declared 11 CREVS inoperable and TS 3.4.5 was again entered. Additional NMPNS troubleshooting revealed that the 11 fan failed to actuate because relays in the CREVS actuation circuitry were defective, which prevented a successful start of the 11 CREV fan.

Procedure CNG-MN-4.01-1008; "Pre/Post Maintenance Testing," Revision 00100, Section 5.3.C explains that the need for post maintenance operability test is to re-establish operability and should address the cause of the original SSC inoperability. However, NMPNS failed to determine the cause of the 11 CREV fan failure to initiate. Although the 11 CREV fan was declared operable and the LCO was exited on December 3, 2012; it actually remained inoperable until December 7, 2012, when the degraded relay and contacts were replaced, and a successful PMT was performed. The issue was entered into the NMPNS CAP as CR-2012-011027.

Analysis: The inspectors determined that NMPNS failure to conduct an adequate PMT in accordance with CNG-MN-4.01-1008 was a performance deficiency that was reasonably within NMPNS' ability to foresee and correct and should have been prevented. This finding is more than minor because it is associated with the SSC and barrier performance attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the operators in the control room from radionuclide releases caused by accidents or events. Specifically, the inadequate PMT for the 11 CREV fan led to the system failing to perform its function during subsequent testing. As a result, the LCO was prematurely exited, and the system would not have performed its function if called upon for a high radiation event between December 3, 2012 and December 7, 2012.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency only represented a degradation of the radiological barrier function provided for the control room.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because NMPNS failed to thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, if NMPNS would have identified the cause of the problem and performed an adequate PMT, the system would not have been restored with a degraded condition [P.1(c)].

Enforcement: TS 6.4.1, "Procedures," requires that written procedures and administrative policies shall be established, implemented, and maintained covering the applicable procedures recommended in NRC Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)," Appendix A, Revision 2 dated February, 1978. NMPNS procedure CNG-MN-4.01-1008 is a procedure recommended by Section 9 of RG 1.33, Appendix A. CNG-MN-4.01-1008 Section 5.3 contains requirements for adequate post-maintenance operability testing to ensure system operability prior to returning a system to service. Contrary to the above, NMPNS failed to perform an adequate post maintenance test to establish operability of the 11 CREV system as required by CNG-MN-4.01-1008, Section 5.3.C. Because this violation is of very low safety significance (Green) and NMPNS entered this issue into their CAP as CR-2012-011027, this finding is being treated as an NCV consistent with the Enforcement Policy. **(NCV 05000220/2012005-02, Inadequate Post Maintenance Test Results in Subsequent Failure of 11 CREVS Fan)**

1R20 Refueling and Other Outage Activities (71111.20 - five samples)

a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the Unit 1 forced outage (1F1204), which was conducted October 29 through November 3; the Unit 1 forced outage (1F1205) which was conducted November 3 through November 9; the Unit 2 planned outage (2P1201) which was conducted November 14 through November 18, the Unit 1 planned outage (1P1201) which was conducted November 30 through December 5, and the forced outage (1F1206) which was conducted December 13 through December 19. The inspectors reviewed NMPNS development and implementation of outage plans and schedules to verify that risk, industry experience,

previous site-specific problems, and defense-in-depth were considered. During the outages, the inspectors observed portions of the shutdown and cooldown processes and monitored controls associated with the following outage activities:

- Fatigue management
- Assessment of post trip review
- Monitoring of decay heat removal operations
- Configuration management, including maintenance of defense-in-depth
- Identification and resolution of problems related to forced outage activities
- Power ascension activities
- Turbine lubricating oil system inspections and repair
- Equipment lineup
- Local leak rate testing of IV-201-31, IV-201-32, IV-201-16, IV-201-17
- Drywell closeout
- Troubleshooting activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - five samples)

a. Inspection Scope

The inspectors observed performance of the following surveillance tests (STs) and/or reviewed test data of risk-significant SSCs to assess whether test results satisfied TSs, the UFSAR, and NMPNS procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following STs:

- N1-ST-Q16A, EDG 102 Quarterly Test on October 22, 2012
- N1-ISP-201-501, Type "B" Containment Isolation Airlock Doors Leak Rate Test on November 1, 2012
- N1-IPM-029-007, Feedwater System, Pump Valve Control and Sequencing on November 7, 2012
- N2-OSP-RSS-R007, RCIC Remote Shutdown Panel Operational Test on November 8, 2012
- N2-FSP-FPW-R005, Sprinkler System Piping Verification Test Control Room Outdoor Air Special Filter Train Systems on November 27, 2012

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 - one sample)a. Inspection Scope

The Office of Nuclear Security and Incident Response headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures and the Emergency Plan located under ADAMS accession number ML12268A135 and ML123130233 as listed in the Attachment.

NMPNS determined that in accordance with 10 CFR Part 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR Part 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

b. Findings

No findings were identified.

**2. RADIATION SAFETY****Cornerstones: Public Radiation Safety and Occupational Radiation Safety**2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 - one sample)

During a November 25 through 29, 2012 on-site inspection, the inspectors verified that gaseous and liquid effluent processing systems are maintained so radiological discharges are properly reduced, monitored, and released. The inspectors also verified the accuracy of the calculations for effluent releases and public doses.

The inspectors used the requirements in 10 CFR Part 20; 10 CFR Part 50.35 (a); TS; 10 CFR Part 50 Appendix A, "Criterion 60 Control of Release of Radioactivity to the Environment and Criterion 64 Monitoring Radioactive Releases;" 10 CFR Part 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operations to Meet the Criterion ALARA [As Low As is Reasonably Achievable] for Radioactive Material in Light-Water Cooled Nuclear Power Reactor Effluents;" 10 CFR Part 50.75(g), "Reporting and Recordkeeping for Decommissioning Planning;" 40 CFR Part 141, "Maximum Contaminant Levels for Radionuclides;" 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations;" RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents;" RG 1.21, "Measuring, Evaluating, Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste;" RG 4.1, "Radiological Environmental Monitoring for Nuclear Power Plants;" RG 4.15, "Quality Assurance for Radiological Monitoring Programs;" NUREG-1301 or 1302, "Offsite Dose Calculation Manual (ODCM) Guidance: Standard Radiological Effluent Controls;" applicable industry standards; and licensee procedures required by NMPNS TSs/ODCM as criteria for determining compliance.

a. Inspection Scope

Inspection Planning and Program Reviews

Event Report and Effluent Report Reviews

The inspectors reviewed NMPNS annual radiological effluent release reports for 2010 and 2011 to determine if the reports were submitted as required by the TSs/ODCM. The inspectors reviewed anomalous results, unexpected trends, and abnormal releases that were identified. The inspectors determined that if anomalous effluent results were evaluated, they were entered in the CAP, and were adequately resolved.

The inspectors identified radioactive effluent monitor operability issues reported by the site as provided in the NMPNS annual radioactive effluent release reports, and reviewed these issues and determined if the issues were entered into the CAP and were adequately resolved.

Offsite Dose Calculation Manual and Updated Final Safety Analysis Report Review

The inspectors reviewed NMPNS UFSAR descriptions of the radioactive effluent monitoring systems, treatment systems, and effluent flow paths to identify system design features and required functions.

The inspectors reviewed changes to NMPNS ODCM made by NMPNS since the last inspection. When differences were identified, the inspectors reviewed the technical basis or evaluations of the change and determined whether they were technically justified and maintained effluent releases ALARA.

The inspectors reviewed NMPNS' documentation to determine if any non-radioactive systems that have become contaminated were disclosed either through an event report or the ODCM. The inspectors reviewed selected 10 CFR Part 50.59 evaluations and made a determination if any newly contaminated systems had an unmonitored effluent discharge path to the environment. The inspectors also reviewed whether it required revisions to the ODCM to incorporate these new pathways and whether the associated effluents were reported in accordance with RG 1.21. NMPNS Unit 1 perimeter drain system discharges to Lake Ontario from outfall 020 were being added to NMPNS Unit 1 ODCM.

Groundwater Protection Initiative (GPI) Program

The inspectors reviewed reported groundwater monitoring results and changes to NMPNS' written program for identifying and controlling contaminated spills/leaks to groundwater. No elevated tritium concentrations have been detected in the GPI monitoring wells since the last inspection.

Seven new monitoring wells (MWs) have been drilled and developed in the vicinity of NMPNS Unit 1 screenwell house, NMPNS Unit 2 radwaste building, and near the cooling tower (upgradient well). Water samples collected during the development of these shallow and deep monitoring wells did not detect tritium above the minimum detectable concentrations [~400-500 picocuries per liter (pCi/L).] These new MWs are being added to NMPNS long term groundwater monitoring program.

### Procedures, Special Reports, and Other Documents

The inspectors reviewed LERs, event reports and/or special reports related to the effluent program issued since the previous inspection to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports. A 30 day report was sent by NMPNS to the NRC on September 12, 2012. The report was entitled "Nine Mile Point Unit 1 Discovery of Tritium in Groundwater In-Leakage, 30 Day Report in Accordance with the Industry Groundwater Protection Initiative." The report described the tritium event and the actions being taken by NMPNS.

The inspectors reviewed effluent program implementing procedures, including those associated with effluent sampling, effluent monitor set-point determinations, and dose calculations.

### Walkdowns and Observations

The inspectors determined that NMPNS is proposing to make a significant change to their effluent release points. A NMPNS Unit 1 perimeter drain which discharged to an outfall in Lake Ontario is a permitted release path by the New York State Pollution Elimination Discharge System. This outfall is now being proposed as a new radioactive liquid discharge point. NMPNS will perform a safety evaluation for this new radioactive discharge point prior to its use.

### Sampling and Analyses

The inspectors selected three effluent sampling activities, and assessed whether adequate controls have been implemented to ensure representative samples were obtained.

The inspectors selected one effluent discharge made with inoperable effluent radiation monitors to verify that controls were in place to ensure compensatory sampling was performed consistent with the TSs/ODCM and that those controls were adequate to prevent the release of unmonitored liquid and gaseous effluents.

### Instrumentation and Equipment

#### Effluent Flow Measuring Instruments

The inspectors reviewed the methodology that NMPNS uses to determine the effluent stack and vent flow rates to verify that the flow rates are consistent with TSs/ODCM and UFSAR values. The inspectors reviewed the differences between assumed and actual stack and vent flow rates to ensure that they do not affect the calculated results of public dose.

#### Air Cleaning Systems

The inspectors assessed whether ST results for TS-required ventilation effluent discharge systems meet TS acceptance criteria.

### Dose Calculations

The inspectors reviewed all significant changes in reported dose values compared to the previous radioactive effluent release report to evaluate the factors which may have resulted in the change.

The inspectors reviewed four radioactive liquid and two gaseous waste discharge permits to verify that the projected doses to members of the public were accurate and based on representative samples of the discharge path.

The inspectors evaluated the methods used to ensure that all radionuclides in the effluent stream source term are included, within detectability standards. The review included the current waste stream analyses to ensure hard-to-detect radionuclides are included in the effluent releases.

The inspectors reviewed the 2012 land use census to verify changes that affect public dose pathways have been factored into the dose calculations and environmental sampling/analysis program.

No records of any abnormal gaseous or liquid tank discharges were generated during this inspection period. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages were reviewed to ensure that an evaluation was made of the discharge to account for the effluent release and were included in the calculated doses to the public.

### GPI Implementation

The inspectors reviewed the voluntary Nuclear Energy Institute (NEI) GPI to determine if NMPNS has implemented the GPI as intended. The inspectors assessed whether NEI-07-07 GPI objectives and associated acceptance criteria were being implemented.

A revision to NMPNS hydrological investigation report was recently published in November 2012. The revised report verified using the new monitoring wells that the NMPNS Unit 2 reactor building (RB) mat drain system has a groundwater cone of influence that extends out to about 1000 feet from these pumps. The groundwater elevation contour maps were also updated to provide more detail on the groundwater flow in the area between NMPNS Unit 1 and Lake Ontario.

For anomalous results or missed samples, the inspectors assessed whether NMPNS has identified and addressed deficiencies through its CAP.

The inspectors reviewed identified leakage or spill events and entries made into NMPNS's decommissioning files. The inspectors reviewed evaluations of leaks or spills, and reviewed the effectiveness of any remediation actions. The inspectors reviewed onsite contamination events involving contamination of groundwater and assessed whether the source of the leak or spill was identified and isolated/terminated.

For unmonitored spills, leaks, or unexpected liquid or gaseous discharges, the inspectors assessed whether an evaluation was performed to determine the type and amount of radioactive material that was discharged by: assessing whether sufficient radiological surveys were performed to evaluate the extent of the contamination and assessing whether a survey/evaluation has been performed; and determining whether NMPNS completed offsite notifications, as provided in its GPI implementing procedures.



The inspectors reviewed the evaluation of discharges from onsite surface water bodies that contain or potentially contain radioactivity, and the potential for groundwater leakage from these onsite surface water bodies. The inspectors assessed whether NMPNS is properly accounting for discharges from these surface water bodies as part of their effluent release reports.

The inspectors assessed the on-site groundwater sample results and discussed with licensing staff if a description of the on-site tritium in groundwater will be documented in either the Annual Radiological Environmental Operating Report or Annual Radioactive Effluent Release Report.

b. Findings

No findings were identified.

On July 30, 2012, NMPNS identified groundwater intrusion containing elevated concentrations of tritium at NMPNS Unit 1 screenwell building. Tritium results were based on samples collected and analyzed from the circulating water pump pits and ranged from 33,000 to 44,000 pCi/L. The water entering the pump pits was observed to be leaking from pipe penetrations in the foundation of the screenhouse building. Groundwater influx was estimated at 1-2 gallons per minute. The water in these pits flows to a sump in the building which is periodically pumped to the discharge tunnel for release to Lake Ontario. There is an environmental composite sampler that monitors these discharge canal releases.

Upon discovery of the tritium in the Circulation Water Pump Pits, NMPNS isolated the sump pump in the screenhouse building. Starting in early September 2012, discharges from the sump in NMPNS Unit 1 screenhouse were routed to tanker trucks, sampled and released as monitored releases to the circulating water intake. NMPNS placed this event in their CAP and initiated an investigation (CR-2012-007684).

Since the concentrations were verified to be above the NEI GPI threshold for stakeholder communication (30,000 pCi/L for non-drinking water pathway) stakeholder notifications were made. On August 14, 2012, NMPNS implemented its NEI-07-07 notification plan and also issued an event notification in accordance with 10 CFR Part 50.72 (b)(2)xi. NRC, NYS Department of Environmental Quality, NYS Department of Health, local officials, Institute of Nuclear Power Operators, Nuclear Energy Institute, and American Nuclear Insurers were all notified of the tritium event at NMPNS Unit 1. A 30 day report was sent by NMPNS to the NRC on September 12, 2012. The report was entitled "Nine Mile Point Unit 1 discovery of tritium in groundwater in-leakage, 30 day report in accordance with the industry groundwater protection initiative."

In early September 2012, NMPNS leased a temporary pump and eight tanker trucks to collect the water from NMPNS Unit 1 perimeter drain system and the sump in the screenhouse building. NMPNS has collected over 2.5 million gallons from these sources since that time. The tritium contaminated groundwater was collected into 20,000 gallon tanker trucks, sampled and discharged to the circulating water intake as monitored and permitted radioactive liquid releases. The final batches of water pumped from the perimeter drain in November and December 2012 were all less than the minimum detectable concentration for tritium (<~400 pCi/L).

There are no apparent public or occupational radiological risks. The release pathway was immediately terminated and public/occupational dose consequences are considered insignificant.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification (71151)

##### .1 Safety System Functional Failures (two samples)

###### a. Inspection Scope

The inspectors sampled NMPNS' submittals for the Safety System Functional Failures performance indicator (PI) for both Units 1 and 2 for the period of October 1, 2011 through June 30, 2012. To determine the accuracy of the PI data reported during those periods, inspectors used definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR Part 50.72 and 10 CFR Part 50.73." The inspectors reviewed NMPNS' operator narrative logs, operability assessments, maintenance rule records, maintenance WOs, condition reports, event reports and NRC integrated inspection reports to validate the accuracy of the submittals.

###### b. Findings

No findings were identified.

##### .2 Occupational Exposure Control Effectiveness (one sample)

###### a. Inspection Scope

On November 29, 2012, the inspectors sampled NMPNS submittals for the occupational exposure control effectiveness PI for the period from the fourth quarter 2011 through third quarter 2012. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, to determine the accuracy of the PI data reported.

To assess the adequacy of NMPNS' PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry accumulated dose alarms, dose reports, and dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized PI occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas.

###### b. Findings

No findings were identified.

.3 Radiological Effluent TS/ODCM Radiological Effluent Occurrences (one sample)

a. Inspection Scope

On November 29, 2012, the inspectors sampled NMPNS submittals for the radiological effluent TS/ODCM radiological effluent occurrences PI for the period from the fourth quarter 2011 through third quarter 2012. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, to determine if the PI data was reported properly during this period.

The inspectors reviewed the NMPNS' corrective action report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous and liquid effluent summary data and the results of associated offsite dose calculations for selected dates between the fourth quarter 2011 through third quarter 2012, to determine if indicator results were accurately reported. The inspectors also reviewed NMPNS' methods for quantifying gaseous and liquid effluents and determining effluent dose.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 - two samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure (IP) 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that NMPNS entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by IP 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by NMPNS outside of the CAP, such as trend reports, PIs, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The

inspectors also reviewed NMPNS' CAP database for the third and portions of the fourth quarters of 2012 to assess CRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRC's daily CR review (Section 4OA2.1). The inspectors reviewed NMPNS' quarterly trend reports for the second and third quarters of 2012, conducted under CNG-CA-1.01-1007, "Performance Improvement Program Trending and Analysis," Revision 00300 to verify that NMPNS personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors reviewed a sample of issues (e.g. work scheduled on protected equipment especially during the Unit 2 refueling outage, Unit 2 standby liquid control level alarms, Unit 1 liquid poison CRs, Unit 2 battery specific gravity CRs) that occurred over the past two quarters to objectively determine whether issues were appropriately evaluated to determine whether trends existed. The inspectors verified these issues were addressed within the scope of the CAP or through the system health review process.

.3 Annual Sample: Review of a Potential Emerging Theme in NRC Inspection Findings with Cross-Cutting Aspect in the Area of Human Performance - Resource [H.2(c) in accordance with IMC 0310

a. Inspection Scope

This inspection focused on NMPNS' evaluation and resolution of an emerging theme in the number of human performance cross-cutting issues associated with NRC inspection findings. Specifically, in August 2012, three NRC inspection findings were identified as having cross-cutting aspects in the area of Human Performance - resources because NMPNS did not provide complete, accurate, and up-to date procedures that were adequate to assure nuclear safety [H.2(c)]. NMPNS initiated CR-2012-007529 and performed an apparent cause evaluation to assess this issue. The inspectors also reviewed CR-2012-007777 concerning a declining trend in site forced loss rate. Between November 10, 2010, and August 16, 2012, NMPNS experienced 14 significant force loss rate events. Significant force loss rate events are defined by NMPNS as events that result in loss of generation of 20 percent core thermal power or greater. The inspectors selected this CR for review because two of the 14 significant force loss rate issues had causes related to the H.2(c) cross-cutting aspect and were reviewed under the CR. Subsequently, in the third quarter of 2012, a fourth finding within this theme was identified. The inspectors selected this emerging trend for review to develop insights into NMPNS' progress in addressing the theme to provide meaningful input into the assessment process. The inspectors reviewed NMPNS' CRs, apparent cause evaluations, root cause analyses, and corrective, preventive, and compensatory actions associated with addressing the emerging theme. The inspectors also interviewed plant personnel. The four findings associated with this cross-cutting theme are summarized as follows:

- Inadequate torque applied to shutdown cooling isolation valves closure bolts – Unit 1 (CR-2012-001441)

- Loss of spent fuel pool cooling due to an inadequate procedure – Unit 2 (CR-2012-004850)
- Inadequate special operating procedure for loss of spent fuel pool cooling – Unit 2 (CR-2012-007811)
- Inadequate evaluation and implementation of design modification to the turbine gland seal supply system – Unit 2 (CR-2012-006615)

b. Findings

No findings were identified.

On August 9, 2012, NMPNS identified an emerging theme in Human Performance – resources [H.2(c)] and initiated CR-2012-007529 to evaluate the theme. The scope of the apparent cause evaluation included Category 1 and Category 2 Tier 1 CRs, and any CRs associated with an NCV or finding resulting in a Human Performance cross-cutting aspect initiated on or after August 1, 2011, through August 31, 2012. NMPNS determined that Mechanical Maintenance and Design Engineering human performance have led to consequential station events, and that Mechanical Maintenance and Engineering leadership observations have not been effective in preventing human performance errors. Specifically, for the events reviewed, Mechanical Maintenance supervision has not employed a good questioning attitude, urging workers to “stop when unsure,” nor provided coaching in the field to prevent these events from occurring. Additionally, Design Engineering leadership has not emphasized cognitive and technical understanding when using key human performance tools such as assumption validation, self-checking, and peer checking, nor has supervision provided associated coaching to prevent these events from occurring. Corrective, preventive, and compensatory corrective actions to improve NMPNS human performance focused on improving the station’s observation program such as training to supervisors, conducting additional observations, and the development and use of more probing questions.

The inspectors also reviewed CR-2012-007777 and the associated root cause analysis concerning a declining trend in site forced loss rate. Between November 10, 2010, and August 16, 2012, NMP experienced 14 significant force loss rate events. Two of the four NRC findings that have H.2(c) cross-cutting aspects were included as part of the analysis. The root cause was that station personnel have not consistently demonstrated a zero tolerance policy for unanticipated component failures. Contributing causes were determined to be a lack of performance standards for recognizing and managing latent equipment failure vulnerabilities, and Mechanical Maintenance work practices and fundamental behaviors were inconsistently applied. Corrective actions to prevent recurrence of forced loss rate issues included revising CNG-AM-1.01, “Equipment Reliability,” Revision 00900 to include an attachment which describes desired behaviors associated with “zero tolerance for unanticipated failures;” and revising procedure CNG-TR-1.01-1017, “Leadership Development Training Program,” Revision 0500 Attachment 7, “Fundamental Refresher Topics,” for equipment reliability topics to be presented on a bi-annual basis. Other corrective and preventive actions included development of an “essential maintenance process” which identify components whose failure would result in force loss rate and ensure appropriate rigor is applied in planning the associated maintenance activities for those components; improving the mechanical maintenance and design engineering observation program; implementing a mechanical maintenance procedure improvement project; human performance simulator training for

engineering personnel to reinforce the importance of the technical reviewer; and an Equipment Reliability Return to Excellence plan (which includes some elements of human performance and training).

The inspectors concluded that although the apparent cause evaluation and root cause analysis for CR-2012-007529 and CR-2012-007777 provided insight and corrective actions for the general human performance issues, the analyses did not directly address any potential common causes within the cross-cutting theme of concern. On November 7, 2012, as a result of the inspectors' review, NMPNS initiated CR-2012-010211 and conducted a root cause analysis that directly addressed the identified theme. The root cause for the existing cross-cutting theme in H.2(c) was that site leadership had not identified marginal performance relative to technical rigor in the production of work execution documents and, as such, had not put into place corresponding corrective or mitigating strategies. The contributing cause was that existing administrative controls governing changes to procedures and work orders and reviews of the changes were too lenient to ensure high quality documents are consistently prepared to support plant operations and maintenance activities. Corrective actions included the development of a Station Policy to ensure high standards of performance and technical rigor in producing work documents. This station policy will be integrated into the 2013 station focus area of Safety/Human Performance. Several supporting corrective actions included the development of a conduct of engineering procedure and revision of other administrative procedures to close performance gaps in work order, site procedure change and engineering processes, and training. Interim quarterly assessments to evaluate the effectiveness of corrective actions are scheduled to begin in the third quarter 2013. The final effectiveness review is scheduled to be completed by July 15, 2014.

#### 4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153 - four samples)

##### .1 Plant Events

##### b. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that NMPNS made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed NMPNS' follow-up actions related to the events to assure that NMPNS implemented appropriate corrective actions commensurate with their safety significance.

- Unit 1 fire in power board H-111 resulting in the declaration of a Notice of Unusual Event on October 22, 2012
- Unit 1 automatic reactor scram due to a generator load reject on October 29, 2012
- Unit 1 automatic reactor scram due to high level turbine trip on November 3, 2012
- Unit 1 plant shutdown due to high containment leakage on December 13, 2012

b. Findings

Introduction. An unresolved item (URI) was identified pending NMPNS quantifying the amount of leakage that occurred from the Unit 1 drywell from December 3 -13, 2012.

Description. On December 3, 2012, at 11:31 a.m., Unit 1 established primary containment integrity and commenced a reactor startup from an unplanned outage. The following day at 2:40 a.m., NMPNS commenced injecting nitrogen into the primary containment as part of a planned activity to reduce primary containment oxygen concentration to less than four percent as required by TS 3.3.1, "Oxygen Concentration". This activity was completed 10:55 a.m., on December 4. Once an appropriate nitrogen concentration has been achieved in containment, additional makeup is generally not required. However, from December 6 - 8, on three occasions, operators added additional nitrogen to the containment to maintain pressure within procedural limits. This issue was documented in CR 2012-011157, "Adverse Trend in Unit 1 Nitrogen Usage." This issue was initially classified as a priority 2 work item and NMPNS commenced initial troubleshooting activities, which included examining systems/components that were possible sources of nitrogen leakage. However, a definitive source for the leakage was not identified. On December 12, following a fourth addition of nitrogen that occurred on December 11, NMPNS increased the importance of the issue to Priority 1, formed an incident response team and staffed the outage coordination center. As part of the investigation process, NMPNS cycled several containment isolation valves in the nitrogen purge and vent system, and attempted to quantify the amount of seat leakage through the valves by opening test fittings located between isolation valves. In parallel with the troubleshooting efforts, NMPNS and vendor personnel began to develop analytical tools that could be used to quantify the amount of containment leakage. On December 13, at 6:47 p.m., after observing a decrease in containment pressure following a fifth nitrogen addition, and receiving preliminary data that a containment isolation valve local leak rate test (LLRT) between reactor containment inert gas purge and fill drywell cooling system isolation valves IV-201-31 and IV-201-32 may fail, NMPNS commenced a plant shutdown because primary integrity as required in TS 3.3.3 could not be assured. The plant reached cold shutdown on December 13 at 11:33 p.m.

Subsequent NMPNS testing of containment isolation valves revealed that three valves in the reactor containment inert gas purge and fill drywell cooling system IV-201-10, IV-201-31 and IV-201-32 had unacceptable seat leak rates. These conditions were documented in several CRs including 2012-011210 and 2012-011288. When the valves were disassembled and examined, NMPNS identified that iron oxide buildup on the valve resilient seats had prevented the valves from closing tightly and adversely impacted seat leakage performance. The reactor containment inert gas purge and fill drywell cooling system is a carbon steel system and the internal piping surface adjacent to the valves had visible signs of iron oxide degradation (rust). NMPNS corrective action included removing the loose surface rust, installing new seats on the valves, and successfully performing as-left LLRTs on the subject valves. Additional corrective actions are outlined in CR 2012-011157.

This issue will be tracked as a URI pending NMPNS quantification of the drywell leakage that existed from December 3 - 13, 2012 and NRC review of the NMPNS evaluation to determine whether the issue is more than minor and whether a violation exists. NMPNS intends to complete the evaluation by January 31, 2013. **(URI 05000220/2012005-03, Assessment of Containment Leakage Due to Containment Isolation Valve Failure)**

40A5 Other Activities.1 (Closed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdownsa. Inspection Scope

The inspectors verified that NMPNS' walkdown packages for Units 1 and 2 structures and the site external flood berms and drainage culverts contained the elements as specified in the NEI 12-07 Walkdown Guidance document. The inspectors accompanied NMPNS on its walkdown of Unit 2 control building and verified that NMPNS confirmed the following flood protection features:

- Hatch and door seals
- Piping penetration seals
- Cable conduit seals
- Floor drains
- Equipment berms
- Available physical margins from postulated flood height

The inspectors independently performed their walkdowns and verified that the flood protection features listed above were in place. Items whose functionality appeared degraded were noted and compared with NMPNS CRs. The inspectors verified that noncompliances with current licensing requirements, and issues identified in accordance with the 10 CFR Part 50.54(f) letter, item 2.g of Enclosure 4, were entered in NMPNS' CAP. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and NMPNS' ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No findings were identified.

.2 (Closed) NRC TI 2515/188, Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdownsa. Inspection Scope

The inspectors accompanied NMPNS on their seismic walkdowns of the control room and RB emergency ventilation systems in the Unit 1 turbine building on July 16, 2012 and verified that NMPNS confirmed that the following seismic features associated with the fans, chillers, and ductwork were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation
- SSCs will not be damaged from impact by nearby equipment or structures
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment
- Attached lines have adequate flexibility to avoid damage



- The area was free of potentially adverse seismic interactions that could cause flooding or spray in the area
- The area was free of potentially adverse seismic interactions that could cause a fire in the area
- The area was free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)

The inspectors independently performed walkdowns of the high pressure core spray and reactor core isolation cooling systems on August 15 - 17, 2012, and verified the following:

- Anchorage was free of bent, broken, missing or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation
- SSCs will not be damaged from impact by nearby equipment or structures
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment
- Attached lines have adequate flexibility to avoid damage
- The area was free of potentially adverse seismic interactions that could cause flooding or spray in the area
- The area was free of potentially adverse seismic interactions that could cause a fire in the area
- The area was free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)

Observations made during the walkdown that could not be determined to be acceptable were entered into NMPNS' CAP for evaluation.

Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the seismic walkdown equipment list and these items were walked down by NMPNS.

b. Findings

No findings were identified.

.3 Extended Power Uprate Closure and Summary (71004)

a. Inspection Scope

On December 22, 2011, the NRC approved NMPNS Unit 2 License Amendment No. 140 (ADAMS package ML11330040) for an approximately 15-percent extended power uprate (EPU) at Unit 2 and issued the associated safety evaluation (SE) (proprietary SE: ML112930470, and non-proprietary SE: ML113560333). The inspectors observed and reviewed selected activities throughout the phased EPU implementation at Unit 2. 100 percent reactor power on Unit 2 at the new EPU limit was achieved by NMPNS on July 21, 2012. The inspectors verified, based on a sample review of these activities and

comparison of records and tests with the current licensing documents, that NMPNS's commitments have been met regarding the Unit 2 EPU and that NMPNS has fully implemented the EPU within its approved implementation timeline.

As required by IP 71004, Power Uprate, all inspection sample requirements for the power uprate on Unit 2 have been verified completed and recorded, consistent with the inspection plan. This entry provides a summary of all inspection samples associated with implementation of, and as required by IP 71004.

Inspection Sample	Inspection Procedure	Inspection Report
Head Shroud Bolt Calculation	71111.17	2010007
2FWS*P1A Main Feed Pump Impeller Replacement	71111.17	2010007
2FWS*P1A Main Feed Pump Seal Replacement	71111.17	2010007
2CSL*P1 Core Spray Pump	71111.21	2011007
MS Lead Temp Steam Line Isolation Instrumentation	71111.21	2011007
Jet Pump Modification	71008	2012003
Power Ascension	71111.20, 71004	2012003
Pressure Regulator Transient Test	71111.19, 71004	2012003
TSV Closure Test	71111.19, 71004	2012003
EC/FAC	49001, 71004	2012004

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On January 25, 2013, the inspectors presented the inspection results to Mr. Christopher Costanzo, Site Vice President, and other members of NMPNS' staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee Identified Violations

The following Severity Level IV violation was identified by NMPNS and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- 10 CFR Part 55.53(i) requires as a condition of a license, that the licensee (licensed operator) shall have a biennial medical examination.

Contrary to the above, for approximately three hours on December 14, 2012, a licensed Unit 2 Senior Reactor Operator (SRO) filled the dayshift control room supervisor role without having a fully completed biennial medical examination.

The SRO's previous medical examination was completed November 3, 2010 and his latest medical examination should, therefore, have been completed in November 2012. Although the SRO had successfully completed the physical testing portion of the medical examination on September 19, 2012, the examination was not complete

Enclosure



in that it still required review and approval of the licensed medical practitioner, who was not available on that day.

The licensed operator did not realize his physical was incomplete and the qualification matrix, used to track whether operators meet conditions of their licenses, identified the operator as meeting all requirements to assume licensed duties. Accordingly, the SRO did not identify this deficiency prior to assuming the shift on December 14, 2012. Approximately three hours into the shift, other station personnel performing a paperwork verification of annual examination completion identified that the SRO had not completed his required biennial medical examination. The SRO was immediately relieved of watch standing duties, and his physical was subsequently completed on December 17, 2012. No disqualifying medical conditions were identified.

NMPNS promptly entered the issue into its corrective action process as CR-2012-011258 and CR-2012-011261 and initiated a root cause investigation. An extent of condition review determined that medical physical examinations for all other Nine Mile Point licensed operators were completed within the required periodicity.

ATTACHMENT: SUPPLEMENTARY INFORMATION

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

**NMPNS Personnel**

C. Costanzo, Vice President  
M. Philippon, Plant General Manager  
P. Bartolini, Supervisor, Design Engineering  
K. Clark, Director, Security  
J. Dean, Supervisor, Quality Assurance  
R. Dean, Training Manager  
S. Dhar, Design Engineering  
J. Dosa, Director, Licensing  
J. Gillard, Emergency Preparedness Analyst  
J. Holton, Supervisor, Systems Engineering  
G. Inch, Principle Engineer, EPU Project Manager  
M. Kunzwiler, Security Supervisor  
J. Leonard, Supervisor Design Engineering  
C. McClay, Senior Engineer  
F. Payne, Manager, Operations  
J. Reid, Design Engineer  
M. Shanbhag, Licensing Engineer  
T. Syrell, Manager, Nuclear Safety and Security  
J. Thompson, General Supervisor, Mechanical Maintenance  
A. Verno, Director, Emergency Preparedness

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED AND UPDATED**Opened

05000220/2012005-03	URI	Assessment of Containment Leakage Due to Containment Isolation Valve Failure (Section 4OA3)
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Opened and Closed

05000220/2012005-01	FIN	Failure to Develop Adequate Inspection Requirements for Main Transformer Modification Results in Reactor Scram (Section 1RO4)
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05000220/2012005-02	NCV	Inadequate Post Maintenance Test Results in Subsequent Failure of 11 CREVS Fan (Section 1R19)
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Closed

05000220/410/2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 – Flooding Walkdowns (Section 4OA5)
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05000220/410/2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5)
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Discussed

None

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### **Procedures**

EPIP-EPP-26, Natural Hazard Preparation and Recovery, Revision 00301  
NAI-PSH-11, Seasonal Readiness Program, Revision 00700  
N1-OP-64, Meteorological Monitoring, Revision 00602  
N2-OP-102, Meteorological Monitoring, Revision 01102

### **Section 1R04: Equipment Alignment**

#### **Procedures**

N1-OP-12, Liquid Poison System, Revision 02900  
NEP-DES-09, Engineering Specifications, Revision 08  
CNG-SC-1.01-3000, Enhanced Procurement for Critical Material, Revision 00100  
S-RCMP-GEN-005, AC Circuit Verification for PT's and CT's, Revision 00301  
S-EMP-GEN-006, Installation and Testing of Instrument Transformers, Revision 04

#### **Documents**

ECP-09-000185, Replace Main Generator Step-Up Transformer

#### **Condition Report**

2012-009971	2012-009834
2012-009820	2012-009832

#### **Drawings**

C-18019-C, Reactor Liquid Poison System P&I Diagram, Revision 33  
C-18046-C, Administrative Building Technical Support Center Ventilation System P&I Diagram, Revision 11  
C-22342-C, General Electric Transformer Nameplate Drawing, Revision 1.00  
C-22340-C SH2F, Main Transformer No.1, Revision 1  
C-19415-C SH1, 345KV Line, Nine Mile Point Line #8 & #9 Power Circuits, Revision 33  
C-19413-C SH2, Generator Control Circuits, Revision 31  
C-19412-C SH2, Generator and Station Service Power Circuits, Revision 9  
C-22343-C SH2, Main Transformer No.1 Outline, Revision 0  
C-22343-C SH3, Main Transformer No.1 Outline, Revision 0

#### **Work Orders**

C91258383  
C91134428

### **Section 1R05: Fire Protection**

#### **Procedures**

N1-PFP-0101, Unit 1 Pre-fire Plans, Revision 00200  
N2-FPI-PFP-0201, Unit 2 Pre-fire Plans, Revision 001

#### **Documents**

Unit 1 UFSAR, Appendix 10A, Fire Hazards Analysis, Revision 22

**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

Procedures

N1-EOP-2, RPV Control, Revision 01500  
N1-EOP-4, Primary Containment Control, Revision 01500  
N1-EOP-5, Secondary Containment Control, Revision 01401  
N1-EOP-6, Radioactive Release Control, Revision 01401  
N1-SOP-1.5, Unplanned Reactor Power Change, Revision 04  
N2-EOP-RPV, RPV Control - Flowchart, Revision 01400  
N2-EOP-PC, Primary Containment Control - Flowchart, Revision 01300  
EPIP-EPP-20, Emergency Notifications, Revision 02800  
EPIP-EPP-18, Activation and Direction of the Emergency Plans, Revision 02003  
CNG-OP-1.01-1000, Conduct of Operations, Revision 00800  
S-ODP-TQS-0101, Administrative Controls for Maintaining Active License Status at Nine Mile Point, Revision 00600  
CNG-MD-1.01-3001, Physical Exam Process for NRC Licenses, Revision 00100  
NMP-TR-1.01-71, Processing Certification of Medical Exam and License Appl, Revision 00200  
NMP-TR-1.01-60, Simulator Operation and Testing, Revision 00800  
CNG-TR-1.01-1013, Licensed Operator Requalification Exam Program, Revision 00300

Simulator Testing

Comparison Test 1-11-002, MG 131 Trip – Loss of Feedwater Heating  
2011 Computer Real Time Test  
2011 Steady State Performance Test  
2011 Cold Critical Comparison and Shutdown Margin Test  
2011 Simultaneous Closure of All MSIVs

Condition Reports

2012-011258  
2012-011261

Simulator Deficiency Reports

SWR-10-031, Recirc Loop Coastdown Slower in Simulator  
SWR-10-157, N1-ST-Q5 Does Not Bring In Expected Annunciators  
SWR-10-156, CRDM High Temperature Alarms Do Not Actuate on FCV Closure  
SWR-10-150, Containment Venting Does Not Affect Stack Rad Levels  
SWR-11-061, Stroke Time for 80-35 Is Outside of Surveillance Acceptance Criteria  
SWR-10-164, Pressure and Level Response When Placing EC in Service  
SWR-11-048, Main Condenser Will Pressurize in Isolated Condition  
SWR-11-019, Evaluate Enhancing RPV Pressure Response to Scram Time Testing  
SWR-10-139, All Half Scrams Do Not Trip Relays

**Section 1R12: Maintenance Effectiveness**

Procedures

CNG-AM-1.01-1023, Maintenance Rule Program, Revision 00200  
N1-OP-32, Generator, Revision 02700  
SA-2012-000073, Maintenance Rule (a)(3) Assessment

Documents

Maintenance Rule Scoping Documents



Main Generator System Training Documents  
 Turbine Generator System Health Report  
 Integrated Seeping Matrix  
 Maintenance Rule Program Health Report  
 PORC Meeting Minutes Dated September 24, 2012  
 Liquid Poison Health Report

Condition Reports

2012-001677	2012-008629	2012-000925
2012-008673	2012-000463	2012-001886
2012-000110	2012-000911	2012-002570
2012-007217	2012-006756	
2012-009512	2012-006765	
2012-008601	2012-006395	

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

N2-OP-100A, Standby Diesel Generators, Revision 01201  
 N2-OP-100A-LINEUPS, Standby Diesel Generators Lineups, Revision 00000

Condition Reports

2012-007048	2012-008773
2009-005490	2012-000985

Work Orders

C91947342	C91151175
C90637794	C91800200

**Section 1R15: Operability Determinations and Functionality Assessments**

Procedures

N1-ST-M10, Scram Discharge Volume Vent and Drain Valve Position Verification, Revision 00601  
 CNG-OP-1.01-1001, Operational Decision Making, Revision 00500  
 N1-OP-32, Generator, Revision 02900

Documents

October 31, 2012 Email from Daniel A. Varga to Matthew Busch, et al in regards to IT Deliverables to the Post Trip Review Team

Condition Report

2012-009688	2011-003141	2012-010039
2012-009841	2012-009884	2012-009852
2012-008673	2012-011126	2012-010335

Drawings

C-18016-C Sheet 2, Control Rod Drive Scram Dump Volume, Revision 29  
 C-23076-C Sheet 1, Feedwater Control System, Revision 33

Miscellaneous

CA-2011-001213

Work Orders

C91250203

C91250204

C91635220

**Section 1R18: Plant Modifications**Documents

Analysis and Measurement Services Corporation Report CSR957R0, "Final Troubleshooting and Mapping of Temperature Switches at Nine Mile Point Unit 2," dated February 2012

Condition Reports

2012-009380

2002-004521

2011-010144

**Section 1R19: Post-Maintenance Testing**Procedures

N1-ST-Q6C, Containment Spray System Loop 112 Quarterly Operability Test, Revision 00901

N1-PM-V2, Pump Curve Validation Test, Revision 00702

N1-ST-M6, Core Spray Keep Fill System Verification Test, Revision 01200

S-EPM-GEN-063, MOV Diagnostic Testing, Revision 00700

N1-RSP-6Q, Control Room Ventilation Radiation Monitor Instrument Channel Test, Revision 00801

N1-OP-49, Control Room Ventilation System, Revision 02200

CNG-MN-4.01-1008, Pre/Post-Maintenance Testing, Revision 00100

Documents

Calculation S14-93-F007, Containment Spray Raw Water Required Pressure and TDH, Revision 3

Nuclear Energy Institute 94-01, Industry Guideline for Implementing Performance Based Option of 10 CFR Part 50, Appendix J, Revision 2, August 2007

Troubleshooting Control Form TCF-012, November 5, 2012

Engineering Evaluation: IV-01-02 MOV Data Review (Globe Valve), November 1, 2012

Condition Reports

2012-009637

2012-006818

2012-011084

2012-009894

2012-011111

2012-010039

2012-007696

2012-010814

2012-007000

2012-011027

Work Orders

C90696454

C91798818

C92100817

C92056693

C92113175

C91717038

Drawings

C-18002-C Sheet 1, Main Steam and High Pressure Turbine, Revision 45

C-19844-C Sheet 6, 600V Power Boards 1671 Control Circuits, Revision 14

C-19844-C Sheet 4, 600V Power Board 1671 Control Circuits, Revision 18

C-23076-C Sheet 1, Feedwater Control System, Revision 33

0005321122075, 20" & 24" Gate Valve Pressure Seal Forged Motor Operator, Revision 02

**Section 1R20: Refueling and Other Outage Activities**Procedures

N1-IPM-029-007, Feedwater System, Pump Valve Control and Sequencing, Revision 01000  
 CNG-CA-1.01-1000, Corrective Action Program, Revision 00701  
 N1-OP-43A, Plant Startup, Revision 02903  
 NMP1-APPJ-001, 10 CFR Part 50, Appendix J Testing Program Plan, Revision 6  
 N1-ISP-LRT-TYC, Type "C" Containment Isolation Valve Leak Rate Test, Revision 00702

Documents

SDBD-402, Condensate and Feedwater System/HPCI Design Basis Document, Revision 17  
 Unit 1 Alarm PC Typer  
 Unit 1 Sequence of Events PC Typer  
 Unit 1 NSSS Log PC Typer  
 SDBD-202, Containment Systems Design Basis Document, Revision 06

Condition Reports

2012-010039	2012-010397	2012-010354
2012-010141	2012-010389	2012-011157
2012-009971	2012-010403	
2012-010389	2012-010422	

Work Order

C92072280

Drawings

C-23076-C Sheet 1, Feedwater Control System, Revision 33  
 C-19413-C Sheet 2, Generator Control Circuits, Revision 31  
 C-19415-C Sheet 1, 345KV Line Nine Mile Point Line #8 & #9 Power Circuits, Revision 33  
 C-19412-C Sheet 2, Generator and Station Service Power Circuits, Revision 9  
 186R999, Turbine Control Diagram, Revision 11  
 C-18037-C, Turbine Lube Oil Storage & Purification, Revision 17  
 B-18023-C Sheet 1, Shaft Driven Reactor Feedwater Pump #13 Gear & Clutch Oil, Revision 16  
 0005321122075, 20" & 24" Gate Valve Pressure Seal Forged Motor Operator, Revision 02  
 PID-31A, Residual Heat Removal System, Revision 22  
 PID-29B-27, Reactor Recirculation System, Revision 27  
 B-18023-C Sheet 1, Pump #13 Gear & Clutch Oil P&I Diagram, Revision 16  
 186R999, Turbine Control Diagram, Revision 11  
 C-18037-C, Turbine Lube Oil Storage & Purification P&I Diagram, Revision 17  
 PID-31A, Residual Heat Removal System, Revision 22  
 PID-29B-27, Reactor Recirculation System, Revision 27

**Section 1R22: Surveillance Testing**Procedures

N1-ST-Q16A, Emergency Diesel Generator 102 Quarterly Test, Revision 00300  
 N1-ISP-201-501, Type "B" Containment Isolation Airlock Doors Leak Rate Test, Revision 00400  
 N1-IPM-029-007, Feedwater System, Pump Valve Control and Sequencing, Revision 0100  
 N2-OSP-RSS-R007, RCIC Remote Shutdown Panel Operational Test, Revision 00201  
 N2-FSP-FPW-R005, Sprinkler System Piping Verification Test Control Room Outdoor Air  
 Special Filter Train Systems, Revision 01

Condition Reports  
2012-010268

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

Procedures

EPMP-EPP-0101, Unit 1 Emergency Classification Technical Bases, Revision 01602  
 EPMP-EPP-0102, Unit 2 Emergency Classification Technical Bases, Revision 01802  
 EPIP-EPP-02-EAL, Emergency Action Level Matrix Unit 2, Revision 21  
 EPIP-EPP-07, Downwind Radiological Monitoring, Revision 15  
 EPIP-EPP-08, Off-Site Dose Assessment and Protective Action Recommendation, Revision 26

**Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment**

Procedures

N1-CSP-V201, Radioactive Liquid Release Analysis, Revision 9  
 N1-CSP-M204, Liquid Release Dose Calculations, Revision 5  
 N1-CSP-Q208, Service Water System Effluent – Sampling and Analysis, Revision 4  
 N1-CSP-V208, Emergency Condenser Liquid Discharge Evaluation, Revision 4  
 N1-CSP-D300, OGESMS Sensor Checks and Elevated Release Daily Surveillance, Revision 1  
 N1-CSP-M301, Noble Gas Sampling and Analysis, Revision 4  
 N1-CSP-M307, Particulate Filter Preparation for Strontium and Iron Analysis, Revision 3  
 N1-CSP-W310, Particulate Filter/Charcoal Cartridge Change and Analysis, Revision 5  
 N1-CSP-V311, Off-Gas Sampling and Flow Adjustment, Revision 4  
 N1-CSP-M322, OGESMS and Auxiliary Tritium Sampling Analysis, Revision 3  
 N1-CSP-M341, Primary Containment Sampling and Analysis, Revision 6  
 N1-CSP-V342, Containment Purge Evaluation, Revision 3  
 N1-CSP-M350, Noble Gas Dose Calculations, Revision 6  
 N1-CSP-M351, Particulate Iodine and Tritium Dose Calculations, Revision 4  
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 N1-CSP-V201, Liquid Release Dose Calculation for Permit for Drain Tank 258888, August 24, 2012  
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C91920728



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2012-007687

2012-007411

2012-009019

2012-009721

2012-007229

2012-009688

2012-009738

**LIST OF ACRONYMS**

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
ALARA	as low as is reasonably achievable
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
CREV	control room emergency ventilation
CT	current transformer
EDG	emergency diesel generator
EPU	extended power uprate
FIN	Finding
GPI	groundwater protection initiative
IMC	Inspection Manual Chapter
IP	inspection procedure
JPM	job performance measure
kV	Kilovolt
LCO	limiting condition for operation
LER	licensee event report
LLRT	local leak rate test
MW	monitoring well
NCV	non-cited violation
NEI	Nuclear Energy Institute
NMPNS	Nine Mile Point Nuclear Station, LLC
NRC	Nuclear Regulatory Commission
ODCM	offsite dose calculation manual
PARS	Publicly Available Records
pCi/L	picocuries per liter
PI	performance indicator
PM	preventive maintenance
PMT	post-maintenance test
RB	reactor building
RG	Regulatory Guide
RPS	reactor protection system
SDP	significance determination process
SE	Safety Evaluation
SRO	Senior Reactor Operator
SSC	structure, system, and component
ST	surveillance test
SW	service water
TI	Temporary Instruction
TS	technical specification
UFSAR	updated final safety analysis report
URI	unresolved item
WO	work order