



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

January 27, 2012

Mr. Kenneth Langdon
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 05000220/2011005 AND 05000410/2011005

Dear Mr. Langdon:

On December 31, 2011, 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 13, 2012, with you and other members of your staff.

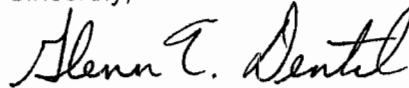
The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two NRC-identified and one self-revealing findings of very low safety significance (Green). One of the findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because it 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 any 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 Inspector 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 Inspector 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

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Sincerely,

A handwritten signature in black ink, reading "Glenn T. Dentel". The signature is fluid and cursive, with the first name "Glenn" and last name "Dentel" clearly legible.

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 05000220/2011005 and 05000410/2011005
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Sincerely,

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

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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.: 05000220/2011005; 05000410/2011005

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, 2011

Inspectors: K. Kolaczyk, Senior Resident Inspector
D. Dempsey, Resident Inspector
T. Fish, Senior Operations Engineer
N. Perry, Senior Project Engineer
J. Brand, Reactor Engineer
B. Fuller, Operations Engineer
B. Keighley, Project Engineer
T. Ziev, Reactor Engineer

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

Enclosure

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SUMMARY OF FINDINGS

IR 05000220/2011005, 05000410/2011005; 10/01/2011 - 12/31/2011; Nine Mile Point Nuclear Station, Units 1 and 2; Operability Determinations and Functionality Assessments, Problem Identification and Resolution, Follow-up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Three Green findings, one of which was a non-cited violation (NCV), were identified. 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. The inspectors identified a Green finding for the failure of NMPNS to meet the fleet standard for establishing and implementing preventive maintenance (PM) templates. Specifically, in 2009, NMPNS failed to implement PM templates for critical non-safety related molded case circuit breakers in accordance with the guidance in the new fleet standard. NMPNS entered this issue into their corrective action program as CR-2011-011000 and CR-2011-011045 to evaluate corrective actions needed to address this issue.

The inspectors determined that the finding was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, continued failure to perform the "clean and inspect" PM on critical NSR MCCBs could lead to a failure that could cause a plant transient. The inspectors determined that the finding was of very low safety significance (Green) since the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding had a cross-cutting aspect in the human performance area, work practices component, in that NMPNS did not implement procedures for conducting preventive maintenance on electrical breakers [H.4.(b)]. (Section 40A2)

Green. A Green self-revealing NCV of technical specification (TS) 5.4.1, "Procedures," was identified for NMPNS' failure to properly implement S-MMP-GEN-201, "Site Valve Packing Procedure," Revision 00600 when maintenance personnel repacked recirculation pump discharge isolation valve 2RCS*MOV18A in August 2011. As a result, on December 9, 2011, the packing for valve 2RCS*MOV18A failed and unidentified reactor coolant system (RCS) leakage increased above the TS limit of a 2 gpm increase per 24 hours forcing a plant shutdown. NMPNS' immediate corrective actions were to repair the valve stem and install a live loaded packing system on the recirculation discharge isolation valves.

This finding is more than minor because it reasonably could be viewed as a precursor to a more significant event and adversely impacted the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety

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functions during power operations. This finding challenged the availability and reliability of a mechanical RCS pressure boundary. This finding was evaluated using IMC 0609, "Significance Determination Process," Attachment 04, "Phase 1-Initial Screening and Characterization of Findings," Table 4a, and determined to require further evaluation because the as-found leakage exceeded a TS RCS leakage limit. Based on Region I Senior Reactor Analyst (SRA) review, the finding was determined to be of very low safety significance (Green) since the maximum possible leak rate through the valve packing would be compensated by normal operation of the control rod drive system and the condensate/feedwater system. This finding has a cross-cutting aspect in the area of human performance, work control because NMPNS did not define and effectively communicate expectations regarding procedural compliance and personnel did not follow procedures during their inspection of the valve stem [H.4.(b)]. (Section 4OA3)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a Green finding for the failure of NMPNS to follow the technical specifications (TS) bases associated with limiting condition for operation (LCO) 3.0.2. Specifically on October 24, 2011, on three separate occasions, NMPNS entered TS 3.3.6.1 Condition B for operational convenience to conduct troubleshooting of a reactor water cleanup (RWCU) system differential flow high channel. The inspectors determined this action was contrary to the bases of TS LCO 3.0.2 which states, in part, intentional entry into actions should not be made for operational convenience and must not compromise safety. NMPNS immediate corrective actions included coaching the control room personnel involved in the troubleshooting process and entered the issue into the corrective action program as CR 2011-009767.

This finding is more than minor because it impacted the configuration control aspect of the Barrier Integrity Cornerstone and adversely affected the Cornerstone objective to maintain functionality of containment. Specifically, as part of a planned troubleshooting activity, a protective isolation feature was removed from service on multiple occasions that collectively exceeded the allowed LCO time for the system. The inspectors determined that the finding was of very low safety significance (Green) since the finding did not represent an actual open pathway in the physical integrity of the reactor containment. This finding has a cross-cutting aspect in the area of human performance in that NMPNS did not use conservative assumptions in decision making when performing multiple entries into TS [H.1.(b)]. (Section 1R15)

Other Findings

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent power. On October 29, reactor power was lowered to approximately 71 percent to conduct planned maintenance and surveillance activities including a rod sequence exchange. The reactor was returned to 100 percent power on October 30. On December 17, reactor power was reduced to 95 percent to remove the 15 recirculation pump from service for planned maintenance. Power was returned to 100 percent later that day and remained at 100 percent for the remainder of the report period.

Unit 2 began the inspection period at 100 percent power. On November 19, reactor power was lowered to 65 percent to conduct a planned control rod sequence exchange and to perform turbine valve testing. The reactor was returned to 100 percent power later the same day. On December 9, the reactor was shut down as required by technical specifications (TSs) due to an increase in unidentified RCS leakage. On December 15, the reactor was taken critical and the turbine was synchronized to the grid on December 16. The plant was restored to 100 percent power on December 19. On December 28, reactor power was lowered to 97 percent due to main feedwater heater level control system problems. On December 29, following repairs, the reactor was returned to 100 percent power. The unit remained at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Seasonal Extreme Weather Conditions (Two samples)

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 diesel fire pump room, and the Unit 2 SW pump bays and Emergency Diesel Generator (EDG) rooms. The inspectors reviewed the updated final safety analysis report (UFSAR), TSs, control room logs, and the corrective action program (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 inspectors reviewed station procedures, including NMPNS procedure NAI-PSH-11, "Seasonal Readiness Program," Revision 06. 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 00500 and 01000. 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.

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b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walkdown (71111.04Q - Three samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- High pressure coolant injection subsystem 11 while the 13 feedwater booster pump was out of service for planned maintenance on October 3, 2011
- Technical support center ventilation system prior to performance of an emergency drill on October 12, 2011
- Division I of the control room air conditioning system (CRACS) system when the Division II CRACS was out of service for planned maintenance on November 3, 2011

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), condition reports (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.

1R05 Fire Protection (71111.05)

Quarterly Inspection (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 turbine building (TB) east battery room 277 foot elevation (fire zone TB277-07) on October 27, 2011
- Unit 1 TB west battery room 277 foot elevation (fire zone TB277-08) on October 27, 2011
- Unit 1 control room complex, control room 277 foot elevation (fire zone CC277-01) on October 28, 2011
- Unit 2 HPCS cable routing area 244 foot elevation (fire area 21) on November 8, 2011
- Unit 2 diesel fire pump room 261 foot elevation (fire area 62) on November 10, 2011

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training (71111.11Q – Two samples)

a. Inspection Scope

The inspectors observed a Unit 1 licensed operator simulator training on October 18, 2011, which included failure of the mechanical hydraulic control system, a leak in the reactor water cleanup (RWCU) system, and a failure of a RWCU system isolation valve. On October 25, 2011, the inspectors observed a licensed operator simulator graded examination for Unit 2. The inspectors evaluated operator performance during the simulated event 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 classification made by the shift manager. 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 Annual Review (71111.11A – One Sample)

a. Inspection Scope

On December 21, 2011, an NRC region-based inspector conducted an in-office review of results of Nine Mile Point-administered annual Unit 1 operating tests and comprehensive written exams. The inspection assessed whether pass rates were consistent with the guidance of NRC Inspection Manual Chapter (IMC) 0609, Appendix I, and "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspector verified that:

- Crew pass rates were greater than 80 percent (pass rate was 100 percent)
- Individual pass rates on the dynamic simulator test were greater than 80 percent (pass rate was 100 percent)
- Individual pass rates on the job performance measures (JPMs) of the operating exam were greater than 80 percent (pass rate was 100 percent)
- More than 75 percent of the individuals passed all portions of the exam (100 percent of the individuals passed all portions of the examination)

Unit 1 comprehensive written exams were previously administered in November and December 2010.

b. Findings

No findings were identified.

.3 Biennial Review (71111.11B – One sample)

The following inspection activities were performed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," Appendix A, "Checklist for Evaluating Facility Testing Material" and Appendix B, "Suggested Interview Topics."

A review was conducted of recent operating history documentation found in inspection reports, licensee event reports (LERs), NMPNS' CAP, and the most recent NRC plant issues matrix. The inspectors also reviewed specific events from NMPNS' CAP which indicated possible training deficiencies, to verify that they had been appropriately addressed. The resident staff was also consulted for insights regarding licensed operators' performance. These reviews did not detect any operational events that were indicative of possible training deficiencies.

The operating tests for the week of December 5, 2011, were reviewed for quality and performance.

On December 21, 2011, the results of the Unit 2 requalification exam for year 2011 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 Significance Determination Process (SDP)."

- Crew pass rates were greater than 80 percent (pass rate was 85.7 percent)
- Individual pass rates on the dynamic simulator test were greater than 80 percent (pass rate was 91.8 percent)
- Individual pass rates on the written exam were greater than 80 percent (pass rate was 93.7 percent)
- Individual pass rates on the JPMs of the operating exam were greater than 80 percent (pass rate was 97.9 percent)
- More than 75 percent of the individuals passed all portions of the exam (85.4 percent of the individuals passed all portions of the examination)

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Observations were made of the dynamic simulator exams and JPMs administered during the week of December 5, 2011. These observations included facility evaluations of crew and individual performance during the dynamic simulator exams and individual performance of five JPMs.

The remediation plans for an individual's and one crew's failure were reviewed to assess the effectiveness of the remedial training.

Five license reactivation records were reviewed to ensure that 10 CFR Part 55.53 license conditions and applicable program requirements were met.

Operators, instructors, and training/operation's management were interviewed for feedback on their training program and the quality of training received.

Simulator performance and fidelity were reviewed for conformance to the reference plant control room.

A sample of records for requalification training attendance, program feedback, reporting, and medical examinations were reviewed for compliance with license conditions, including NRC regulations.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Six 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 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

- Week of October 31, 2011, WO C91695643, emergent work to backseat second stage reheater stop check valve CVK-08-30
- Week of November 1, 2011, planned maintenance on 115 kilovolt (kV) offsite power line 4, 345 kV line 8 and the number 12 liquid poison pump which placed in the plant in an elevated (yellow) risk condition

- Week of November 2, 2011, WO C91698942, emergent work to repair 12 TB exhaust fan
- Week of December 19, 2011, in which planned maintenance was conducted on the 12 condensate pump, condensate booster pump and containment spray loop 111 which placed in the plant in an elevated (yellow) risk condition

Unit 2

- November 7 and 8, 2011, emergent work to replace trip unit E31A-N619B which had failed isolating the reactor core isolation cooling (RCIC) and RWCU systems
- Week of December 19, 2011, in which planned maintenance was conducted on the Division 1 EDG that placed in the plant an elevated (yellow) risk condition

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - Seven samples)

a. Inspection Scope

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

- CR 2011-007548, concerning 10 CFR Part 21, "Failure to Include Seismic Input in Reactor Control Blade Customer Guidance," submitted by GE Hitachi on August 28, 2011
- CR 2011-010440, concerning degradation of a main steam isolation valve closure scram limit switch on November 21, 2011
- CR 2011-009027, concerning cracking that was discovered on the cover of Division II battery cell 13 on October 7, 2011
- CR 2011-009767, concerning the unexpected failure of a RWCU instrument channel on October 23, 2011
- CR 2011-010179, concerning the unexpected trip of HVC*ACU2B during a post maintenance surveillance test (ST) that was performed on November 10, 2011
- CR 2011-008733, concerning water in 13 condensate pump upper motor bearing oil, on November 29, 2011
- CR 2011-007525, concerning unexpected drywell leakage detection alarm H2-4-7 on Unit 1. The condition was corrected on December 1, 2011

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

Introduction. The inspectors identified a Green finding for the failure of NMPNS to follow the TS bases associated with limiting condition for operation (LCO) 3.0.2. Specifically on October 24, 2011, NMPNS entered TS 3.3.6.1 Condition B on three occasions for operational convenience.

Description. On October 23, 2011, at 0915, Unit 2 operators declared the Division I RWC system differential flow high channel inoperable when it failed a periodic channel check. As a result of the failure, operators entered LCO Condition A for TS 3.3.6.1, "Primary Containment Isolation Instrumentation," which required placing the channel in trip within 24 hours. To investigate the failure, a troubleshooting plan was subsequently developed. While implementing the troubleshooting plan on October 24, 2011, on three separate occasions at 01:52, 02:58 and 05:19, both Divisions I and II RWC system differential flow timers were placed in bypass and LCO Condition B for TS 3.3.6.1 was entered for one or more automatic functions with isolation capability not maintained. LCO Condition B for TS 3.3.6.1 allows both channels of an automatic isolation function to be inoperable for one hour. If this time limit is not met, LCO Condition F of TS 3.3.6.1 is entered which requires the affected penetration to be isolated within one hour. In each of the three instances, one channel of the RWC system differential flow high channels was returned to service within the one hour time limit allowed in LCO Condition B of TS 3.3.6.1. Both channels were bypassed for a total of 151 minutes. The troubleshooting did not identify the cause of the initial instrument failure, and as a result on October 24, 2011, at 0807, operators entered Condition F of TS 3.3.6.1 and isolated the RWC system penetration that was affected by the failed instrument channel.

The RWC system high flow channel isolation is designed to isolate the RWC system in the event a flow imbalance occurs in the RWC system which could indicate a RWC system pipe leak has occurred. When reviewing this event, the inspectors were informed by NMPNS personnel that the short duration entries into and out of LCO Condition B for TS 3.3.6.1 while conducting troubleshooting operations were accomplished to avoid having to remove the RWC system from service, which could adversely impact reactor coolant chemistry and increase radiation exposure to personnel.

TS 3.0.2 states, in part, that "Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met" The bases of TS 3.0.2 states, "Entering ACTIONS must be done in a manner that does not compromise safety. Intentional entries into ACTIONS should not be done for operational convenience." The inspectors determined that the multiple entries into and out of LCO Condition B for TS 3.3.6.1 when troubleshooting the RWC system high flow channel isolation were for operational convenience, and as such were not consistent with the bases of TS 3.0.2.

The failure to properly implement TS 3.0.2 was documented in CR 2011-009767, "Bases Behind TS 3.0.2 Was Not Correctly Applied During RWCU Priority One Issue." NMPNS' immediate corrective actions included coaching the control room personnel involved in the troubleshooting process. This issue has a cross-cutting aspect in the area of human performance in that NMPNS did not use conservative assumptions in decision making.

Analysis. The performance deficiency associated with this finding is that contrary to the bases for TS LCO 3.0.2 on October 24, 2011, NMPNS performed multiple short duration entries into LCO Condition B of TS 3.3.6.1 for operational convenience. These multiple entries delayed removal of the RWCU system from service. This action is contrary to the bases of TS LCO 3.0.2 which states, "Entering ACTIONS must be done in a manner that does not compromise safety. Intentional entries into ACTIONS should not be done for operational convenience." NMPNS troubleshooting activities compromised safety since a protective isolation feature was removed from service on multiple occasions, as part of a planned troubleshooting activity that collectively exceeded the allowed LCO time for the system. This finding is more than minor because it impacted the configuration control aspect of the Barrier Integrity Cornerstone and adversely affected the Cornerstone objective to maintain functionality of containment. The inspectors determined that the finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with IMC 0609.04, Table 4a Characterization Worksheet for Initiating Events, Mitigating Systems and Barrier Integrity Cornerstones. Specifically, the finding did not represent an actual open pathway in the physical integrity of the reactor containment. This finding has a cross-cutting aspect in the area of human performance, decision making, in that NMPNS did not use conservative assumptions in decision making when performing multiple entries into TS 3.3.6.1 [H.1.(b)].

Enforcement. Enforcement action does not apply because this performance deficiency did not involve a violation of a regulatory requirement. Specifically the bases of TS 3.0.2 are not part Appendix A of the plant TS. This issue was entered into NMPNS CAP as CR-2011-009767. Because this finding does not involve a violation and has very low safety significance, it is identified as a finding. **(FIN 05000410/2011005-01, Troubleshooting Approach Not Consistent With Technical Specification Bases)**

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications (One sample)

a. Inspection Scope

The inspectors reviewed the temporary modification described in engineering change package ECP-08-0033, "Revise High Operating or Alarm Limits from 135 degrees Fahrenheit (°F) to 160 °F for Service Water Pump 'D' Bearing Temperature," to determine whether the modification affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results, and conducted field walkdowns of the modification to verify that the temporary modification did not degrade the design bases, licensing bases, and performance capability of the affected system.

b. Findings

No findings were identified.

.2 Permanent Modifications (One sample)a. Inspection Scope

The inspectors evaluated a modification to the Unit 2 reactor recirculation pump isolation valves implemented by engineering change package ECP-11-000982, "Install Live Loaded Packing on Unit 2 Recirculation Blocking Valves 2RCS*MOV18A/18B and 2RCS*MOV10A/B." The inspectors verified that the design bases, licensing bases, and performance capability of the affected valves were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the design change, including installation of the packing gland follower piece, and gland stud assembly and Belleville washers.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – Eight samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests (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 bases 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 WO C91103878 to upgrade the capacity of the 11 liquid poison pump. The PMT was to verify expected flow rate using N1-ST-Q8A, "Liquid Poison Pump 11 and Check Valve Operability Test," Revision 00400, and to verify motor voltage and running current on October 26, 2011
- Unit 1 WO C91698942 to replace 12 TB exhaust fan drive motor MOT-203-06. The PMT was to verify correct rotation and acceptable vibration readings on November 4, 2011
- Unit 1 WO C91695610 to repair 11 TB exhaust fan FN-203-05. The PMT was to conduct vibration and noise checks at full fan speed using N1-MPM-GEN-558, "Reactor and Turbine Building Supply and Exhaust Fans," Revision 00701 on November 17, 2011

- Unit 1 WO C91706330 to replace a 5 volt direct current power supply to the rod position indication system. The PMT was to energize the replacement power supply and verify output voltage was within vendor recommended values on November 19, 2011
- Unit 1 WO C91031713 that disassembled and flushed the SW radiation monitor piping. The PMT was to leak test the SW piping that had been disassembled and verify the monitor was receiving adequate SW flow per N1-CTP-V203, "Service Water Radiation Monitor Flow Adjustment/Pump Switch/Air Purge/Pump Startup/Shutdown," Revision 02 on November 29, 2011
- Unit 1 WOs C91389912 and C90921883 that performed aging management inspections of the 102 EDG cooling water heat exchangers and preventive maintenance (PM) of the raw water pump breaker. The PMT was to verify leak tightness and proper cooling system operation using N1-ST-M4A, "EDG 102 and PB 102 Operability Test," Revision 00500 on December 2, 2011
- Unit 2 WO C91704355, to replace reactor building spent fuel heat exchanger room 'B' air temperature switch. The PMT was to verify proper operation of the switch using N2-ISP-LDS-R108, "Reactor Building Pipe Chase Temperature Instrument Channel Calibration," Revision 01000 on November 10, 2011
- Unit 2 WO C91717796 that installed test equipment in the Division III EDG air start system. The PMT was to start and run the machine using N2-OSP-EGS-M@002, "Diesel Generator and Diesel Air Start Valve Operability Test – Division III," Revision 00900 on December 1, 2011

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 - One sample)

a. Inspection Scope

During the emergent December 2011 outage at Unit 2, the inspectors observed and/or reviewed the following activities to verify that operability requirements were met and that risk, industry experience, and previous site-specific problems were considered.

- Following the plant shutdown due to excessive RCS leakage, the inspectors toured drywell elevations 249 foot, 261 foot, and 306 foot to verify that components located in the general area of 2RCS*MOV18A were not damaged by water and steam that emanated from the packing on that valve
- The inspectors attended several outage meetings where risk management activities were discussed. The inspectors also toured plant areas to verify risk management actions had been properly implemented
- The inspectors observed portions of the December 15, 2011, reactor plant startup and initial power ascension and plant heatup activities
- The inspectors observed NMPNS repair activities, and attended several outage meetings including a post scram plant operations review committee meeting
- The inspectors observed configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment out of service

Enclosure

- The inspectors observed the status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- The inspectors observed activities that could affect reactivity

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - One sample)

a. Inspection Scope

The inspectors observed performance of the following ST and/or reviewed test data of selected risk-significant structures, systems, and components 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, the test was 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 ST:

- N1-ST-W15, "Manual Scram Instrument Channel Test," Revision 00401 completed on November 21, 2011

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – Two samples)

Safety System Functional Failures

a. Inspection Scope

The inspectors sampled NMPNS' submittals for the Safety System Functional Failures performance indicator for both Units 1 and 2 for the period of October 1, 2010, through September 30, 2011. To determine the accuracy of the performance indicator data reported during those periods, inspectors used definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." The inspectors reviewed NMPNS' operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, condition reports, event reports and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

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

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 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 Annual Sample: Effectiveness of Corrective Actions for Unit 2, Historical Reactor Water Clean-up Pumps Seal Failures (One sample)

a. Inspection Scope

This inspection was conducted to assess the effectiveness of NMPNS' planned and implemented corrective actions to address historical Unit 2 RWCU pump seal failures. Specifically, RWCU pump mechanical seal failures at Unit 2 have been occurring since original plant startup in 1987. Approximately twenty three seal failures have occurred, and some failures have been very premature; e.g. within a few days of seal repair or replacement (CR-1998-03286 and 2010-001649). Dose rates in the area are high and seal repairs cause significant radiation exposure to workers. RWCU pump mechanical seal failure is a known General Electric boiling water reactor (BWR) industry problem in the United States.

The Unit 2 RWCU system consists of two 50 percent (%) capacity pumps and four filters. The system is designed to maintain high reactor water quality by removing corrosion products and impurities from the reactor. The system is also used to remove water to control reactor pressure vessel level during plant shutdown and startup evolutions while at low power levels. Portions of the RWCU system are part of the reactor coolant pressure boundary, and therefore perform a safety function to detect a break or leak in the RWCU system and to isolate the leak to prevent exceeding offsite dose limits.

The inspectors reviewed the associated root cause and related assessments to determine the effectiveness of the corrective actions. The inspectors reviewed NMPNS' UFSAR, the applicable TS, the associated maintenance rule scope, system health reports, and Unit 2 RWCU pump Vendor Specification N2U05500PUMP004, to

determine the design requirements and overall performance of the RWCU pumps, the mechanical seals, and associated components. The inspectors also interviewed engineers, plant operators, licensing and management personnel, and performed a visual video camera inspection of the pumps and seals. In addition, the inspectors reviewed ST procedures to ensure that testing was being performed in accordance with the current licensing basis.

b. Findings and Observations

No findings were identified.

A number of root cause analyses and evaluations have been performed due to RWCU pump seal failures. In 2010, NMPNS recognized that several minor system/pump design changes and various maintenance and system operating improvements have been implemented over the years without a significant improvement in the life of the mechanical seal. The corrective actions taken to date have typically been symptom based and have not entirely addressed the causes of the seal failures. A Category I, root cause evaluation was performed by NMPNS under CR-2010-010023, to fully understand this long standing issue.

The inspectors noted the root cause analysis in CR-2010-010023 was detailed and adequately recognized the chronic problems with Unit 2 RWCU pump seal leakage. The inspectors verified that mechanical maintenance technicians have taken critical dimensional checks to verify critical clearances and pump condition. Also, independent vendors experienced in mechanical seal failure analysis were procured to help determine the cause of the seal failures and to develop recommendations and corrective actions to minimize recurrence. The engineering evaluation included historical reviews, interviews with maintenance, operations and engineering personnel, and vendor representatives. The evaluation included an extent of condition review which concluded that Unit 1 RWCU pumps do not experience similar mechanical seal problems primarily because they operate in milder conditions (lower suction temperature and suction pressure) than Unit 2 pumps. In addition, unlike the Unit 2 RWCU configuration, the Unit 1 RWCU pumps are located downstream of the filters which reduces the likelihood of small particles lodging between seal faces. The root cause was determined to be a less than adequate original design of the Unit 2, RWCU pumps and system configuration. Contributing factors included; 1) inadequate management decision making; 2) inadequate procedures; and 3) inadequate maintenance practices. The evaluation determined that major plant modifications such as pump replacements or system pipe modifications had been necessary at almost all of the US BWR plants to resolve chronic RWCU pump seal failures.

Corrective actions performed at NMPNS thus far include the following:

- Replaced the 'A' RWCU pump with an improved design to achieve longer operation (greater than three years versus less than six months) without mechanical seal leakage
- Implemented operating and maintenance procedure improvements to enhance pump re-assembly, pump warm-up and system filling and venting

Enclosure

- Initiated a long term solution to replace the 'A' RWCU pump with a new 100% capacity seal-less pump design to align with industry standards, and to achieve longer operating periods without repairs (target life of six years). This design will allow operation with one pump, using the second pump as an on-line spare

The inspectors concluded that although RWCU pump seal leakage has resulted in increased radiation exposure to workers and chemistry control issues since original start-up in 1987, there were no performance deficiencies. This is because safety related components have not been directly impacted, and over the years a number of root cause analyses and evaluations have been performed and multiple corrective actions have been implemented. Specifically, the new seal and pump combination that has already been installed on the 'A' RWCU pump (and planned, scheduled and budgeted for the 'B' RWCU pump) has improved reliability (life of the mechanical seals) in that failures have gone from less than every six months to approximately every three years. In addition, NMPNS has a high priority, Category I CR and associated long term corrective actions to replace the seals on one of the two RWCU pumps with a new seal-less 100% capacity pump which is expected to eliminate seal leakage and improve system reliability.

.3 Semi-Annual Trend Review (One sample)

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 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 corrective action program backlogs. The inspectors also reviewed NMPNS' CAP database for the third and portions of the fourth quarters of 2011 to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily CR review (Section 40A2.1). The inspectors reviewed NMPNS' quarterly trend report for the first quarter of 2011, conducted under CNG-CA-1.01-1007, "Performance Improvement Program Trending and Analysis," 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. No trends were noted by the inspectors that indicated a potential safety significant issue. The inspectors verified that NMPNS appropriately identified trends and captured them in the CAP, performance monitoring program, system health reports, and quality assurance assessments. Examples of trends identified by NMPNS were trends in the areas of procedure use and adherence, and radiation monitor and control rod drive system performance.

.4 Annual Sample: Unresolved Item (URI) 05000220, 05000410/2011008-01: Inconsistencies Between Non-Safety Related Breaker Preventive Maintenance Templates and Station Practices (One sample)

a. Inspection Scope

This URI was opened in inspection report 05000220/410/2011008 pending inspector determination if the difference between the PM templates and actual station practices was a performance deficiency and if this issue was more than minor. The characterization of this issue as a finding and its risk significance are discussed below. This URI is closed.

b. Findings

Introduction. The inspectors identified a Green Finding for NMPNS' failure to meet the Constellation fleet standard for establishing and implementing PM templates. Specifically, in 2009, NMPNS failed to implement PM templates for non-safety related (NSR) molded case circuit breakers (MCCB) in accordance with the guidance in the new fleet standard.

Description. In 2005, NMPNS transitioned to a new work management system and transferred existing PM templates into this system. In 2006, NMPNS undertook an effort to classify components as critical, significant, economic, or run-to-failure. At this time, PMs for NSR MCCBs were removed from the work schedule, to be re-added after the classification was completed. Later in 2006 through 2007, NMPNS conducted an analysis to reconcile existing PM templates with new fleet templates. For NSR MCCBs, this analysis concluded that the existing PM templates met the requirements in the fleet template, and no changes to the template were required. In 2008, NMPNS identified that the PM templates for NSR MCCBs had not been re-added to the work schedule. NMPNS drafted PM change requests to re-establish these PMs; however, the change requests were never processed.

In 2009, fleet engineering standard CNG-FES-039, "Preventive Maintenance Template Development, Review, Analysis and Application," was issued. This standard required that, "All PM Tasks or maintenance strategies that are outlined in the PM template for a particular component shall be reviewed and applied in accordance with the PM template to the extent achievable. Where a PM template task or maintenance strategy is not appropriate for application, a technical deviation is required if the PM template is not applied as written." However, NMNPS did not perform PM template required maintenance on NSR MCCBs, and did not provide a technical deviation in the PM basis. This standard also stated that "PM template deviations for critical components should be rarely applied and should only be reserved for severe/hardship situations," for non-conservative deviations. Contrary to this guidance, NMPNS did not meet this guidance for critical NSR MCCBs. The PM templates for NSR MCCBs required a "clean and inspect" PM to be performed on a 10 year frequency, but that activity was not performed on 35 critical NSR MCCBs on Unit 1 and 391 on Unit 2 (this activity was only performed on 123 critical MCCBs total). Failure of a critical NSR MCCB could result in issues such as a plant transient.

On June 25, 2011, there was a fire in a non-critical NSR MCCB, and NMNPS declared an Unusual Event. The apparent cause evaluation for this event identified failure to perform a "clean and inspect" PM as the cause of the fire. As a corrective action for this event, NMPNS evaluated the PM templates for NSR MCCBs to determine if "clean and inspect" PMs should be added to the PM templates. During this review, NMPNS

determined that the "clean and inspect" PM should be implemented for all critical and some significant NSR MCCBs. However, NMPNS failed to identify that PM templates for NSR MCCBs were not implemented in accordance with the guidance in CNG-FES-039. During investigation into this issue, NMPNS identified that when CNG-FES-039 was issued in 2009 it was not disseminated to all appropriate engineering personnel, or implemented.

The inspectors determined that the finding has a cross-cutting aspect in the human performance area, work practices component, in that NMPNS did not implement procedures. NMPNS entered the failure to meet CNG-FES-039 into their corrective action program as CR-2011-011000 and CR-2011-011045 to evaluate corrective actions needed to ensure PM templates for NSR MCCBs are implemented in accordance with the guidance in the standard. NMPNS also intends to evaluate the extent of condition for PM templates on other components.

Analysis. The inspectors determined that failure to ensure that PM templates for NSR MCCBs were implemented in accordance with fleet engineering standards was a performance deficiency within NMPNS's ability to foresee and correct, and should have been prevented. The inspectors determined that the finding was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, continued failure to perform the "clean and inspect" PM on critical NSR MCCBs could lead to a failure that could cause a plant transient. This was demonstrated by the internal operating experience at NMPNS and NRC Information Notice 2008-18, "Loss of a Safety-Related Motor Control Center Caused by a Bus Fault," that documented failures at other sites.

The inspectors evaluated the finding using IMC 0609.04, Phase 1 – Initial Screening and Characterization of Findings, Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems and Barrier Integrity Cornerstones." The inspectors determined the finding to be of very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The inspectors determined that the finding has a cross-cutting aspect in the human performance area, work practices component, in that NMPNS did not implement procedures. Specifically, NMPNS failed to ensure that CNG-FES-039 was implemented after it was issued in 2009 [H.4.(b)].

Enforcement. This finding does not involve enforcement action because no regulatory requirement violation was identified. Because this finding does not involve a violation and has very low safety significance, it is identified as a finding. **(FIN 05000220, 05000410/2011005-02, Failure to Meet Fleet Standards for Preventive Maintenance Templates)**

4OA3 Followup of Events and Notices of Enforcement Discretion (71153 – Three samples)

- .1 (Closed) Licensee Event Report 05000410/2011-002-00: Reactor Shutdown Due to Reactor Coolant System Unidentified Leakage Above Technical Specification Limits

On August 6, 2011, NMPNS shut down Unit 2 after identifying that unidentified RCS leakage into the drywell had exceeded the TS limits. Following a drywell entry, the

source of the leakage was found to be stem packing failure on recirculation pump discharge isolation valve 2RCS*MOV18A. Other aspects of this event are discussed in Section 4OA3.4 of NRC Integrated Inspection Report 05000220/2011004 and 05000410/2011004 in which no performance deficiencies were found. The inspectors did not identify any new issues during review of the LER. This LER is closed.

.2 (Closed) Licensee Event Report 05000410/2011-003-00: Reactor Shutdown Due to an Unisolatable Leak on a Feedwater Pump Minimum Flow Line

On August 10, 2011, during power ascension from an outage, with the reactor at approximately 15 percent of rated thermal power, NMPNS identified a leak from a vent pipe connected to the 'A' feedwater pump minimum flow line. The leak resulted from fatigue failure of a socket weld. A self-revealing finding concerning this issue is discussed in Section 4OA3.5 of NRC Integrated Inspection Report 05000220/2011-004 and 05000410/2011004. The inspectors did not identify any new issues during the review of the LER. This LER is closed.

.3 Technical Specification-Required Shutdown Due To An Increase in Unidentified Reactor Coolant System Leakage

a. Inspection Scope

On December 9, 2011, at 10:46 a.m., NMPNS Unit 2 commenced a TS-required shutdown due to an increase in unidentified RCS (drywell) leakage of greater than two gallons per minute (gpm) within the previous 24-hour period. At 9:03 a.m. operators had identified and commenced monitoring of increasing drywell leakage. Unidentified leakage reached a maximum of 3.7 gpm. In accordance with procedures, operators completed a controlled reactor shutdown and reached the hot shutdown condition at 11:17 p.m. The plant was taken to cold shutdown on December 10 at 6:13 p.m. Drywell leakage decreased as expected as RCS pressure decreased. Following a drywell entry, the cause of the rise in leakage was determined to be from the 'A' recirculation pump discharge isolation valve packing.

The inspectors responded to the control room and observed operators' responses to the event. Operators responded in accordance with the TSs and normal operating procedures. The inspectors verified that NMPNS appropriately characterized the event in accordance with its emergency plan procedures and notified the NRC and state government authorities in a timely manner.

The inspectors reviewed the circumstances surrounding the event. The inspectors monitored startup preparation activities and corrective actions through plant walkdowns, attendance at outage update meetings, discussions with plant personnel, and review of records.

b. Findings

Introduction. A Green self-revealing NCV of TS 5.4.1, "Procedures," was identified for NMPNS' failure to properly implement S-MMP-GEN-201, "Site Valve Packing Procedure," Revision 00600 when maintenance personnel repacked recirculation pump

discharge isolation valve 2RCS*MOV18A in August 2011. As a result, on December 9, 2011, the packing for valve 2RCS*MOV18A failed and unidentified RCS leakage increased above the TS limit of a two gpm increase per 24 hours forcing a plant shutdown.

Description. Due to leakage identified in August 2011, the packing of valve 2RCS*MOV18A was removed and replaced. In accordance with Attachment 1 step 1.2.1 of procedure S-MMP-GEN-201, the stem and stuffing box were inspected for scratches, nicks, gouges, and pitting and documented in work order C91530786 as satisfactory for new packing installation. However, when the stem and stuffing box were inspected on December 9, 2011, following a plant shutdown, NMPNS identified scoring marks and a 10 mil burr on the valve stem. NMPNS determined that following the August 2011 valve repack, during valve stroking for packing consolidation, the burr scored the inner diameter of a carbon packing bushing and damaged the packing resulting in leakage that led to the December 2011 plant shutdown.

The failure to properly implement S-MMP-GEN-201 during the August 2011 valve repack activity was documented in CR 2011-010909. NMPNS' immediate corrective actions were to repair the valve stem and install a live loaded packing system on valves 2RCS*MOV 18A and 2RCS*MOV18B. This finding has a cross-cutting aspect in the area of human performance, work control, because NMPNS did not define and effectively communicate expectations regarding procedural compliance and personnel did not follow procedures.

Analysis. The failure to have properly performed a repacking of the recirculation pump discharge isolation valve in August 2011 is a performance deficiency. Specifically, inadequate work practices led to damage of the valve stem and stuffing box that directly contributed to leakage from the valve packing on December 9, 2011, that exceeded the TS limit of greater than a two gpm increase in less than 24 hours. This finding is more than minor because it reasonably could be viewed as a precursor to a more significant event and adversely impacted the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding challenged the availability and reliability of a mechanical RCS pressure boundary.

This finding was evaluated using IMC 0609, "Significance Determination Process," Attachment 04, "Phase 1-Initial Screening and Characterization of Findings," Table 4a, and determined to require further evaluation because the as-found leakage exceeded a TS RCS leakage limit. A Region I Senior Reactor Analyst (SRA) conducted a qualitative risk assessment to characterize the potential increase in core damage frequency as a result of the identified RCS leakage rate and pathway. Based upon NMPNS' estimate of 4 gpm maximum leakage, this amount of RCS leakage is less than half the lower bounds of the "very small loss of coolant accident/leak rate" category (10 to 100 gpm range). Leak rates in the "very small" category are typically compensated for by routine operation of the control rod drive system and significantly minimized by the high volume operation of the condensate/feedwater system. Accordingly, the increase in core damage frequency as a result of this identified RCS leak rate and pathway is inconsequential. This finding is of very low safety significance (Green). This finding has

a cross-cutting aspect in the area of human performance, work control because NMPNS did not define and effectively communicate expectations regarding procedural compliance and personnel did not follow procedures during their inspection of the valve stem [H.4.(b)].

Enforcement. TS 5.4.1 requires that written procedures shall be established, implemented, and maintained covering activities as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Appendix A, section 9 requires that maintenance that can affect the performance of safety-related equipment should be pre-planned and performed in accordance with written procedures appropriate to the circumstances. Step 1.2.1 of Attachment 1 of S-MMP-GEN-201, "Site Valve Packing Procedure," Revision 00600 requires inspection of a valve stem and packing stuffing box for scratches, nicks, gouges, and pitting. Contrary to the above, on August 9, 2011, NMPNS did not perform an inspection adequate to identify significant scoring and a burr on the stem of valve 2RCS*MOV18A. As a result, on December 9, 2011, the valve packing failed in service. NMPNS' immediate corrective actions were to repair the valve stem and install a live loaded packing system on valves 2RCS*MOV 18A and 2RCS*MOV18B. Because this finding is of very low safety significance and NMPNS has entered it into its CAP as CR-2011-010906, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000410/2011005-03, Failure to Follow Valve Packing Procedure)**

4OA6 Meetings, Including Exit

On January 13, 2012, the inspectors presented the inspection results to Mr. Kenneth Langdon, Site Vice President, and other members of the NMPNS staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

Enclosure

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

NMPNS Personnel

K. Langdon, Vice President
 M. Philippon, Plant General Manager
 P. Bartolini, Supervisor, Design Engineering
 J. Dean, Supervisor, Quality Assurance
 R. Dean, Training Manager
 S. Dhar, Design Engineering
 K. Dellinger, Component Engineering
 J. Dosa, Director, Licensing
 T. Fioenza, General Supervisor Program Engineering
 J. Holton, Supervisor, Systems Engineering
 G. Inch, Principle Engineer, EPU Project Manager
 J. Kaminski, Director, Emergency Preparedness
 M. Kunzwiler, Security Supervisor and Fatigue Rule Program Coordinator
 J. Leonard, Supervisor Design Engineering
 C. McClay, Senior Engineer
 F. Payne, Manager, Operations
 J. Reid, Design Engineer
 M. Shanbhag, Licensing Engineer
 P. Swift, Engineering Manager
 T. Syrell, Manager, Nuclear Safety and Security
 J. Thompson, Unit 2 General Supervisor Operations

LIST OF ITEMS OPENED, CLOSED, DISCUSSED AND UPDATED

Opened

None

Opened and Closed

05000410/2011005-01	FIN	Troubleshooting Approach Not Consistent With Technical Specification Bases
05000220,05000410/2011005-02	FIN	Failure to Meet Fleet Standards for Preventive Maintenance Templates

A-2

05000410/2011005-03

NCV

Failure to Follow Valve
Packing Procedure

Closed

05000410/2011002-00

LER

Reactor Shutdown Due to
Reactor Coolant System
Unidentified Leakage Above
Technical Specification Limits

05000410/2011003-00

LER

Reactor Shutdown Due to an
Unisolatable Leak on a
Feedwater Pump Minimum
Flow Line

05000220,
05000410/2011008-01

URI

Inconsistencies Between Non-
Safety Related Breaker
Preventive Maintenance
Templates and Station
Practices

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

N1-OP-64, Meteorological Monitoring, Revision 00500
NAI-PSH-11, Seasonal Readiness Program, Revision 00700
N2-OP-102, Meteorological Monitoring, Revision 00500
N2-PM-A001, Annual Draining and Refilling of ACU and Cooling Coils, Revision 00001

Section 1R04: Equipment Alignment

Procedures

N1-OP-16, Feedwater Booster Pump to Reactor, Revision 05100
N1-ST-Q9, Technical Support Center Emergency Ventilation System Operability Test, Revision 0600
N2-OP-53A, Control Building Ventilation System, Revision 01100

Drawings

C-18003-C, Condensate Flow P&I Diagram, Revision 5
C-18004-C, Feedwater Flow Low Pressure P&I Diagram, Revision 20
C-18005-C, Feedwater Flow High Pressure P&I Diagram, Sheet 1, Revision 42
C-18005-C, Feedwater Flow High Pressure P&I Diagram, Sheet 2, Revision 42
C-18046-C, Administrative Building Technical Support Center Ventilation System, Revision 11
F-45187-C, 480V One Line diagram and Panel Schedules TSC Area, Revision 15
12828-EE-1A, Elementary Wiring Diagram 480/277V Single Line Alternate and Addition to Admin BLDG, Revision 21
C-19436-C, Elementary Wiring Diagram 600 Volt Power Board 16 Power Circuits, Revision 39
PID-53A, Piping and Instrument Diagram Control Building Chilled Water, Revision 18

Section 1R05: Fire Protection

Procedures

N1-PFP-0101, Unit 1 Pre-fire Plans, Revision 00100
N2-FPI-PFP-0201, Unit 2 Pre-fire Plans, Revision 02

Documents

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

Section 1R11: Licensed Operator Regualification Program

Procedures

N1-SOP-1, Reactor Scram, Revision 02100
N1-EOP-1, NMP1 EOP Support Procedure, Revision 00900
N1-EOP-2, RPV Control Flowchart, Revision 01400
N1-OP-3, Reactor Cleanup System, Revision 03102

Simulator Testing

Steady-state and Normal Operating Tests (2010 and 2011)

Transient Testing (2010)

Computer Real Time Test (2011)

Operating Limits exceeded Test (2011)

License Class Reactivity Manipulations (9/2010)

Plant Down Power Comparison (10/2010)

Rapid Power Reduction Transient (3/2011)

Condition Reports

2011-000773

2011-005181

2011-003013

2010-007672

Simulator Deficiency Reports

2011-002

2009-050

2010-040

2010-051

2011-080

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

CNG-OP-4.01-1000, Integrated Risk Management, Revision 00900

N1-VALU-01, Valve Lineup and Valve Operations, Revision 02

Work Orders

C90934388

Condition Reports

2011-009788

2011-010062

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

N1-PM-@004, Full Stroke Control Rod Insertion Testing for Potential Fuel Channel Bow, Revision 00100.

N1-ISP-201-004, Drywell Floor Drain Tank/Drywell Equipment Drain Tank Level Element Calibration, Revision 00500

Documents

OE 2011-0024111, Operating Experience: 110928 – GE Hitachi (update) – Vendor notification #46230.

CNG-OP-1.01-1002, Conduct of Operability Determinations/Functionality Assessments:

GE Hitachi Safety Communication, SC 11-04, (ESL 2011-0205) Revision 0.

CNG-OP-1.01-1002, Conduct of Operability Determinations/Functionality Assessments:

GE Hitachi Safety Communication, SC 11-04, (ESL 2011-0205) Revision 1.

CNG-OP-1.01-1002, Conduct of Operability Determinations/Functionality Assessments:
 GE Hitachi Safety Communication, SC 11-04, (ESL 2011-0205) Revision 2.
 OE-2011-002411, 110928-GE Hitachi (Update) – Vendor Notification #46230
 CNG-OP-1.01-1002, Attachment 1, Operability Determination for CR-2011-007548
 S12-50HT01, Rate of Heat Increase of Condensate Pump Motor Bearing If Cooling Water
 Is Lost, dated February 24, 2005

Condition Reports

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2011-008796	2011-007525	2011-010179
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Section 1R18: Plant Modifications

Documents

ECN 2008-000079, Performance Monitoring System PMS Computer I/O List (2CEC-FP600
 &CP601), Revision 00
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 &CP601), Revision 36
 ESR 08-00812, High Temperature Condition on the “D” SWP pump following return to service,
 Revision 0000
 ECP 2008-0033, High Temperature Condition on the “D” SWP pump following return to service,
 Revision 00
 Unit 2 Service Water Pumps: Inboard Bearing Temperature Charts 1/1/2008-10/6/2011
 Unit 2 Service Water Pumps: Outboard Bearing Temperature Charts 1/1/2008-10/6/2011
 WO 06-13888

Documents

ECP- 11-000138, Install Tygon Tubing in Bubbler to Restore Intake Differential Pressure Indication

Condition Reports

2008-006248

Section 1R19: Post-Maintenance Testing

Procedures

N2-ISP-LDS-R108, Reactor Building Pipe Chase Temperature Instrument Channel Calibration,
 Revision 01000
 N1-CTP-V203, Service Water Radiation Monitor Flow Adjustment/pump Switch/Air Purge/Pump
 Startup/Shutdown, Revision 02
 N1-ST-Q8A, Liquid Poison Pump 11 and Check Valve Operability Test, Revision 00400
 N1-MPM-GEN-558, Reactor and Turbine Building Supply and Exhaust Fans, Revision 00701
 N1-CTP-V203, Service Water Radiation Monitor Flow Adjustment/pump Switch/Air Purge/Pump
 Startup/Shutdown, Revision 02
 N1-ST-M4A, EDG 102 and PB 102 Operability Test, Revision 00500
 N2-OSP-EGS-M@002, Diesel Generator and Diesel Air Start Valve Operability Test –
 Division III, Revision 00900
 N2-ISP-LDS-R108, Reactor Building Pipe Chase Temperature Instrument Channel Calibration,
 Revision 01000

Condition Reports

2011-010463

Work Orders

C91717796

C91704355

C91389912

C90921883

C91706330

C91031713

C91695610

C91698942

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C91706330

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C91031713

Section 1R20 Refueling and Other Outage Activities

Procedures

S-MAP-MAI-0115, Valve Packing Preventive Maintenance Program, Revision 0.00

N2-ISP-CNT-@002, Primary Containment Air Locks Door Seal Leakage Rate and Interlock Test, Revision 00700

N2-OSP-CNT-M003, Reactor Building Integrity Verification Test, Revision 00201

N2-OSP-CNT-M001, Primary Containment Penetration Verification Test, Revision 00802

N2-ISP-CNT-R@001, Type B Leak Rate Test, Revision 00800

N2-OP-19, Instrument and Service Air System, Revision 01900

N2-OP-101A, Plant Startup, Revision 02400

Condition Reports

2001-005894

2011-007171

2011-007606

2011-011032

Section 1R22: Surveillance Testing

Procedures

N1-ST-W15, Manual Scram Instrument Channel Test, Revision 00401

Section 40A2: Problem Identification and Resolution

Drawings

PID-11P-27, Piping & Instrumentation Diagram Service Water System, Revision 27

PID-37A-23, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 23

PID-37B-21, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 21

PID-37C, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 21

PID-37D, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 14

PID-37E, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 12

A-7

PID-37F-9, Piping & Instrumentation Diagram Reactor Water Cleanup System, Revision 0
PID-62A-15, Piping & Instrumentation Diagram DBA Hydrogen Recombiner, Revision 14
0007.212-001-044, Elementary Diagram Nuclear Steam Supply Shutoff System, Revision 5

Procedures

N2-ISP-WCS-R101, Operating Cycle Channel Calibration of the Group 6 and 7 Isolation
Including Time Delay on RWCU Differential Flow High Instrument Channels, Revision 502,
completed 10/25/11
S-ODP-OPS-0124, Control of Operator Workarounds and Burdens, Revision 0000
N2-OP-37, Reactor Water Cleanup System, Revision 2200
N2-OSP-LOG-S001, Shift Checks-Mode 1, Revision 01200

Miscellaneous

Historical Vibration Data for Reactor Water Cleanup Pumps and Motors (2WCS-P1A and 1B)
NMP, U-2 WCS System Health Report, dated 4/1/2009-6/30/2009
NMP, U-2 WCS System Health Report, dated 7/1/2009-9/30/2009
NMP, U-2 WCS System Health Report, dated 10/1/2009-12/31/2009
NMP, U-2 WCS System Health Report, dated 1/1/2010-3/31/2010
NMP, U-2 WCS System Health Report, dated 4/1/2010-6/30/2010
NMP, U-2 WCS System Health Report, dated 7/1/2010-9/30/2010
NMP, U-2 WCS System Health Report, dated 10/1/2010-12/31/2010
NMP, U-2 WCS System Health Report, dated 1/1/2011-6/30/2011

Reactor Water Cleanup System Walkdown, dated 8/31/2010
Reactor Water Cleanup System Walkdown, dated 10/19/2011

UFSAR Section 5.4.8, Reactor Water Cleanup System
Maintenance Rule Functional Details 2-WCS-F01
Maintenance Rule Functional Details 2-WCS-F02
Maintenance Rule Functional Details 2-WCS-F04
Maintenance Rule Functional Details 2-WCS-F05
Maintenance Rule Functional Details 2-WCS-F06
Maintenance Rule Functional Details 2-WCS-F07
Maintenance Rule Functional Details 2-WCS-F08
Maintenance Rule Functional Details 2-WCS-F09
Maintenance Rule Functional Details 2-WCS-F10

SL-010542, Nine Mile Point Unit 2, Evaluation of Alternatives for WCS Pump Modification,
Revision 0, dated May 2011
N2U05500 Pump 004, Union Pump Co. Union Pump Type 3x4x13 NTS, Pump Instructional
Manual, Revision 6, dated 8/14/200
CNG-AM-1.01-1003, NMP, Units 1 and 2, Top 10 Material Condition List, Revision 0600
T.S Sections 1.0, 3.0, 3.3.6.1, Limiting Condition of Operations
T.S Sections B 3.0, Limiting Condition For Operation (LCO) Applicability Bases
NMP Daily Fleet OE Report for Monday July 11, 2011

Work Orders

080190800
080190900

Condition Reports

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1993-000563	1998-011819	2011-009574
1994-008042	1998-012911	2011-009585
1995-007191	1999-008762	2011-009766
1995-006873	1999-019501	2011-011444
1995-001459	2002-003091	2011-011422
1996-008487	2010-001649	2011-011437
1997-012424	2010-010023	2011-011267
1997-007695	2010-001658	2011-011005
1998-001457	2010-009745	2011-011386
1998-003286	2011-000464	

Section 40A3: Followup of Events and Notices of Enforcement Discretion

CNG-OM-1.01-3000, Issue Response Team, Revision 00200
 CNG-OP-1.01-1001, Operational Decision Making, Revision 00300
 CNG-MN-1.01-1002, Troubleshooting, Revision 00100
 S-MMP-GEN-201, Site Valve Packing Procedure, Revision 00600

Work Orders

C91530786

Condition Reports

2011-010906

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
BWR	boiling water reactor
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
CRACS	control room air conditioning system
°F	degrees Fahrenheit
ECP	engineering change package
EDG	emergency diesel generator
FIN	Finding
gpm	gallons per minute
IMC	Inspection Manual Chapter
JPM	job performance measure
kV	kilovolt
LCO	limiting condition for operation
LER	licensee event report
MCCB	molded case circuit breaker
NCV	non-cited violation
NEI	Nuclear Energy Institute
NMPNS	Nine Mile Point Nuclear Station, LLC
NRC	Nuclear Regulatory Commission
NSR	non-safety related
PARS	Publicly Available Records
%	percent
PI	performance indicator
PM	preventive maintenance
PMT	post-maintenance test
RCIC	reactor core isolation cooling
RCS	reactor coolant system
RTP	rated thermal power
RWCU	reactor water cleanup
SDP	significance determination process
ST	surveillance test
SW	service water
TB	turbine building
TS	technical specification
UFSAR	updated final safety analysis report
URI	unresolved item
WO	work order