



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

July 30, 2007

Mr. Keith J. Polson  
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 05000220/2007003 and 05000410/2007003

Dear Mr. Polson:

On June 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station Unit 1 and Unit 2. The enclosed integrated inspection report documents the inspection results discussed on July 13, 2007, with Mr. Mark Schimmel 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 very low safety significance (Green). Both of these findings were determined to involve a violation of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the non-cited violations noted in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-001; and the NRC Senior Resident Inspector at Nine Mile Point Nuclear Station.

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

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Sincerely,

**/RA/**

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

Docket No.: 50-220, 50-410  
License No.: DPR-63, NPF-69

Enclosure: Inspection Report 05000220/2007003 and 05000410/2007003  
w/Attachment: Supplemental Information

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T. Judson, Central NY Citizens Awareness Network  
D. Katz, Citizens Awareness Network  
C. Adrienne Rhodes, Chairman and Executive Director,  
State Consumer Protection Board

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-220, 50-410

License No.: DPR-63, NPF-69

Report No.: 05000220/2007003 and 05000410/2007003

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

Facility: Nine Mile Point Nuclear Station, Units 1 and 2

Location: Lake Road  
Oswego, NY

Dates: April 1, 2007 through June 30, 2007

Inspectors: L. Cline, Senior Resident Inspector  
E. Knutson, Resident Inspector  
K. Diederich, Reactor Inspector  
R. Fernandes, Resident Inspector  
J. Furia, Senior Health Physicist  
G. Johnson, Operations Engineer  
K. Kolaczyk, Senior Resident Inspector  
M. Marshfield, Resident Inspector  
N. Seiller, Project Engineer

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

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## SUMMARY OF FINDINGS

IR 05000220/2007003, 05000410/2007003; 04/01/2007 - 06/30/2007; Nine Mile Point Nuclear Station, Units 1 and 2; Refueling and Other Outage Activities.

The report covered a thirteen-week period of inspection by resident inspectors and announced inspections by a senior health physicist and several regional specialist inspectors. Two Green non-cited violations (NCVs) 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). 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.

### A. NRC-Identified and Self-Revealing Findings

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

- Green. A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," occurred when NMPNS failed to identify and correct a condition adverse to quality, associated with two of the four Unit 1 intermediate range monitor (IRM) instrument channels, when they failed to perform vendor recommended testing during refueling outage (RFO) 19. As a result, operators identified two of the four IRM instrument channels, associated with the 12 reactor protection system (RPS) trip, inoperable during the startup on April 14, 2007. Operators immediately halted the startup and maintenance repaired the signal cable connections. NMPNS entered the issue into its corrective action program (CAP) as condition report (CR) 2007-2359.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding to be of very low safety significance because the finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because NMPNS management failed to use conservative assumptions in decision making and inappropriately deleted vendor recommended testing designed to detect degraded IRM system cable connections (H.1.b). (Section 1R20.1)

#### **Cornerstone: Barrier Integrity**

- Green. A self-revealing Green NCV of Unit 1 TS 6.4, "Procedures," occurred on April 2, 2007, when operators failed to resolve a position discrepancy identified with respect to the emergency cooling system (EC) vent line isolation valves prior to reactor startup following RFO 19. This resulted in the EC vent line isolation

valves being left open, which represented an open pathway in the physical integrity of the reactor coolant and primary containment system boundaries. Upon discovery of the degraded barrier, operators immediately halted the startup and closed the valves. NMPNS entered the issue into its CAP as CR 2007-2380.

The finding is greater than minor because it is associated with the human performance attribute of the Barrier Integrity cornerstone and adversely affects the cornerstone objective to provide reasonable assurance that reactor coolant and containment system physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors determined the finding to be of very low safety significance because even though the open valves were associated with the integrity of the reactor coolant system and containment they did not contribute to large early release frequency because the EC steam line vent to the reactor building (RB) equipment drain tank is less than two inches in diameter. This finding has a cross-cutting aspect in the area of human performance because operators failed to follow procedures (H.4.b). (Section 1R20.2)

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

Nine Mile Point Unit 1 began the inspection period in RFO 19 on March 17, 2007. On April 14, 2007, operators commenced plant startup and reached full power on April 18, 2007. On May 16, 2007, operators shut down the unit due to a problem with the main turbine oil system. The unit was restored to full power on May 24, 2007. On May 26, 2007, power was reduced to 80 percent to withdraw a control rod that was inserted for drive system maintenance. Full power was restored later that day and remained there the rest of the inspection period.

Nine Mile Point Unit 2 began the inspection period at full power. On June 9, 2007, operators reduced power to 65 percent to support switching the operating and standby main feedwater pumps and other planned maintenance. Full power was restored on June 10, 2007, and remained there the rest of the inspection period.

## **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

### 1R01 Adverse Weather Protection (71111.01 - Two samples)

#### a. Inspection Scope

The inspectors completed two adverse weather protection samples (one per unit). The inspectors verified the seasonal readiness for Unit 1 and Unit 2 in accordance with NMPNS procedure NAI-PSH-11, "Seasonal Readiness Program." The inspectors reviewed and verified completion of the operations department warm weather preparation checklists contained in procedures N1-OP-64, "Meteorological Monitoring, Attachment 2: Hot Weather Preparation Checklist" and N2-OP-102, "Meteorological Monitoring, Attachment 3: Hot Weather Preparation Checklist," for Units 1 and 2 respectively. The inspectors reviewed the procedural limits and actions associated with elevated lake temperature and walked down accessible areas of the buildings to assess the effectiveness of the ventilation systems. The inspectors reviewed seasonal readiness evaluations performed by system engineers in accordance with NAI-PSH-11 Attachment 2 for select Unit 1 and Unit 2 systems, and verified system lineups for the emergency diesel generators (EDGs) and control room air-conditioning systems for each unit. The inspectors reviewed NMPNS procedure S-ODP-OPS-0112, "Off-site Power Operations and Interface," to verify that the appropriate information was exchanged between the transmission system operator and the plant when issues arose that impact the offsite power system. Documents reviewed for this inspection are listed in the Attachment.

#### b. Findings

No findings of significance were identified.



## 1R04 Equipment Alignment

### .1 Partial System Walkdown (71111.04Q - Four samples)

#### a. Inspection Scope

The inspectors performed a partial system walkdown to verify a train was properly restored to service following maintenance or evaluate the operability of one train while the opposite train was inoperable or out of service for maintenance and testing. The inspectors compared system lineups to system operating procedures (OPs), system drawings, and the applicable chapters in the updated final safety analysis report (UFSAR). The inspectors also verified the operability of critical system components by observing component material condition during the system walkdown. Documents reviewed during this inspection are listed in the Attachment. The inspectors performed a partial walkdown of the following systems:

- Unit 1 reactor building (RB) emergency ventilation system on May 15, 2007;
- Unit 1 liquid poison system on May 23, 2007;
- Unit 2 high pressure core spray system on May 1, 2007; and
- Unit 2 residual heat removal subsystem 'A' on May 30, 2007.

#### b. Findings

No findings of significance were identified.

### .2 Complete System Walkdown (71111.04S - One sample)

#### a. Inspection Scope

The inspectors performed a complete system alignment inspection of the Unit 1 emergency service water (SW) system to identify any discrepancies between the existing equipment lineup and the specified lineup. During the inspection, system drawings and OPs were used to verify proper equipment alignment and operational status. The inspectors reviewed the open maintenance work orders (WO) associated with the system for any deficiencies that could affect the ability of the system to perform its function. Documentation associated with unresolved design issues such as temporary modifications, operator work arounds, and items tracked by plant engineering were also reviewed to assess their collective impact on system operation. In addition, the inspectors reviewed the CR database to verify that equipment alignment problems were being identified and appropriately resolved. Documents reviewed for this inspection are listed in the Attachment.

#### b. Findings

No findings of significance were identified.

## 1R05 Fire Protection

### .1 Quarterly Inspection (71111.05Q - Eight samples)

#### a. Inspection Scope

The inspectors toured eight areas important to reactor safety to evaluate NMPNS control of transient combustibles and ignition sources; and the material condition, operational status, and operational lineup of fire protection systems including detection, suppression and fire barriers. The inspectors used procedure GAP-INV-02, "Control of Material Storage Areas," the fire hazards analysis, and pre-fire plans to perform the inspection. Other documents reviewed are listed in the Attachment. The areas inspected included:

- Unit 1 Fire Zone R1A, General Area West 261 foot elevation;
- Unit 1 Fire Zone R1A, General Area West 281 foot elevation;
- Unit 1 Fire Zone R1A, General Area West 298 foot elevation;
- Unit 1 Fire Zone R1A, General Area West 318 foot elevation;
- Unit 2 RB elevation 175 foot elevation;
- Unit 2 RB elevation 196 foot elevation;
- Unit 2 RB elevation 215 foot elevation; and
- Unit 2 RB elevation 240 foot elevation.

#### b. Findings

No findings of significance were identified.

### .2 Annual Inspection (71111.05A - One sample)

#### a. Inspection Scope

The inspectors completed one annual fire drill observation inspection sample. The inspectors observed a fire brigade drill on May 16, 2007, in the Unit 2 600 Volt switchgear room. The inspectors observed brigade performance during the drill to evaluate the following: donning and use of protective equipment; fire brigade leader command and control; fire brigade response time; radio communications; and use of pre-fire plans. The inspectors attended the post-drill critique and reviewed the disposition of issues and deficiencies identified during the drill. The inspectors also verified that all fire fighting equipment used during the drill was returned to a condition of readiness. Documents reviewed for this inspection are listed in the Attachment.

#### b. Findings

No findings of significance were identified.

## 1R06 Flood Protection Measures

### .1 Internal Flooding (71111.06 - Two samples)

#### a. Inspection Scope

The inspectors completed two internal flooding inspection samples. The inspectors reviewed the individual plant examination (IPE) and UFSAR for Unit 1 and 2 concerning internal flooding events and completed walkdowns of two areas per unit in which flooding could have a significant impact on risk. For Unit 1, the cable spreading room and EDG rooms were reviewed. For Unit 2, the emergency standby switchgear and EDG rooms were reviewed. Documents reviewed during this inspection are listed in the Attachment.

#### b. Findings

No findings of significance were identified.

### .2 External Flooding (71111.06 - Two samples)

#### a. Inspection Scope

The inspectors completed two external flood protection inspection samples, one sample for each unit. The inspectors reviewed the IPE and UFSARs for Unit 1 and 2 concerning external flooding events at the site. The inspection included a walkdown of accessible areas of each unit's perimeter to look for potential susceptibilities to external flooding and verify the assumptions included in each unit's external flooding analysis. The inspectors also reviewed relevant abnormal and emergency plan procedures. Documents reviewed during this inspection are listed in the Attachment.

#### b. Findings

No findings of significance were identified.

## 1R07 Heat Sink Performance (71111.07A - One sample)

#### a. Inspection Scope

The inspectors completed one annual heat sink performance inspection sample. The inspectors reviewed the testing and evaluation of test results for a RB general area unit cooler, 2HVR\*UC404C, performed in accordance with NMPNS procedure N2-TTP-HVR-@403, "Performance Evaluation Test for Unit Cooler 2HVR\*UC404A, B, C, and D." The inspectors reviewed performance data to verify that heat exchanger operation was consistent with its design basis. The inspectors conducted interviews with design engineers, system engineers, and the heat exchanger program manager to ensure the test was properly controlled and to verify the overall condition of the heat exchanger. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q - Two samples)

a. Inspection Scope

The inspectors completed two licensed operator requalification training program (LORT) inspection samples. Documents reviewed for this inspection are listed in the Attachment. For each scenario observed, the inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift manager. During the scenario the inspectors also compared simulator performance with actual plant performance in the control room. The following simulator scenarios were observed:

- On May 22, 2007, the inspectors observed Unit 2 LORT to access operator and instructor performance during a scenario involving a loss of feedwater heating, an inadvertent opening of a safety relief valve, a trip of the running control rod drive pump and a reactor coolant leak into containment. The inspectors evaluated the performance of risk significant operator actions including the use of Emergency Operating Procedures (EOPs), N2-EOP-RPV, "RPV Control" and N2-EOP-PC, "Primary Containment Control."
- On May 23, 2007, the inspectors observed Unit 1 LORT to access operator and instructor performance during a scenario involving a failure of the electronic pressure regulator, a loss of 12 feedwater pump, the loss of 115 kV offsite power line and a steam leak inside containment. The inspectors evaluated the performance of risk significant operator actions including the use of EOPs, N1-EOP-2, "RPV Control," N1-EOP-4, "Primary Containment Control," and N1-EOP-8, "RPV Blowdown."

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - Six samples)

a. Inspection Scope

The inspectors completed six maintenance effectiveness routine inspection samples. The inspectors reviewed performance-based problems or performance and condition history reviews involving selected in-scope structures, systems or components (SSCs) to assess the effectiveness of the maintenance program. Reviews focused on: proper maintenance rule scoping in accordance with 10 CFR Part 50.65; characterization of reliability issues; tracking system and component unavailability; 10 CFR Part 50.65 (a)(1) and (a)(2) classifications; identifying and addressing common cause failures,

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trending key parameters, and the appropriateness of performance criteria for SSCs classified (a)(2), as well as, the adequacy of goals and corrective actions for SSCs classified (a)(1). The inspectors reviewed system health reports, maintenance backlogs, and maintenance rule basis documents. Other documents reviewed for the inspection are listed in the Attachment. The following six maintenance rule inspection samples were reviewed:

- Unit 1 containment spray loop isolation valve performance;
- Unit 1 primary containment pressure control system performance;
- Unit 1 shutdown cooling isolation valve IV-38-02;
- Unit 2 safety-related uninterruptible power supply failures;
- Unit 2 turbine generator gland seal and exhaust steam system performance; and
- Unit 2 SW to circulating water flow control/isolation valve performance.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Eight samples)

a. Inspection Scope

The inspectors reviewed risk assessments for the eight work weeks listed below. The inspectors verified that risk assessments were performed in accordance with GAP-OPS-117, "Integrated Risk Management," and that risk of scheduled work was managed through the use of compensatory actions and schedule adherence. Inspectors reviewed that applicable contingency plans were properly identified in the integrated work schedule. Documents reviewed for the inspection are listed in the Attachment.

Unit 1

- Week of April 23, 2007, that included planned maintenance on the 13 RB closed loop cooling heat exchanger and surveillance testing for the 112 containment spray pump and the 102 EDG.
- Week of May 14, 2007, that included planned maintenance to replace the 11 reactor feed water pump controller and a Scriba 345 kV switchyard line 8 outage to support grid related maintenance.
- Week of June 4, 2007, that included 11 high pressure coolant injection system control calibration and planned maintenance in the James A. FitzPatrick 115 kV switchyard that potentially affected the Unit 1 115 kV offsite power supply.
- Week of June 11, 2007, that included EDG 103 testing, planned maintenance in the James A. FitzPatrick 115 kV switchyard that potentially affected the Unit 1

115 kV offsite power supply, and 112 core spray pump preventative maintenance.

### Unit 2

- Week of April 23, 2007, that included planned electrical maintenance and testing on high pressure core spray pump breaker, Division 3 EDG testing and 'E' SW pump and strainer planned maintenance.
- Week of April 30, 2007, that included planned electrical maintenance on the 'B' reserve station service transformer, Division 2 EDG instrumentation maintenance and testing, and Division 2 SW valve power supply breaker maintenance.
- Week of May 14, 2007, that included planned maintenance to replace switch S34A-2ADSA01 in the Division 1 automatic depressurization system and a Scriba 345 kV switchyard line 8 outage to support grid related maintenance.
- Week of June 4, 2007, that included Division 2 EDG testing, Division 2 safety-related switchgear loss of offsite power/loss of coolant accident testing, and main generator 345 kV output breaker troubleshooting and corrective maintenance.

#### b. Findings

No findings of significance were identified.

### 1R15 Operability Evaluations (71111.15 - Seven samples)

#### a. Inspection Scope

The inspectors reviewed the operability evaluations associated with the seven CRs listed below. The inspectors evaluated the acceptability of the determinations, the use and control of compensatory measures, and compliance with TS. The inspectors' review verified that the operability determinations were made as specified by procedure CNG-NL-1.01-1003, "Conduct of Operability Determinations." The technical adequacy of the determinations was reviewed and compared to the TS, UFSAR, technical requirements manual, and associated design basis documents. Other documents reviewed for this inspection are listed in the Attachment. The following seven evaluations were reviewed:

- CR-2007-1474 concerning the failure of containment spray loop isolation valve 80-35 to open during restoration from surveillance procedure N1-ST-R2, "LOCA and EDG Simulated Auto Initiation Test;"
- CR-2007-2480 concerning the Unit 1 torus to drywell vacuum breaker open alarm received while adding nitrogen to the Unit 1 drywell;
- CR-2007-2822 concerning the Unit 1 Yarway reactor vessel level indication bias;
- CR-2007-3549 concerning the Unit 1 turbine emergency trip device lockout sleeve stuck in the lockout position;

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- CR 2007-1125 concerning Unit 2 SW pump 'A' suction expansion joint that was found to be extended to greater than its design length;
- CR 2007-1977 concerning water intrusion into a Unit 2 Division 3 underground cable run; and
- CR 2007-2368 concerning identification that the Unit 2 reactor core isolation cooling turbine minimum speed was nearly twice what was specified in the in-use procedure.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A - One sample)

a. Inspection Scope

The inspectors reviewed one permanent plant modification, Design Change N2-06-064, "NMP2 Balance of Plant Optimization." The purpose of this change was to establish optimal reheat steam flow to the moisture separator reheaters to achieve optimal turbine train efficiency. The amount of steam used to heat the moisture separator reheaters was balanced with the energy content of the reheated steam that powers the low pressure turbines. Operators performed special test procedure N2-STP-051, "Unit 2 Balance of Plant Optimization," to determine the optimal moisture separator reheater steam flow, and NMPNS implemented the modification on May 21, 2007. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19 - Seven samples)

a. Inspection Scope

The inspectors reviewed post maintenance test procedures and associated testing activities for selected risk significant mitigating systems to assess whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness, and were consistent with design basis documents. The inspectors verified that test instrumentation had current calibrations with appropriate range and accuracy for the application. Upon test completion, the inspectors verified that equipment was returned to the proper alignment necessary to perform its safety function. The adequacy of the identified post maintenance testing requirements were verified through comparisons with GAP-SAT-02, "Pre/Post-Maintenance Test Requirements," and the design basis information contained in the TS, UFSAR and associated design basis documents. Other documents reviewed for this inspection are listed in the Attachment. The following seven post maintenance test activities were reviewed.

- Unit 1, action request (ACR) 07-1325 and ACR 07-1335 that performed corrective maintenance on the RB air lock doors D-198 and D-53. The retest was performed in accordance with N1-ST-V5, "Secondary Containment Doors RB Ventilation Isolation Valves and Penetration Post-Maintenance Test."
- Unit 1, ACR 07-02458 that performed corrective maintenance on a time delay relay associated with main steam isolation valve 122. The retest was performed in accordance with N1-ST-Q26, "Feedwater and Main Steam Line Power Operated Isolation Valves Partial Exercise Test and Associated Functional Testing of Reactor Protection System Trip Logic."
- Unit 1, WO 07-05312-00 that replaced the directional control valves for hydraulic control unit 22-03. The retest was performed in accordance with N1-REP-25, "Control Rod Stroke Timing and Adjustment During Power Operations."
- Unit 1, WO 06-08472-00 that performed preventative maintenance on 111 core spray topping pump. The retest was performed in accordance with N1-ST-Q1A, "Core Spray 111 Pump, Valve and Shutdown Cooling Water Seal Check Valve Operability Test."
- Unit 2, WO 06-07546-00 and 06-07545-00 that performed annual preventative maintenance on the diesel fire pump. The retest was performed in accordance with N2-OSP-FOF-M001, "Engine Driven Fire Pump Operability and Storage Tank Level Test."
- Unit 2, WO 06-01731-00 and WO 06-01734-00 that performed preventative maintenance on the 'E' SW pump and strainer. The retest was performed in accordance with N2-OSP-SWP-Q002, "SW Pump and Valve Operability Test."
- Unit 2, WO 03-04223-00 that performed an overhaul of the Division 1 standby liquid control pump. The retest was performed in accordance with N2-OSP-SLS-Q001, "Standby Liquid Control Pump, Check Valve, Relief Valve Operability Test and ASME XI Pressure Test."

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

Unit 1 RFO 19: The inspectors observed and/or reviewed the following Unit 1 refueling outage activities to verify that operability requirements were met and that risk, industry experience, and previous site specific problems were considered. Documents reviewed for this inspection are listed in the Attachment.

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- The inspectors reviewed outage schedules and procedures, verified that TS-required safety system availability was maintained and shutdown risk was minimized. The inspectors verified that contingency plans existed for restoring key safety functions as required by NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," and NMPNS procedure NIP-OUT-01, "Shutdown Safety."
- Through plant tours, the inspectors verified that NMPNS maintained and protected electrical power supplies to safety-related equipment and that TS requirements were met.
- The inspectors verified proper alignment and operation of shutdown cooling and other decay heat removal systems. The verification also included reactor cavity and fuel pool makeup paths and water sources, and administrative control of drain down paths.
- The inspectors reviewed N1-FHP-25, "General Description of Fuel Moves," N1-FHP-27C, "Core Shuffle," N1-ODP-NFM-101, "Refueling Operations," and the TS, and verified all requirements for refueling operations were met through refueling floor observations, control room panel walkdowns, and surveillance procedure reviews.
- Before the drywell was closed from general access for start-up, the inspectors performed an "as-left" walkdown to identify evidence of reactor coolant system leakage and verify the condition of drywell coatings, structures, valves, piping, supports, and other equipment in areas where maintenance was completed. The inspectors also verified that no debris was left in the drywell that could affect the performance of the emergency core cooling system suction strainers.
- The inspectors observed portions of the reactor startup following the outage, and verified through plant walkdowns, control room observations, and surveillance test reviews that safety-related equipment specified for mode change was operable.

Unit 1 Forced Outage F701: The inspectors observed and reviewed the following activities during the Unit 1 forced outage F701 from May 16 through May 21, 2007. Documents reviewed for this inspection are listed in the Attachment.

- The inspectors observed portions of the plant shutdown and cooldown and verified that the TS cooldown rate limits were satisfied.
- The inspectors reviewed outage schedules and procedures and verified that TS specified safety system availability was maintained, shutdown risk was considered, and that contingency plans existed to restore key safety functions such as electrical power and containment integrity.
- The inspectors performed a walkdown of the drywell to identify evidence of reactor coolant system leakage, and verify the condition of drywell coatings,

structures, valves, piping, supports and other equipment. The inspectors also verified that no debris was left in the drywell that could affect the performance of the emergency core cooling system suction strainers.

- The inspectors observed portions of the reactor startup following the outage, and verified through plant walkdowns, control room observations, and Surveillance test reviews that safety-related equipment specified for mode change was operable.

b. Findings

.1 NCV 05000220/2007003-01, Failure to Conduct Adequate Testing Resulted in Two Inoperable IRM Channels During Reactor Startup.

Introduction. A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," occurred when NMPNS failed to identify and correct a condition adverse to quality, associated with two of the four Unit 1 IRM instrument channels when they failed to perform vendor recommended testing during RFO 19. As a result, operators identified two of the four intermediate range instrument channels associated with the 12 RPS trip system inoperable during the startup on April 14, 2007.

Description. The reactor neutron monitoring system consists of three monitoring ranges, the source range monitoring system, the IRM, and the average power range monitoring system. The IRM consists of eight identical neutron detection channels 11 through 18. The IRM provides the operator with neutron flux information during reactor startup when the indication range of the source range monitoring system is exceeded and the average power range monitoring system channels are not on scale. The IRM initiates a control rod withdrawal block if prescribed neutron flux levels are exceeded and can also input reactor scram signals to the RPS if prescribed neutron flux levels are exceeded or if a system malfunction occurs. Each IRM detection channel provides a scram input to one of two trip systems of the RPS. IRM detection channels 11 through 14 provide input to RPS trip system 11, and IRM detection channels 15 through 18 provide input to RPS trip system 12.

At the conclusion of RFO 19, operators commenced a Unit 1 reactor startup on April 14, 2007. During the startup, when reactor power had increased to the intermediate range, operators noted that two of the eight IRM detection channels, 15 and 17, remained downscale. IRM detection channels 15 and 17 both input to RPS trip system 12. The operators immediately declared IRM detection channels 15 and 17 inoperable. With two IRM detection channels inoperable and the mode switch in the Startup position, TS Table 3.6.2.a specified that the associated RPS channel be placed in the tripped condition within 12 hours. Additionally, because each IRM channel has a rod withdrawal block function, TS 3.6.2.a(7) also specified that no control rods be withdrawn. Operators immediately halted the startup.

NMPNS determined that the channels were inoperable because work performed in the proximity of the IRM detection channel signal cables during RFO 19 unseated the connectors between the detectors and the instruments for the affected channels. The

condition remained undetected until the reactor startup because NMPNS failed to implement vendor recommended testing following unrelated maintenance activities with the potential to disturb the neutron monitoring system signal cables. This reduced the reliability of the reactor protection system to respond to an initiating event and prevent core damage. Maintenance repaired the connectors and on-scale indication was established on April 14, 2007. Operators declared IRM detection channels 15 and 17 operable and restored the plant to full power on April 16, 2007.

Vendor guidance indicated that neutron monitoring instrumentation failure can be caused by unrelated maintenance activities that disturb neutron monitoring system detector signal cables such as under-vessel maintenance activities during refueling outages. This failure is not detectable by routine surveillance testing, because this testing does not verify continuity of the signal path from the detector to the instrument. Signal path continuity can be verified using time domain reflectometry (TDR) to measure signal path impedance. The vendor guidance recommended that TDR testing be performed prior to startup from any outage when under-vessel maintenance activities could disturb neutron monitoring equipment signal cables. NMPNS reviewed the vendor guidance in response to CR 2004-0152 in accordance with its corrective action program. To address the issues identified by the vendor guidance, NMPNS revised its preventative maintenance program to require TDR testing prior to containment closeout after a refueling outage. NMPNS originally included pre-startup TDR testing of the IRM detection channels in the RFO 19 schedule, but deleted the testing during a schedule review near the end of the outage. NMPNS management failed to use conservative assumptions in decision making when it deleted the testing from the RFO 19 scope, and, as a result, inappropriately deleted the testing based on satisfactory completion of normal surveillance testing during the outage.

The performance deficiency associated with this event was NMPNS failed to implement vendor recommended testing that would have identified and corrected loose IRM signal cables.

Analysis. The finding was greater than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the finding was determined to be of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent a loss of a system/train safety function, and did not screen as potentially risk significant due to external events.

This finding had a cross-cutting aspect in the area of human performance because NMPNS management failed to use conservative assumptions in decision making and inappropriately deleted from the RFO 19 scope vendor recommended testing designed to detect the degraded IRM detection channel signal cables (H.1.b).

Enforcement. 10 CFR Part 50, Appendix B, Criteria XVI, "Corrective Action," states, in part, "Measures shall be established to assure that conditions adverse to quality, such as . . . malfunctions . . . are promptly identified and corrected." Contrary to the above, prior to the Unit 1 reactor startup on April 14, 2007, NMPNS failed to identify and correct a condition adverse to quality associated with two of the four Unit 1 IRM instrument channels. As a result, two of the four intermediate range instrument channels in 12 RPS trip system were found inoperable during the startup. Because this finding is of very low safety significance and was entered into the corrective action program as CR 2007-2359 this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: **NCV 05000220/2007003-01, Failure to Conduct Adequate Testing Resulted in Two Inoperable IRM Channels During Reactor Startup.**

.2 NCV 05000220/2007003-02, Procedural Noncompliance Resulted in Failure to Establish Primary Containment Integrity Prior to Reactor Startup

Introduction. A self-revealing Green NCV of Unit 1 TS 6.4, "Procedures," occurred on April 2, 2007, when operators failed to resolve a position discrepancy identified with respect to the EC vent line isolation valves prior to reactor startup following RFO 19. This resulted in the EC vent line isolation valves being left open, which represented an open pathway in the physical integrity of the reactor coolant and primary containment system boundaries.

Description. The Unit 1 EC system is provided as a redundant backup for the main turbine condenser to remove reactor core decay heat following a reactor isolation and scram. The system consists of two independent loops. Each loop is connected directly to the reactor coolant system and consists of a condenser located inside the RB. The system operates by natural circulation to remove the decay heat production at 100 seconds following a reactor scram from full power.

On April 15, 2007, during reactor plant startup from RFO 19, the control room received fire alarms in the vicinity of the RB equipment drain tank. Operators halted the startup to investigate the cause of the alarm. Operators discovered steam discharging from the one inch diameter EC steam line vent into the RB equipment drain tank because the normally closed isolation valves for the vent lines from both trains of EC were left open. At the time of discovery, reactor coolant system pressure was approximately 350 psig. This configuration represented an open pathway in the physical integrity of the reactor coolant and primary containment system boundaries, but due to the less than two inch diameter of the vent line, it did not affect the heat removal function of the EC system. Operators closed the valves in accordance with the valve lineup on April 16, 2007.

NMPNS determined that operators opened the EC steam line vent valves at the beginning of RFO 19 during reactor disassembly in accordance with N1-OP-34A, "Refueling Procedure." At the end of RFO 19 on April 2, 2007, in preparation for plant startup and in accordance with N1-OP-43A, "Plant Startup," and N1-VLU-01, "Valve Lineup and Valve Operations," operators performed an EC system valve lineup verification. During the lineup, operators identified the EC steam line vent valves positions as open rather than locked closed as specified in the valve lineup. Operators documented the positions for the vent valves as "open R19" in the remarks section of

the valve lineup sheet and took no further action. As a result, operators did not close the EC steam line vent valves to establish reactor coolant system and primary containment system integrity prior to reactor plant startup.

The valve lineup sheets from N1-OP-13, "Emergency Cooling System," state that if a valve is left in an off-normal position provide an explanation in the lineup remarks. Additionally, the valve lineup procedure, N1-VALU-01, directs that discrepancies be reported to the shift manager immediately during the lineup and the shift manager shall determine the appropriate course of action. The inspectors concluded that the failure of operators to fully implement the procedure requirements resulted in the failure to close the EC steam line vent valves prior to the reactor startup.

The performance deficiency associated with this event was the alignment of the EC system vent valves in a configuration that provided an open pathway in the reactor coolant and primary containment system boundaries because operators failed to adequately implement valve lineup procedures.

Analysis. The finding was greater than minor because it was associated with the human performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that reactor coolant and containment system physical design barriers protect the public from radionuclide releases caused by accidents or events. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors determined that IMC 0609, Appendix H, "Containment Integrity Significance Determination Process" applied because the performance deficiency represented an actual open pathway in the physical integrity of the reactor containment. From Appendix H, Section 4.1, the finding screened as a Type B finding, in that it related to a degraded condition that had potentially important implications for the integrity of the containment, without affecting the likelihood of core damage. From Table 4.1, the finding was determined not to contribute to the large early release frequency, because the EC steam line vent to the RB equipment drain tank was less than two inches in diameter. Therefore, in accordance with Figure 4.1 of IMC 0609, Appendix H, the finding was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance because operators failed to follow procedures. (H.4.b)

Enforcement. TS 6.4, "Procedures," states, in part, that, "Written procedures . . . shall be implemented . . . that meet or exceed the requirements and recommendations of Sections 5.1 and 5.3 of ANSI N18.7-1972 and cover . . . the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 3, 1972 . . . ." ANSI N18.7-1972, Section 5.1.2, "Procedure Adherence," states, in part, "Procedures shall be followed . . . ." Regulatory Guide 1.33, Appendix A, November 3, 1972, Item D, "Procedures for Startup, Operation, and Shutdown of Safety-Related BWR Systems," lists the reactor core isolation cooling system as one of the applicable systems. Contrary to the above, operators did not correctly implement the valve lineup portion of N1-OP-13, "Emergency Cooling System," in accordance with the requirements of N1-VALU-01, "Valve Lineup and Valve Operations." On April 2, 2007, operators did not

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resolve the position discrepancy identified with respect to the EC vent line isolation valves and did not restore the valves to their specified position prior to reactor startup. Because this procedural noncompliance is of very low safety significance and was entered into the corrective action program as CR 2007-2380, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: **NCV 05000220/2007003-02, Procedural Noncompliance Resulted in Failure to Establish Primary Containment Integrity Prior to Reactor Startup.**

1R22 Surveillance Testing (71111.22 - Seven samples)

a. Inspection Scope

The inspectors observed performance of and/or reviewed test data for seven risk-significant surveillance tests to assess whether the SSCs tested satisfied TS, UFSAR, technical requirements manual, and NMPNS procedure requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with the design basis documents; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon surveillance test completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. Documents reviewed for this inspection are listed in the Attachment. The following seven surveillance tests were reviewed:

- N1-ST-C5, "Secondary Containment and RB Emergency Ventilation System Operability Test;"
- N1-IPM-029-008, "Flange and Wide Range Vessel Level Calibration;"
- N1-ISP-201-004, "Drywell Floor Drain Tank / Drywell Equipment Drain Tank Level Element Calibration;"
- N1-ISP-LRT-TYC, "Type 'C' Containment Isolation Valve Leak Rate Test," for main steam isolation valve 01-03;
- N1-ST-R30, "Reactor Pressure Vessel and ASME Class 1 System Leakage Test;"
- N2-OSP-CSL-Q@002, "Low Pressure Core Spray Pump and Valve Operability and System Integrity Test;" and
- N2-OSP-RSS-R007, "Reactor Core Isolation Cooling Remote Shutdown Operational Test."

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 - Two samples)

a. Inspection Scope

The inspectors completed two emergency drill evaluation inspection samples. The inspectors observed control room operator emergency plan response actions during evaluated LORT scenarios on May 23, 2007 for Unit 1 and May 22, 2007 for Unit 2. The inspectors verified that emergency classification declarations and notifications were completed in accordance with 10 CFR Part 50.72, 10 CFR Part 50 Appendix E and emergency plan implementing procedures. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 15 samples)

a. Inspection Scope

The inspectors identified exposure significant work areas within radiation areas, high radiation areas (HRA), or airborne radioactivity areas in the plant and reviewed associated NMPNS controls and surveys of these areas to determine if controls were acceptable.

The inspectors walked down these areas or their perimeters to determine: whether prescribed radiation work permit (RWP), procedure, and engineering controls were in place, whether NMPNS surveys and postings were complete and accurate, and whether air samplers were properly located.

The inspectors reviewed RWPs used to access these and other HRAs and identify what work control instructions or control barriers had been specified. The inspectors reviewed electronic personal dosimeter alarm set points for conformity with survey indications and plant policy.

The inspectors reviewed RWPs for airborne radioactivity areas with the potential for individual worker internal exposures of greater than 50 millirem (mrem) committed effective dose equivalent. The inspectors verified barrier integrity and engineering controls performance.

Based on NMPNS's schedule of work activities, the inspectors selected for observation two jobs performed in radiation areas, airborne radioactivity areas, or HRAs: reactor

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building closed loop cooling large bore pipe ultrasonic testing and tie rod maintenance on the refueling floor. The inspectors reviewed RWP and work procedure requirements. The inspectors observed job performance with respect to the requirements and verified that radiological conditions in the work area were adequately communicated to workers through briefings and postings.

During job performance observations, the inspectors verified the adequacy of radiological controls including specified surveys, radiation protection department (RP) job coverage, and contamination controls.

For high radiation work areas with significant dose rate gradients the inspectors reviewed the application of dosimetry used to monitor personnel exposure and verified that NMPNS's controls were adequate.

During job performance observations, the inspectors observed worker performance with respect to stated radiation protection work requirements. The inspectors determined whether workers were aware of significant radiological conditions and the RWP controls in place and that worker performance considered the level of radiological hazards present.

During job performance observations, the inspectors observed RP technician performance with respect to radiation protection work requirements. The inspectors verified that RP technicians were aware of radiological conditions and RWP controls and that their performance was consistent with their training and qualifications.

The inspectors determined that there were no challenges to the NMPNS performance indicators (PIs) for the Occupational Radiation Safety cornerstone for followup.

The inspectors assessed the adequacy of NMPNS's internal dose assessment for any actual internal exposure greater than 50 mrem committed effective dose equivalent. No internal exposures of this magnitude occurred since the last inspection of this area.

The inspectors examined NMPNS's physical and programmatic controls for highly activated or contaminated non-fuel materials stored in the spent fuel and other storage pools. The inspectors observed activities in the Unit 2 spent fuel pool.

The inspectors discussed with the RP Manager controls and procedures for high dose rate HRAs and very high radiation areas. The inspectors verified that any changes to NMPNS procedures did not substantially reduce the effectiveness and level of worker protection.

The inspectors discussed with RP technician supervisors the controls in place for special areas that have the potential to become very high radiation areas during certain plant operations. The inspectors verified that timely communication with the radiation protection department occurred to allow proper posting and control of radiation hazards.

Documents reviewed for this inspection are listed in the Attachment.

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b. Findings

No findings of significance were identified.

2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls (71121.02 -16 samples)

a. Inspection Scope

The inspectors selected the following three work activities of highest exposure significance for review: drywell in-service inspection, drywell scaffold, and drywell recirculation motors and seals.

The inspectors reviewed ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors verified that NMPNS established appropriate procedures and engineering and work controls to achieve occupational exposures that were ALARA. The inspectors compared the results achieved with the intended dose established in NMPNS's ALARA planning for these work activities.

For the three activities selected above the inspectors evaluated NMPNS's use of ALARA controls for these work activities by performing the following: evaluated NMPNS's use of engineering controls to achieve dose reductions; verified that procedures and controls were consistent with NMPNS's ALARA reviews; verified that sufficient shielding of radiation sources was provided for; and determined that dose expended to install and remove the shielding did not exceed the dose reduction benefits afforded by the shielding. The inspectors reviewed the integration of ALARA requirements into work procedures and RWP documents.

The inspectors compared the person-hour estimates provided by maintenance planning and other groups to radiation protection with the actual work activity time requirements and evaluated the accuracy of these time estimates. The inspectors reviewed NMPNS's exposure tracking system. The inspectors verified that the level of detail, report timeliness and distribution were sufficient to support control of collective exposures. The inspectors verified that workers utilized the low dose waiting areas and were effective in maintaining doses ALARA.

The inspectors verified that workers received appropriate on-the-job supervision to ensure ALARA requirements were met. The inspectors verified that the job supervisors ensured the work activities were performed in a dose efficient manner.

The inspectors observed radiation worker and RP tech performance during work activities performed in radiation areas. The inspectors verified workers demonstrated ALARA in practice and followed procedure requirements. The inspectors also observed radiation worker performance to verify training was sufficient with respect to the radiological hazards and work involved. The inspectors observed activities associated with the Unit 2 refueling pool and the Unit 1 forced shutdown.

The inspectors determined that during the current assessment period two workers had filed pregnant worker declarations. The inspectors reviewed the exposure results and monitoring controls employed by NMPNS for these workers with respect to the requirements of 10 CFR Part 20.

The inspectors evaluated the interface between operations, RP, maintenance, maintenance planning, scheduling, and engineering groups.

The inspectors verified that post-job reviews were performed and identified problems were entered into the CAP.

The inspectors reviewed exposures for individuals from selected work groups and evaluated significant exposure variations among workers to determine if the variations were due to skill differences or poor ALARA work practices.

Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 - Two samples)

a. Inspection Scope

The inspectors reviewed NMPNS self-assessments, audits, and licensee event reports (LER). The inspectors focused on radiological incidents that involved personnel contamination monitor alarms due to personnel internal exposures. No internal exposures of greater than 50 mrem occurred during the assessment period.

The inspectors verified calibration, operability, and alarm setpoints for several instruments and equipment. The inspectors verified actions taken when an instrument was found significantly out of calibration. The inspectors determined possible consequences of instrument use since last successful calibration or source check. The inspectors verified that out of calibration equipment was entered into the CAP. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

## Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation (71122.02)a. Inspection Scope

On February 22, 2007, NMPNS prepared and shipped irradiated hardware from the Unit 2 spent fuel pool cleanup project to Barnwell, South Carolina in an NRC-approved Type 'B' shipping cask, Model CNS 3-55-1, in accordance with certificate of compliance no. 5805. On February 26, 2007, upon arrival Barnwell technicians inspected the shipment and identified several loose base plate bolts. NMPNS documented this issue in its CAP as CR 2007-0962 and CR 2007-1209. The inspectors reviewed NMPNS preparations and shipment of the cask to verify compliance with the certificate of compliance. The inspectors also reviewed NMPNS cause analysis for the issue. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program (71122.03 - 10 samples)a. Inspection Scope

The inspectors reviewed the current annual environmental monitoring report and assessment results to verify that the REMP was implemented in accordance with the TS and the offsite dose calculation manual (ODCM). The inspectors reviewed changes to the ODCM, environmental monitoring station locations, self-assessments and audits, LERs, inter-laboratory comparison program results, the UFSAR, and the scope of the audit program to verify that it met the requirements of 10 CFR Part 20.1101.

The inspectors walked down 15 air particulate and iodine sampling stations, two storm drain outfalls, three water treatment stations, and 27 thermoluminescent dosimeter monitoring locations; and verified that they were located as described in the ODCM and that equipment material condition was acceptable.

The inspectors observed the collection and preparation of a variety of environmental samples and verified that environmental sampling was representative of the release pathways specified in the ODCM and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors verified that the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, Safety Guide 23, and NMPNS procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable.

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The inspectors reviewed each event documented in the annual environmental monitoring report that involved a missed sample, inoperable sampler, lost thermoluminescent dosimeter, or anomalous measurement for the cause and corrective actions. The inspectors conducted a review of NMPNS's assessment of positive sample results.

The inspectors reviewed significant changes made by NMPNS to the ODCM as a result of changes to the land census or sampler station modifications since the last inspection. The inspectors reviewed technical justifications for changed sampling locations and verified that NMPNS performed the reviews specified to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors reviewed the calibration and maintenance records for air samplers. The inspectors reviewed: the results of NMPNS's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by NMPNS; NMPNS's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies; NMPNS's determination of any bias to the data and the overall effect on the REMP; and quality assurance audit results of the program to determine whether NMPNS complied with TS and ODCM requirements. The inspectors verified that the appropriate detection sensitivities with respect to the TS and ODCM were utilized for counting samples and reviewed the results of the quality control program including the interlaboratory comparison program to verify the adequacy of the program.

The inspectors observed several locations where NMPNS monitors potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release from these areas. This included observing the performance of personnel surveying and releasing material for unrestricted use and verifying that the work was performed in accordance with plant procedures.

The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed NMPNS's criteria for the survey and release of potentially contaminated material; verified that there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material; and reviewed NMPNS's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material. The inspectors also reviewed NMPNS's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters and verified that NMPNS had not established a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

The inspectors reviewed NMPNS's LERs, special reports, and audits related to the REMP performed since the last inspection. The inspectors determined that identified

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problems were entered into the CAP for resolution. The inspectors also reviewed corrective actions affecting environmental sampling, sample analysis, or meteorological monitoring instrumentation. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA2 Identification and Resolution of Problems (71152 - Five samples)

.1 Review of Items Entered into the Corrective Action Program (CAP)

a. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into NMPNS's CAP. The review was accomplished by accessing the computerized database for CRs and attending CR screening meetings. In accordance with the baseline inspection modules, the inspectors also selected 73 CAP items across the initiating events, mitigating systems, barrier integrity, emergency preparedness, occupational radiation safety and public radiation safety cornerstones for additional follow-up and review. The inspectors assessed NMPNS's threshold for problem identification, the adequacy of the cause analyses, extent of condition review, operability determinations, and the timeliness of the specified corrective actions. The CRs reviewed are noted in the Attachment.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors reviewed NMPNS's CAP and associated documents to identify trends that could indicate significant safety issues. The inspectors' review focused on repetitive equipment and corrective maintenance issues but also considered the results of daily inspector CAP item screening. The review included issues documented outside the normal CAP in system health reports, corrective maintenance WOs, quality assurance performance assessment reports, temporary modifications, maintenance rule status reports, operator workarounds and burdens, and the 2007 top ten issues list. The inspectors' review considered the six-month period of December

2006 through May 2007. Documents reviewed for this inspection are listed in the Attachment.

b. Assessment and Observations

No findings or observations of significance were identified.

.3 Annual Sample - CR 2004-3291 and CR 2006-3927 - Decrease in diesel fuel oil sulfur concentration specifications

a. Inspection Scope

The inspectors selected CR 2004-3291 for detailed review. The CR was associated with activities performed in response to the proposed 2010 Environmental Protection Agency changes in diesel fuel sulfur concentration requirements. The inspectors also reviewed NMPNS's actions in response to the receipt of ultra low sulfur diesel fuel oil in June and August 2006 as documented in CR 2006-3927. The CRs were reviewed to determine whether the full extent of the problems were identified, that appropriate operability evaluations were performed, and appropriate corrective actions were specified. The inspectors walked down portions of the systems at both units and interviewed applicable system engineers and other personnel. The inspectors evaluated the reports against the requirements of procedure NIP-ECA-01, "Corrective Action Program," and 10 CFR Part 50, Appendix B. Documents reviewed for this inspection are listed in the Attachment.

b. Assessment and Observations

No findings of significance were identified. The inspectors identified a minor issue associated with NMPNS evaluation of the effect of diesel fuel ultra-low sulfur concentrations at Unit 2. NMPNS's evaluation of the potential reduced energy content of the ultra-low sulfur diesel fuel oil inappropriately determined that at Unit 2 the ten percent capacity margin maintained in the storage tanks compensated for any reduced energy content. This determination was inappropriate because the system's design bases stated that the seven day fuel oil supply was based on the time-dependent load for the EDGs, and that the time dependent load for the EDGs included the capacity to supply power to all engineered safety features and a minimum capacity margin of ten percent. All incoming ultra-low sulfur diesel fuel oil as of June 2007 conformed to the American Petroleum Institute gravity requirements specified by the Unit 2 TS and therefore the ten percent margin was not affected. NMPNS documented this deficiency in the CAP as CR 2007-3496.

.4 Annual Sample - CR-2006-5553 - Unit 1 diesel fire pump heat exchanger poor performance

a. Inspection Scope

The inspectors completed a detailed review of NMPNS's response to performance issues identified in CR 2006-5553. This CR was written to address inadequate

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implementation of actions to prevent recurrence of the Unit 1 diesel fire pump heat exchanger poor performance in July 2006 and the organizations lack of understanding of the risk significance of the diesel fire pump and how that should impact the priority of diesel fire pump maintenance. This issue was a concern because of the risk significance of the diesel fire pump with respect to the potential for loss of offsite power events during the summer months. The inspectors reviewed the CR to ensure that the extent of the problem was identified, a thorough evaluation was performed, and appropriate corrective actions specified. The inspectors reviewed the evaluation and corrective actions against the requirements of procedure NIP-ECA-01, "Corrective Action Program," and 10 CFR Part 50, Appendix B. Documents reviewed for this inspection are listed in the Attachment.

b. Assessment and Observations

There were no findings of significance identified. The inspectors determined that NMPNS performed a thorough review of Unit 1 diesel fire pump performance and priority maintenance scheduling. The inspectors determined that NMPNS specified appropriate corrective actions to address the causes identified and that corrective actions were assigned to the appropriate individuals. The corrective actions specified included replacing the fouled diesel heat exchanger, procuring a replacement heat exchanger to allow timely resolution of future heat exchanger issues, enhanced performance monitoring, and Operations Manual procedure revisions that directed expediting maintenance for high risk significant components monitored by the maintenance rule. Most of the actions taken were completed in an adequate and timely manner with one exception. In reviewing the status of the corrective action specified to ensure that adequate priority was assigned to diesel fire pump maintenance, the inspectors determined that the original procedure revised in response to this CR, the Operational Decision Making Checklist specified in the NMPNS Operations Manual, was superseded by corporate procedure GAI-OPS-17, "Response to Operational Conditions/Events," and that the revisions specified by the CR were not incorporated into the corporate procedure. To address the inspectors' concern, NMPNS documented the issue in CR 2007-3958.

.5 Annual Sample - Unit 1 Operator Workarounds

a. Inspection Scope

The inspectors reviewed Unit 1 operator workarounds to verify that NMPNS was identifying operator workaround problems at an appropriate threshold and entering them into the CAP. The inspectors evaluated the potential for cumulative effects of identified operator workarounds, burdens, and control room deficiencies on the functionality of mitigating systems.

b. Assessment and Observations

No findings or observations of significance were identified.

.6 Annual Sample - Unit 2 Operator Workarounds

a. Inspection Scope

The inspectors reviewed Unit 2 operator workarounds to verify that NMPNS was identifying operator workaround problems at an appropriate threshold and entering them in the CAP. The inspectors evaluated the potential for cumulative effects of identified operator workarounds, burdens, and control room deficiencies on the functionality of mitigating systems.

b. Assessment and Observations

No findings or observations of significance were identified.

4OA3 Event Followup (71153 - One sample)

.1 Steam Leak from the Unit 2 Reactor Water Cleanup System

a. Inspection Scope

On May 30, 2007, a reactor building fire alarm was received in the Unit 2 control room. Operators entered emergency plan implementing procedure (EPIP)-EPP-28, "Fire Fighting." The NMPNS fire brigade responded, and observed steam at the reactor building 328 foot elevation in the vicinity of the reactor water cleanup system. Control room operators noted that reactor water cleanup system flow was higher than normal, and that the reactor building particulate radiation monitor showed a prompt rise in level. Based on these indications, control room operators concluded that there was a leak in the reactor water cleanup system and isolated the system. The steam began to dissipate and the fire brigade verified that there was no fire in the area. Subsequent investigation revealed that reactor water cleanup regenerative heat exchanger tube side relief valve, 2WCS-RV139 had lifted and not properly reseated. The valve was replaced and the reactor water cleanup system was returned to service the following day.

The inspectors responded to the control room and reviewed operator response to the event. The inspectors verified that operators responded in accordance with procedures and that the basis for isolating the reactor water cleanup system was reasonable. The inspectors confirmed that no emergency plan emergency action levels existed and that the event was not reportable to the NRC. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.



4OA6 Meetings, Including Exit

The inspectors presented the inspection results to Mr. Mark Schimmel and other members of NMPNS management on July 13, 2007. NMPNS acknowledged that no proprietary information was involved.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee personnel

K. Polson, Vice President  
 N. Conicella, Manager, Operations  
 R. Dean, Director, Quality and Performance Assessment  
 M. Faivus, General Supervisor, Chemistry  
 J. Gerber, General Supervisor, Radiation Protection  
 G. J. Laughlin, Manager, Engineering Services  
 T. Maund, Manager, Maintenance  
 J. McCrobie, Director, Performance Improvement  
 W. Paulhardt, Manager, Integrated Work Management  
 M. Schimmel, Plant General Manager  
 T. Shortell, Manager, Training and Performance Improvement, Nuclear  
 T. Syrell, Director, Licensing

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened and Closed

05000220/2007003-01	NCV	Failure to Conduct Adequate Testing Resulted in Two Inoperable IRM Channels During Reactor Startup (Section 1R20)
05000220/2007003-02	NCV	Procedural Noncompliance Resulted In Failure to Establish Primary Containment Integrity Prior to Reactor Startup (Section 1R20)

### **LIST OF DOCUMENTS REVIEWED**

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

NAI-PSH-11, "Seasonal Readiness Program," Revision 1  
 S-ODP-OPS-0112, "Off-site Power Operations and Interface," Revision 12  
 CR-NM-2006-5133  
 NAI-PSH-11 Attachment 2, "System Seasonal Readiness Evaluation," Diesel Generators, January 30, 2007  
 NAI-PSH-11 Attachment 2, "System Seasonal Readiness Evaluation," CRAC, December 12, 2006  
 NAI-PSH-11 Attachment 2, "System Seasonal Readiness Evaluation," HVC, HVK, HVN, HVT, HVH, January 16, 2007

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

SDBD-502, System Design Basis Document SW System  
P&ID C-18022-C, SW Reactor and Turbine Buildings, Sheet 1  
N1-OP-18, "SW System"  
N1-ST-Q13, "ESW Pump Operability Test"  
WO 07-3558-00, Pipe Wall Thinning in ESW Lines  
WO 05-7895-00, SW Master - Pitting Identified in ESW #11 Discharge Line  
WO 05-24187-00, 2ENS\*SWG102-2(CUB4), N2-EPM-GEN-4Y550, 4.16 kV breaker PM  
(2CSH\*M1)  
N2-ISP-CSH-Q001, "Quarterly Functional Test and Trip Unit Calibration of HPCS Suction  
Transfer on High Suppression Pool Level Instrument Channels"  
N2-ISP-CSH-Q002, "Quarterly Functional Test of the HPCS Pump P1 Discharge Pressure -  
High Bypass Instrument Channel"  
N2-ISP-CSH-Q005, "Quarterly Functional Test and Trip Unit Calibration of Condensate Storage  
Tank Level Low Instrumentation for HPCS Suction Transfer"  
N2-ISP-CSH-Q006, "Quarterly Functional Test and Trip Unit Calibration of HPCS Initiation on  
Drywell Pressure High Instrument Channels"  
N2-ISP-CSH-Q007, "Quarterly Functional Test and Trip Unit Calibration of HPCS Initiation on  
Reactor Vessel Water Level Low"  
Clearance 07-CSH007  
Clearance 07-CSH008  
Clearance 07-CSH009  
N1-OP-10, "Reactor Building Heating, Cooling, and Ventilation System"  
N1-OP-12, "Liquid Poison System"  
N2-OP-31, "Residual Heat Removal System"  
N2-VLU-01, "Walkdown Order Valve Lineup and Valve Operations," Attachment 31,  
N2-OP-31, "Walkdown Valve Lineup"  
P&ID C-18013-C  
P&ID C-18019-C

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

Nine Mile Point Unit 1 UFSAR, Appendix 10A  
Nine Mile Point Unit 2 UFSAR, Appendix 9A  
GAP-INV-02, Revision 17, Control of Material Storage Areas  
N1-FPI-PFP-0101, "Pre-fire Plans", Revision 1  
N2-FPI-PFP-0201, "Pre-fire Plans", Revision 0  
Fire Brigade Scenario No. OS-FT-FIR-SCN-2-02, 2JNS-US2 600 Volt Switchgear Room  
NDD-FPP, "Fire Protection Program"  
S-ODP-FPP-0101, "Report on Fire Department Activity/Drills"  
NIP-FPP-01, "Fire Protection Program"  
NMP-TR-1.01-107, "Nuclear Fire Brigade Training Program," Attachment 1, Fire Brigade Drill  
Assessment, for Drill No. OS-FT-FIR-SCN-2-14, Shift B  
NMP-TR-1.01-107, "Nuclear Fire Brigade Training Program," Attachment 1, Fire Brigade Drill  
Assessment, for Drill No. OS-FT-FIR-SCN-1-13, Shift A  
NMP-TR-1.01-107, "Nuclear Fire Brigade Training Program," Attachment 1, Fire Brigade Drill  
Assessment, for Drill No. OS-FT-FIR-SCN-2-14, Shift C

NMP-TR-1.01-107, "Nuclear Fire Brigade Training Program," Attachment 1, Fire Brigade Drill Assessment, for Drill No. OS-FT-FIR-SCN-2-14, Shift D

**Section 1R06: Flood Protection Measures**

SAS-TR-95-001, Nine Mile Point Nuclear Station - Unit 2 -IPE of External Events (IPEEEs)  
SAS-TR-96-001, Nine Mile Point Nuclear Station - Unit 1 -IPE of External Events (IPEEEs)  
CR- NM-2005-4547  
NMP Nuclear Station SDBD-201, Core Spray System, Revision 4, March 15, 2006  
NMP Nuclear Station SDBD-804, Emergency Diesel Generator System, Revision 11  
P&ID C-18045-C, Sh. 9, Revision 15

**Section 1R07: Heat Sink Performance**

WO 05-15295-01, N2-TTP-HVR-@404 Performance for Unit Cooler 2HVR\*404C  
N2-TTP-HVR-@404, "Performance Evaluation for Unit Cooler 2HVR\*404A, B, C, and D,"  
Revision 04  
NIP-PRO-04 Attachment 2, "Type 2 Procedure Change Evaluation," for N2-TTP-HVR-@404,  
December 12, 2006  
NMPNS-HX-001, "Generic Letter 89-13 Heat Exchanger Program Plan," Revision 1

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

N2-EOP-RPV, "RPV Control"  
N2-EOP-PC, "Primary Containment Control"  
NMPNS Operations Manual  
NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 4  
CNG-HU-1.01, "Human Performance Program"  
CNG-HU-1.01-1000, "Human Performance"  
CNG-HU-1.01-1001, "Human Performance Tools and Verification Practices"  
S-ODP-OPS-0001, "Conduct of Operations"  
N1-SOP-1, "Reactor Scram"  
N2-SOP-101C, "Reactor Scram"  
N1-EOP-02, "RPV Control"  
N1-EOP-05, "Secondary Containment Control"  
N2-ARP-01, "Control Room Alarm Response Procedures."  
N2-EOP-RPV, "RPV Control"  
Unit 1 Alarm response procedures  
NMP Unit 1 Shift Turnover Checklist, May 20, 2007  
NMP2 Crew Common Turnover Sheet, May 21, 2007  
S-MAP-MAI-0111, "Fluid Leak Management Program", Revision 3

**Section 1R12: Maintenance Effectiveness**

S-MRM-REL-0105, Maintenance Rule Performance Criteria, Revision 00  
Periodic Assessment of Maintenance Rule Program, October 2003-September 2005  
N2-OP-25, "Auxiliary Steam, Auxiliary Condensate and Gland Seal", Revision 5

Attachment 1 of Lesson Plan 02-OPS-001-246-2-00, "Turbine Generator Gland Seal and Exhaust Steam", Revision 4  
Nine Mile Point Nuclear Station (NMP) Maintenance Rule Monitoring Report as of March 2007  
Program Health Report; "NMP Maintenance Rule", Third Quarter 2004  
Maintenance Rule Unavailability Report April 2005-March 2007  
Function Report, Main Turbine Gland Seal and EXH STM  
Maintenance Rule Expert Panel (MREP) Meeting Record C-2006-008  
MREP Meeting Record C-2007-006  
CR 2007-1474  
CR 2006-0663  
WO 06-03769-00, Disassemble and Rebuild Actuator for 68-02 on 1/24/07  
WO 04-07328-00, O-Ring and limit switch replacement, valve BV-68-03, disassembly on 5/1/04  
WO 06-02086-00, O-Ring inspection and Replacement on BV-68-04 on 4/14/07  
WO 06-03025-00, BV-68-09 failed to stroke full open (CR-2006-498)  
PMST Change Form 02-2005-PM-321256-9999, N2-MPM-SWP-Q523, 2SWP\*FV47A/B and 2SWP\*FV54A/B, Change Periodicity From Quarterly to Every 5 Years  
Unit 2 Control Room Logs  
WO 04-17304-00, Hydraulic Oil Leaks on 2SWP\*FV54B work complete 9/25/04 (as found stroke test not performed)  
WO 05-12536-00, SWP\*FV47A Leaking hyd fluid and running erratic with grinding noise (as found stroke test not performed)  
S-MRM-REL-0104, Maintenance Rule Manual, Revision 00. 3/18/2005.  
S-MRM-REL-0101, Maintenance Rule, Revision 17. 5/30/2006.  
NDD-REL, Maintenance Rule and Probabilistic Risk Assessment, Revision 08. 3/16/2005.  
Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." 8/17/1995.  
Generic Letter 89-10, Supplement 6, "Information on Schedule and Grouping, and Staff Responses to Additional Public Questions." 3/8/1994.  
NMP Response to Generic Letter 95-07 and Requests for Additional Information, dated February 13, 1996; June 20, 1996; November 21, 1996; August 29, 1997; April 21, 1999.  
NMP Shutdown Cooling Function Report. Email. Printed 3/30/2007.  
NMP Emergency (SR) UPS Function Report. Email. Printed 3/30/2007.  
NMP Maintenance Rule Reliability Report. Printed 2/26/2007.

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

GAP-OPS-117, "Integrated Risk Management"  
GAP-PSH-03, "Control of On-line Work Activities"  
NAI-PSH-03, "On-line Work Management Process"  
N2-MPM-SWP-R141, "SW Pumps Preventative Maintenance"  
N2-MPM-SWP-A513, "SW Strainer PM"  
N2-OP-78, "Remote Shutdown System"  
N2-OP-11, "SW System"  
WO 06-01737-00, 2SWP\*STR4E, N2-MPM-SWP-A513, SW strainer pm  
WO 06-01734-00, 2SWP\*P1E, N2-MPM-SWP-R141, SW pump pm running checks will be done the week before  
N2-OSP-SWP-Q002, "SW Pump and Valve Operability Test"

WO 06-07918-00, 2RTX-XSR1B, S-EPM-GEN-700, Outdoor transformer and grounding transformer PM  
WO 06-07541-00, N2-EPM-V582, Molded case circuit breaker and thermal overload relay testing, 2EHS\*MCC303-2C  
NUMARC 93-01, "Industry Guidelines For Monitoring The Effectiveness of Maintenance At Nuclear Power Plants"  
OP-72, "Standby And Emergency AC Distribution System"  
OP-70, "Station Electrical Feed and 115 kV Switchyard"  
WO 07-04059-00, Feedwater control station has heat damage that has caused one run on the board to lift regarding 11 RFP controller replacement  
WO 06-13275-00, Control Room panel 2CEC\*PNL601  
N1-IPM-029-008, "Flange and Wide Range Vessel Level Calibration"  
WO 06-09324-00, MOT-81-24, S-EPM-MPM-V080, Site AC Motor Predictive Maintenance Testing (Offline Attachment 2)  
WO 06-09325-00, MOT-81-49, S-EPM-MPM-V080, Site AC Motor Predictive Maintenance Testing  
WO 06-09326-00, Core Spray Topping Pump 112 - Motor Inspection Schedule with BKR-(103/1-4)52  
WO 06-09378-00, Change oil in the 112 Core Spray Topping Pump  
N1-ST-Q1C, "Core Spray Pump and Valve Operability Test"

#### **Section 1R15: Operability Evaluations**

SDBD-203, Containment Spray System  
N1-EOP-1, "NMP1 EOP Support Procedure"  
N1-EOP-4, "Primary Containment Control"  
N1-PM-M010, "Main Turbine Monthly Tests"  
Nine Mile Point Nuclear Station, Elementary Wiring Diagram No. C-19859-C, Sheet 2  
Nine Mile Point Nuclear Station, Elementary Wiring Diagram No. C-19859-C, Sheet 5  
N1-TTP-RXVI-001, "Yarway Column Leak Check"  
Nine Mile Point Nuclear Station, P&ID, Dwg No. C-18015-C, Reactor Vessel Instrumentation  
N1-ST-DO, "Daily Checks," Attachment 4, TS Guidance For Level Indication Deviation  
Nine Mile Point Nuclear Station Operations Manual, Figure 14, Type 1 Decision Making Checklist, completed for issues identified in CR-2007-2822

#### **Section 1R17: Permanent Plant Modifications**

Design Change N2-06-064, "NMP2 BOP (balance of plant) Optimization"  
Special Test N2-STP-051, "Unit 2 Balance of Plant Optimization"

#### **Section 1R19: Post Maintenance Testing**

WO 06-07546-00 Clean Strainers in 2 locations for 2FWP-RV112  
WO 06-07545-00 N2-MPM-FPW-A854 Diesel Driven Fire Pump Engine Inspection (Annual Freq.)  
Maintenance Procedure N2-MPM-FPW-A854 Diesel Driven Fire Pump Engine Inspection, Revision 3

Surveillance Test N2-OSP-FOF-M001 Engine Driven Fire Pump Operability & Storage Tank Level Test, Revision 00

GAP-SAT-02, "Pre/Post-Maintenance Test Requirements"

CNG-HU-1.01, "Human Performance Program"

CNG-HU-1.01-1000, "Human Performance"

CNG-HU-1.01-1001, "Human Performance Tools and Verification Practices"

GAP-MAI-01, "Conduct of Maintenance"

N2-MPM-SWP-R141, "SW Pumps Preventative Maintenance"

N2-MPM-SWP-A513, "SW Strainer PM"

N2-OP-78, "Remote Shutdown System"

N2-OP-11, "SW System"

WO 06-01737-00, 2SWP\*STR4E, N2-MPM-SWP-A513, SW strainer pm

WO 06-01734-00, 2SWP\*P1E, N2-MPM-SWP-R141, SW pump pm running checks will be done the week before

N2-OSP-SWP-Q002, "SW Pump and Valve Operability Test"

N2-OSP-SWP-Q002, "SW Pump and Valve Operability Test," completed on April 28, 2007

N2-OSP-SWP-Q002, "SW Pump and Valve Operability Test," completed on May 18, 2007

N1-ST-V5, "Secondary Containment Doors RB Ventilation IVs and Penetration Post-Maintenance Test" completed March 16, 2007

N1-ST-C5, "Secondary Containment And RB Emergency Ventilation System Operability Test" completed March 14, 2007, Sections 8.1, 8.2 and 8.3

N1-REP-25, "Control Rod Timing and Adjustment During Power Operations," completed on May 8, 2007

N1-MPM-044-658, "Hydraulic Control Unit Preventative Maintenance"

ACR 07-02458, Yellow light did not illuminate during I&C testing during RFO-19, Attachment 10 of N1-ISP-001-006

N1-ST-Q26, "Feedwater and Main Steam Line Power Operated Isolation Valves Partial Exercise Test and Associated Functional Testing of Reactor Protection System Trip Logic" completed May 3, 2007

N1-ST-Q1A, "CS 111 Pump, Valve and SDC Water Seal Check Valve Operability Test"

N2-OSP-SLS-Q001, "Standby Liquid Control Pump, Check Valve, Relief Valve Operability Test and ASME XI Pressure Test"

WO 03-04223-00

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

CNG-HU-1.01, "Human Performance Program"

CNG-HU-1.01-1000, "Human Performance"

CNG-HU-1.01-1001, "Human Performance Tools and Verification Practices"

CNG-HU-1.01-1002, "Pre-Job and Post-Job Critiques"

GAP-OPS-117, "Integrated Risk Management"

S-RPIP-10.4, "Primary Containment Entries"

N1-FHP-27C, "Core Shuffle"

N1-FHP-25, "General Description of Fuel Moves"

N1-ODP-NFM-101, "Refueling Operations"

N1-ODP-OPS-0108, "Shutdown Operations Protection"

N1-OP-34, "Refueling Procedure"

N1-OP-43A, "Plant Startup"

N1-OP-43C, "Plant Shutdown"  
N1-OP-4, "Shutdown Cooling System"  
CR-2007-2822  
CR-2007-2936  
CR-2007-2958  
CR-2007-3016  
CR-2007-3021

### **Section 1R22: Surveillance Testing**

2RSS\*FIC106 Calibration Records and History  
2RSS\*FIC106 IQ Review  
N2-ISP-ICS-R124 Revision 1 Operating Cycle Calibration of Remote Shutdown Monitor RCIC  
Pump Discharge Flow Instrument Channel  
N2-OSP-RSS-R007 Revision 2 RCIC Remote Shutdown Operational Test  
WO 98-07306-00, Trouble linkage that prevents turbine speed from going lower than 3600 rpm  
WO 99-10250-00, Gov. linkage needs a little fine adjustment to achieve lower speed before  
manual trip  
Work Order 98-07450-00 Turbine Governor would not allow speed to < 30  
CNG-HU-1.01, "Human Performance Program"  
CNG-HU-1.01-1000, "Human Performance"  
CNG-HU-1.01-1001, "Human Performance Tools and Verification Practices"  
GAP-SAT-01, "Surveillance Test Program"  
CNG-HU-1.01-1002, "Pre-Job and Post-Job Critiques"  
GAP-OPS-117, "Integrated Risk Management"  
NMPNS Unit 1 Calculation No. 4.16VAC-DG-ES, D.G. Loading  
N1-ST-M4A, "Emergency Diesel Generator 102 and PB 102 Operability Test" completed on  
January 22, 2007  
N1-OP-33A, "115 kV System"  
N2-OSP-CSH-Q@002, "HPCS Pump and Valve Operability and System Integrity Test"  
completed on January 25, 2007  
N1-ST-C5, "Secondary Containment and RB Emergency Ventilation System Operability Test"  
completed on March 14, 2007, Sections 8.1, 8.2, and 8.3  
N2-OP-100B, "HPCS Diesel Generator"  
N2-OSP-EGS-M@002, "Diesel Generator and Diesel Air Start Valve Operability Test - Division  
III" completed January 27, 2007  
N1-IPM-029-008, "Flange and Wide Range Vessel Level Calibration" completed June 7, 2007  
N1-ISP-201-004, "Drywell Floor Drain Tank / Drywell Equipment Drain Tank Level Element  
Calibration"  
N1-ISP-LRT-TYC, "Type "C" Containment Isolation Valve Leak Rate Test"  
N1-ST-R30, "Reactor Pressure Vessel and ASME Class 1 System Leakage Test"  
N2-OSP-CSL-Q@002, "LPCS Pump and Valve Operability and System Integrity Test"

### **Section 1EP6: Drill Evaluation**

NEI 99-02, PI Guidelines, Revision 2  
CNG-HU-1.01, "Human Performance Program"



CNG-HU-1.01-1000, "Human Performance"  
CNG-HU-1.01-1001, "Human Performance Tools and Verification Practices"  
S-ODP-OPS-0001, "Conduct of Operations"  
EPIP-EPP-01, "Classification of Emergency Conditions at Unit 1"  
EPIP-EPP-02, "Classification of Emergency Conditions at Unit 2"  
EPIP-EPP-17, "Emergency Communications Procedure"  
EPIP-EPP-20, "Emergency Notifications"

**Section 20S1: Access Control to Radiologically Significant Areas**

N2-WHP-3, Revision 8, Cask/Seavan Arrival Procedure  
QA-TP-003, Revision 8, Soap Bubble Testing of the Model CNS 3-55 Transportation Cask  
TR-OP-019, Revision 24, Handling Procedure for the Duratek Transportation Cask CNS 3-55  
Certificate of Compliance 5805  
N2-WHP-6, Revision 9, Cask/Seavan Loading Procedure

**Section 20S2: ALARA Planning and Controls**

ALARA Reviews: 07-1-07, Recirc Pump Motors and Seals; 07-1-10, Drywell Scaffold; 07-1-11, Drywell Insulation; 01-7-19, Refuel Floor  
Nine Mile Point Unit 1 Radiation Protection RFO19 Post Outage Report

Post Job ALARA Reviews:  
07-1-01, Drywell RP Surveys/Job Coverage  
07-1-04, Operations Support in Drywell  
07-1-06, Drywell ISI/FAC  
07-1-07, Drywell Recirc Motors and Seals Replacement  
07-1-08, Drywell Cable Replacements  
07-1-09, Drywell Area Cooler Work  
07-1-10, Drywell Scaffold  
07-1-11, Drywell Insulation  
07-1-12, Drywell Temporary Shielding  
07-1-13, Drywell Snubbers  
07-1-14, Drywell ERVs  
07-1-15, Drywell MOV Actuator PMs, Testing, and Repair  
07-1-17, Drywell Decon  
07-1-18, Drywell LLRTs  
07-1-19, N1R19 Refuel Floor Work  
07-1-21, RB 281' SFC #12 Filter Vessel Gasket Replacement  
Instrument Calibration Procedures: S-RTP-52; S-RTP-122; S-RTP-183

**Section 20S3: Radiation Monitoring Instrumentation and Protective Equipment**

Shielding Packages: DW-237-008, Recirc Risers; DW-259-006, N1 & N2 Nozzles; DW-259-013, RWCU Snake Line  
RFO19 Radiation Protection Pre-Outage Report

**Section 2PS2: Radioactive Material Processing and Transportation**

Work Orders: 05-26029-3, Receive and Ship 3-55 Cask; 05-26029-7, Receive and Ship 3-55 Cask to Support Cask Torque Validation Plan

**Section 2PS3: Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program**

Nine Mile Point Unit 1 Offsite Dose Calculation Manual  
Nine Mile Point Unit 2 Offsite Dose Calculation Manual  
Nine Mile Point Nuclear Station, LLC 2006 Annual Radiological Environmental Operating Report

**Procedures:**

S-CSP-925, Revision 2, Sampling and Analysis of Fluids and Semifluids for Release from Radiologically Controlled Area  
S-IMP-MET-201, Revision 1, Dew Point Calibration  
S-IMP-MET-301, Revision 3, Barometric Pressure Calibration  
S-IMP-MET-401, Revision 2, Precipitation Gauge Calibration  
S-IMP-MET-601, Revision 1, Main Meteorological Tower 30 Foot Wind Speed and Direction Calibration  
S-IMP-MET-602, Revision 4, Main Meteorological Tower 100 Foot Wind Speed and Direction Calibration  
S-IMP-MET-603, Revision 1, Main Meteorological Tower 200 Foot Wind Speed and Direction Calibration  
S-IMP-MET-611, Revision 2, Backup Tower Wind Speed and Direction Calibration  
S-IMP-MET-621, Revision 1, Inland Meteorological Tower Wind Speed and Direction Calibration  
S-IMP-MET-701, Revision 1, Temperature and Delta Temperature Instrument Calibration  
Joint Frequency Distribution 2005 (Nine Mile Point, LLC)  
Joint Frequency Tables and Recovery Rates for 2006 (ABS Consulting) Monthly Meteorological Reports: April 2007, March 2007  
James A. FitzPatrick Environmental Laboratory Quality Assurance Report 2006  
James A. FitzPatrick Environmental Laboratory Equipment Control Charts 2/5/07-6/5/07

**Section 4OA2: Identification and Resolution of Problems**

2NER-2M-095, #2D Ultra Low Sulfur Diesel (ULSD) Fuel Oil Use in Diesel Engines at NMPNS, Revision 00  
Unit I EDG #102 No. 2 Diesel Fuel Storage Tank, sample analysis results for 2/15/06  
Unit I EDG #102 No. 2 Diesel Fuel Storage Tank, sample analysis results for 5/15/06  
Unit I EDG #102 No. 2 Diesel Fuel Storage Tank, sample analysis results for 8/15/06  
Unit I EDG #102 No. 2 Diesel Fuel Storage Tank, sample analysis results for 11/15/06  
Unit I EDG #102 No. 2 Diesel Fuel Storage Tank, sample analysis results for 2/20/07  
Unit I EDG #103 No. 2 Diesel Fuel Storage Tank, sample analysis results for 2/15/06  
Unit I EDG #103 No. 2 Diesel Fuel Storage Tank, sample analysis results for 5/15/06  
Unit I EDG #103 No. 2 Diesel Fuel Storage Tank, sample analysis results for 8/15/06  
Unit I EDG #103 No. 2 Diesel Fuel Storage Tank, sample analysis results for 11/15/06  
Unit I EDG #103 No. 2 Diesel Fuel Storage Tank, sample analysis results for 2/20/07

Graph, Unit 2 Diesel Fuel Oil Particulates for 5/1/05 - 6/1/07, 6/7/07  
 N1-CTP-M500, "Monthly Diesel Fuel Oil Sampling and Analysis"  
 N1-CTP-V502, "Incoming Diesel Fuel Oil Sampling and Analysis," performed on 1/16/07  
 N1-CSP-Q504, "Quarterly Diesel Fuel Oil Sampling and Analysis," performed on 5/31/07  
 N2-CSP-EDG-@501, "Incoming Diesel Fuel," 03, performed on 3/30/07  
 N2-CSP-EDG-@501, "Incoming Diesel Fuel," performed on 4/13/07  
 N2-CSP-EDG-M500, "Emergency Diesel Fuel Monthly Particulate Surveillance"  
 N2-CTP-EDG-R504, "Refueling Cycle Emergency Diesel Fuel Storage Tank Check,"  
 PREF 4198, "Diesel Fuel Oil"  
 PREF 4199, "Diesel Fuel Oil"  
 NAI-PSH-05, "Work Control Action Request Screening Process"  
 GAI-OPS-17, "Response to Operational Conditions/Events"  
 N1-NMP-100-851, "Diesel Fire Pump Engine Preventive Maintenance"  
 WO 06-21680 Contingency Work Plan to replace Cooling Coil on DCP  
 N1-PM-M9, "Revision 1 Monthly Operation of Fire Pumps"

#### Condition Reports

2007-0962	2007-1474	2007-1977	2006-0107
2007-1209	2006-0101	2006-3405	2006-0498
2007-2453	2006-0107	2005-4547	2006-2170
2007-1826	2006-3295	2006-5134	2006-3295
2006-5418	2006-5553	2006-5228	2006-3826
2004-3291	2007-0589	2006-0664	2006-3944
2006-3927	2006-4390	2004-3921	2007-0355
2006-4322	2007-2480	2003-3464	2007-2210
2007-2041	2007-3866	2003-3414	2007-2480
2007-3496	2007-2709	2004-4104	2006-4319
2006-3081	2007-4066	2005-0057	2007-1125
2007-3958	2007-3865	2005-2451	2007-1977
2007-1659	2007-4000	2005-2543	2007-2368
2007-2301	2007-2822	2005-4319	2007-1474
2007-0993	2007-2936	2003-4119	2007-2822
2007-3183	2007-2958	2005-3056	2007-3356
2007-3376	2007-3016	2005-3162	
2007-3380	2007-3021	2006-0101	
2007-3378	2006-2691		

#### **Section 40A3: Event Follow-up**

EPIP-EPP-28, "Fire Fighting"

#### **LIST OF ACRONYMS**

ACR	action request
ADAMS	Agency Documents Access Management System
ALARA	as low as reasonably achievable

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ANSI	American National Standards Institute
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
EC	emergency cooling system
EDG	emergency diesel generator
EOP	emergency operating procedure
EPIC	emergency plan implementing procedure
HRA	high radiation area
IMC	inspection manual chapter
IPE	individual plant examination
IRM	intermediate range monitoring
kV	kilovolt
LOCA	loss of coolant accident
LER	licensee event report
LORT	licensed operator requalification training
mrem	millirem
NCV	non-cited violation
NMPNS	Nine Mile Point Nuclear Station
NRC	Nuclear Regulatory Commission
ODCM	offsite dose calculation manual
OP	operating procedure
PARS	publicly available records
PI	performance indicator
RB	reactor building
REMP	radiological environmental monitoring program
RFO	refueling outage
RP	radiation protection
RPS	reactor protection system
RPV	reactor pressure vessel
RWP	radiation work permit
SDP	significance determination process
SSC	structure, system, or component
SW	service water
TDR	time domain reflectometry
TS	technical specifications
UFSAR	updated final safety analysis report
WO	work order