

## Nine Mile Point 1 2Q/2013 Plant Inspection Findings

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### Initiating Events

**Significance:** TBD Jun 30, 2013

Identified By: NRC

Item Type: AV Apparent Violation

#### **Improper Bus Restoration Results in a Loss of Shutdown Cooling**

A self-revealing apparent violation of Technical Specification 6.4.1, "Procedures," was identified at Unit 1 because Constellation Energy Nuclear Group (CENG) failed to properly recover from a loss of a vital direct current (DC) bus in accordance with station off-normal procedures resulting in an unplanned loss of all shutdown cooling (SDC) when time to boil was less than 2 hours. Specifically, during the restoration from the loss of battery bus 12, operators failed to identify a SDC trip signal before attempting restoration of the DC bus, which ultimately lead to a SDC pump trip (i.e. loss of decay heat removal from the reactor). Corrective actions included conducting a prompt human performance event review, entering the issue into their corrective action program, and conducting a root cause analysis. Planned corrective actions include a review of all emergency, off-normal, and normal system operating procedures.

The inspectors determined that CENG's failure to properly restore battery bus 12 in accordance with N1-SOP-47A.1, "Loss of DC," Revision 00101, and N1-OP-47A, "125 VDC Power System," Revision 02500, was a performance deficiency that was reasonably within CENG's ability to foresee and correct and should have been prevented. The performance deficiency was determined to be more than minor because the inspectors determined it affected the configuration control aspect of the Initiating Events cornerstone and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The significance of the finding is designated as To Be Determined (TBD) until a Phase 3 analysis can be completed by the NRC's senior reactor analysts. The inspectors determined this finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety - complete, accurate, and up-to-date design documentation, procedures, work packages, and correct labeling of components. Specifically, CENG procedures N1-SOP-47A.1 and N1-OP-47A did not contain adequate guidance to ensure recovery from a loss of a DC bus would not result in an unexpected plant transient [H.2(c)].

Inspection Report# : [2013003](#) (*pdf*)

**Significance:**  Mar 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Test Conditions Not Properly Established**

A self-revealing finding (FIN) was identified for the failure of CENG, maintenance personnel to ensure appropriate conditions were established during a surveillance test to confirm the lockup valves for flow control valve (FCV)-29-137 were properly functioning at Unit 1. As a result, a failure associated with the lockup valves was not detected during surveillance testing activities conducted in March 2011. This undetected failure led to an unexpected injection of water into the reactor pressure vessel (RPV) on November 6, 2012, during an unplanned outage, resulting in an increase in RPV water level, turbine trip signal, and initiation of the high-pressure coolant injection (HPCI) logic. CENG entered this issue into their corrective action program as condition report (CR)-2012-010141.

This finding is more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, because maintenance personnel did not properly implement procedure N1-IPM-029-010, "Calibration of Feedwater FCV-29-134, FCV-29-137, and FCV-29-14," Revision 00603, the lockup valves for FCV-29-137 were not adequately tested, and as a result, degraded valve performance was not detected during a March 2011 surveillance test. Consequently, on November 6, 2012, FCV-29-137 unexpectedly failed partially open when instrument air was removed from the valve which caused a subsequent increase in RPV level, creation of a turbine trip signal, and initiation of the HPCI injection logic. In accordance with Inspection Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency did not cause a reactor trip, and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable, shutdown condition.

This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because CENG maintenance personnel did not ensure plant conditions and system status were adequate to perform an air drop test on the lockup valves for FCV-29-137. Specifically, CENG personnel failed to ensure the actuating cylinder for FCV-29-137 was pressurized prior to commencing the test. As a result, the air drop test was not properly conducted, and the degraded condition of the lockup valves was not identified [H.4(a)].

Inspection Report# : [2013002](#) (*pdf*)

**Significance:** G Mar 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Inadequate Procedure Change Review Results in Reactor Scram**

A self-revealing finding (FIN) was identified for CENG's failure to perform a cross-disciplinary engineering review in 2003, as required by station procedures, of the amplidyne excitation system operation setting. On September 20, 2012, Unit 1 experienced electrical oscillations at the main generator that required operators to take the automatic voltage regulator (AVR) from automatic to manual. As a result of the incorrect amplidyne operation setting at 10 to 20 volts boost, operators were unsuccessful at mitigating the electrical oscillations at the main generator, ultimately leading to a reactor scram. CENG entered this issue into their corrective action program as condition report (CR)-2012-008673.

This finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, contrary to procedures NIP-PRO-04, "Procedure Change Evaluations and Future Procedure Enhancements," Revision 14, and NIP-PRO-03, "Preparation and Review of Technical Procedures," Revision 14, CENG failed to perform a cross-disciplinary engineering review to identify the inadequate amplidyne operation setting. As a result, the default set point of the AVR was not correct, and when electrical oscillations occurred at the Unit 1 main generator on September 20, the main generator became under excited when the AVR was placed in manual, resulting in a reactor scram. This finding was evaluated in accordance with Inspection Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012. The inspectors determined that this finding is of very low safety significance (Green) because while the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors did not assign a cross-cutting aspect to this finding because the performance deficiency is not indicative of present performance because it did not occur within the last 3 years.

Inspection Report# : [2013002](#) (*pdf*)

**Significance:**  Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Perform a 50.59 Evaluation for a Procedure Change**

The inspectors identified a Severity Level IV non-cited violation (NCV) and associated Green finding (FIN) of Title 10 of the Code of Federal Regulations (10 CFR) 50.59, “Changes, Tests and Experiments,” because Unit 1 failed to perform a written 50.59 evaluation for changes to the operating procedure for the shutdown cooling system (SDCS) isolation valves. Specifically, CENG added steps to the procedure to defeat the design basis safety function of the SDC isolation valves to automatically isolate on a reactor pressure vessel (RPV) low-low water level signal without performing a written 50.59 evaluation. CENG entered this issue into their corrective action program as condition report (CR)-2012-009540.

The inspectors determined that CENG’s failure to perform a written 50.59 evaluation for changes to N1-OP-4, “Shutdown Cooling System,” Revision 03701, as required by 10 CFR 50.59 was a performance deficiency that was reasonably within CENG’s ability to foresee and correct and should have been prevented. Because this issue had the potential to affect the NRCs ability to perform its regulatory function, the inspectors evaluated the performance deficiency in accordance with the traditional enforcement process. The violation was determined to be more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval, because the change resulted in a more than minimal change in the frequency of occurrence of a previously evaluated accident (LOCA).

However, both the NRC Enforcement Policy and NRC Inspection Manual Chapter (IMC) 0612 Appendix B, “Issue Screening,” direct the inspector to evaluate the finding under the significance determination process (SDP) as well. Under the SDP, this finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, by failing to maintain the safety function of the SDCS isolation valves to automatically isolate on low-low RPV water level, Unit 1 increased the likelihood of a LOCA. In accordance with IMC 0609.04, “Initial Characterization of Findings,” IMC 0609 Appendix G, “Shutdown Operations Significance Determination Process,” and Checklist 6 of IMC 0609 Appendix G, Attachment 1, “BWR Cold Shutdown or Refueling Operation, Time to Boil <2 hours: RCS Level <23 feet Above Top of Flange,” the inspectors determined this finding to be of very low safety significance (Green) because this finding was not a loss of control and did not impact checklist attributes requiring a Phase 2 or Phase 3 analysis.

Therefore, in accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is also categorized as a Severity Level IV violation because the resulting conditions were evaluated as having very low safety significance (Green) by the SDP. The inspectors did not assign a cross-cutting aspect to this finding because the performance deficiency is not indicative of present performance because it did not occur within the last 3 years.

Inspection Report# : [2013002](#) (*pdf*)

**Significance:**  Dec 31, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

**Failure to Develop Adequate Inspection Requirements for Main Transformer Modification Results in Reactor Scram**

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

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

Inspection Report# : [2012005](#) (*pdf*)

**Significance:**  Sep 30, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

### **Inadequate Implementation of Operational Decision Making Issues Monitoring Plan for EPR Results in Reactor Scram**

A self-revealing Green finding (FIN) was identified for NMPNS' failure to adequately implement the monitoring activities specified in the operation decision making issues (ODMI) plan for the Unit 1 electronic pressure regulator (EPR) in accordance with procedure CNGOP-1.01-1001, "Operational Decision Making". As a result, when the EPR system began to degrade on June 21, 2012, this condition was not identified by station personnel and corrective action (CA) was not implemented. The EPR subsequently malfunctioned while in service, causing a July 17, 2012, reactor scram. NMPNS removed the EPR from service and entered the issue into its corrective action program as CR-2012-006792.

This finding is more than minor because it adversely affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using Attachment 0609.04, "Initial Characterization of Findings," in Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." The finding was determined to be of low safety significance (Green) because while it caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable

shutdown condition. The finding has a cross-cutting aspect in the area of human performance, work practices, because NMPNS did not ensure proper supervisory and management oversight of the ODMI implementation plan.

Inspection Report# : [2012004](#) (*pdf*)

**Significance:**  Sep 30, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

### **Inadequate Installation Instructions for Control Rod Blade Storage Rack**

A self-revealing Green finding (FIN) was identified for NMPNS' failure to provide adequate instructions for the installation of a control rod blade storage rack in the Unit 1 spent fuel pool. Specifically, certain critical steps were missing from the installation instructions and as a result, the rack was not properly installed, causing it to shift. The rack could have dropped, potentially resulting in damage to the spent fuel bundles stored beneath the rack. NMPNS' immediate CAs were to halt further control rod blade moves and install temporary slings to hold up the rack. The rack was then re-leveled and the jacking pad was welded to the spent fuel pool curb. NMPNS entered this issue into its corrective action program as CR 2012-006547.

This finding is more than minor because it would have the potential to lead to a more significant safety concern; e.g. spent fuel bundle damage and a radiological release. The inspectors evaluated the finding using Attachment 0609.04 of Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Exhibit 3, "Barrier Integrity Screening Questions," pertaining to spent fuel pools and determined this finding to be of very low safety significance (Green), because the finding did not adversely affect decay heat removal capabilities or pool water inventory, and did not result from fuel handling errors, dropped fuel assembly, dropped storage cask, or crane operations over the spent fuel pool that caused mechanical damage to fuel clad and a detectible release of radionuclides. The finding has a cross-cutting aspect in the area of work practices because NMPNS did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported. Specifically, NMPNS supervision did not ensure that critical assumptions contained in the control rod storage rack design analysis concerning the configuration of the Unit 1 spent fuel pool curb were translated into the installation instructions, and differences between Units 1 and 2 curbs noted during the installation were captured or evaluated by engineering, work control, or the CA process.

Inspection Report# : [2012004](#) (*pdf*)

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## **Mitigating Systems**

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## **Barrier Integrity**

**Significance:**  Jun 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### Containment Leakage Exceeds Technical Specification 3.3.3 Limits

A self-revealing non-cited violation of Technical Specification (TS) 3.3.3, "Leakage Rate," was identified for Constellation Energy Nuclear Group's (CENG) failure from December 3 to December 13, 2012, to maintain containment leakage less than 1.5 percent by weight of the containment air per day and less than 0.6 percent by weight of the containment air per day for all penetrations and all primary containment isolation valves subject to Title 10 of the Code of Federal Regulations Part 50, Appendix J, Types 'B' and 'C' tests, when pressurized to 35 pound per square inch gauge when reactor coolant system temperature is above 215 degree Fahrenheit and primary containment integrity is required. CENG entered this issue into their corrective action program as condition report CR-2012-011247. Corrective actions included cleaning iron oxide from the primary containment vent and purge valve and replacing the resilient seals.

This finding is more than minor because it is associated with the structure, system, component, and barrier performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, containment leakage exceeded the leakage limits outlined in the Unit 1 TS 3.3.3 from December 3 to December 13, 2012. This finding was evaluated in accordance with Inspection Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," and Table 6.2, "Phase 2 Risk Significance-Type B Findings at Full Power," of IMC 0609, Appendix H, "Containment Integrity Significance Determination Process," issued May 6, 2004. The inspectors determined this finding was of very low safety significance (Green) because the leakage was less than 100 percent of containment volume per day for the duration of the leak. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because CENG failed to take appropriate corrective action to address safety issues and adverse trends in a timely manner commensurate with their safety significance. Specifically, following identification of the adverse trend regarding the frequency of nitrogen addition to the drywell, CENG did not assess in a timely manner the significance of the leakage and the impact on primary plant containment [P.1(d)].

Inspection Report# : [2013003](#) (*pdf*)

**Significance:**  Dec 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### Inadequate Post Maintenance Test Results in Subsequent Failure of 11 CREVS Fan

A self-revealing Green NCV of TS 6.4.1 occurred because NMPNS failed to develop an adequate post maintenance test (PMT) to determine operability of the 11 control room emergency ventilation system. Specifically, troubleshooting on December 2 failed to identify a cause of the failure and an inadequate PMT was performed to determine operability. As a result the degraded system was returned to service even though it did not meet all the requirements for operability. The limiting condition for operation (LCO) was exited incorrectly, and the issue was not identified and resolved until subsequent surveillance testing. Following subsequent surveillance testing, the degraded circuit was repaired and a successful PMT was performed. The issue was entered into NMPNS CAP as CR-2012-011027.

This finding is more than minor because it adversely affected the structure, system, and component (SSC) and barrier performance attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the operators in the control room from radionuclide releases caused by accidents or events. The finding was evaluated in accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A. The inspectors determined that this finding is of very low safety significance (Green) because the

performance deficiency only represented a degradation of the radiological barrier function provided for the control room. This finding has a cross-cutting aspect in the area of problem identification and resolution, because NMPNS failed to thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, if NMPNS would have identified the cause of the problem and performed an adequate PMT, the system would not have been restored with a degraded condition [P.1(c)].

Inspection Report# : [2012005](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** N/A Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Submit a Required Licensee Event Report**

The inspectors identified a Severity Level IV non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) 50.73(a)(2)(iv)(A) in that Unit 1 inappropriately retracted an event notification report (ENR) and subsequently failed to make the required licensee event report (LER) for a valid actuation of the high-pressure coolant injection (HPCI) system. Specifically, CENG inappropriately retracted ENR number 48477, an 8-hour notification for a valid HPCI actuation and failed to submit an LER within 60 days of discovery of the actuation. CENG entered this issue into their corrective action program as CR-2013-001859.

The inspectors determined that the inappropriate retraction of a notification required by 10 CFR 50.72(b)(3)(iv)(A) and failure to make a required event report in accordance with 10 CFR 50.73(a)(2)(iv)(B)(4) were performance

deficiencies that were reasonably within CENG's ability to foresee and correct and should have been prevented. Because this issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated these performance deficiencies in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined that the violation was a Severity Level IV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation. Because this violation involves the traditional enforcement process and does not have an underlying technical violation that would be considered more than minor, the inspectors did not assign a cross-cutting aspect to this violation in accordance with Inspection Manual Chapter 0612, Appendix B, "Issue Screening," issued September 7, 2012.

Inspection Report# : [2013002](#) (*pdf*)

Last modified : September 03, 2013