



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Grand Gulf 1 > Quarterly Plant Inspection Findings

Grand Gulf 1 – Quarterly Plant Inspection Findings

3Q/2017 – Plant Inspection Findings

On this page:

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness
- Occupational Radiation Safety
- Public Radiation Safety
- Security

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2017

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Establish an Appropriate Preventative Maintenance Procedure for the HPCS Jockey Pump

The inspectors reviewed a self-revealed, non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to establish appropriate procedural instructions for performing preventative maintenance on the high pressure core spray jockey pump. Specifically, on January 27, 2017, the high pressure core spray jockey pump failed because the licensee did not establish a preventative maintenance procedure that prescribes oil analysis and additional performance trending for the high pressure core spray jockey pump every 6 months consistent with the licensee's preventative maintenance strategy template. On January 29, 2017, the licensee completed repairs and returned the high pressure core spray jockey pump and high pressure core spray system to operable status. The licensee has also incorporated oil analysis and performance trending into the preventative maintenance for jockey pumps. This issue has been entered into the licensee's corrective action program as Condition Report CR-GGN-2017-0917.

The failure to establish appropriate preventative maintenance instructions for the high pressure core spray jockey pump was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, 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. Specifically, the failure to establish appropriate preventative and predictive maintenance work instructions resulted in the unplanned inoperability and unavailability of the high pressure core spray system. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding resulted in a loss of system and/or function; therefore, a detailed risk evaluation was performed. A senior reactor analyst performed a detailed risk evaluation in

accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power." The NRC determined that the increase in core damage frequency for internal initiators was $1.59E-7$ /year, and a bounding analysis of external initiators indicated that these events would not result in a change in the color of the finding. Therefore, this finding is of very low safety significance (Green). The analyst also determined that an estimation of large early release frequency (LERF) was required. The result was an increase in LERF of $3.19E-8$ /year, which is of very low safety significance for LERF (Green).

This finding had a cross-cutting aspect in the area of human performance associated with consistent process because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee did not use a consistent approach in developing a preventative maintenance strategy for the high pressure core spray jockey pump by utilizing the approved preventative maintenance strategy template.

Inspection Report# : 2017002 (*pdf*)

Significance:  Apr 21, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Untimely Corrective Action

The team identified a non-cited violation of License Condition 2.C.(41) for failure to correct a condition adverse to fire protection in a timely manner. Specifically, the licensee failed to complete evaluations of multiple spurious operations (MSO) concerns identified in 2011. The licensee entered this finding into their corrective action program as Condition Report CR GGN 2017-03996.

The failure to correct a condition adverse to fire protection in a timely manner was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, untimely resolution of these MSO actuations placed the facility at risk of being unable to safely shutdown the facility in response to a fire.

The finding was screened in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," dated June 19, 2012. Because the finding affected the ability to achieve and maintain post-fire safe shutdown, the team reviewed the finding using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," dated September 20, 2013. The finding was screened as a Green finding of very low safety significance in accordance with Task 1.3, "Ability to Achieve Safe Shutdown," Question A. Although the licensee failed to completely evaluate the impact of MSOs that could potentially result in the loss of suppression pool inventory, the team determined that for all fire areas one division of the residual heat removal system and the supporting standby service water system remained available along with suppression pool level indication. The team confirmed that suppression pool makeup for the standby service water system would remain available. For the postulated control room fire that led to control room evacuation, a senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding. The senior reactor analyst determined this finding was of very low safety significance. The finding had a cross-cutting aspect in the Conservative Bias component of the Human Performance area because the licensee failed to use decision making-practices that emphasize prudent choices over those that are simply allowable. Specifically, the licensee reclassified a condition report to be non-adverse allowing resolution to be given a lower priority prior to completing the evaluations required to provide a technical basis for that decision.

Inspection Report# : 2017008 (*pdf*)

Significance: G Apr 21, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Alternative Shutdown Procedure Timing

The team identified a Green non-cited violation of Technical Specification 5.4.1.a for the failure to implement and maintain adequate written procedures covering a fire in the control room. Specifically, the licensee failed to maintain an alternative shutdown procedure that ensured operators could safely shut down the plant under all postulated fire scenarios within the time limits established by the thermal hydraulic analysis. The licensee entered this finding into their corrective action program as Condition Report CR-GGN-2017-04011. As an immediate compensatory measure, the license issued Standing Order 17-0010 to provide operators additional guidance.

The failure to implement and maintain adequate written procedures covering timed operator actions during a fire in the control room was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the alternative shutdown procedure failed to ensure operators could safely shut down the plant under all postulated fire scenarios within the time limits established by the thermal hydraulic analysis. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a postulated control room fire that led to control room evacuation. The senior reactor analyst determined this finding was of very low safety significance.

The finding did not have a cross-cutting aspect since it was not indicative of present performance in that the performance deficiency occurred more than 3 years ago.

Inspection Report# : 2017008 (*pdf*)

Significance: G Apr 21, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Isolate Control Circuits for Safe Shutdown Equipment From the Effects of a Control Room Fire

The team identified a Green non-cited violation of License Condition 2.C.(41) for the failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to adequately isolate control circuits for safe shutdown equipment to ensure independence from the effects of a fire in the control room. The licensee entered this finding into their corrective action program as Condition Report CR GGN 2017 04028. As an immediate compensatory measure, the licensee issued Standing Order 17-0010 to provide operators additional guidance.

The failure to adequately isolate control circuits for safe shutdown equipment from the effects of a control room fire was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the spurious actuation of safety relief valves would adversely affect the safe shutdown equipment relied upon to achieve and maintain safe shutdown conditions. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it

involved a postulated control room fire that led to control room evacuation. The senior reactor analyst determined this finding was of very low safety significance.

The finding did not have a cross-cutting aspect since it was not indicative of present performance in that the performance deficiency occurred more than 3 years ago.

Inspection Report# : 2017008 (*pdf*)

Significance:  Apr 21, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Alternative Shutdown Procedure Steps

The team identified a Green non-cited violation of Technical Specification 5.4.1.a for the failure to maintain adequate written procedures covering a fire in the control room. Specifically, the licensee failed to ensure that all steps in Procedure 05-1-02-II-1, "Shutdown from the Remote Shutdown Panel," could be performed as written. Specifically, the licensee's procedure did not provide specific guidance to the control room staff on how to actuate the low pressure core spray pump breaker lockout relay. The licensee initiated Condition Report CR-GGN-2017-03368 to address the deficiency and immediately implemented Standing Order 17-0009, which provides specific guidance to the control room staff on how to actuate the low pressure core spray pump breaker lockout relay.

The failure to provide a procedure that operators understood to implement the requirements of the approved fire protection program for a fire in the control room was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the alternative shutdown procedure failed to ensure operators could safely shut down the plant during a control room fire causing circuit faults. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since it involved a postulated control room fire that led to control room evacuation. The Senior Reactor Analyst determined this finding was of very low safety significance.

The finding did not have a cross-cutting aspect since it was not indicative of present performance in that the performance deficiency occurred more than 3 years ago.

Inspection Report# : 2017008 (*pdf*)

Significance:  Dec 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Incorporate Design Requirements for Switchgear Room Cooling

The inspector identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," involving the failure to implement appropriate design control measures associated with a safety-related service water flow calculation. Specifically, several unverified and potentially nonconservative inputs were identified associated with Calculation MC-QIP41-97020, Revision 11, "Determination of Minimum Allowable SSW Flows (LOCA Lineup) to Safety Related Heat Exchangers," used to analyze minimum service water flow to the vital switchgear room coolers. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2016-07597, initiated action to update Calculation MC-QIP41-97020, and initiated actions to analyze the ability of vital switchgear room cooling to meet its specified safety function.

This performance deficiency was more than minor, and therefore a finding, because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and it adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee did not assure that the vital switchgear ventilation system was capable of maintaining the rooms' temperature below design requirements under all conditions. The NRC performed an initial screening of the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated July 1, 2012, this finding had very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating system; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This finding had a cross-cutting aspect in the documentation aspect of the human performance cross-cutting area because the licensee failed to maintain complete, accurate, and up-to-date documentation of the design temperature limits for safety-related equipment. Specifically, the licensee failed to document and evaluate a change to temperature limits related to switchgear cooling to ensure that its use as a design parameter was consistent with original design specifications of the equipment.

Inspection Report# : 2016004 (*pdf*)

Significance:  Nov 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Obtain NRC Approval For Changes to the Reactor Protection System

The team identified a Severity Level IV non-cited violation of 10 CFR 50.59(c)(2), "Changes, Tests, and Experiments," for the licensee's failure to obtain a license amendment prior to implementing a proposed change, test, or experiment that would result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the final safety analysis report. Specifically, from June 24, 2014, until November 3, 2016, the licensee modified its reactor protection system to remove turbine first stage pressure instrumentation to measure reactor power, which resulted in a more than minimal increase of the likelihood of a malfunction. The failure to obtain a license amendment prior to implementing a change that resulted in a more than a minimal increase in the likelihood of occurrence of a malfunction of a system important to safety was a performance deficiency. In response to this issue, the licensee implemented compensatory actions to ensure the reactor protection system trips would be enabled when required, will either prepare a new evaluation under current regulatory guidelines, or submit a license amendment request to the NRC, and documented the condition in its corrective action program as Condition Report CR-GGN-2016-08298.

This performance deficiency was more-than-minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the elimination of the turbine first stage pressure instruments increased the likelihood of a malfunction of the reactor protection system. Additionally, the violation was similar to the more than-minor examples in the NRC Enforcement Manual Appendix E, "Minor Violations - Examples", dated September 9, 2013. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. Since the violation was determined to be Green in the significance determination process, the traditional enforcement

violation was determined to be a Severity Level IV violation, consistent with the example in paragraph 6.1.d(2) of the NRC Enforcement Policy. Traditional enforcement violations are not assessed for cross-cutting aspects.

Inspection Report# : 2016007 (*pdf*)

Significance:  Nov 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Obtain NRC Approval For Changes to Diesel Generator Trips and Flood Mitigation Strategy

The team identified two examples of a Severity Level IV non-cited violation of 10 CFR 50.59(c)(2), "Changes, Tests, and Experiments," for the licensee's failure to conclude that modifications to the Division 3 diesel generator trip logic circuits and flood mitigation strategy would have required a license amendment. Specifically, from October 7 to November 3, 2016, the licensee removed the automatic high crankcase diesel generator trip and from March 5, 2013, to November 3, 2016, used an unapproved method for mitigating design basis flooding. The licensee's failure to obtain a license amendment prior to implementing a change that resulted in a more than a minimal increase in the likelihood of occurrence of a malfunction of a system important to safety was a performance deficiency. In response to these issues, the licensee entered the issues into the corrective action program as Condition Reports CR-GGN-2016-08328 and CR-GGN-2016-08329 and will either prepare new evaluations under current regulatory guidelines, or submit a license amendment request to the NRC.

The first example of a performance deficiency for the change to the Division 3 diesel generator trip logic was more-than-minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the elimination of the diesel generator automatic trips increased the likelihood of a malfunction of systems important to safety. The second example of a performance deficiency for a change to the flood mitigation strategy to rely on the construction of temporary sandbag barriers was more-than-minor because it was associated with the protection against external hazards attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, the violation was similar to the more-than-minor example of a change in requirements in the NRC Enforcement Manual Appendix E, "Minor Violations - Examples", dated September 9, 2013. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. Since the violation was determined to be Green in the significance determination process, the traditional enforcement violation was determined to be a Severity Level IV violation, consistent with the example in paragraph 6.1.d(2) of the NRC Enforcement Policy. Traditional enforcement violations are not assessed for cross-cutting aspects.

Inspection Report# : 2016007 (*pdf*)

Significance:  Nov 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate Delaying Inspection of Diesel Fuel Oil Storage Tank

The team identified a Severity Level IV non-cited violation of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," for the licensee's failure to provide a written evaluation describing the basis for determining that a change to how often the Division 3 diesel fuel oil storage tank is cleaned and inspected did not require a license amendment. The failure to

perform an evaluation prior to implementing a change that resulted in a more than a minimal increase in the likelihood of occurrence of a malfunction of a system important to safety as required by 10 CFR 50.59 was a performance deficiency. In response to this issue, the licensee declared the Division 3 diesel generator inoperable until it performed the cleaning and inspections required by Regulatory Guide 1.137. After the inspection was successfully completed without issues, the licensee declared the Division 3 diesel generator to operable. This issue was entered the issue into the corrective action program as Condition Report CR-GGN-2016-08327.

This performance deficiency was more-than-minor because if left uncorrected, the issue would the performance deficiency have the potential to lead to a more significant safety concern. Specifically, the failure to clean and inspect the Division 3 fuel oil storage tank could result in the failure of the Division 3 diesel system. Additionally, the violation was similar to the more-than-minor example of changes to requirements in the NRC Enforcement Manual Appendix E, "Minor Violations - Examples", dated September 9, 2013. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. Since the violation was determined to be Green in the significance determination process, the traditional enforcement violation was determined to be a Severity Level IV violation, consistent with the example in paragraph 6.1.d(2) of the NRC Enforcement Policy. Traditional enforcement violations are not assessed for cross-cutting aspects.

Inspection Report# : 2016007 (*pdf*)

Significance: G Nov 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish Adequate Procedures for Building Sandbag Barriers

The team identified a Green, non-cited violation of Technical Specification 5.4.1(a), "Procedures," for failure to establish adequate procedures for severe weather operations. Specifically, the licensee failed to establish adequate severe weather procedures to ensure the control building, diesel building, and standby service water pump houses would be adequately protected from flooding. The failure to establish adequate procedures for severe weather operations to ensure compliance with Technical Specification 5.4.1(a), "Procedures," and with the Regulatory Guide 1.33, Appendix A, Section 6.w, "Acts of Nature," was a performance deficiency. In response to this issue, the licensee calculated the maximum allowable leakage of the sandbag barriers that would adequately protect any structure, system, or components important to safety from flooding. Additionally, the licensee performed a mock-up of the sandbag barriers and determined that the expected leakage through the sandbag barriers during a probable maximum precipitation event would be less than the maximum leakage allowed by the calculation. This finding was entered into the licensee's corrective action program as Condition Reports CR-GGN-2016-08294 and CR-GGN-1-2016-08912.

This performance deficiency was more-than-minor because it was associated with the protection against external factors 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. Specifically, the licensee failed to establish adequate procedures to ensure the sandbag barriers offer adequate flood protection during a probable maximum precipitation event that no structures, systems, or components important to safety are affected. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system

or train; did not result in the loss of one or more trains of nontechnical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined the finding had a cross-cutting aspect of Avoiding Complacency within the area of Human Performance because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk in building the sandbag barriers, even while expecting successful outcomes.

Inspection Report# : 2016007 (*pdf*)

Barrier Integrity

Significance: G Nov 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Technical Specification Surveillance Requirements for Reactor Protection System

The team identified a Green non-cited violation of 10 CFR 50.36, "Technical Specifications," which requires that "surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." Contrary to this requirement, from June 24, 2014, until November 3, 2016, the licensee failed to include in its technical specification a surveillance requirement to assure that the facility operation will be within safety limits. Specifically, after modifying its reactor protection system to remove turbine first stage pressure instrumentation, the licensee failed to adjust the interval at which it calibrates the average power range monitor channels during surveillance tests to ensure the signals were accurately indicating the true core average power and that reactor protection system trips were enabled when required to assure the facility will be within safety limits. The licensee's failure to ensure "surveillance requirements relating to calibration to assure that facility operation will be within safety limits, and that the limiting conditions for operation will be met" was a performance deficiency. In response to this issue, the licensee implemented compensatory actions to ensure the reactor protection system trips would be enabled when required, and documented the condition in its corrective action program as Condition Report CR-GGN-2016-08297.

This performance deficiency was more-than-minor because it was associated with the thermal limit design control attribute of the Barrier Integrity 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, the surveillance requirements did not assure calibration of the average power range monitors to ensure an accurate measurement of reactor power such that the reactor protection system trips were enabled at 35.4 percent power. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect in the area of human performance associated with change management because the licensee failed to use a systematic process for evaluating and implementing changes to the reactor protection system so that nuclear safety remains the overriding priority.

Inspection Report# : 2016007 (*pdf*)

Emergency Preparedness

Significance: G Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Conduct a Drill Required by the Site Emergency Plan in 2014

The inspectors identified a non-cited violation of 10 CFR 50.54(q)(2) associated with the licensee's failure to conduct a drill required by the site emergency plan in 2014. The licensee was required to conduct a drill involving both the site first-aid team and a local hospital. This violation is not an immediate safety concern because drills were conducted involving the site first-aid team and other drills were conducted at local hospitals. This issue has been entered into the licensee's corrective action program as Condition Report CR-GGN-2017-00311.

The performance deficiency was more than minor, and therefore a finding, because it was associated with the emergency response organization performance (drills and exercises) cornerstone attribute and adversely affected the Emergency Preparedness Cornerstone objective of being capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was evaluated using Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 22, 2015. The finding was determined to be of very low safety significance (Green) because it was a failure to comply with NRC requirements, was not associated with the risk-significant planning standards, and was not a degraded planning standard function. The finding had a cross-cutting aspect in the area of human performance associated with training because the licensee did not maintain a workforce knowledgeable about the requirements of the emergency plan.

Inspection Report# : 2017001 (*pdf*)

Occupational Radiation Safety

Significance: G Dec 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Use Procedures and Engineering Controls to Maintain Occupational Doses ALARA

The inspectors identified a non-cited violation of 10 CFR 20.1101(b) for the licensee's failure to implement radiation exposure reduction procedures and engineering controls to minimize unplanned and unintended radiation dose to workers and to maintain occupational doses as low as is reasonably achievable (ALARA). Several radiological work permits exceeded initial dose estimates with minimal or no actions taken to evaluate the basis for the dose overrides and to develop mitigating strategies. The primary contributor to the unplanned exposures was elevated dose rates from increased cobalt-60 activity associated with a failure to properly plan and execute spent fuel pool and reactor cavity cleanup operations. In addition, the licensee failed to observe radiological work permit hold points, to initiate ALARA Management Committee meetings, and to perform radiological assessments of radiological work permit dose estimates as procedurally required. As immediate corrective actions, the licensee reviewed the work activity, documented lessons learned, and generated Condition Reports CR-GGN-2016-03151 and CR-GGN-2016-08543 to address these programmatic weaknesses for future outages.

The failure to implement procedures and engineering controls to minimize unplanned and unintended radiation dose and to maintain occupational doses as low as is reasonably achievable was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (ALARA planning) and adversely affected the cornerstone objective to ensure the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, inadequate ALARA planning and radiological controls resulted in unplanned, unintended dose for a number of work activities in which the actual collective dose exceeded 5 person-rem and exceeded the planned, intended dose by more than 50 percent. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined this finding to be of very low safety significance (Green) because the finding involved ALARA planning

and controls, and because the licensee's latest 3-year rolling average did not exceed 240 person-rem per unit for boiling water reactors. The finding had a cross-cutting aspect in the area of problem identification and resolution, associated with operating experience, in that, the licensee's organization failed to systematically and effectively collect, evaluate, and implement relevant internal and external operating experience in a timely manner. Specifically, the licensee failed to implement and incorporate relevant internal operating experience from Refueling Outage 18, which was of similar radiological circumstances, to mitigate the effects of cobalt-60 activity in the reactor cavity and unplanned spent fuel pool cleanup outages.

Inspection Report# : 2016004 (*pdf*)

Public Radiation Safety

Significance: G Jul 14, 2017

Identified By: NRC

Item Type: VIO Violation

Failure to Correct Instrument Calibration Process in a Timely Manner

The inspectors identified a violation of 10 CFR 20.1501(c) for the failure to properly calibrate installed radiation monitors using industry accepted calibration methods and tolerances. Specifically, since January 2012, the licensee failed to properly calibrate the following radiation monitors: main steam line, containment high range, and the drywell high range. This violation was originally entered into the licensee's corrective action program in March 2015 as Condition Report CR-GGNS-2015-01832. However, in 2017, inspectors determined that subsequent to 2015, the licensee failed to implement corrective actions to properly calibrate the instruments. The licensee entered this repetitive issue into their corrective action process as Condition Report CR-GGN-2017-06826.

The failure to properly calibrate radiation monitors is a performance deficiency. The performance deficiency is more than minor because it is associated with the cornerstone attribute of plant instrumentation and adversely affects the cornerstone objective to ensure adequate protection of employee health and safety during routine civilian nuclear reactor operation and is therefore a finding. Specifically, the failure to properly calibrate radiation monitors impacts the licensee's ability to assess dose rates. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding to be of very low safety significance because it was not an as low as reasonably achievable (ALARA) issue, there was no overexposure or substantial potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding has a cross-cutting aspect in the resources component of the Problem Identification and Resolution area because the licensee did not ensure that effective corrective actions were implemented to address issues in a timely manner commensurate with the safety significance.

Inspection Report# : 2017012 (*pdf*)

Significance: G Jul 14, 2017

Identified By: NRC

Item Type: FIN Finding

Failure to Operate the Gaseous Radwaste System Within Design Specifications

The inspectors identified a finding associated with the licensee's failure to operate the gaseous radwaste system within design specifications. These deficiencies in design specifications were associated with the off gas charcoal adsorber and vault refrigeration components of the gaseous radwaste system, which has impacted the system's reliability and efficiency since at least 2007. The design parameters for offgas flow rate into the charcoal adsorbers and vault refrigeration temperature were 30 scfm and 0 degrees Fahrenheit, respectively. In contrast, the gaseous radwaste system is being operated with an approximate flow rate is 80 scfm and vault refrigeration temperature is 15 degrees Fahrenheit. The licensee has developed a system improvement plan to address resolution of these issues during the next scheduled

outages. This performance deficiency was entered into the licensee's corrective action program as Condition Report CR-GGN-2017-06875.

The failure to operate the offgas gaseous radwaste system within design specifications, resulting in elevated radiological effluent releases, is a performance deficiency. The finding is more than minor because it is associated with the plant equipment attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of public health and safety from exposure of radioactive materials released into the public domain as a result of routine civilian nuclear plant operation. Using Inspection Manual Chapter 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because it involved the Effluent Release Program, it did not impair the ability to assess dose, and did not exceed the 10 CFR Part 50, Appendix I, or 10 CFR 20.1301(d) limits. The finding has a cross-cutting aspect in the area of problem identification and resolution, associated with the resolution component, because the licensee failed to take effective corrective actions in a timely manner to minimize the unreliability and inefficiency of the gaseous radwaste system.

Inspection Report# : 2017012 (*pdf*)

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : November 29, 2017

Page Last Reviewed/Updated Monday, November 06, 2017