



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

February 12, 2018

Mr. Eric Larson, Site Vice President
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

**SUBJECT: GRAND GULF NUCLEAR STATION – NRC PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000416/2017011**

Dear Mr. Larson:

On January 18, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution biennial inspection at your Grand Gulf Nuclear Station, Unit 1. The NRC inspection team discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC determined that individuals generally identified issues at an appropriately low threshold.

The inspectors selected and reviewed 800 condition reports during the inspection. The NRC determined that the licensee did not evaluate and address 85 (10.6 percent) of the condition reports reviewed by the inspectors appropriately and timely, commensurate with their safety significance. Overall, the NRC concluded that the licensee lacked consistency when developing appropriate corrective actions to address conditions adverse to quality. The NRC identified notable deficiencies with respect to the effectiveness, prioritization, and evaluation of issues.

The team reviewed the station's programs to establish and maintain a safety-conscious work environment and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team's observations and the results of these interviews, the team found no evidence of challenges to your organization's safety-conscious work environment. Your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

The NRC inspectors documented six findings with eleven total examples in this report. Three of the findings involved violations of NRC requirements. All of these findings were determined to be of very low safety significance (Green). The three findings involving violations of NRC requirements were documented as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC resident inspector at the Grand Gulf Nuclear Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC resident inspector at the Grand Gulf Nuclear Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC's Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Thomas R. Hipschman, Team Leader
Inspection Program and Assessment Team
Division of Reactor Safety

Docket No. 50-416
License No. NPF-29

Enclosure:
Inspection Report 05000416/2017011
w/Attachments:
1. Supplemental Information
2. Information Request

**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket: 05000416

License: NPF-29

Report: 05000416/2017011

Licensee: Entergy Operations, Inc.

Facility: Grand Gulf Nuclear Station, Unit 1

Location: 7003 Baldhill Road
Port Gibson, MS 39150

Dates: October 30, 2017, through January 18, 2018

Team Lead: J. Sowa, Senior Resident Inspector

Inspectors: R. Azua, Senior Reactor Inspector
L. Micewski, Senior Resident Inspector
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Approved By: T. Hipschman, Team Leader
Inspection Program and Assessment Team
Division of Reactor Safety

Enclosure

SUMMARY

IR 05000416/2017011; 10/30/2017 – 01/18/2018; Grand Gulf Nuclear Station; Problem Identification and Resolution (Biennial)

The inspection activities described in this report were performed between October 30, 2017, and January 18, 2018, by two inspectors from the Nuclear Regulatory Commission's Region IV office, the resident inspector from Waterford 3 Steam Electric Station, and the senior resident inspectors from Grand Gulf Nuclear, Susquehanna Steam Electric, and River Bend Stations. The report documents six findings of very low safety significance (Green). Three of these findings involved violations of Nuclear Regulatory Commission requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Nuclear Regulatory Commission Inspection Manual Chapter 0609, "Significance Determination Process," dated April 29, 2015. Their cross-cutting aspects are determined using Nuclear Regulatory Commission Inspection Manual Chapter 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. Violations of Nuclear Regulatory Commission requirements are dispositioned in accordance with the Nuclear Regulatory Commission Enforcement Policy. The Nuclear Regulatory Commission's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

Assessment of Problem Identification and Resolution

Based on its inspection sample, the team concluded that the licensee maintained a corrective action program in which individuals generally identified issues at an appropriately low threshold.

The inspectors selected and reviewed 800 condition reports during the inspection. The Nuclear Regulatory Commission determined that the licensee did not evaluate and address 85 (10.6 percent) of the condition reports reviewed by the inspectors appropriately and timely, commensurate with their safety significance. Overall, the Nuclear Regulatory Commission concluded that the licensee lacked consistency when developing appropriate corrective actions to address conditions adverse to quality. The Nuclear Regulatory Commission identified notable deficiencies with respect to the effectiveness, prioritization, and evaluation of issues.

The licensee appropriately evaluated industry operating experience for relevance to the facility and entered applicable items in the corrective action program. The licensee incorporated industry and internal operating experience in its root cause and apparent cause evaluations. The licensee performed effective and self-critical nuclear oversight audits and self-assessments. The licensee maintained an effective process to ensure significant findings from these audits and self-assessments were addressed.

The licensee maintained a safety-conscious work environment in which personnel were willing to raise nuclear safety concerns without fear of retaliation.

Cornerstone: Mitigating Systems

- Green. The inspectors identified five examples of a finding for the licensee's failure to categorize and evaluate conditions in accordance with procedural requirements. Specifically, the licensee did not categorize adverse conditions that represented the loss of a safety function as significant conditions adverse to quality as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 28. The

licensee entered the conditions into their corrective action program as Condition Report CR-GGN-2017-10896. The licensee initiated corrective actions to re-categorize the conditions and perform the required evaluations.

The failure to categorize conditions that represent the loss of a safety function as significant conditions adverse to quality as required by Procedure EN-LI-102 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, root cause evaluations, corrective actions to prevent recurrence, and effectiveness reviews are used per licensee Procedure EN-LI-102 to ensure availability and reliability of structures, systems, and components are maintained. Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program. This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee's failure to consistently evaluate the conditions during initial screening led to the incorrect categorization of the condition reports [H.13]. (Section 4OA2.5a)

- Green. The inspectors identified a finding for the licensee's failure to disposition conditions as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 30. Specifically, the licensee did not identify 72 conditions as either Adverse Category B, C, or D as required by the procedure. As a result, the licensee failed to perform the required cause evaluations and develop corrective actions to address the conditions. The licensee entered the conditions into their corrective action program as Condition Report CR-GGN-2017-10896. The licensee initiated corrective actions to re-categorize the conditions and perform the required evaluations.

The failure to disposition conditions as adverse (B, C, or D) as required by Procedure EN-LI-102 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, condition reports associated with deficiencies or potential deficiencies involving safety-related equipment are required to be categorized as adverse and appropriate corrective actions are assigned including causal analyses appropriate to the circumstances per licensee Procedure EN-LI-102. The inspectors performed an initial screening of the finding in accordance with Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its technical specification allowed outage

time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program. This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee's failure to consistently disposition identified conditions as adverse led to the failure to fully evaluate the conditions [H.13]. (Section 4OA2.5b)

- Green. The inspectors identified three instances of a non-cited violation of Technical Specification 3.8.1, "AC Sources – Operating," for the licensee's failure to take required actions for an inoperable emergency diesel generator. Specifically, after classifying the Division I or Division II emergency diesel generator as inoperable on the basis of nonconforming conditions, and after failing to either verify that the opposite train emergency diesel generator was not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the opposite train emergency diesel generator within 24 hours, the licensee failed to enter Mode 3 within 12 hours as required by Technical Specification 3.8.1, Actions B.3.1, B.3.2, and G.1, respectively. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2017-11393. The licensee initiated corrective actions to conduct an adverse condition analysis.

The failure to take required actions for an inoperable emergency diesel generator was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Actions B.3.1 and B.3.2 of Technical Specification 3.8.1 exist to ensure the availability, reliability, and capability of at least one emergency diesel generator in scenarios where there is a potential for a common cause failure of both emergency diesel generators, and the licensee took neither action. Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because the finding did not represent an actual loss of function of either the Division I or Division II emergency diesel generator for greater than its technical specifications allowed outage time. The finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically, the licensee failed to review the required actions of the applicable technical specification to ensure that all of those actions would be properly carried out [H.13]. (Section 4OA2.5c)

- Green. The inspectors reviewed a self-revealed, non-cited violation of Technical Specification 5.4, "Procedures," for the licensee's failure to perform maintenance on the residual heat removal pump A mechanical seal in accordance with written procedures. Specifically, on September 22, 2016, maintenance did not install seal assembly drive pins in accordance with Step 7.8.2 of Procedure 07-S-14-279, Revision 007. The licensee entered this issue into their corrective action program as Condition Reports CR-GGN-2017-08269 and CR-GGN-2017-11009. The licensee implemented immediate corrective actions by declaring the pump inoperable and replacing the mechanical seal.

The failure to perform maintenance on the residual heat removal pump A mechanical seal in accordance with written procedures was a performance deficiency. The performance

deficiency was more than minor, and therefore a finding, because it was associated with the human 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, on September 22, 2016, mechanical maintenance installed the residual heat removal pump A seal drive pins backwards. As a result, the drive pins damaged the seal and on August 23, 2017, caused an unisolable leak from the seal. This resulted in unplanned inoperability and unavailability of the residual heat removal pump A from August 23, 2017, through August 25, 2017, when the mechanical seal was replaced. Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program. This finding had a cross-cutting aspect in the area of human performance, avoid complacency, because the licensee failed to recognize and plan for the possibility of mistakes, and individuals failed to implement appropriate error reduction tools. Specifically, the licensee failed to use appropriate error reductions tools such as self-check or peer checking which resulted in incorrect performance of procedural steps [H.12]. (Section 4OA2.5d)

Cornerstone: Barrier Integrity

- Green. The inspectors reviewed a self-revealed, non-cited violation of 10 CFR Part 50, Criterion XVI, "Corrective Action," for the licensee's failure to appropriately correct a condition adverse to quality. Specifically, the control room envelope door had been documented in several condition reports for not consistently working properly. Subsequent to these condition reports, on July 9, 2017, the door was opened and did not close automatically, and therefore the door was left in an unsecured position. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2017-06705. The licensee restored compliance by securing the door and replacing the hinge bushings to ensure the door would close properly.

The failure to correct a condition adverse to quality for a control room envelope boundary door was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the structures, systems, and components and barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (functionality of the control room) protect the public from radionuclide releases caused by accidents or events. Specifically, on July 9, 2017, since the licensee had not corrected the adverse conditions identified on the control room envelope door, the door was left in an unsecured position and resulted in the station declaring both trains of standby fresh air inoperable. Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix A, Exhibit 3,

“Barrier Integrity Screening Questions,” the inspectors determined that the finding was of very low safety significance (Green) because the finding did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, spent fuel pool, or standby gas treatment system, and did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere. The period of the barrier in the open position was of short duration, approximately 1 minute, and therefore did not result in significant risk input. This finding had a cross-cutting aspect in the area of problem identification and resolution, resolution, because the licensee did not take corrective actions in a timely manner commensurate with their safety significance. Specifically, the licensee did not ensure proper priority of corrective actions on the degraded control room envelope boundary door [P.3]. (Section 4OA2.5e)

Cornerstone: Public Radiation Safety

- Green. The inspectors identified a finding for the licensee’s failure to follow Procedure EN-OP-104, “Operability Determination Process,” Revisions 10 through 12. Specifically, the licensee did not perform functionality assessments for adverse conditions on the offgas system as required by the procedure. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2017-11265. The licensee initiated corrective actions to perform functionality assessments for the conditions identified and to evaluate any potential programmatic issues.

The failure to perform functionality assessments required by Procedure EN-OP-104 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to perform functionality assessments could affect the availability and reliability of the offgas system to maintain the doses associated with releases to the environment as low as reasonably achievable. Using Nuclear Regulatory Commission Inspection Manual Chapter 0609, Appendix D, “Public Radiation Safety Significance Determination Process,” the inspectors determined that the finding was 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. This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee’s failure to consistently disposition adverse conditions associated with the offgas system resulted in the station not performing required functionality assessments [H.13]. (Section 4OA2.5f)

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152)

The team based the following conclusions on a sample of corrective action documents that were open during the assessment period, which ranged from October 8, 2015, to the end of the on-site portion of this inspection on November 17, 2017.

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The team reviewed approximately 800 condition reports (CRs), including associated root cause analyses and apparent cause evaluations, from approximately 24,000 that the licensee had initiated or closed between October 8, 2015, and November 17, 2017. The majority of these were lower significance CRs that did not require cause evaluations. The inspection sample focused on higher-significance CRs for which the licensee should have evaluated and taken actions to address the cause of the condition. In performing its review, the team evaluated whether the licensee had properly identified, characterized, and entered issues into the corrective action program (CAP), and whether the licensee had appropriately evaluated and resolved the issues in accordance with established programs, processes, and procedures. The team also reviewed these programs, processes, and procedures to determine if any issues existed that may impair their effectiveness.

The team reviewed a sample of performance metrics, system health reports, operability determinations, self-assessments, trending reports and metrics, and various other documents related to the licensee's CAP. The team evaluated the licensee's efforts in determining the scope of problems by reviewing selected logs, work orders, self-assessment results, audits, system health reports, action plans, and results from surveillance tests and preventive maintenance tasks. The team reviewed daily CRs and attended the licensee's performance improvement review group and corrective action review board meetings to assess the reporting threshold and prioritization efforts, and to observe the CAP's interfaces with the operability assessment and work control processes. The team's review included an evaluation of whether the licensee considered the full extent of cause and extent of condition for problems, as well as a review of how the licensee assessed generic implications and previous occurrences of issues. The team assessed the timeliness and effectiveness of corrective actions, completed or planned, and looked for additional examples of problems similar to those the licensee had previously addressed. The team conducted interviews with plant personnel to identify other processes that may exist where problems may be identified and addressed outside the CAP.

The team reviewed corrective action documents that addressed some past Nuclear Regulatory Commission (NRC) identified violations to evaluate whether corrective actions addressed the issues described in the inspection reports. The team reviewed a sample of corrective actions closed to other corrective action documents to ensure that the ultimate corrective actions remained appropriate and timely. The team reviewed a sample of 22 CRs where the licensee had changed the significance level after initial

classification to determine whether the level changes were in accordance with station procedures and that the conditions were appropriately addressed.

The team considered risk insights from both the NRC's and Grand Gulf Nuclear Station's risk models to focus the sample selection and plant tours on risk-significant systems and components. The team also considered historical issues based on information provided by the resident inspectors. As a result, the team focused a portion of its sample on the residual heat removal (RHR) system and the reactor core isolation cooling (RCIC) system.

RHR

The team reviewed a 5-year history of the RHR system. The team reviewed system health reports, interviewed the system engineer, and performed walkdowns of the RHR system. The team reviewed 11 apparent cause evaluations associated with RHR during the review period.

RCIC

The team reviewed a 5-year history of the RCIC system. The team reviewed system health reports, interviewed the system engineer, and performed walkdowns of the RCIC system. The team reviewed 17 apparent cause evaluations and 3 root cause evaluations (RCEs) associated with RCIC during the review period.

b. Assessments

1. Effectiveness of Problem Identification

From October 8, 2015, through October 29, 2017, the licensee initiated approximately 24,000 CRs. The team determined that the licensee appropriately entered most conditions into the CAP as required by station Procedure EN-LI-102, "Corrective Action Program." During interviews with supervisors and staff, the team determined that supervision and management encouraged station personnel to enter problems into the CAP at a low threshold by documenting the issue in the licensee's paperless condition reporting system.

In September 2014 the licensee implemented a significant change to the CAP. The change allowed for the segregation of "adverse" conditions from "non-adverse" conditions as defined by the CAP procedure. Identification of an adverse condition required prompt initiation of a CR. CRs are optional, but encouraged for non-adverse conditions.

Overall, the team concluded that the licensee generally maintained a low threshold for the formal identification of problems and entry into the CAP for evaluation. Most of the personnel interviewed by the team understood the requirements for CR initiation; most expressed a willingness to enter newly identified issues into the CAP at a very low threshold.

2. Effectiveness of Prioritization and Evaluation of Issues

The sample of CRs reviewed by the team focused primarily on issues screened by the licensee as having higher-level significance, including those that received cause evaluations, those classified as significant conditions adverse to quality, and those that required adverse condition analyses. The team also reviewed a number of CRs that included or should have included immediate operability determinations for safety-related structures, systems, and components (SSCs), and assessed the quality, timeliness, and prioritization of these determinations.

The inspectors selected and reviewed 800 CRs during the inspection. The NRC determined that the licensee did not evaluate and address 85 (10.6 percent) of the CRs reviewed by the inspectors appropriately and timely, commensurate with their safety significance. Overall, the NRC concluded that the licensee lacked consistency when evaluating CRs and developing appropriate corrective actions to address conditions adverse to quality. The NRC identified notable deficiencies with respect to the effectiveness, prioritization, and evaluation of issues:

- Failure to Categorize Condition Reports for Significant Conditions Adverse to Quality as Required by Procedures

The NRC identified five examples of a Green finding for the licensee's failure to categorize conditions in accordance with procedural requirements. Specifically, the licensee did not categorize adverse conditions that represented the loss of a safety function as significant conditions adverse to quality as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 28. As a result, the licensee failed to perform the required RCEs, develop corrective actions to prevent recurrence, and perform effectiveness reviews. The inspectors identified five CRs associated with conditions that were reported to the NRC as a loss of safety function, but were not categorized as Category A (significant condition adverse to quality) as required by Procedure EN-LI-102. After discussion with the inspectors, the licensee initiated Condition Report CR-GGN-2017-10896 to evaluate the potential programmatic issues regarding the misclassification of CRs that are required to be treated as Category A. During the inspection period, the licensee previously identified eight CRs classified as Category A. After discussions with the inspectors, the licensee reclassified the five CRs as Category A as well as initiated Condition Report CR-GGN-2017-10896 to evaluate potential programmatic issues associated with the failure to appropriately categorize losses of safety function. This represented a 75 percent increase in the number of Category a CRs (40A2.5a).

- Failure to Disposition Adverse Conditions as Required by Procedures

The NRC identified a Green finding for the licensee's failure to disposition conditions as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 30. Specifically, the licensee did not identify 72 conditions as either Adverse Category B, C, or D as required by the procedure. As a result, the licensee failed to perform the required cause evaluations and develop corrective actions to address the conditions. The inspectors reviewed a sample of 532 CRs categorized as "non-adverse" generated during the inspection review period of October 8, 2015, to October 29, 2017. Of the 532 CRs reviewed, the

inspectors determined that 72 of these CRs were incorrectly classified and should have been screened as adverse conditions (either B, C, or D). Of the 532 non-adverse CRs reviewed for accuracy by the inspectors, the 72 incorrectly categorized conditions represent a mischaracterization rate of 13.5 percent. The 532 CRs reviewed are a sampling of the 16,454 non-adverse CRs generated by the licensee over the inspection review period (4OA2.5b).

- Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator

The NRC identified three examples of a Green, non-cited violation (NCV) of Technical Specification (TS) 3.8.1, "AC Sources – Operating," for the licensee's failure to take required actions for an inoperable emergency diesel generator (EDG). Specifically, after classifying the Division I or Division II EDG as inoperable on the basis of nonconforming conditions, and after failing to either verify that the opposite train EDG was not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the opposite train EDG within 24 hours, the licensee failed to enter Mode 3 within 12 hours as required by TS 3.8.1, Actions B.3.1, B.3.2, and G.1, respectively (4OA2.5c).

- Failure to Correct Control Room Boundary Door Resulted in Loss of Safety Function

The NRC reviewed a Green, NCV of 10 CFR Part 50, Criterion XVI, "Corrective Action," for the licensee's failure to appropriately correct a condition adverse to quality. Specifically, the control room envelope door had been documented in several CRs for not consistently working properly. On July 9, 2017, the door was opened and did not close automatically, and therefore the door was left in an unsecured position (4OA2.5e).

- Failure to Perform Functionality Assessments as Required by Procedures

The NRC identified a Green finding for the licensee's failure to perform functionality assessments in accordance with procedural requirements. Specifically, the licensee failed to perform eight functionality assessments as required by Procedure EN-OP-104, "Operability Determination Process," Revisions 10 through 12. During the inspection period, the licensee generated 23 CRs for the offgas system in which they determined that a functionality assessment was not required. Of those 23 CRs, the inspectors identified eight associated with conditions that warranted functionality assessments per Procedure EN-OP-104. This sample indicates that, for the offgas system, 35 percent of CRs required functionality assessments that were not performed (4OA2.5f).

Additionally, the team noted the following observations associated with the effectiveness of evaluations and timeliness of operability determinations:

- On February 21, 2017, the station wrote Condition Report CR-GGN-2017-01855 which generated an elevation of line management engagement in the corrective action and trending processes. This “elevation to the fleet corporate functional area manager for CAP” CR resulted in a series of corrective actions associated with significant weaknesses in the CAP. On August 7, 2017, the station wrote Condition Report CR-GGN-2017-07695 which documented that Grand Gulf received an escalation for weaknesses in line management engagement in the corrective action and trending processes based on lack of sufficient progress in the previously issued elevation. The inspectors reviewed LO-GLO-2017-0018, which included the self-assessment conducted to evaluate the adequacy, effectiveness, and efficiency of the CAP. The self-assessment was completed on October 10, 2017, and concluded that 7 of the 13 objectives were not met with 12 standard performance deficiencies and 10 negative observations identified. Of note, the self-assessment documented issues with evaluation, corrective actions, trending, and CAP effectiveness. The NRC determined that attempts to improve CAP performance through the use of the station’s improvement plan (the “Blueprint”) have not yet resulted in desired outcomes.
- The inspectors reviewed Procedure EN-LI-102, “Corrective Action Program,” Revision 30. The current revision of this procedure provides objective examples for classifying a condition as a significant condition adverse to quality or Category A. Attachment 9.1 of the procedure lists eight situations that warrant a classification of Category A. For adverse conditions B, C, and D there are numerous objective examples of adverse conditions that warrant a B, C, or D classification. However, the procedure does not differentiate between B, C, and D in the examples. Instead, the station uses a risk and uncertainty matrix to classify a condition as adverse B, C, or D. The classification is based on the significance of the condition and how well the condition is understood. Category B CRs are investigated with analysis methods selected by management to sufficiently understand the issue to develop actions to improve future performance. Category C CRs use an action to correct the identified condition. Category D CRs are administratively closed at screening. Due to the omission of standard terminology for defining “significance” and “how well the condition is understood,” the possibility exists to close adverse conditions to C or D without performing a causal analysis required of a B categorization. The inspectors determined that over the inspection period the station initially classified 135 CRs as B. Twenty-two of these (16.2 percent) were subsequently downgraded to C or D. Conversely, the station initially classified approximately 6,000 CRs as C or D and 10 (0.17 percent) were subsequently upgraded to a B condition.
- During the inspection period, the inspectors noted that 10 of 17 Licensee Event Reports (LERs) were submitted without determining the actual cause of the event. The causes documented in 10 LERs submitted to the NRC were later changed and supplemental LERs were submitted. The licensee did not adhere to the timeline guidelines for determining the cause of events. Procedure EN-LI-102, “Corrective Action Program,” Revisions 25-30, states:

“For Category A: < 45 days from CR classification (including performance improvement review group approval of RCE and incorporation of performance improvement review group comments)

For Category B adverse condition analyses: < 30 days from CR classification (not including performance improvement review group approval of adverse condition analyses)”

The inspectors concluded that causes for conditions adverse to quality are not identified in a timely manner to support appropriate corrective actions, as well as, support quality submittals to the NRC within the 10 CFR 50.73 reporting time of 60 days. The licensee did not exceed the 60-day submittal requirement and the regulation does allow for supplements, if required.

- Condition Reports CR-GGN-2017-07180 and CR-GGN-2017-10079 document 12 instances of operability determinations that did not meet the requirements of Procedure EN-OP-104, "Operability Determination Process," Revisions 11 and 12. Problems documented in the CRs include untimely determinations, shortcomings in documentation, and incorrect initial determinations. In response to these issues, the licensee has implemented corrective actions including a daily operability determination review board and training for the operability determination process.

3. Effectiveness of Corrective Actions

Overall, the team concluded that the licensee did not consistently develop appropriate corrective actions to address problems. The team concluded that the licensee generally identified effective corrective actions for problems evaluated properly in the CAP. However, due to the volume of issues identified both by the licensee and the inspectors with respect to the effectiveness, prioritization, and evaluation of issues, the inspectors concluded that corrective actions for conditions mischaracterized as non-adverse were ineffective. Additionally, the inspectors identified five Category B adverse conditions that were subsequently revised to Category A and assigned RCEs. This represents a 75 percent increase in the number of Category A CRs that resulted from a sample review by the inspectors. The inspectors performed a review of a sample of 532 CRs classified as non-adverse. Of the 532 non-adverse CRs reviewed for accuracy by the inspectors, the inspectors identified 72 that should have been designated adverse (B, C, or D). Based on the sample size of 532, this represents a mischaracterization rate of 72 out of 532 (13.5 percent). The licensee independently identified 274 additional CRs associated with functionality assessments and operability determinations that were inappropriately classified as non-adverse. The licensee initiated corrective actions to review these CRs to determine if they should have been classified as adverse conditions and take appropriate corrective actions. The team reviewed one finding associated with the effectiveness of corrective actions:

- Failure to Install the Residual Heat Removal Pump A Mechanical Seal in Accordance with Procedures

The team reviewed a Green, NCV of TS 5.4.1.a for the licensee's failure to perform maintenance on the RHR pump A mechanical seal in accordance with written procedures. Specifically, on September 22, 2016, as part of a corrective action to replace the RHR pump A, the licensee did not effectively replace the mechanical seal assembly because they did not install seal assembly drive pins in accordance with Step 7.8.2 of Procedure 07-S-14-279, Revision 007 (4OA2.5d).

The team noted the following observations regarding the effectiveness of corrective actions:

- On December 6, 2017, the NRC issued Inspection Report 05000416/2017013 (Adams Accession Number ML17342B130). The report documents significant weaknesses associated with RCEs:
 - The inspectors determined that for Condition Report CR-GGN-2016-02950, the RCE the staff performed as a result of the March 29, 2016, reactor scram did not generate corrective actions that were adequate to preclude repetition of the event. The inspectors identified that the licensee failed to identify two potential contributing causes to the reactor scram event on March 29, 2016. Specifically, the licensee stated in their cause evaluation that the workers assigned to the transformer wiring tasks did not use shorting screws despite them being available. The inspectors concluded, based on their inspections and interviews, that while some shorting screws were available, the required number of shorting screws necessary to perform the work order tasks were not available, contrary to the RCE write-up. The inspectors determined that the unavailability of all required shorting screws potentially contributed to the event because, if the supplemental workers had used shorting screws, the mis-wiring would not have occurred.

- The inspectors determined that for Condition Report CR-GGN-2016-04766, the RCE conducted as a result of the June 17, 2016, reactor scram did not perform root cause determinations to a depth commensurate with the objectives of the inspection procedure guidance. The inspectors identified that the RCE for the June 17, 2016, reactor scram event failed to conduct an adequate review of past internal and external operating experience associated with the second root cause. The second root cause identified that operations personnel did not have specific procedural guidance to address operating limits during transients caused by malfunctions of the turbine control system. The search parameters used to obtain prior operating experience were narrowly focused on nonconservative decision making, operator fundamentals, and reactor scrams. The search parameters failed to capture lack of procedural guidance, which resulted in the operating experience search missing a previous internal condition report for an NRC-identified, Green NCV issued in October 2015 (Condition Report CR-GGN-2015-07209). Appropriate extent of condition reviews and corrective actions taken as a result of this NCV potentially could have identified the lack of procedural guidance to address operating limits during transients caused by malfunctions of the turbine control system; and therefore, could have prevented the reactor scram event of June 17, 2016.
- The inspectors also noted that LO-GLO-2017-0018, which included the self-assessment conducted to evaluate the adequacy, effectiveness, and efficiency of the CAP, documented that the objective of verifying corrective actions commensurate with the significance of the issue have been identified and implemented in a timely manner was not met. Specifically, the self-assessment concluded that in some instances corrective actions are not timely, corrective actions are not aligned to the stated cause, and one corrective action to prevent recurrence was not adequate to ensure repetition of the event.
- The team reviewed the past 2 years of rework evaluations. The inspectors noted several rework issues that challenged the licensee. The challenges caused or had the potential to cause the plant to reduce power and caused inoperability of plant equipment. Examples include rework on the RHR pump A mechanical seal, RHR system orifice, main feedwater pump turbine B control valve rod positioner assembly, and the condensate booster pump A cooling water orifice. The team also attended a station rework reduction board meeting on Friday, November 3, 2017, where the licensee discussed four rework evaluations. The team noted the following:
 - For three of the four evaluations, the voting members that electronically voted “No” were not present at the meeting to provide their reasoning as to why they disagreed with the categorization of the rework. A rework evaluation was designated as the highest level of rework, Level 1; however, only one member voted “No.” The individual that voted “No” was represented by a designated representative that stated that the evaluation should be a Level 2 based on the procedural requirements. The board agreed due to the procedural categorization and overturned the classification. This showed a weakness in utilization of the procedure during evaluation reviews by the original voting members.

- One of the four evaluations was not adequate to understand the issue and was designated to be re-evaluated and brought back to the next board meeting. The inspectors also noted that two of the other three evaluations did not have enough detail or quality in the write-ups, which caused the board to have additional discussion on what “actually” occurred in each activity.

The inspectors interviewed several board members on the expectations for evaluations and the amount of rework. The inspectors determined that there was not a CR driving corrective actions, however, the maintenance department was reinforcing high expectations pertaining to performing the job correctly the first time by following the procedure and stopping when uncertain. The board members also stated that department plans for the Grand Gulf Blueprint are relied on to decrease rework.

Operations Department Monitoring (Operator Burdens and Workarounds)

The team reviewed conditions that challenged or burdened operator performance. As of November 14, 2017, the licensee was tracking seven control room deficiencies, ten non-functional or inoperable control room annunciators, eight operable but degraded/nonconforming SSCs, ten operational decision making issues, one leaking fuel assembly, four operator burdens, and one operator workaround. The licensee is adequately managing these issues and seeks timely corrective actions to close these issues within the first outage following discovery.

Aging SSC Management Program

The team reviewed issues related to the age of certain SSCs. The team noted that Grand Gulf was approved for license renewal by the NRC in March 2016. The plant is approximately 7 years from when the extended period of operation would begin; therefore, the licensee has begun to implement aging management programs. The licensee is marginally identifying and addressing aging management issues once discovered. However, the team noted there were two recent NRC findings and an additional scram that had causes related to aging equipment. The first issue led to a plant scram in June 2016 that was linked to inadequate corrective actions for replacing the turbine electro-hydraulic control system (NCV 05000416/2016003-03). The second issue led to a plant scram in June 2016 that was linked to failed cards, which are now obsolete, in the electro-hydraulic control system (no finding was identified). The third issue led to a plant scram with complications in April 2017 that was linked to an aging condensate system and vibration (NCV 05000416/2017001-01). These three examples were reviewed for corrective action effectiveness in the NRC supplemental inspection that was performed in August 2017 (Adams Accession Number ML17342B130).

Examples of Previous Findings Reviewed for Corrective Action Effectiveness

The inspectors reviewed 44 previously issued findings and Severity Level IV NCVs for corrective action effectiveness and noted the following observations:

- NCV 05000416/2016405-03 and NCV 05000416/2016403-02, “Failure to Use the Site Corrective Action Program to Prevent Recurrence,” Condition Reports CR-GGN-2016-05797 and CR-GGN-2016-08733. The NRC issued two NCVs for performance deficiencies resulting from failing to use the CAP to address security-related issues. The inspectors reviewed Procedure EN-LI-118, “Cause Evaluation Process,” Revisions 18 through 23. Step 5.13.1 states that the station should “Consider an effectiveness review for NRC violations.” Of the 25 CRs associated with NRC violations the inspectors reviewed, only 3 of them were assigned effectiveness reviews.
- NCV 05000416/2016007-03, “Failure to Obtain NRC Approval for Changes to Diesel Generator Trips and Flood Mitigation Strategy,” Condition Report CR-GGN-2016-09756. The licensee made changes to the plant without requesting approval from the NRC or performing an adequate evaluation to ensure that the change could be made without prior NRC approval. The inspectors noted that the corrective action included training engineering staff on the 10 CFR 50.59 process and a review of past 10 CFR 50.59 screenings and evaluations for adequacy. The inspectors noted that the review of past screenings and evaluations was performed prior to providing the training to the staff for how to adequately perform evaluations and screenings.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The team examined the licensee’s program for reviewing industry operating experience, including reviewing the governing procedures. The team reviewed a sample of 20 industry operating experience communications and the associated site evaluations to assess whether the licensee had appropriately assessed the communications for relevance to the facility. The team also reviewed assigned actions to determine whether they were appropriate.

b. Assessment

Overall, the team determined that the licensee appropriately evaluated industry operating experience for its relevance to the facility. Operating experience information was incorporated into plant procedures and processes as appropriate.

The team further determined that the licensee appropriately evaluated industry operating experience when performing root cause analyses and apparent cause evaluations. The licensee appropriately incorporated both internal and external operating experience into lessons learned for training and pre-job briefs.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The team reviewed a sample of licensee self-assessments and audits to assess whether the licensee was regularly identifying performance trends and effectively addressing them. The team also reviewed audit reports to assess the effectiveness of assessments

in specific areas. The specific self-assessment documents and audits reviewed are listed in the Attachment.

b. Assessment

Overall, the team concluded that the licensee had an effective self-assessment and audit process. The team determined that self-assessments were critical and identified deficiencies. The team confirmed that self-assessment and audit findings were entered into the licensee's CAP for resolution. LO-GLO-2017-0018, which included the self-assessment conducted to evaluate the adequacy, effectiveness, and efficiency of the CAP, was completed on October 10, 2017, and concluded that 7 of the 13 objectives were not met with 12 standard performance deficiencies and 10 negative observations identified. The standard performance deficiencies, negative observations, and objectives not met revealed that the CAP has been challenged in the following areas:

- Inconsistent condition report screening, including operability determinations and timeliness of screenings
- Quality and timeliness of cause analyses
- Timeliness of corrective action performance
- Inadequate trending
- Ineffective self-assessment and benchmarking
- Timeliness of operating experience application

Of note, the self-assessment documented issues with evaluation, corrective actions, trending, and CAP effectiveness. After the inspectors performed an independent review, they identified 72 additional examples of conditions adverse to quality that were not evaluated as such. Additionally, the inspectors identified five Category B adverse conditions that were subsequently revised to Category A and assigned RCEs. These were not identified by the licensee in the sample performed as part of the self-assessment. The inspectors concluded that while the self-assessment was critical and identified weaknesses, the actions taken as a result were not sufficient to identify pervasive issues with prioritization and evaluation of CRs, as evidenced by the NRC-identified CRs incorrectly dispositioned as non-adverse.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The team interviewed 38 individuals in 10 focus groups. The purpose of these interviews was: (1) to evaluate the willingness of licensee staff to raise nuclear safety issues, either by initiating a CR or by another method; (2) to evaluate the perceived effectiveness of the CAP at resolving identified problems; and (3) to evaluate the licensee's safety-conscious work environment. The focus group participants included personnel from maintenance, operations, radiation protection, and security. The team selected the participants randomly from these work groups, based partially on

availability. To supplement these focus group discussions, the team interviewed both the incoming and outgoing Employee Concerns Program managers to assess their perception of the site employees' willingness to raise nuclear safety concerns. The team reviewed the Employee Concerns Program case log and select case files. The team also reviewed the minutes from the licensee's most recent safety culture monitoring panel meetings.

b. Assessment

1. Willingness to Raise Nuclear Safety Issues

All individuals interviewed indicated that they would raise nuclear safety concerns. All felt that their management was receptive to nuclear safety concerns and was willing to address them promptly. All of the interviewees further stated that if they were not satisfied with the response from their immediate supervisor, they had the ability to escalate the concern to a higher organizational level. Most expressed positive experiences after raising issues to their supervisors. All expressed positive experiences documenting most issues in CRs. The team questioned focus group participants whether they were able to submit a CR anonymously. Most individuals were aware that they could submit CRs anonymously and were knowledgeable of the process.

2. Employee Concerns Program

All interviewees were aware of the Employee Concerns Program. Most explained that they had heard about the program through various means, such as posters, training, presentations, and discussion by supervisors or management at meetings. All interviewees stated that they would use Employee Concerns if they felt it was necessary. All expressed confidence that their confidentiality would be maintained if they brought issues to the Employee Concerns Program.

3. Preventing or Mitigating Perceptions of Retaliation

When asked if there have been any instances where individuals experienced retaliation or other negative reaction for raising issues, all individuals interviewed stated that they had neither experienced nor heard of an instance of retaliation, harassment, intimidation, or discrimination at the site. The team determined that processes in place to mitigate these issues were being successfully implemented.

Responses from the focus group interviewees indicate that they believe that management has established and promoted a safety-conscious work environment where individuals feel free to raise safety concerns without fear of retaliation. Overall, employees indicated that they have noticed an improved culture on site. As described, there is a sense that management is more interested now in addressing issues in a manner that will result in more lasting solutions. They indicated that there is more management support for their efforts.

.5 Findings

a. Failure to Categorize Condition Reports for Significant Conditions Adverse to Quality as Required by Procedures

Introduction. The inspectors identified five examples of a Green finding for the licensee's failure to categorize and evaluate conditions in accordance with procedural requirements. Specifically, the licensee did not categorize adverse conditions which represented the loss of a safety function as significant conditions adverse to quality as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 28. As a result, the licensee failed to perform the required RCEs, develop corrective actions to prevent recurrence, and perform effectiveness reviews.

Description. The inspectors identified five instances of the licensee's failure to categorize CRs as significant conditions adverse to quality as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 28. Step 5.5[2] of Procedure EN-LI-102 requires that significant conditions adverse to quality be categorized as Category A CRs. Step 5.5[2] further requires that, for Category A CRs, the licensee perform RCEs, develop corrective actions to prevent recurrence of the conditions, and perform effectiveness reviews for the corrective actions. Attachment 9.1 of Procedure EN-LI-102 identifies conditions that result in the loss of a safety function as an example a Category A condition.

In each of the identified instances, the licensee determined that conditions occurred that represented the loss of a safety function. However, in each instance, the licensee inappropriately categorized the associated CRs as Category B, which do not require the licensee to perform RCEs, to develop corrective actions to prevent recurrence of the conditions, and to perform effectiveness reviews for the corrective actions.

- Condition Report CR-GGN-2015-05732 documented a condition that occurred on October 1, 2015, that rendered secondary containment inoperable from 3:24 a.m. to 4:40 a.m. due to a failed surveillance. A violation related to the condition was previously documented in NRC Integrated Inspection Report 05000416/2015008. The licensee submitted LER 2015-002-00 to report the loss of safety function to the NRC. After discussions with the inspectors, the licensee documented the inappropriate categorization of Condition Report CR-GGN-2015-05732 as Category B in Condition Report CR-GGN-2017-10860.
- Condition Report CR-GGN-2016-02513 documented a condition that occurred on March 17, 2016, that rendered both trains of shutdown cooling inoperable for approximately 3 minutes due to a loss of power. This event was previously documented in NRC Integrated Inspection Reports 05000416/2016001 and 05000416/2016002. The licensee submitted LER 2016-001-00 to report the loss of safety function to the NRC. After discussions with the inspectors, the licensee documented the inappropriate categorization of Condition Report CR-GGN-2016-02513 in Condition Report CR-GGN-2017-10872.
- Condition Report CR-GGN-2016-03707 documented a condition that was identified on April 7, 2016, that rendered secondary containment inoperable for approximately 30 minutes due to an open boundary door. A violation related to the condition was previously documented in NRC Integrated Inspection

Report 05000416/2016002. The licensee submitted LER 2016-003-00 to report the loss of safety function to the NRC. After discussions with the inspectors, the licensee documented the inappropriate categorization of Condition Report CR-GGN-2016-03707 in Condition Report CR-GGN-2017-10866.

- Condition Report CR-GGN-2017-00917 documented a condition that occurred on January 27, 2017, that rendered high pressure core spray inoperable from January 27, 2017, to January 29, 2017. A violation related to the condition was previously documented in NRC Integrated Inspection Report 05000416/2017002. The licensee submitted LER 2017-001-00 to report the loss of safety function to the NRC. After discussions with the inspectors, the licensee documented the inappropriate categorization of Condition Report CR-GGN-2017-00917 as Category B in Condition Report CR-GGN-2017-10883.
- Condition Report CR-GGN-2017-02968 documented a condition that was discovered on March 24, 2017, that resulted in both trains of standby gas treatment being inoperable from February 28, 2017, through March 3, 2017. The licensee submitted LER 2017-002-00 to report the loss of safety function to the NRC. After discussions with the inspectors, the licensee documented the inappropriate categorization of Condition Report CR-GGN-2017-02968 as Category B in Condition Report CR-GGN-2017-10884.

After discussions with the licensee, the station initiated Condition Report CR-GGN-2017-10896 to evaluate the potential programmatic issues regarding the misclassification of CRs that are required to be treated as Category A.

Analysis. The failure to categorize conditions which represent the loss of a safety function as significant conditions adverse to quality (Category A) as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 28, was a performance deficiency.

The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, RCEs, corrective actions to prevent recurrence, and effectiveness reviews are used to ensure availability and reliability of SSCs are maintained.

The team 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 NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating SSC, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its TS allowed outage time, or two separate safety systems out-of-service for longer than their TS allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program.

This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make

decisions. Specifically, the licensee's failure to consistently evaluate the conditions during initial screening led to the incorrect categorization of the CRs [H.13].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. The finding is of very low safety significance, and the issue was entered into the licensee's CAP as Condition Report CR-GGN-2017-10896. The licensee's planned corrective actions include performing RCEs, developing corrective actions to prevent recurrence of the conditions, and performing effectiveness reviews for the corrective actions. Because this finding does not involve a violation of a regulatory requirement and was of very low safety significance (Green), it is being documented as a finding: FIN 05000416/2017011-01, "Failure to Categorize Condition Reports for Significant Conditions Adverse to Quality as Required by Procedures."

b. Failure to Disposition Adverse Conditions as Required by Procedures

Introduction. The inspectors identified a Green finding for the licensee's failure to disposition adverse conditions as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 30. Specifically, the licensee did not identify 72 conditions as either Adverse Category B, C, or D as required by the procedure. As a result, the licensee failed to perform the required cause evaluations and develop corrective actions to address the conditions.

Description. On September 26, 2017, the licensee wrote Condition Report CR-GGN-2017-09628 which documented that 274 CRs associated with functionality assessments and operability determinations were classified as non-adverse. The licensee initiated corrective actions to review these CRs and determine if they should have been classified as adverse conditions. The inspectors reviewed a sample of 532 CRs categorized as "non-adverse" generated during the inspection review period of October 8, 2015, to October 29, 2017. The inspectors determined that 72 of these CRs were incorrectly classified and should have been screened as adverse conditions (either B, C, or D). The nature of the adverse conditions in this sample was not limited to any specific condition. The inspectors identified CRs that included conditions potentially affecting safety-related equipment, conditions associated with functionality assessments, emergency preparedness deficiencies, Maintenance Rule functional failures, worker practices, maintenance and test equipment, and security deficiencies that were all incorrectly screened as non-adverse. Of the 532 non-adverse CRs reviewed for accuracy by the inspectors, the 72 incorrectly categorized conditions represent a mischaracterization rate of 13.5 percent. The 532 CRs reviewed are a sample of the 16,454 non-adverse CRs generated by the licensee over the inspection review period.

Analysis. The failure to disposition conditions as adverse (B, C, or D) as required by Procedure EN-LI-102, "Corrective Action Program," Revisions 24 through 30, was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, CRs associated with deficiencies or potential deficiencies involving safety-related equipment are required to be categorized as adverse and appropriate corrective actions are assigned including causal analyses appropriate to the circumstances. The inspectors 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 NRC

Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating SSC, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its TS allowed outage time, or two separate safety systems out-of-service for longer than their TS allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program.

This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee's failure to consistently disposition identified conditions as adverse led to the failure to fully evaluate the conditions [H.13].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. The finding is of very low safety significance, and the issue was entered into the licensee's CAP as Condition Report CR-GGN-2017-11363. The licensee's planned corrective actions include re-evaluating all CRs dispositioned as non-adverse over the previous 24-month period for accuracy. Because this finding does not involve a violation of a regulatory requirement and was of very low safety significance (Green), it is being documented as a finding: FIN 05000416/2017011-02, "Failure to Disposition Adverse Conditions as Required by Procedures."

c. Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator

Introduction. The inspectors identified three instances of a Green, NCV of TS 3.8.1, "AC Sources – Operating," for the licensee's failure to take required actions for an inoperable EDG. Specifically, after classifying the Division I or Division II EDG as inoperable on the basis of nonconforming conditions, and after failing to either verify that the opposite train EDG was not inoperable due to common cause failure within 24 hours or conduct a surveillance run on the opposite train EDG within 24 hours, the licensee failed to enter Mode 3 within 12 hours as required by TS 3.8.1, Actions B.3.1, B.3.2, and G.1, respectively. The licensee entered this issue into their CAP as Condition Report CR-GGN-2017-11393.

Description. When a potentially degraded or nonconforming condition renders a diesel generator inoperable, Actions B.3.1 and B.3.2 of TS 3.8.1 require the licensee to either rule out a potential common cause inoperability on the other EDG within 24 hours or demonstrate the operability of the other EDG by conducting a surveillance in accordance with Surveillance Requirement (SR) 3.8.1.2 within 24 hours. If those actions are not completed in the required time frame, TS 3.8.1, Action G.1, requires the licensee to enter Mode 3 within 12 hours.

On October 22, 2015, station personnel identified an issue with breaker 72-11A57 which supplies power to the field flash for the Division I EDG. The licensee concluded that the Division I EDG was rendered inoperable as a result. This condition was described in Condition Report CR-GGN-2015-06193 on October 22, 2015, at 2:36 p.m. The inspectors reviewed the CR, corrective actions associated with the CR, and main control

room logs and found that an extent of condition review on the Division II EDG was performed at 3:52 p.m. on October 23, 2015. This review was performed 1 hour and 16 minutes after the initial inoperability of the Division I EDG was discovered, and therefore outside of the 24-hour required action to perform an extent of condition review in accordance with TS 3.8.1, Action B.3.1. TS 3.8.1, Action G.1, was not entered. The station was not in compliance with TS 3.8.1, Action G.1, from 2:36 p.m. on October 23, 2015, to 3:52 p.m. on October 23, 2015.

On October 24, 2015, station personnel identified an air leak on the shutdown signal three-way valve associated with the Division I EDG. The licensee concluded that the size of the leak did not adversely affect the operability of the air start system, but did conclude that Division I EDG was rendered inoperable as a result. This condition was described in Condition Report CR-GGN-2015-06231 on October 24, 2015, at 4:49 a.m. The inspectors reviewed the CR, corrective actions associated with the CR, and main control room logs and found no record of a common cause evaluation performed on the Division II EDG nor a surveillance run of the Division II EDG in accordance with SR 3.8.1.2. TS 3.8.1, Action G.1, was not entered. The Division I EDG was restored to operable at 7:24 p.m. on October 25, 2015. The station was not in compliance with TS 3.8.1, Action G.1, from 4:49 a.m. on October 25, 2015, to 7:24 p.m. on October 25, 2015.

On March 6, 2017, station personnel identified P75-F037B (Division II EDG jacket water cooler shell side vent) was difficult to manipulate in the open position. They concluded that the valve stem broke with the handwheel and could no longer be manipulated. Station personnel documented that this condition rendered the Division I EDG inoperable in Condition Report CR-GGN-2017-02291 on March 6, 2017, at 12:16 p.m. The inspectors reviewed the CR, corrective actions associated with the CR, and main control room logs and found no record of a common cause evaluation performed on the Division II EDG, nor a surveillance run of the Division I EDG in accordance with SR 3.8.1.2. TS 3.8.1, Action G.1, was not entered. The Division I EDG was restored to operable at 1:26 p.m. on March 16, 2017. The station was not in compliance with TS 3.8.1, Action G.1, from 12:16 p.m. on March 7, 2017, to 1:26 p.m. on March 16, 2017.

Analysis. The failure to take required actions for an inoperable EDG was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Actions B.3.1 and B.3.2 of TS 3.8.1 exist to ensure the availability, reliability, and capability of at least one EDG in scenarios where there is a potential for a common cause failure of both EDGs, and the licensee took neither action. Using NRC Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined the finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of either the Division I or Division II EDG for greater than its TS allowed outage time. The finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically, the licensee failed to review the required actions of the applicable TS to ensure that all of those actions would be properly carried out [H.13].

Enforcement. TS 3.8.1 requires, in part, that three EDGs be operable in Modes 1, 2, and 3. For the condition of one EDG inoperable, Action B.3.1 and B.3.2 of TS 3.8.1 require the licensee to either determine that the operable EDG is not inoperable due to common cause failure within 24 hours, or perform SR 3.8.1.2 on the operable EDG within 24 hours. If these actions are not taken, Action G.1 of TS 3.8.1 requires the licensee to be in Mode 3 within 12 hours. Contrary to the above, from 2:36 p.m. to 3:52 p.m. on October 23, 2015, from 4:49 a.m. to 7:24 p.m. on October 25, 2015, and from 12:16 p.m. on March 6, 2017, to 1:26 p.m. on March 16, 2017, after declaring one EDG inoperable on the basis of a potentially nonconforming or degraded condition, and after failing to either determine that the operable EDG was not inoperable due to common cause failure within 24 hours, or perform SR 3.8.1.2 on the operable EDG within 24 hours, the licensee failed to place the unit in Mode 3 within 12 hours. The licensee restored compliance by subsequently conducting successful surveillance testing of the EDGs. Because this finding is of very low safety significance (Green) and has been entered into the licensee's CAP as Condition Report CR-GG-2017-11393, this violation is being treated as a NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2017011-03, "Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator."

d. Failure to Install the Residual Heat Removal Pump A Mechanical Seal in Accordance with Procedures

Introduction. The inspectors reviewed a Green, self-revealed, NCV of TS 5.4, "Procedures," for the licensee's failure to perform maintenance on the RHR pump A mechanical seal in accordance with written procedures. Specifically, on September 22, 2016, maintenance personnel did not install seal assembly drive pins in accordance with Step 7.8.2 of Procedure 07-S-14-279, Revision 007.

Description. On September 22, 2016, the licensee replaced the mechanical seal on the RHR pump A after replacing the pump. Mechanical maintenance used Procedure 07-S-14-279, "Inspection, Overhaul, Alignment, and Impeller Lift Adjustment of the RHR Pumps," Revision 007, to perform the replacement of the seal.

On August 23, 2017, the RHR pump A mechanical seal was determined to have a leak. The operations department determined that the pump was inoperable due to the leak and entered TS 3.5.1. Upon disassembly of the mechanical seal, the licensee determined that the seal was rebuilt incorrectly on September 22, 2016. The licensee identified that the drive pins were installed backwards. Additionally, Step 7.8.2 of Procedure 07-S-14-279 was performed incorrectly because mechanical maintenance personnel did not utilize self or peer check to ensure the procedural step was performed appropriately. Step 7.8.2, stated in part, "Place drive pins (5-3) through holes in seal drive (S-2) and out through slots in spring holder (S-17)." Due to the incorrect installation of the drive pins, the pins dislodged from their installed position and damaged the seal, resulting in the leak. The licensee restored compliance by declaring the pump inoperable and replacing the mechanical seal on August 25, 2017. The licensee entered this issue into their CAP as Condition Reports CR-GGN-2017-08269 and CR-GGN-2017-11009.

Analysis. The failure to perform maintenance on the RHR pump A mechanical seal in accordance with written procedures was a performance deficiency. This performance

deficiency was more than minor, and therefore a finding, because it was associated with the human 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, on September 22, 2016, mechanical maintenance installed the RHR pump A seal drive pins backwards. As a result, the drive pins damaged the seal and on August 23, 2017, caused an unisolable leak from the seal. This resulted in unplanned inoperability and unavailability of the RHR pump A from August 23, 2017, through August 25, 2017, when the mechanical seal was replaced. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because it was related to, but was not itself: (1) a deficiency affecting the design or qualification of a mitigating SSC, and did not result in a loss of operability or functionality; (2) a loss of system and/or function; (3) an actual loss of function of at least a single train for longer than its TS allowed outage time, or two separate safety systems out-of-service for longer than their TS allowed outage time; and (4) an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule program.

This finding had a cross-cutting aspect in the area of human performance, avoid complacency, because the licensee failed to recognize and plan for the possibility of mistakes and individuals implement appropriate error reduction tools. Specifically, the licensee failed to use appropriate error reductions tools such as self-check or peer checking, and this resulted in the inappropriate performance of the procedural step [H.12].

Enforcement. TS 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2. Section 9.a of Appendix A of Regulatory Guide 1.33, Revision 2, requires, in part, maintenance that can affect the performance of safety-related equipment should be properly performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Procedure 07-S-14-279, Step 7.8.2, stated in part, "Place drive pins (5-3) through holes in seal drive (S-2) and out through slots in spring holder (S-17)." Contrary to the above, on September 22, 2016, the licensee failed to properly perform maintenance that can affect the performance of safety-related equipment in accordance with Procedure 07-S-14-279, Step 7.8.2. As a result, on September 22, 2016, mechanical maintenance installed the RHR pump A seal drive pins backwards. The drive pins damaged the seal and on August 23, 2017, caused an unisolable leak from the seal. This resulted in unplanned inoperability and unavailability of the RHR pump A. The licensee restored compliance by declaring the pump inoperable and replacing the mechanical seal. Because this finding is of very low safety significance (Green) and has been entered into the licensee's CAP as Condition Reports CR-GGN-2017-08269 and CR-GGN-2017-11009, this violation is being treated as a NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2017011-04, "Failure to Install the Residual Heat Removal Pump A Mechanical Seal in Accordance with Procedures."

e. Failure to Correct Control Room Boundary Door Resulted in Loss of Safety Function

Introduction. The inspectors reviewed a Green, self-revealed, NCV of 10 CFR Part 50, Criterion XVI, "Corrective Action," for the licensee's failure to appropriately correct a condition adverse to quality. Specifically, the control room envelope door had been documented in several CRs as not consistently working properly. On July 9, 2017, the door was opened and did not close automatically, and therefore the door was left in an unsecured position.

Description. On July 9, 2017, a firewatch entered the control room envelope through door SZ100C516 to perform required duties. Upon walking through the door, the individual did not ensure that the door automatically closed. It is an expectation at the Grand Gulf Nuclear Station that every door is checked secured when traversing through the entryway. This door in particular has a sign that states that it is a control room envelope door and ensure that the door is secured. The door is alarmed, and since it was not closed, security received the alarm. Security responded and closed the door in approximately 1 minute. From 2006 to 2017, there were 38 CRs documenting mechanical failures of the door. The most recent CR was written on June 27, 2017, which stated that the door was dragging, which is the exact condition that caused the issue on July 9, 2017. However, the licensee did not establish the right priority to ensure reliable operation of the automatic closure mechanism. This resulted in a breach of the control room envelope and both trains of standby fresh air were declared inoperable during the 1 minute that the door was unattended.

The licensee issued LER 2017-005-00, "Loss of Safety Function and Control Room Envelope Due to an Open Boundary Door," under 10 CFR 50.73(a)(2)(v)(D) for an event or condition that could have prevented the fulfillment of a safety function of structures, or systems that are needed to mitigate the consequences of an accident. In this report, the licensee identified that control room envelope and both trains of standby fresh air were inoperable for approximately 1 minute. The licensee entered this issue into their CAP as Condition Report CR-GGN-2017-06705. The licensee restored compliance by securing the door and replacing the hinge bushings to ensure the door would close properly.

Analysis. The failure to correct a condition adverse to quality for a control room envelope boundary door was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the SSC and barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (functionality of the control room) protect the public from radionuclide releases caused by accidents or events. Specifically, on July 9, 2017, since the licensee had not corrected the adverse conditions identified on the control room envelope door, the door was left in an unsecured position, and resulted in the inoperability of both trains of standby fresh air. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because the finding did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, spent fuel pool, or standby gas treatment system, and did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere. The period of the barrier in the open

position was of short duration (approximately 1 minute), and therefore did not result in significant risk input.

This finding had a cross-cutting aspect in the area of problem identification and resolution, because the licensee did not take corrective actions in a timely manner commensurate with their safety significance. Specifically, the licensee did not ensure proper prioritization of corrective actions on the degraded control room envelope boundary door [P.3].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, from June 27, 2017, to July 9, 2017, the licensee failed to assure that conditions adverse to quality, such as deficiencies and defective material and equipment, were corrected. Specifically, since the licensee had not corrected the adverse conditions identified on the control room envelope door, the door was left in an unsecured position and resulted in the inoperability of both trains of standby fresh air. The licensee restored compliance by securing the door and replacing the hinge bushings to ensure the door would close properly. Because the finding was of very low safety significance (Green) and has been entered into the licensee's CAP as Condition Report CR-GGN-2017-06705, this violation is being treated as a NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2017011-05, "Failure to Correct Control Room Boundary Door Resulted in Loss of Safety Function."

f. Failure to Perform Functionality Assessments as Required by Procedures

Introduction. The inspectors identified a Green finding for the licensee's failure to follow Procedure EN-OP-104, "Operability Determination Process," Revisions 10 through 12. Specifically, the licensee did not perform functionality assessments for adverse conditions on the offgas system as required by the procedure.

Description. In a review of CRs associated with the offgas system, the inspectors identified eight instances of the licensee's failure to perform functionality assessments as required by Procedure EN-OP-104, "Operability Determination Process," Revisions 10 through 12, for conditions that could potentially affect specific functions as described in the Updated Final Safety Analysis Report and technical requirements manual. In each instance, the licensee generated a CR documenting a deficient condition associated with the system, but inappropriately concluded that functionality assessment process of Procedure EN-OP-104 did not apply.

- Condition Report CR-GGN-2015-06567 documented a condition related to control room alarms for the offgas system
- Condition Report CR-GGN-2015-07356 documented a condition related to an unanticipated increase in offgas flow rates
- Condition Report CR-GGN-2016-02948 documented receipt of the offgas hygrometer moisture fail light and moisture readings found outside of the allowed range

- Condition Report CR-GGN-2016-03158 documented apparent obstruction of the A offgas cooler condenser
- Condition Report CR-GGN-2016-06793 documented a crack discovered in the B offgas dryer chiller
- Condition Report CR-GGN-2017-01836 documented offgas flow rate found outside of the allowed range
- Condition Report CR-GGN-2017-09110 documented discovery of melted wires associated with the offgas vault refrigeration unit
- Condition Report CR-GGN-2017-09466 documented an unexpected rise in the A offgas desiccant dryer temperature

After discussions with the licensee, the station initiated Condition Report CR-GGN-2017-11265 to perform functionality assessments for the conditions identified and evaluate the potential programmatic issues regarding the failure to perform functionality assessments when required by Procedure EN-OP-104. The licensee determined that while the CRs represented degraded conditions, 10 CFR 100 limits were not exceeded.

Analysis. The failure to perform functionality assessments required by Procedure EN-OP-104, "Operability Determination Process," Revisions 10 through 12, was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to perform functionality assessments could affect the availability and reliability of the offgas system to maintain the doses associated with releases to the environment as low as reasonably achievable. Using NRC 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 1, or 10 CFR 20.1301(d) limits.

This finding had a cross-cutting aspect in the area of human performance, consistent process, because the licensee did not use a consistent, systematic approach to make decisions. Specifically, the licensee's failure to consistently disposition adverse conditions associated with the offgas system resulted in the station not performing required functionality assessments [H.13].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. The finding is of very low safety significance, and the issue was entered into the licensee's CAP as Condition Report CR-GGN-2017-11265. The licensee's corrective actions included performing functionality assessments for the identified conditions. Because this finding does not involve a violation of a regulatory requirement and was of very low safety significance (Green), it is being documented as a finding: FIN 05000416/2017011-06, "Failure to Perform Functionality Assessments as Required by Procedures."

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 18, 2018, the inspectors presented the inspection results to Mr. E. Larson, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Hawkins, Director, Regulatory Assurance and Performance Improvement
D. Ellis, Specialist, Regulatory Assurance
E. Larson, Site Vice President
D. Neve, Manager, Regulatory Assurance
J. Seiter, Manager, Emergency Preparedness

NRC Personnel

N. Day, Resident Inspector
M. Young, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000416/2017011-01	FIN	Failure to Categorize Condition Reports for Significant Conditions Adverse to Quality as Required by Procedures (Section 4OA2.5a)
05000416/2017011-02	FIN	Failure to Disposition Adverse Conditions as Required by Procedures (Section 4OA2.5b)
05000416/2017011-03	NCV	Failure to Conduct Common Cause Failure Evaluation in Response to Inoperable Emergency Diesel Generator (Section 4OA2.5c)
05000416/2017011-04	NCV	Failure to Install the Residual Heat Removal Pump A Mechanical Seal in Accordance with Procedures (4OA2.5d)
05000416/2017011-05	NCV	Failure to Correct Control Room Boundary Door Resulted in Loss of Safety Function (4OA2.5e)
05000416/2017011-06	FIN	Failure to Perform Functionality Assessments as Required by Procedures (4OA2.5f)

LIST OF DOCUMENTS REVIEWED

Condition Reports (CR-GGN-)

2014-01797	2015-04814	2015-05057	2015-05217	2015-05236
2015-05294	2015-05625	2015-05666	2015-05716	2015-05732
2015-05781	2015-05789	2015-05826	2015-05840	2015-05849
2015-05857	2015-05862	2015-05897	2015-05901	2015-05910
2015-05921	2015-05924	2015-05926	2015-05929	2015-05940
2015-05943	2015-05956	2015-05972	2015-05983	2015-05995
2015-05999	2015-06031	2015-06043	2015-06047	2015-06055
2015-06079	2015-06089	2015-06094	2015-06104	2015-06112
2015-06120	2015-06127	2015-06141	2015-06148	2015-06154
2015-06156	2015-06183	2015-06193	2015-06199	2015-06200
2015-06201	2015-06214	2015-06226	2015-06231	2015-06250
2015-06256	2015-06274	2015-06277	2015-06290	2015-06299
2015-06317	2015-06318	2015-06322	2015-06340	2015-06346
2015-06367	2015-06396	2015-06423	2015-06424	2015-06425
2015-06428	2015-06429	2015-06433	2015-06456	2015-06496
2015-06505	2015-06515	2015-06516	2015-06532	2015-06539
2015-06567	2015-06580	2015-06613	2015-06616	2015-06621
2015-06631	2015-06657	2015-06673	2015-06711	2015-06714
2015-06743	2015-06828	2015-06830	2015-06831	2015-06839
2015-06843	2015-06900	2015-06921	2015-06976	2015-06981
2015-06988	2015-06994	2015-07015	2015-07033	2015-07061
2015-07086	2015-07103	2015-07113	2015-07274	2015-07313
2015-07356	2015-07367	2015-07371	2015-07377	2016-00153
2016-00183	2016-00378	2016-00947	2016-01267	2016-01313
2016-02948	2016-02997	2016-03023	2016-03158	2016-03194
2016-03238	2016-03376	2016-03490	2016-03495	2016-03508
2016-03527	2016-03543	2016-03552	2016-03707	2016-03745
2016-03782	2016-03818	2016-03829	2016-04075	2016-04225
2016-04238	2016-04251	2016-04266	2016-04269	2016-04586
2016-04798	2016-04834	2016-05274	2016-05735	2016-05795

Condition Reports (CR-GGN-)

2016-05796	2016-05797	2016-05848	2016-06067	2016-06658
2016-06793	2016-06794	2016-06821	2016-06887	2016-07151
2016-07344	2016-07492	2016-07620	2016-08234	2016-08297
2016-08298	2016-08810	2016-08993	2016-09138	2016-09228
2016-09468	2016-09756	2016-09757	2016-09759	2017-00359
2017-00425	2017-00445	2017-00559	2017-00686	2017-00917
2017-01468	2017-01567	2017-01690	2017-01836	2017-01840
2017-01855	2017-01939	2017-02291	2017-02968	2017-03333
2017-03368	2017-03658	2017-03817	2017-03948	2017-03996
2017-04011	2017-04015	2017-04028	2017-04237	2017-04658
2017-04790	2017-04808	2017-05275	2017-05277	2017-05374
2017-05389	2017-05823	2017-06230	2017-06247	2017-06403
2017-06582	2017-06705	2017-06769	2017-06804	2017-06824
2017-07104	2017-07180	2017-07597	2017-07695	2017-07999
2017-08025	2017-08088	2017-08172	2017-08389	2017-08434
2017-08488	2017-08702	2017-08750	2017-08759	2017-08836
2017-08839	2017-08898	2017-09110	2017-09324	2017-09404
2017-09466	2017-09587	2017-09605	2017-09689	2017-09690
2017-09703	2017-09720	2017-09813	2017-09815	2017-09853
2017-09935	2017-09986	2017-09995	2017-10032	2017-10164
2017-10339	2017-10341	2017-10342	2017-10343	2017-10428
2017-10825	2017-10900	2017-10947	2017-10990	2017-11435
2017-11444	2015-07146	2015-06858	2016-03556	2017-06857
2017-06345	2017-11009	2017-08269	2017-10939	2016-02513
2016-02950	2016-04766	2015-05549	2015-06857	2017-04672
2015-06852	2015-05513	2015-04413	2017-05057	2015-06854
2015-04647	2015-04859	2015-06858	2015-06856	2015-04615
2015-04760	2015-06855	2015-04611	2015-04627	2015-05655
2015-06979	2017-10468	2015-04780	2015-05550	2015-06980
2016-03654	2016-03556	2015-03985	2015-06873	2016-02950
2017-02094	2017-02102	2017-02110	2017-08376	2017-08377

Condition Reports (CR-GGN-)

2017-08792 2017-08860 2017-09001 2016-07281

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
EC 73723	Engineering Input for Standby Gas A Train Filter Train Filter Integrity During the Elevated Filter Train Flow Event of Condition Report CR-2017-2968	0
EC 73521	T48 SGBT Flow Rate at 5000 CFM and 8203 CFM Condition Report CR-GGN-2017-2968	0
ER-GG-2004-0388-000	Repair 1N65B001	0
XC-N1T48-17001	Offsite Dose Analysis for Standby Gas Treatment System Flow Rate at 5000 CFM	0
	Standby Fresh Air/Control Room Heating, Ventilation, and Air Conditioning System Health Report	
	Station Rework Reduction Board Meeting Document	November 3, 2017

Miscellaneous

QA-03-2015-GGNS-1 QA-03-2017-GGNS-1 WTGGN-2015-00001
CA 00366

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01-S-02-9	Offgas Post-Treatment Radiation Monitor	109
02-S-01-27	Operations Philosophy	075
04-1-01-N64-1	Offgas System	74
04-1-01-N65-1 SU	Offgas Vault Refrigeration	33
06-OP-1D17-C-0001	Offgas Post-Treatment Discharge Valve Functional Test	102
06-OP-1D17-M-0013	Carbon Bend Vault Radiation Monitor Functional Test	101
EN-AD-100	Policy Process	6
EN-AD-101	NMM Procedure Process	29
EN-DC-205	Maintenance Rule Monitoring	6

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-FAP-LI-001	Performance Improvement Review Group	11
EN-LI-102	Corrective Action Program	25
EN-LI-102	Corrective Action Program	26
EN-LI-102	Corrective Action Program	27
EN-LI-102	Corrective Action Program	28
EN-LI-102	Corrective Action Program	29
EN-LI-102	Corrective Action Program	30
EN-LI-104	Self-Assessment and Benchmark Process	13
EN-LI-118	Cause Evaluation Process	24
EN-LI-121	Trending and Performance Review Process	22
EN-LI-121	Trending and Performance Review Process	23
EN-LI-123-01	Nuclear Regulatory Commission Inspection Support	8
EN-MA-123	Identification and Trending of Rework	8
EN-OE-100	Operating Experience Program	29
EN-OP-104	Operability Determination Process	12
EN-OP-115	Conduct of Operations	22
EN-OP-200	Plant Transient Response Rules	4
EN-QV-126	Oversight Follow-up Procedure	19

Self-Assessments

LO-GLO-2015-0160	LO-GLO-2016-0013	LO-GLO-2017-0018	LO-GLO-2017-0022
LO-GLO-2017-0029			

Work Orders

00426753	00470795	52323346	52335678
52411027	52411028	52417211	52611025
52646919	00454964	00483054	52636393
00480291			

Information Request
Biennial Problem Identification and Resolution Inspection
Grand Gulf Nuclear Station
August 9, 2017

Inspection Report: 05000416/2017011

On-site Inspection Dates: October 30–November 3 and November 13–17, 2017

This inspection will cover the period from October 8, 2015, through November 16, 2017. The scope of this request is information associated with activities during this inspection period unless otherwise specified. To the extent possible, the requested information should be provided electronically in word-searchable Adobe PDF (preferred) or Microsoft Office format. Any sensitive information should be provided in hard copy during the team's first week on site; do not provide any sensitive or proprietary information electronically.

Lists of documents ("summary lists") should be provided in Microsoft Excel or a similar sortable format. Please be prepared to provide any significant updates to this information during the team's first week of on-site inspection. As used in this request, "corrective action documents" refers to condition reports, notifications, action requests, cause evaluations, and/or other similar documents, as applicable to Grand Gulf.

Please provide the following information no later than October 3, 2017:

1. Document Lists

Note: For these summary lists, please include the document/reference number, the document title, initiation date, current status, and long-text description of the issue.

- a. Summary list of all corrective action documents related to significant conditions adverse to quality that were opened, closed, or evaluated during the period
- b. Summary list of all corrective action documents related to conditions adverse to quality that were opened or closed during the period
- c. Summary list of all currently open corrective action documents associated with conditions first identified any time prior to June 1, 2016, including prior to the beginning of the inspection period
- d. Summary lists of all corrective action documents that were upgraded or downgraded in priority/significance during the period (these may be limited to those downgraded from, or upgraded to, apparent-cause level or higher)
- e. Summary list of all corrective action documents initiated during the period that "roll up" multiple similar or related issues, or that identify a trend
- f. Summary lists of operator workarounds, operator burdens, temporary modifications, and control room deficiencies (1) currently open and (2) that were evaluated and/or closed during the period
- g. Summary list of safety system deficiencies that required prompt operability determinations (or other engineering evaluations) to provide reasonable assurance of operability

- h. Summary list of plant safety issues raised or addressed by the Employee Concerns Program (or equivalent) (sensitive information should be made available during the team's first week on site—do not provide electronically)
- i. Summary list of all Apparent Cause Evaluations completed during the period

2. Full Documents with Attachments

- a. Root Cause Evaluations completed during the period; include a list of any planned or in progress
- b. Quality Assurance audits performed during the period
- c. Audits/surveillances performed during the period on the Corrective Action Program, of individual corrective actions, or of cause evaluations
- d. Functional area self-assessments and non-NRC third-party assessments (e.g., peer assessments performed as part of routine or focused station self- and independent assessment activities; do not include INPO assessments) that were performed or completed during the period; include a list of those that are currently in progress
- e. Any assessments of the safety-conscious work environment at Grand Gulf
- f. Corrective action documents generated during the period associated with the following:
 - i. NRC findings and/or violations issued to Grand Gulf
 - ii. Licensee Event Reports issued by Grand Gulf
- g. Corrective action documents generated for the following, if they were determined to be applicable to Grand Gulf (for those that were evaluated but determined not to be applicable, provide a summary list):
 - i. NRC Information Notices, Bulletins, and Generic Letters issued or evaluated during the period
 - ii. Part 21 reports issued or evaluated during the period
 - iii. Vendor safety information letters (or equivalent) issued or evaluated during the period
 - iv. Other external events and/or Operating Experience evaluated for applicability during the period
- h. Corrective action documents generated for the following:
 - i. Emergency planning drills and tabletop exercises performed during the period
 - ii. Maintenance preventable functional failures that occurred or

were evaluated during the period

- iii. Action items generated or addressed by offsite review committees during the period
- iv. Findings, violations, and comments/observations documented in the 2015 NRC PI&R inspection report

3. Logs and Reports

- a. Corrective action performance trending/tracking information generated during the period and broken down by functional organization (if this information is fully included in item 3.b, it need not be provided separately)
- b. Current system health reports, Management Review Meeting package, or similar information; provide past reports as necessary to include ≥ 12 months of metric/trending data
- c. Radiation protection event logs during the period
- d. Security event logs and security incidents during the period (sensitive information should be made available during the team's first week on site—do not provide electronically)
- e. List of training deficiencies, requests for training improvements, and simulator deficiencies for the period

Note: For items 3.c and 3.d, if there is no log or report maintained separate from the corrective action program, please provide a summary list of corrective action program items for the category described.

4. Procedures

Note: For these procedures, please include all revisions that were in effect at any time during the period.

- a. Corrective action program procedures, to include initiation and evaluation procedures, operability determination procedures, apparent and root cause evaluation/determination procedures, and any other procedures that implement the corrective action program at Grand Gulf
- b. Quality Assurance program procedures (specific audit procedures are not necessary)
- c. Employee Concerns Program (or equivalent) procedures
- d. Procedures that implement/maintain a Safety-Conscious Work Environment
- e. Conduct of Operations procedure (or equivalent) and any other procedures or policies governing control room conduct, operator burdens and workarounds, etc.

- f. Operating Experience (OpE) program procedures and any other procedures or guidance documents that describe the site's use of OpE information

5. Other

- a. List of risk-significant components and systems, ranked by risk worth
- b. List of structures, systems, and components and/or functions that were in maintenance rule (a)(1) status at any time during the inspection period; include dates and results of expert panel reviews and dates of status changes
- c. Organization charts for plant staff and long-term/permanent contractors
- d. Electronic copies of the UFSAR (or equivalent), technical specifications, and technical specification bases, if available
- e. Table showing the number of corrective action documents (or equivalent) initiated during each month of the inspection period, by screened significance
- f. For each day the team is on site,
 - i. Planned work/maintenance schedule for the station
 - ii. Schedule of management or corrective action review meetings (e.g. operations focus meetings, condition report screening meetings, CARBs, MRMs, challenge meetings for cause evaluations, etc.)
 - iii. Agendas for these meetings and documents to be reviewed

Note: The items listed in 5.f may be provided on a weekly or daily basis after the team arrives on site.

All requested documents should be provided electronically where possible. Regardless of whether they are uploaded to an internet-based file library (e.g., Certrec's IMS), please provide copies on CD or DVD. One copy of the CD or DVD should be provided to the senior resident inspector at Grand Gulf; three additional copies should be provided to the team lead, to arrive no later than October 3, 2017:

Eric Ruesch
U.S. NRC Region IV
1600 E. Lamar
Arlington, TX 76011

PAPERWORK REDUCTION ACT STATEMENT

This request does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

GRAND GULF NUCLEAR STATION – NRC PROBLEM IDENTIFICATION AND RESOLUTION
INSPECTION REPORT 05000416/2017011 – FEBRUARY 12, 2018

DISTRIBUTION:

KKennedy, RA
 SMorris, DRA
 TPruett, DRP
 AVegel, DRS
 RLantz, DRP
 JClark, DRS
 JKozal, DRP
 TDeBey, DRP
 CYoung, DRP
 NDay, DRP
 AAthar, DRP
 AElam, DRP
 JSowa, DRP
 LMicewski, DRP
 WSifre, DRS
 CSpeer, DRP
 SKirkwood, OGC
 JBowen, RIV/OEDO
 VDricks, ORA
 JWeil, OCA
 SLingam, NRR
 AMoreno, RIV/CAO
 BMaier, RSLO
 THipschman, IPAT
 RAzua, IPAT
 EUribe, IPAT
 MHerrera, DRMA
 R4Enforcement
 ROP Reports
 ROP Assessments

ADAMS ACCESSION NUMBER: ML18043B137

☒ SUNSI Review: ADAMS: ☐ Non-Publicly Available ☒ Non-Sensitive Keyword:
 By: **JRS** ☒ Yes ☐ No ☒ Publicly Available ☐ Sensitive NRC-002

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SIGNATURE	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/
DATE	01/19/18	01/30/18	01/19/18	01/19/18	01/19/18	01/22/18
OFFICE	BC:DRP/C	TL:DRS/IPAT				
NAME	THipschman	JKozal	THipschman			
SIGNATURE	/RA/	/RA/	/RA/			
DATE	01/19/18	01/23/18	02/12/18			

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