UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

August 11, 2015

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

SUBJECT: GRAND GULF NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT 05000416/2015002

Dear Mr. Mulligan:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Grand Gulf Nuclear Station, Unit 1. On July 28, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. All three of these findings involved violations of NRC requirements. Additionally, NRC inspectors documented one Severity Level IV violation with no associated finding. Further, inspectors documented a licensee-identified violation, which was determined to be of very low safety significance (Green). The NRC is treating these violations 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, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; 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 Regional Administrator, Region IV; and the NRC resident inspector at the Grand Gulf Nuclear Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, “Public Inspections, Exemptions, Requests for Withholding,” a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC’s Public

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Greg Warnick, Branch Chief
Project Branch C
Division of Reactor Projects

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

Enclosure: Inspection Report 05000416/2015002
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution for Grand Gulf Nuclear Station

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Greg Warnick, Branch Chief
Project Branch C
Division of Reactor Projects

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

Enclosure: Inspection Report 05000416/2015002
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution for Grand Gulf Nuclear Station

<u>DISTRIBUTION</u>:
See next page

ADAMS ACCESSION NUMBER:

☒ SUNSI Review By: RAzua	ADAMS ☒ Yes ☐ No		☒ Non-Sensitive ☐ Sensitive	☒ Publicly Available ☐ Non-Publicly Available		
OFFICE	SRI:DRP/C	RI:DRP/C	SPE:DRP/C	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
NAME	MSchwieg	NDay	RAzua	TRFarnholtz	GWerner	VGaddy
SIGNATURE	***/RA/E***	***/RA/E***	***/RA/***	***/RA/***	***/RA/E***	***/RA/***
DATE	8/10/15	8/10/15	8/1/15	8/6/15	8/6/15	8/6/15
OFFICE	C:DRS/PSB1	C:DRS/PSB2	TL:DRS/TSS	BC:DRP/C		
NAME	MHaire	HGepford	ERuesch	GWarnick		
SIGNATURE	***/RA/***	***/RA/***	***/RA/***	***/RA/***		
DATE	8/6/15	8/6/15	8/6/15	8/11/15		

OFFICIAL RECORD COPY

Letter to Kevin Mulligan from Greg Warnick dated August 11, 2015

SUBJECT: GRAND GULF NUCLEAR STATION – NRC INSPECTION REPORT 5000416/2015002

DISTRIBUTION:
Regional Administrator (Marc.Dapas@nrc.gov)
Deputy Regional Administrator (Kriss.Kennedy@nrc.gov)
DRP Director (Troy.Pruett@nrc.gov)
DRP Deputy Director (Ryan.Lantz@nrc.gov)
DRS Director (Anton.Vegal@nrc.gov)
DRS Deputy Director (Jeff.Clark@nrc.gov)
Senior Resident Inspector (Ryan.Alexander@nrc.gov)
Senior Resident Inspector (Mark.Schwieg@nrc.gov)
Senior Resident Inspector (Matt.Young@nrc.gov)
Resident Inspector (Neil.Day@nrc.gov)
Administrative Assistant (Alley.Farrell@nrc.gov)
Branch Chief, DRP/C (Greg.Warnick@nrc.gov)
Senior Project Engineer (Ray.Azua@nrc.gov)
Project Engineer (Paul.Nizov@nrc.gov)
Project Engineer (Michael.Stafford@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Alan.Wang@nrc.gov)
Branch Chiefs, DRP (R4DRP-BC@nrc.gov)
Branch Chiefs, DRS (R4DRS-BC@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
ACES (R4ACES@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Technical Support Assistant (Loretta.Williams@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
RIV Congressional Affairs Officer (Angel.Moreno@nrc.gov)
RIV/ETA: OEDO (Cindy.Rosales-Cooper@nrc.gov)
ROPreports

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000416
License:	NPF-29
Report:	05000416/2015002
Licensee:	Entergy Operations, Inc.
Facility:	Grand Gulf Nuclear Station, Unit 1
Location:	7003 Baldhill Road Port Gibson, MS 39150
Dates:	April 1 through June 30, 2015
Inspectors:	R. Alexander, Acting Senior Resident Inspector M. Schwieg, Acting Senior Resident Inspector M. Young, Senior Resident Inspector N. Day, Resident Inspector J. Mateychick, Senior Reactor Inspector L. Carson, Senior HP Inspector N. Taylor, Senior Project Engineer
Approved By:	Greg Warnick, Chief, Project Branch C Division of Reactor Projects

SUMMARY

IR 05000416/2015002; 04/01/2015 – 06/30/2015; Grand Gulf Nuclear Station; Maintenance Effectiveness, Post-Maintenance Testing, and Follow-up of Events

The inspection activities described in this report were performed between April 1 and June 30, 2015, by the resident inspectors at the Grand Gulf Nuclear Station and inspectors from the NRC's Region IV office. Three findings of very low safety significance (Green) are documented in this report. All three of these findings involved violations of NRC requirements. Additionally, NRC inspectors documented in this report one Severity Level IV violation with no associated finding and one licensee-identified violation of very low safety significance. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green. The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, for failure to establish appropriate work instructions to properly pre-plan and perform maintenance that affected the performance of the reactor core isolation cooling system. Specifically, the work instructions failed to ensure that a steam supply drain pot drain alignment path was maintained while replacing valve packing 1-E51-F026. As a result, the drain path was isolated causing a group 4 isolation, which rendered the reactor core isolation cooling system unavailable. Operations personnel returned the reactor core isolation cooling system to operable status approximately 19 hours after the isolation occurred. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2015-01677.

  This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have an adequate maintenance work instruction resulted in the unplanned unavailability of the reactor core isolation cooling system. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not 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) did not represent a loss of system and/or function; (3) did not represent 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) did not represent 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. In addition, this finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of

mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of having a drain path during the entire maintenance activity to properly plan the activity using appropriate configuration control and work instructions [H.12]. (Section 1R12)

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, for the failure to have appropriate maintenance instructions to review and analyze vibration data on the division 3 emergency diesel generator soak back oil pump. Specifically, Work Order WO 52582051 failed to ensure an appropriate review and analysis of the vibration data collected on the division 3 emergency diesel generator soak back oil pump. As a result, the soak back oil pump on the division 3 emergency diesel generator failed due to high vibration and the emergency diesel generator was declared inoperable. As corrective actions, the licensee repaired soak back oil pump. This issue was entered issue into the licensee's corrective action program as Condition Report CR-GGN-2015-0071.

  This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, vibration data was collected, but was not appropriately reviewed and analyzed to identify a degrading soak back oil pump on the division 3 emergency diesel generator. The division 3 emergency diesel generator was declared inoperable when the failed pump coupling was identified by the licensee. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not 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) did not represent a loss of system and/or function; (3) did not represent 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) did not represent 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 has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of including complete instructions to maintenance personnel to ensure that critical steps were accomplished [H.12]. (Section 1R19)

- Green. The team identified a non-cited violation of License Condition 2.C.9, "Fire Protection," for the failure to provide reliable communications systems for use by operators during control room fire scenarios. The licensee included this deficiency in their corrective action program as Condition Report CR-GGN-2014-03803, and completed actions to establish alternate communications.

  The failure to provide a reliable communication system for operators to use to perform a post-fire safe shutdown outside of the control room was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone, and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013. Because it affected the ability to reach and maintain safe shutdown conditions in case of a fire that led to control room evacuation, a senior reactor analyst performed a Phase 3 evaluation that determined the deficiency had very low risk significance. The finding did not have a cross-cutting aspect since it is not indicative of current licensee performance. (Section 4OA5)

Other Findings

- SL-IV. The inspectors identified a non-cited violation with three examples for the licensee's failure to update the Updated Final Safety Analysis Report in accordance with 10 CFR Part 50.71(e). Specifically, the licensee failed to update the Grand Gulf Nuclear Station Updated Final Safety Analysis Report, Section 15.2.2.2.2.1, "Generator Load Rejection with Bypass," to appropriately reflect the anticipated plant response to a full load reject after the completion of the extended power uprate. Additionally, the inspectors determined that the licensee did not adequately describe the extended power uprate changes in the Updated Final Safety Analysis Report Chapters 11 (Radioactive Waste Management) and 12 (Radiation Protection) and submit an update to the NRC. The licensee documented this issue in Condition Reports CR-GGN-2015-00892, CR-GGN-2015-01607, and CR-GGN-2015-01610.

  The licensee's failure to update the Updated Final Safety Analysis Report in a timely manner is a performance deficiency. This performance deficiency was evaluated using traditional enforcement because it has the potential to impact the NRC's ability to perform its regulatory function. The inspectors used the NRC Enforcement Policy to evaluate the significance of this violation. Consistent with Section 6.1.d.3 of the NRC Enforcement Policy, the inspectors determined that the performance deficiency is a Severity Level IV non-cited violation because the lack of up-to-date information in the Updated Final Safety Analysis Report has not resulted in any unacceptable change to the facility or procedures. This non-cited violation has no cross-cutting aspect because there was no finding associated with this traditional enforcement violation. (Section 4OA3)

Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

The Grand Gulf Nuclear Station began the inspection period at 100 percent power.

On April 7, 2015, power was reduced to 50 percent to perform control rod sequence exchange. Upon completion, power ascension activities were performed to reach 100 percent power on April 16, 2015.

On April 17, 2015, power was reduced to 83 percent to perform control rod pattern adjustment. Upon completion, power ascension activities were performed to reach 100 percent power on April 18, 2015.

On May 8, 2015, power was reduced to 85 percent to perform control rod surveillance. Upon completion, power ascension activities were performed to reach 100 percent power on May 9, 2015.

On June 5, 2015, power was reduced to 50 percent to perform a control rod sequence exchange. Upon completion, power ascension activities were performed to reach 100 percent power on June 11, 2015.

On June 12, 2015, power to 68 percent to perform a control rod adjustment. Upon completion, power ascension activities were performed to reach 100 percent power on June 13, 2015. Power remained at or near 100 percent for the remainder of the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate AC Power Systems

a. Inspection Scope

On June 10, 2015, the inspectors completed an inspection of the station's off-site and alternate-ac power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment to verify that plant features and procedures were appropriate for operation and continued availability of off-site and alternate-ac power systems. The inspectors reviewed outstanding work orders and open condition reports for these systems. The inspectors walked down the switchyard to observe the material condition of equipment providing off-site power sources. The inspectors assessed corrective actions for identified degraded conditions and verified that the licensee had considered the degraded conditions in its risk evaluations and had established appropriate compensatory measures.

The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the off-site and alternate-ac power systems.

These activities constituted one sample of summer readiness of off-site and alternate-ac power systems, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walk-down

a. Inspection Scope

The inspectors performed three partial system walk-downs of the following risk-significant systems:

- April 20, 2015, control room air conditioning A during maintenance on control room air conditioning B

- June 16, 2015, high pressure core spray (HPCS) service water following corrective maintenance

- June 20, 2015, direct current power distribution

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted three partial system walk-down samples, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walk-down

a. Inspection Scope

On May 22, 2015, the inspectors performed a complete system walk-down inspection of the reactor core isolation cooling (RCIC). The inspectors reviewed the licensee's procedures and system design information to determine the correct RCIC lineup for the existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, in-process design changes, temporary modifications, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walk-down sample, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on five plant areas important to safety:

- April 8, 2015, RCIC Room (1A104-02)
- April 13, 2015, Diesel Generating Bays (1D306 63, 1D308 62, 1D310 61)
- May 12, 2015, Fire Pump Rooms (0M101 66, 0M102 66, 0M103 66)
- May 26, 2015, Control Rod Drive Hydraulic Control Area (1A311 25)
- May 26, 2015, Lower Cable Spreading Room (0A402 42)

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted five quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On May 22, 2015, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose one plant area containing risk-significant structures, systems, and components (SSCs) that were susceptible to flooding:

- Emergency diesel generator underground fuel oil tanks

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

These activities constituted completion of one flood protection measures sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On May 19, 2015, the inspectors observed Simulator Training GSMS-LOR-00178 (inadvertent RCIC initiation) for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the crew training.

These activities constituted completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On June 9, 2015, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened risk due to unit power reductions. The inspectors observed the operators' performance of the following activities:

- A 68 percent reactor power reduction for control rod adjustment

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure, and other operations department policies.

These activities constituted completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-related SSCs and reviewed the licensee's Periodic Evaluation as one of the required annual samples:

- May 14, 2015, Maintenance Rule Periodic Review
- May 29, 2015, offgas refrigeration unit overheating during defrost operation
- June 5, 2015, RCIC automatic isolation during maintenance activities

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of three maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

Introduction. The inspectors reviewed a Green, self-revealing, non-cited violation of Technical Specification 5.4.1.a, for failure to establish appropriate work instructions to properly pre-plan and perform maintenance that affected the performance of the RCIC system. Specifically, the work instructions failed to ensure that a steam supply drain pot drain alignment path was maintained while replacing the packing for valve 1-E51-F026. As a result, the drain path was isolated causing a group 4 isolation, which rendered the RCIC system unavailable.

Description. On March 30, 2015, the licensee performed maintenance to replace valve packing on RCIC steam supply drain valve 1-E51-F026. Work Order WO 00401014 was developed to perform the maintenance activity. As part of the work order, the licensee developed valve Tagout 1C20-1, E51-03E51F026, which included RCIC system valves 1-E51-F025, 1-E51-F038, and 1-E51-F054. The valves were assigned to be closed during the maintenance activity for personnel safety. Closing these particular valves isolated the normal RCIC drain path. To maintain the RCIC system available, the upstream drain pot manual drain valves 1-E51-F219 and 1-E51-F220 were opened in accordance with Procedure 04-1-01-E51-1, "Reactor Core Isolation Cooling System," Revision 133, since the normal drain path could not be maintained. This alternate drain path alignment was to the adjacent residual heat removal (RHR) room. The valves associated with the alternate drain path alignment were not included in the work order instructions, or the tagout associated with the maintenance activity.

While the maintenance effort was ongoing, an unexpected RHR high temperature alarm actuated. In accordance with plant practice, operations personnel closed valves 1-E51-F219 and 1-E51-F220 to control the RHR room temperature. Since the valves were not appropriately tagged, operations personnel were unaware of the impact this action would have on the facility. As a result, the alternate drain path for the RCIC turbine established for the packing replacement maintenance was isolated. Consequently, the RCIC system unexpectedly isolated on a division 1 steam line differential pressure high signal. The licensee had planned to maintain the RCIC system available to perform its intended safety function during the maintenance activity. However, due to the unexpected isolation, the RCIC system, per Technical Specification 3.5.3, was inoperable and unavailable for approximately 19 hours.

Per work order Tagout 1C20-1, E51-03E51F026 no drain alignment was ensured, and the RCIC TURB STM SPLY DR TRAP LVL HI control room annunciator was sealed in. This prevented operators from being notified of the lack of a drain path. This resulted in operations personnel not taking appropriate actions, such as reopening valves 1-E51-F219 and F220, as required in alarm response instruction 04-1-02-1H13-P601-21A-B3.

Analysis. The failure to establish appropriate work instructions to properly pre-plan and perform maintenance on the RCIC system was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have an adequate maintenance work instruction resulted in the unplanned unavailability of the RCIC system. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not 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) did not represent a loss of system and/or function; (3) did not represent 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) did not represent 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. In addition, this finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of having a drain path during the entire maintenance activity to properly plan the activity using appropriate configuration control and work instructions [H.12].

Enforcement. Technical Specification 5.4.1.a requires written procedures to be established as recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 9.a recommends procedures for performing maintenance, such that, maintenance that can affect the performance of safety-related equipment is properly pre-planned and performed in accordance with documented instructions appropriate to the circumstances. Work order 00401014 was the documented instruction to repack RCIC steam supply outboard drain valve 1-E51-F026, and was an activity that could impact the performance of the safety-related system. Contrary to the above, on March 20, 2015, the licensee failed to establish appropriate work instructions to properly pre-plan and perform maintenance that affected the performance of the RCIC system. Specifically, work order 00401014 failed to ensure that a steam supply drain pot drain alignment path was maintained while replacing valve packing 1-E51-F026. As a result, the drain path was isolated causing a group 4 isolation which rendered the RCIC system unavailable. Operations personnel returned the RCIC system to operable status approximately 19 hours after the isolation occurred. Because this finding is determined to be of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-GGN-2015-01677, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2015002-01, "Failure to Have Appropriate Instructions Resulted in the Unplanned Unavailability of the Reactor Core Isolation Cooling System."

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

a. Inspection Scope

The inspectors reviewed six risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- April 15, 2015, RCIC maintenance outage
- April 19, 2015, HPCS maintenance outage
- April 20, 2015, standby service water (SSW) C maintenance outage
- May 5, 2015, RHR A maintenance outage
- May 13, 2015, SSW A maintenance outage
- May 19, 2015, RHR C maintenance outage

The inspectors verified that these risk assessment were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected SSCs.

These activities constituted completion of six maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed six operability determinations that the licensee performed for degraded or nonconforming SSCs:

- April 10, 2015, operability determination of control room air conditioning B trip

- April 10, 2015, operability determination of drywell purge compressor agastat relay crack

- April 21, 2015, operability determination of diesel fuel oil vents

- April 23, 2015, operability determination of standby liquid control continuity relay

- May 12, 2015, operability determination of division 2 station battery cover cracks

- June 29, 2015, operability determination of division 3 kilowatt loading swings

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability of the degraded SSC.

These activities constituted completion of six operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed two permanent plant modifications that affected risk-significant SSCs:

- June 10, 2015, flex containment cooling system (M41) vent path to atmosphere
- June 12, 2015, Fukushima spent fuel pool indication

The inspectors reviewed the design and implementation of the modifications. The inspectors verified that work activities involved in implementing the modifications did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the functionality of the SSCs as modified.

These activities constituted completion of two samples of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed eight post-maintenance testing activities that affected risk-significant SSCs:

- April 6, 2015, RCIC E51 AT2 optical isolator input/output card replacement
- April 16, 2015, control room air conditioner B compressor replacement
- April 21, 2015, SSW C pump replacement
- April 24, 2015, RCIC isolation valve repair
- May 8, 2015, standby liquid control relay replacement
- May 14, 2015, SSW C relief valve replacement
- May 19, 2015, reactor power supply power supply (WO369137-01)
- May 28, 2015, division 3 emergency diesel generator (EDG) soak back oil pump coupling replacement

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

These activities constituted completion of eight post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

Introduction. The inspectors identified a Green, non-cited violation of Technical Specification 5.4.1.a, for the failure to have appropriate maintenance instructions to review and analyze vibration data on the division 3 EDG soak back oil pump. Specifically, on December 1, 2014, the licensee failed to establish adequate work instructions to ensure an appropriate review and analysis of the vibration data collected on the division 3 EDG soak back oil pump. The high vibration condition was not identified and caused the soak back oil pump coupling to fail, which resulted in the inoperability of the division 3 EDG.

Description. The division 3 EDG has two soak back oil pumps to keep the engine turbochargers pre-lubricated. This reduces wear on the EDG during startup and after shutdown. The soak back oil pumps are safety-related and must operate at all times.

On December 1, 2014, work order 52582051 was performed to record quarterly vibration data on the division 3 EDG soak back oil pump. The data was collected and the highest vibration recorded was 0.75 ILS. This vibration reading was above the action range

(> .6 ILS), however, no condition report was issued or actions taken as required by the vibration monitoring program contained in Procedure SEP-VIB-GGN-001, "Grand Gulf Vibration Monitoring Program Section," Revision 0.

On January 5, 2015, the EDG system engineer conducted a walk down of the division 3 EDG room and heard a loud noise coming from the soak back oil pump. Upon further inspection, there was evidence of deterioration of the pump coupling. Vibration readings above 1.0 ILS were recorded, which is well above the action range (>.6 ILS). Condition report CR-GGN-2015-0071 was generated, and the division 3 EDG was declared inoperable. On January 6, 2015, a work order was implemented to repair the pump coupling. Following repairs to the pump coupling and appropriate retests, the division 3 EDG was returned to service.

The inspectors reviewed work order 52582051 and observed that it prescribed actions to collect the vibration data, but did not include actions to review and analyze the data. Consequently, increased vibrations on a safety-related component were not reviewed and analyzed by a qualified vibration analyst, and no condition report was initiated for the elevated vibration readings as required by Procedure SEP-VIB-GGN-001. As a result, a high vibration condition was not identified on December 1, 2014, and the pump coupling for the division 3 EDG soak back oil pump continued to degrade until discovered by the licensee on January 5, 2015.

Analysis. The failure to establish adequate work instructions to ensure an appropriate review and analysis of vibration data was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, vibration data was collected, but was not appropriately reviewed and analyzed to identify a degrading soak back oil pump on the division 3 EDG. The division 3 EDG was declared inoperable when the failed pump coupling was identified by the licensee. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not 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) did not represent a loss of system and/or function; (3) did not represent 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) did not represent 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 has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of including complete instructions to maintenance personnel to ensure that critical steps were accomplished [H.12].

Enforcement. Technical Specification 5.4.1.a requires written procedures to be established as recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 9.a recommends procedures for performing maintenance, such that, maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with documented instructions appropriate to the circumstances. Work order 52582051 was the documented instruction to collect vibration data on the division 3 soak back oil pump, and was an activity that could impact the performance of the safety-related system. Contrary to the above, on December 1, 2014, the licensee failed to establish adequate documented instructions to properly pre-plan and perform maintenance that affected the performance of division 3 EDG. Specifically, work order 52582051 failed to ensure an appropriate review and analysis of the vibration data collected on the division 3 EDG soak back oil pump. As a result, the soak back oil pump on the division 3 EDG failed due to high vibration and the EDG was declared inoperable. The licensee repaired the pump coupling and returned the EDG to operable. Because this finding is determined to be of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-GGN-2015-0071, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2015002-02, "Failure to Identify High Vibration on the Division 3 EDG Soak Back Oil Pump."

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed eight risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service tests:

- April 16, 2015, RCIC quarterly operability test

Containment isolation valve surveillance tests:

- April 20, 2015, HPCS quarterly valve test

Other surveillance tests:

- April 14, 2015, turbine stop valve and control valve test
- April 22, 2015, turbine mechanical overspeed test
- April 30, 2015, division 2 load shedding and sequencing electrical
- April 30, 2015, division 2 load shedding and sequencing functional
- May 14, 2015, division 2 EDG monthly load run
- May 18, 2015, division 3 EDG 24 hour load run

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

These activities constituted completion of eight surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

4OA1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures (MS05)

a. Inspection Scope

For the period of March 31, 2014, through March 31, 2015, the inspectors reviewed licensee event reports (LERs), maintenance rule evaluations, and other records that could indicate whether safety system functional failures had occurred. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, and NUREG-1022, “Event Reporting Guidelines: 10 CFR 50.72 and 50.73,” Revision 3, to determine the accuracy of the data reported.

These activities constituted verification of the safety system functional failures performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Emergency AC Power Systems (MS06)

a. Inspection Scope

The inspectors reviewed the licensee’s mitigating system performance index data for the period of March 31, 2014, through March 31, 2015, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for emergency ac power systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: Cooling Water Support Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee’s mitigating system performance index data for the period of March 31, 2014, through March 31, 2015, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for cooling water support systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On February 7, 2015, an automatic reactor trip occurred due to a generator lockout resulting from a main transformer B differential current trip.

  The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.

These activities constituted completion of one annual follow-up sample, as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

4OA3 Follow-up of Events (71153)

(Closed) Licensee Event Report 05000416/2015-001-00: "Manual Actuation of the Reactor Protection System due to a Main Turbine Trip"

a. Inspection Scope

On February 7, 2015, Grand Gulf Nuclear Station experienced a full load rejection and reactor scram while operating at 100 percent rated thermal power. The full load rejection was initiated due to a fault in the current transformer circuit on the B main transformer. On February 7, 2015, the NRC was notified of the event as required per Title 10 CFR 50.72(b)(2)(iv)(B) in Event Notification 50795. On April 8, 2015, the licensee submitted LER 2015-001-00 as required by Title 10 CFR 50.73(a)(2)(iv)(A) for an automation activation of the reactor protection system. The inspectors have reviewed LER 2015-001-00, and they have determined that no more than minor violations existed during the February 7, 2015, reactor scram or the report. The inspectors did identify the LER contained the inaccurate statement of, "The receipt of the level 9 and the second level 3 SCRAM signal is bounded by the existing UFSAR transient analysis for a full load rejection." The inspectors reviewed the UFSAR and determined that the transient analysis is not included. However, the transient was analyzed for extended power uprate, but not updated in the UFSAR.

These activities constituted completion of one event follow-up sample, as defined in Inspection Procedure 71153.

b. Findings

Introduction. The inspectors identified a Severity Level IV, non-cited violation with three examples for the licensee's failure to update the UFSAR in accordance with 10 CFR 50.71(e). Specifically, the licensee failed to update the Grand Gulf Nuclear Station UFSAR, Section 15.2.2.2.2.1, "Generator Load Rejection with Bypass," to appropriately reflect the anticipated plant response to a full load reject after the completion of the extended power uprate (EPU). Additionally, the inspectors determined that the licensee did not adequately describe the EPU changes in the UFSAR Chapters 11 (Radioactive Waste Management) and 12 (Radiation Protection) and submit an update to the NRC.

Description. Entergy Procedure EN-LI-113-01, "Updated Final Safety Analysis Change Process," Revision 1, describes that the Entergy fleet process for maintaining the UFSAR is consistent with NEI 98-03, "Guidelines for Updating Final Safety Analysis Reports." Paragraph 5.3.1 [2] of EN-LI-113-01 requires that "the UFSAR shall be updated to include all Safety Analyses and evaluations performed by or on behalf of Entergy to support approved license amendments, or to support conclusions that changes did not require a license amendment per 10 CFR 50.59…" This expectation is consistent with NEI 98-03 Revision 1, which was endorsed by the NRC in Regulatory Guide 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with Title 10 CFR 50.71(e)." Additionally, NEI 98-03 requires that the UFSAR be updated annually or within six months after each refueling outage, which was not completed in the three examples described above.

The inspectors noted that the licensee had submitted a license amendment request on September 8, 2010, (ML 102660403) which proposed to increase the reactor power operating limit from 3898 megawatts thermal (MWt) to 4408 MWt, approximately 15 percent above the original licensed power level. A specific safety analysis report was included with the license amendment request describing plant response at the proposed power level. The NRC issued the license amendment on July 18, 2012, (ML 121210023), after which the licensee completed the power uprate modification and started up from Refueling Outage 18 on June 24, 2012. The licensee achieved the new licensed power level of 4408 MWt on September 8, 2012.

NRC inspectors reviewed various sections of the UFSAR and determined that multiple sections of the UFSAR had not been adequately updated as required by Title 10 CFR 50.71(e). The inspectors identified the following three examples where the licensee had failed to update the UFSAR in a timely way:

- Section 11.1.3 describes the calculation for the production of tritium for Grand Gulf Nuclear Station (GGNS). The licensee had not made specific adjustments to the tritium calculation, source term evaluation, and radioisotope inventory estimate based on the power increase to determine if there would be an apparent increase in production from GGNS operations. Radioisotope and source term tables (11.1-1 thru 11.1-5) in Chapter 11 of the USFAR had not been revised since the EPU. In the liquid radwaste Table 11.2-10, the licensee increased the tritium release rate 15 percent from 73 curies pre EPU to 84 curies post EPU. Also, gaseous radwaste Table 11.3-9, states that the GGNS produces 74 curies of tritium per year; an increase of 15 percent. In Tables 11.3 through 11.8, the licensee made changes to the GALE86 FORTRAN source code. However, NRC staff could not verify the licensee's calculations of gaseous radioactive effluent releases using GALE86 and gaseous radioactive effluent offsite doses using GASPAR II. At the time of the March 2014 inspection, the licensee had not adequately justified and documented these changes or determined whether software Quality Assurance and Validation and Verification had been performed. For example, the licensee used a default value of 9.5 curies of C-14 produced per year at 4408 MWt, which was the same as the previous 3833 MWt pre EPU level.

- Section 12.2.1 describes the contained sources within the reactor containment, core, and vessel data associated with neutron and gamma radiation sources. This data is used for calculations for radiation shielding, dose levels around the reactor vessel, and design basis accident analysis. Currently, Section 12.2 of the UFSAR is based on the previous 3833 MWt power rating; it had not been updated to the EPU rating of 4408 MWt power. Specifically, physical data, figures, and tables in UFSAR Section 12.2.1.2 Containment had not been revised as appropriate, Tables 12.2-1 through 12.2-5:

  - Basic Reactor Data
  - Core Boundary Neutron Fluxes
  - Gamma Ray Source Energy Spectra
  - Neutron Flux Outside Reactor Vessel
  - Gamma Flux Outside Reactor Vessel

  For example, UFSAR Section 12.2.1.2.1.1.6 states, in part, that the fast neutron flux outside the reactor with energy greater than 100 kilo electron volts (kev) is 1.36E9 neutrons/cm2-sec. Also, the calculated gamma ray dose is 2.69E4 rad/hour. These values were not revised in consideration of the 15 percent EPU.

- On February 7, 2015, Grand Gulf Nuclear Station experienced a generator load reject reactor scram due to a wiring fault on the B main transformer. The reactor scram and load reject resulted in substantial reactor vessel level changes, which caused both a Level 9 high level trip of the running feed water pumps as well as a subsequent Level 3 low level trip. The turbine bypass valves performed normally during the event. While performing follow up inspections after the event, the NRC inspectors noted that the UFSAR description of the plant response to a generator load reject differed significantly from what was experienced during the reactor scram on February 7.

  Section 15.2.2 describes the anticipated plant response to a generator load rejection. One of the specific cases analyzed in this section is a generator load rejection with bypass available, as described in Sections 15.2.2.2.2.1 and 15.2.2.3.3.1, and Figure 15.2-2, the very event that occurred on February 7, 2015. In particular, the expected reactor vessel level response in Figure 15.2-2 demonstrates that the plant should experience a mild level transient without experiencing a loss of normal feed water flow or low level reactor trip signal. An amplifying note at the bottom of the figure was added in Licensing Document Change 02072 in 2012, and states that, "Initial cycle analyses are based on the originally licensed power level of 3833 MW."

In response to these observations, the licensee initiated Condition Reports CR-GGN-2015-00892, CR-GGN-2015-01607, and CR-GGN-2015-01610 to correct the identified errors in the UFSAR, as well as perform an extent of condition review to identify other outdated information.

Analysis. The licensee's failure to update the UFSAR in a timely manner is a performance deficiency. This performance deficiency was evaluated using traditional enforcement because it has the potential to impact the NRC's ability to perform its regulatory function. The inspectors used the NRC Enforcement Policy to evaluate the significance of this violation. Consistent with Section 6.1.d.3 of the NRC Enforcement Policy, the inspectors determined that the performance deficiency is a Severity Level IV non-cited violation because the lack of up-to-date information in the UFSAR has not resulted in any unacceptable change to the facility or procedures. This non-cited violation has no cross-cutting aspect because there was no finding associated with this traditional enforcement violation.

Enforcement. The inspectors identified a Severity Level IV, non-cited violation of Title 10 CFR Part 50, Paragraph 50.71(e), which states, in part, that each person licensed to operate a nuclear power reactor shall periodically update the final safety analysis report, originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. This submittal shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the applicant or licensee or prepared by the applicant or licensee pursuant to Commission requirement since the submittal of the original final safety analysis report. Contrary to the above, between June 24, 2012, and present, a period of almost 3 years, the licensee has not updated all affected sections of the Grand Gulf Nuclear Station UFSAR following completion of an extended power uprate design change, which increased the licensed thermal power from 3898 to 4408 megawatts thermal in June 2012. Because this is a Severity Level IV violation, and it was entered in the licensee's corrective action program as Condition Report CR-GGN-2015-00892, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2015002-03, "Failure to the Update the Final Safety Analysis Report after the Extended Power Uprate."

4OA5 Other Activities

<u>(Closed) Unresolved Item 05000416/2014007-02: Possible Loss of Communication Systems during Control Room Fire Scenarios</u>

<u>Introduction</u>. The team identified a Green, non-cited violation of License Condition 2.C.9, "Fire Protection," for the failure to provide reliable communications systems for use by operators during control room fire scenarios. The licensee included this deficiency in their corrective action program and completed actions to establish alternate communications.

<u>Description</u>. The licensee developed Engineering Report GGNS-EE-11-00001, "GGNS Appendix R Safe Shutdown Analysis (FPP-1)," Revision 0, to document a revalidation of the post-fire safe shutdown analysis. This analysis described three different intraplant communications systems. These systems included the radio system, public address system, and sound-powered telephones.

The licensee provided a summary of the communications systems, but they had not provided a detailed evaluation of the availability of the communications systems during control room fire scenarios. The licensee noted that they included two of the inverter cabinets for the public address system in the safe shutdown equipment list, but they had not credited them to provide communications for safe shutdown since the sound-powered telephones or hand-held radios could also be used. The licensee concluded that "because of the diverse and overlapping coverage of the intraplant communications systems, it is reasonable to conclude that adequate communications will remain available."

During a walk down, Procedure 5-1-02-II-1, "Shutdown From the Remote Shutdown Panel," Revision 43, the team confirmed that the licensee placed public address system handsets in all areas that required communications between operators, but the team identified that sound-powered telephone jacks were not located in the division 1 diesel generator room. The team noted that Procedure 05-1-02-11-1 required communications between the operators performing steps at the diesel generator and the switchgear during the time critical actions.

Because the analog radio system base station and public address system had circuits and equipment located in the control room, the team identified concerns that a control room fire could possibly disable both the analog radio system and the public address system. Subsequently, the licensee confirmed that both the analog radio system and the public address phone system could be disabled during a fire in the control room.

<u>Analysis</u>. The failure to provide a reliable communication system for operators to use to perform a post-fire safe shutdown outside of the control room was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating

Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because it affected the ability to reach and maintain safe shutdown conditions in case of a fire.

The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013. Because it affected the ability to reach and maintain safe shutdown conditions in case of a fire that led to control room evacuation, a senior reactor analyst performed a Phase 3 evaluation to determine the risk significance.

The senior reactor analyst assigned a generic fire ignition frequency for the control room (FIF_{CR}), which was slightly higher than the value in Calculation AN-95-029, "Control Room Fire Analysis," Revision 1. The analyst multiplied the fire ignition frequency by a severity factor (SF) and a non-suppression probability indicating that operators failed to extinguish the fire within 20 minutes, assuming a 2-minute detection that required a control room evacuation (NP_{CRE}). The resulting control room evacuation frequency (F_{EVAC}) was:

$$F_{EVAC} = FIF_{CR} * SF * NP_{CRE}$$

$$= 1.09 \times 10^{-2}/\text{year} * 0.1 * 1.30 \times 10^{-2}$$

$$= 1.42 \times 10^{-5}/\text{year}$$

To establish a bounding risk significance, the analyst assumed that any control room fire would fail the analog radio system and performed a detailed analysis of the plant public address system.

The control room had a total of 58 cabinets. The analyst determined that a single fire in either of two of these cabinets could lead to the loss of the plant public address system. Therefore, a bounding change in core damage frequency for a control room fire that leads to evacuation and the loss of communications ($F_{EVAC+Comm}$) was determined to be:

$$F_{EVAC+Comm} = F_{EVAC} * 2 / 58$$

$$= 1.42 \times 10^{-5}/\text{year} * 2 / 58$$

$$= 4.90 \times 10^{-7}/\text{year}$$

The analyst considered this frequency bounding because he assumed:

- A fire in any of the applicable cabinets would cause a complete loss of communications;
- The conditional core damage probability given a control room fire with evacuation and the loss of plant communications was equal to one; and
- The performance deficiency accounted for the entire change in core damage frequency (i.e., the baseline core damage frequency for this event was zero).

In accordance with the guidance in Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004, the senior reactor analyst screened the performance deficiency for its potential risk contribution to large early release frequency since the bounding change in core damage frequency provided a risk significance estimate greater than 1×10^{-7}/year. Given that Grand Gulf has a Mark III containment and that control room evacuation sequences include postulated reactor vessel breach at high reactor coolant system pressures, the analyst determined that this finding required a Phase 2 evaluation to determine the risk with respect to large early release frequency. As defined in Table 5.2, "Phase 2 Assessment Factors – Type A Findings at Full Power," the large early release frequency (LERF) factor for high reactor coolant system pressure sequences in a Mark III containment is 0.2. Applying this factor to the bounding change in core damage frequency provides a bounding changing in large, early release frequency of 9.8×10^{-8}. Therefore, the analyst determined this finding was of very low risk significance (Green).

The finding did not have a cross-cutting aspect since it is not indicative of current licensee performance.

Enforcement. License Condition 2.C.(41), "Fire Protection Program," requires that the licensee comply with the requirements of the approved Fire Protection Program as described in Revision 5 to the Updated Final Safety Analysis Report and as approved in the Safety Evaluations dated August 23, 1991, and September 29, 2006. In Updated Final Safety Analysis Report Table 9.5-11, "Fire Protection Program Comparison With NRC Requirements," Section D.5.c, "Emergency Communications," the licensee stated "Comply. Emergency communication is provided as required." Contrary to the above, the licensee failed to adequately implement the requirements of the approved fire protection program. Specifically, the licensee failed to evaluate the availability of the communication systems during control room fire scenarios to assure operators would have adequate communication to perform a safe plant shutdown outside of the control room.

The licensee entered these issues of concern into the corrective action program as Condition Report CR-GGN-2014-03803. On June 3, 2015, the licensee completed corrective actions to address this issue. In the event of a control room fire, operators will communicate using the digital radio system, which does not have equipment or circuits within the control room and would not be affected. The licensee has revised Procedures 04-1-01-C61-1 and 05-1-02-II-1 and staged digital radios dedicated for use during emergencies. Because this violation was of very low safety significance and has been entered into the corrective action program, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000416/2015002-04, "Possible Loss of Communications Systems during Control Room Fire Scenarios."

4OA6 Meetings, Including Exit

Exit Meeting Summary

On June 25, 2015, the inspectors presented the inspection results to Mr. Thomas Coutu 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.

On July 23, 2015, the inspectors presented the inspection results to Mr. Thomas Coutu, Director of Regulatory and Performance Improvement, 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.

On July 28, 2015, the inspectors presented the inspection results to Mr. James Nadeau, acting Director of Regulatory and Performance Improvement, 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.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which meets the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Title 10 CFR Part 50, Appendix E, IV.D.3, states that a licensee shall notify the state and local government agencies within 15 minutes after declaring an event. Contrary to the above, on June 8, 2015, the licensee did not notify the state and local government agencies within 15 minutes after declaring an event. Specifically, the licensee declared a notice of unusual event (NOUE) at 10:59 PM, but completed the notification to the state and local government agencies at 11:21 PM, or 22 minutes after the declaration of the NOUE. The finding was greater than minor because it is associated with the cornerstone attribute of Emergency Response Organization performance during actual event response and adversely affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Timely offsite notifications enable state and local agencies to make decisions for taking initial offsite response measures that could affect the general public. The inspectors determined the finding to be of very low safety significance (Green) because the failure to implement the emergency plan occurred during a notification of usual event. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2015-3367.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
C. Boschetti, Manager Nuclear Oversight
L. Brown, Operations Department Performance Improvement Coordinator
R. Busick, Senior Manager of Operations
D. Chipley, Senior Design Engineer - Electrical
T. Coles, Regulatory Assurance
T. Coutu, Director, Regulatory & Performance Improvement
D. Ellis, Acting Manager, Emergency Preparedness
V. Fallacara, Manager, Plant Operations
J. Hallenbeck, Design and Program Engr. Manager
J. McAdory, Fire Protection Engineer
E. Meaders, Training Manager
R. Meister, Senior Licensing Specialist
M. Milley, Manager, Maintenance
K. Mulligan, Site Vice President
J. Nadeau, Manager Regulatory Assurance
P. Salgado, Performance Improvement Manager
R. Scarbrough, Senior Licensing Specialist
R. Sorrels, Fire Protection Engineer
R. Sumrall, Chemistry Manager
D. Wiles, Engineering Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000416/2015002-01	NCV	Failure to Have Appropriate Instructions Resulted in the Unplanned Unavailability of the Reactor Core Isolation Cooling System (Section 1R12)
05000416/2015002-02	NCV	Failure to Identify High Vibration on the Division 3 EDG Soak Back Oil Pump (Section 1R19)
05000416/2015002-03	SLIV	Failure to the Update the Final Safety Analysis Report after the Extended Power Uprate (Section 4OA3)
05000416/2015002-04	NCV	Possible Loss of Communications Systems during Control Room Fire Scenarios (Section 4OA5)

Closed

05000416/2015-001-00	LER	Manual Actuation of the Reactor Protection System due to a Main Turbine Trip (Section 4OA3)
05000416/2014007-02	URI	Possible Loss of Communication Systems during Control Room Fire Scenarios (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

Number	Title	Revision
05-1-02-I-4	Off-Normal Event Procedure Loss of SC Power	46
05-1-02-VI-2	Off-Normal Event Procedure Hurricanes, Tornados, and Severe Weather	127
05-1-02-VI-2	Off-Normal Event Procedure Hurricanes, Tornados, and Severe Weather	128

Condition Reports (CRs)

CR-GGN-1-2015-03366	CR-GGN-2015-03488	CR-GGN-2015-03487
CR-GGN-2015-02975	CR-GGN-2015-02702	

Section 1R04: Equipment Alignment

Procedures

Number	Title	Revision
9.2	GG USFAR Water Systems	
04-1-01-P41-1	Standby Service Water	138
04-1-01-L11-1	System Operating Plant DC Systems	124

Drawings

Number	Title	Revision
M-1061A	Standby Service Water System	40
M-1061B	Standby Service Water System	38
M-1061C	Standby Service Water System	51
M-1061D	Standby Service Water System	65

Condition Reports (CRs)

CR-GGN-1-2015-02725	CR-GGN-1-2015-02719	CR-GGN-2013-4538
CR-GGN-2013-5511	CR-GGN-2013-5669	CR-GGN-2013-5280
CR-GGN-2013-7296	CR-GGN-2013-6785	CR-GGN-2013-4427
CR-GGN-2013-2486	CR-GGN-2013-2617	CR-GGN-2013-3243
CR-GGN-2013-3242	CR-GGN-2013-3668	CR-GGN-2013-4539

CR-GGN-2013-4776	CR-GGN-2013-5634	CR-GGN-2013-4969
CR-GGN-2013-5140	CR-GGN-2014-305	CR-GGN-2014-41
CR-GGN-2014-855	CR-GGN-2014-372	CR-GGN-2014-371
CR-GGN-2014-8236	CR-GGN-2014-4142	CR-GGN-2014-3470
CR-GGN-2014-4060	CR-GGN-2014-4120	CR-GGN-2014-2933
CR-GGN-2014-2934	CR-GGN-2014-7818	CR-GGN-2014-4664
CR-GGN-2014-4749	CR-GGN-2014-7810	CR-GGN-2014-6187
CR-GGN-2014-7467	CR-GGN-2014-7367	CR-GGN-2014-146
CR-GGN-2014-6850	CR-GGN-2014-7812	CR-GGN-2014-8012
CR-GGN-2014-8366	CR-GGN-2014-8398	CR-GGN-2014-859
CR-GGN-2014-7319	CR-GGN-2015-2361	CR-GGN-2015-2514
CR-GGN-2015-2725	CR-GGN-2015-3416	CR-GGN-2015-1809
CR-GGN-2015-397	CR-GGN-2015-2328	CR-GGN-2015-331
CR-GGN-2015-1620	CR-GGN-2015-1597	CR-GGN-2015-1691
CR-GGN-2015-1724	CR-GGN-2015-1677	CR-GGN-2014-05215
CR-GGN-2015-00485	CR-GGN-2014-06966	CR-GGN-2015-01229
CR-GGN-2015-01297		

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
GG USFAR	9A.5.2.4 Fire Zone 1A104: RCIC Room, Elevation 93’	
GG USFAR	9A.5.2.4 Fire Zone 1A204: Piping Penetration Room, Elevation 119’	
Fire Pre-Plan A-03	RCIC Pump Room – 1A104, Area 8, Elevation 93’	1
Fire Pre-Plan A-14	RWCU Pump Room A (1A209) and B (1A210), Pipe Penetration Room (1A204), Passage (1A223), Pipe Chase (1A224), Blowout Shaft (1A225), Area 8, Elevations 119’ and 128’	1
FPP-Vol-01-0-026	Unit 1 Fire Pre-Plan Volume 1	26
FPP-Vol-01-0-027	Unit 1 Fire Pre-Plan Volume 2	27

Procedures

Number	Title	Revision
GG USFAR	9A.5.63 Fire Area 63	
USFAR	Updated Final Safety Analysis Report, Section 3.5.1.4	

Other Documents

Number	Title	Revision
NUREG-0800	Standard Review Plan	2

Condition Reports (CRs)

CR-GGN-2015-02364	CR-GGN-2009-00427

Section 1R06: Flood Protection Measures

Procedures

Number	Title	Revision
06-OP-1P81-M-002	HPCS Diesel Generator 13 Functional Test	
USFAR	Updated Final Safety Analysis Report, Section 3.5.1.4	

Other Documents

Number	Title	Revision / Date
Regulatory Guide 1.76	Design Basis Tornado for Nuclear Power Plants	April 1974
Structural Integrity Calculation 1500548.301	Fuel Oil Tank Vent Tornado-Generated Missile Evaluation	
Regulatory Guide 1.76	Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants	March 2007
NUREG-0800	Standard Review Plan Missiles Generated by Natural Phenomena	2

Condition Reports (CRs)

CR-GGN-1-2015-02364	CR-GGN-2009-00427

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

Number	Title	Revision
EN-OP-115	Conduct of Operations	15

Section 1R12: Maintenance Effectiveness

Procedures

Number	Title	Revision
06-CH-1000-M-0059	Surveillance Procedure 31-Day Dose Projections	103
04-1-01-N65-1	Offgas Vault Refrigeration	33
04-1-01-E51-1	Reactor Core Isolation Cooling System	133
07-S-14-338	Valve Stem Packing Replacement and Adjustment	10
07-S-13-65	General Maintenance Instruction – Bench Set, Proper Seating and Stroke of Air Operated Valves	1
05-S-01-EP-1, Attachment 3	Emergency/Sever Accident Procedure Support Documents	32

Other Documents

Number	Title	Revision
UFSAR	5.4.6 Reactor Core Isolation Cooling	LDC 04050
UFSAR	Figure 5.4-011	39
System Health Report	E51 Q1-2015	June 17, 2015
Alarm Response Instruction	04-1-02-1H13-P601-21A-B3	35
MRFF Evaluation Tagout	MRFF Eval for CR-GGN-2014-146 and CR-GGN-2014-160 E51-013E51F026	January 10, 2014

Condition Reports (CRs)

CR-GGN-1-2015-02685	CR-GGN-1-2015-02940	CR-GGN-2013-4538
CR-GGN-2013-5511	CR-GGN-2013-5669	CR-GGN-2013-5280

CR-GGN-2013-7296	CR-GGN-2013-6785	CR-GGN-2013-4427
CR-GGN-2013-2486	CR-GGN-2013-2617	CR-GGN-2013-3243
CR-GGN-2013-3242	CR-GGN-2013-3668	CR-GGN-2013-4539
CR-GGN-2013-4776	CR-GGN-2013-5634	CR-GGN-2013-4969
CR-GGN-2013-5140	CR-GGN-2014-305	CR-GGN-2014-41
CR-GGN-2014-855	CR-GGN-2014-372	CR-GGN-2014-371
CR-GGN-2014-8236	CR-GGN-2014-4142	CR-GGN-2014-3470
CR-GGN-2014-4060	CR-GGN-2014-4120	CR-GGN-2014-2933
CR-GGN-2014-2934	CR-GGN-2014-7818	CR-GGN-2014-4664
CR-GGN-2014-4749	CR-GGN-2014-7810	CR-GGN-2014-6187
CR-GGN-2014-7467	CR-GGN-2014-7367	CR-GGN-2014-146
CR-GGN-2014-6850	CR-GGN-2014-7812	CR-GGN-2014-8012
CR-GGN-2014-8366	CR-GGN-2014-8398	CR-GGN-2014-859
CR-GGN-2014-7319	CR-GGN-2015-2361	CR-GGN-2015-2514
CR-GGN-2015-2725	CR-GGN-2015-3416	CR-GGN-2015-1809
CR-GGN-2015-397	CR-GGN-2015-2328	CR-GGN-2015-331
CR-GGN-2015-1620	CR-GGN-2015-1597	CR-GGN-2015-1691
CR-GGN-2015-1724	CR-GGN-2015-1677	CR-GGN-1-2015-02821
CR-GGN-2015-02685		

Work Orders (WOs)

52527325 01	00401014

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

Number	Title	Revision
OPG-047	Protected Equipment Posting Strategy, 4/19/2015	5
EN-OP-119	Protected Equipment Postings	7
EN-OP-119, Attachment 9.1	Protected Equipment Postings: Reason for Protected Equipment Postings CCW C OOS, 5/19/15	7
EN-OP-119, Attachment 9.1	Protected Equipment Postings: Reason for Protected Equipment Postings SSW A Outage	6
OPG-047	Protected Equipment Postings Strategy	5
02-S-01-41	On Line Risk Assessment	13

Other Documents

Number	Title	Date
	Operator's Risk Report	May 19, 2015
	Actual – GG Risk Report	March 23, 2015
	Div 2 Diesel OOS, Operator's Risk Report	May 13, 2015
	Active Technical Specifications, Unit 1, LCOTR # 1-TS-14-0445	May 13, 2015

Condition Reports (CRs)

CR-GGN-2015-02687	CR-GGN-1-2015-02809

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

Number	Title	Revision
EN-OP-104	Operability Determination Process	8
06-EL-1L11-Q-0001	Surveillance Procedure 125-Volt Battery Bank All Cell Check	105
06-EL-1L11-Q-0001	125-Volt Battery Bank All Cell Check	105

Calculations

Number	Title	Revision
1500548	Grand Gulf Emergency Diesel Generator Fuel Oil Tank Vent – Tornado-Generated Missile Impact Evaluation to Support Operability Determination	0

Drawings

Number	Title	Revision
E-1169-014	Diagram C41 Stand-by Liquid Control System Pumps & Valves	10
	Scheme No. 1A6AC41	
	SBLC SQUIB VALVE CONTROL	1
E-1039	Load Shedding & Sequencing Panel 1H22-P331 Unit 1	8
E-1169-014	Schematic Diagram C41 Stand-by Liquid Control System Pumps & Valves Unit 1	10

Drawings

Number	Title	Revision
UFSAR	8.3.1.1.4.2 Division 3 Emergency Diesel Generator	6

Other Documents

Number	Title	Revision / Date
ER-GG-2006-0183-000	Evaluation/Classification of Standby Liquid Control Squib Valve Meter Relay Panel	0
RS-1476	Standby Battery Vented Cell Installation & Operating Instructions	
FSP-0157-B	Field Service Procedure Repair for Minor Cover Cracks in Nuclear Safety Related (1-E) Batteries	
	GGNS Operations Logs, Days	April 22, 2015
06-OP-1R21-M-0002	Div 1 and 2 Load Shedding and Sequencing Functional Test	101
FSP-0157-B	C&D Technologies Field Service Procedure Repair for Minor Cover Cracks in Nuclear Safety-Related (1-E) Batteries	
RS-1476, Section 12-800	Standby Battery Vented Cell Installation & Operating Instructions	
Mississippi Power & Light Report	Grand Gulf Nuclear Station File 0260/15521/L-860.0 Tornado Report AECM-78/80	
PR-PRGGN-2015-00333	Procedure Revision	
PR-PRGGN-2015-00334	Procedure Revision	
PR-PRGGN-2015-00335	Procedure Revision	
PR-PRGGN-2015-00336	Procedure Revision	

Condition Reports (CRs)

CR-GGN-2015-02541	CR-GGN-2015-02037	CR-GGN-2015-02159
CR-GGN-2015-02161	CR-GGN-2015-02054	CR-GGN-2015-02382
CR-GGN-1-2015-03367	CR-GGN-2015-02382	CR-GGN-2015-01412
CR-GGN-1-2015-01935	CR-GGN-1-2015-01950	CR-GGN-1-2015-03438

CR-GGN-2015-00713	CR-GGN-1-2015-01236	CR-GGN-2013-06514
CR-GGN-2013-05902	CR-GGN-1-2015-03539	CR-GGN-1-2015-03526
CR-GGN-1-2015-03527	CR-GGN-1-2015-02893	CR-GGN-1-2013-07525

Work Orders (WOs)

364132	52621093	52621091
326746	369137	

Section 1R18: Plant Modifications

Procedures

Number	Title	Revision
EC 50282	Flex Containment Cooling System (M41) vent Path to Atmosphere	0
EC 50286	Fukushima spent fuel pool (SFP) indication	0

Condition Reports (CRs)

CR-GGN-2015-03405

Section 1R19: Post-Maintenance Testing

Procedures

Number	Title	Revision
EN-OP-104, Attachment 9.2	Operability Determination Process, CR-GGN-2015-0167	8
EN-OP-104, Attachment 9.3	Operability Determination Process, CR-GGN-2015-0167	9
06-OP-1P41-Q-0006, Attachment I	Surveillance Procedure Data Package Cover Sheet: HPCS Service Water System Valve and Pump Operability Test	114

Condition Reports (CRs)

CR-GGN-2015-02541	CR-GGN-2015-02037	CR-GGN-2015-02159
CR-GGN-2015-02161	CR-GGN-2015-01677	CR-GGN-1-2015-02938
CR-GGN-2015-02938		

Work Orders (WOs)

52556734-01	00397261-08	50021595-01
00369137-01		

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
06-OP-1N32-V-0001	Turbine Stop and Control Valve Operability Test	120
06-0P-1E22-Q-0002	HPCS Quarterly Valve Test	110
06-OP-1P81-R-0001	HPCS Diesel Generator Functional Test – Test No. 3 – 24-Hour Rate Load Test/EDG Hot Start Test	123
EN-DC-115	Engineering Evaluation EC No.: 57666	0
06-OP-1E51-Q-0003	RCIC System Operability Pump Operability	132
06-OP-1P75-M-0001	Standby Diesel Generator (SDG) II Functional Test	135
06-OP-1N32-V-0002-01	Turbine Mechanical Overspeed Operability Test	113
06-EL-1R21-M-0001	4.16 Kv Degraded Voltage Functional Test and Calibration	105
06-OP-1R21-M-00002	Div I and Div II Load Shedding and Sequencing Functional Test	101

Other Documents

Number	Title	Revision
TRM	6.3 Instrumentation	LDC 06002

Condition Reports (CRs)

CR-GGN-2015-02157	CR-GGN-2015-0261	CR-GGN-1-2015-02379
CR-GGN-2015-02379	CR-GGN-1-2015-02918	CR-GGN-1-2015-02893
CR-GGN-1-2015-03143	CR-GGN-1-2015-03191	CR-GGN-1-2015-03383
CR-GGN-1-2015-03371	CR-GGN-1-2015-03457	

Work Orders (WOs)

00409808 01	00396797 01	52605174
52602325	52612693 01	52464734 01
52464734 01		

Section 4OA1: Performance Indicator Verification

Other Documents

Number	Title	Revision
Attachment 9.2	NRC Performance Indicator Technique/Data Sheet, Indicator: Mitigating Systems Performance Indicator Emergency AC Power (EDG)	2nd Quarter 2014
	MSPI Indicator Margin Remaining in Green, Grand Gulf Unit 1	April 2014
Engineering Report No. GGNS-SA-06-00002	GGNS MSPI Basis Document and Supporting Information Documentation	5
Draft NEI 99-02 MSPI	Methodologies for Computing the Unavailability Index, the Unreliability Index and Determining Performance Index Validity	August 13, 2002
Attachment 9.2	NRC Performance Indicator Technique/Data Sheet, Indicator: Mitigating Systems Performance Indicator Emergency AC Power (EDG)	3rd Quarter 2014
Attachment 9.2	NRC Performance Indicator Technique/Data Sheet, Indicator: Mitigating Systems Performance Indicator Emergency AC Power (EDG)	4th Quarter 2014
Attachment 9.2	NRC Performance Indicator Technique/Data Sheet, Indicator: Mitigating Systems Performance Indicator Emergency AC Power (EDG)	1st Quarter 2015
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P41 A	October 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	October 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P41 A	November 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	November 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P41 A	December 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	December 2014
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P41 A	January 2015
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	January 2015

Other Documents

Number	Title	Revision
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P41 A	February 2015
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	February 2015
	Data Sheet for Determination of System or Component Unavailability, Plant System/Train: P75 System DIV I Train	March 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	April 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	May 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	June 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	July 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	August 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	September 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	October 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	November 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	December 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	January 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	February 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Emergency AC Power System Unreliability Index	March 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	April 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	May 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	June 2014

Other Documents

Number	Title	Revision
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	July 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	August 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	September 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	October 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	November 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	December 2014
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	January 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	February 2015
	MSPI Derivation Report, Grand Gulf Unit 1, MSPI Cooling Water System Unreliability Index	March 2015

Section 4OA2: Problem Identification and Resolution

Condition Reports (CRs)

CR-GGN-1-2015-02157	CR-GGN-1-2015-02543	CR-GGN-1-2015-02395
CR-GGN-1-2015-02372	CR-GGN-1-2015-02672	CR-GGN-1-2015-03526
CR-GGN-1-2015-03527	CR-GGN-1-2015-03179	CR-GGN-1-2015-03480

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Procedures

Number	Title	Revision
10-S-01-6	Notification of offsite Agencies and Plant On-Call Emergency Personnel	53
EN-LI-118	Causal Evaluation Process	21

Other Documents

Number	Title	Date
Logs	GGNS Operating Logs: Nights	June 8, 2015

Other Documents

Number	Title	Date
	Smoke for C EHC Pump Event Standdown (CR-GGN-2015-03345)	June 7, 2015
LER 2015-001	Manual Actuation of the Reactor Protection System due to a Main Turbine Trip	0

Condition Reports (CRs)

CR-GGN-1-2015-03367	CR-GGN-1-2015-03402	CR-GGN-1-2015-03401

Section 4OA5: Other Activities

Procedures

Number	Title	Revision
04-1-01-C61-1	System Operating Instruction – Remote Shutdown System	7
05-1-02-II-1	Shutdown From the Remote Shutdown Panel	47

Drawings

Number	Title	Revision
E-0637	Lighting & Communication Plan, Control Building, Elevation 111' - 0"	21

Modifications

Number	Title	Revision
EC 32937	Digital Radio System	0

Other Documents

Number	Title	Date
UFSAR Section 9.5.1	Fire Protection Systems	5 and 10
GGNS-EE-11-00001	GGNS Appendix R Safe Shutdown Analysis (FPP-1)	0

Condition Report (CR)

CR-GGN-1-2014-03803

Section 4OA7: Licensee-Identified Violations

Other Documents

Number	Title	Revision
	GGNS Emergency Plan	73

Condition Reports (CRs)

CR-GGN-2015-3367