



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

October 11, 2022

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

SUBJECT: GRAND GULF NUCLEAR STATION – DESIGN BASIS ASSURANCE  
INSPECTION (PROGRAMS) INSPECTION REPORT 05000416/2022013

Dear Mr. Kapellas:

On September 8, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Grand Gulf Nuclear Station and 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.

Two findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, 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 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 Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in black ink that reads "Vincent Gaddy".

Signed by Gaddy, Vincent  
on 10/11/22

Vincent G. Gaddy, Chief  
Engineering Branch 1  
Division of Operating Reactor Safety

Docket No. 05000416  
License No. NPF-29

B. Kapellas

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Enclosure:  
As stated

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GRAND GULF NUCLEAR STATION – DESIGN BASIS ASSURANCE INSPECTION  
 (PROGRAMS) INSPECTION REPORT 05000416/2022013  
 DATED OCTOBER 11, 2022

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DATE	10/7/2022	10/11/2022	10/7/2022	10/7/2022	10/11/2022	10/11/2022

**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Number: 05000416

License Number: NPF-29

Report Number: 05000416/2022013

Enterprise Identifier: I-2022-013-0000

Licensee: Entergy Operations, Inc., Grand Gulf Nuclear Station

Facility: Grand Gulf Nuclear Station

Location: Port Gibson, MS

Inspection Dates: August 15, 2022, to September 08, 2022

Inspectors: J. Braisted, Senior Reactor Inspector  
G. George, Senior Reactor Inspector  
J. Lee, Reactor Inspector  
D. Loveless, Senior Reactor Analyst  
D. Reinert, Reactor Inspector

Approved By: Vincent G. Gaddy, Chief  
Engineering Branch 1  
Division of Operating Reactor Safety

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a design basis assurance inspection (programs) inspection at Grand Gulf Nuclear Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### List of Findings and Violations

Failure to Perform Diagnostic Testing of Low Margin Valve Within the Required Test Interval			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000416/2022013-01 Open/Closed	None (NPP)	71111.21N.02
The inspectors identified a Green finding and associated Non-cited Violation (NCV) of 10 CFR 50.55a(b)(3)(ii) when the licensee failed to establish a program to ensure that motor-operated valves continue to be capable of performing their design basis safety functions. Specifically, the licensee failed to shorten the diagnostic test frequency for motor-operated valve E21F011 from 10 years to 6 years following the identification of low safety margin for the closed thrust.			

Failure to Ensure Standby Service Water Pump House Dampers Would Withstand Pressure Differential Associated with a Tornado			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000416/2022013-02 Open/Closed	None (NPP)	92701
The inspectors identified a Green finding and associated Non-cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, Grand Gulf failed to correctly translate the design basis for tornado depressurization conditions into specifications for the standby service water system ventilation inlet and exhaust dampers.			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000416/2020012-04	Failure to Ensure Standby Service Water Pump House Dampers Would Withstand Pressure Differential Associated with a Tornado	92701	Closed

## **INSPECTION SCOPES**

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## **REACTOR SAFETY**

### 71111.21N.02 - Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements

#### POV Review (IP Section 03) (10 Samples)

The inspectors:

- Determined whether the sampled POVs are being tested and maintained in accordance with NRC regulations along with the licensee's commitments and/or licensing basis.
- Determined whether the sampled POVs are capable of performing their design-basis functions.
- Determined whether testing of the sampled POVs is adequate to demonstrate the capability of the POVs to perform their safety functions under design-basis conditions.
- Evaluated maintenance activities including a walkdown of the sampled POVs (if accessible).

- (1) High Pressure Core Spray Injection Shutoff Valve 1E22F004
- (2) High Pressure Core Spray Pump Suction from Suppression Pool Valve 1E22F015
- (3) Reactor Core Isolation Cooling Steam Supply Drywell Outboard Isolation Valve 1E51F064
- (4) Main Steam Safety Relief Valve Solenoid 1B21F505C
- (5) Residual Heat Removal Pump Suction from Suppression Pool Valve 1E21F004A
- (6) Low Pressure Core Spray Injection Shutoff Valve 1E21F005
- (7) Low Pressure Core Spray Minimum Flow to Suppression Pool Valve 1E21F015
- (8) Containment Cooling Exhaust Containment Vent Valve 1M41F035
- (9) Standby Service Water Loop B Return to Cooling Tower B 1P41F005B
- (10) Standby Service Water Inboard Supply to Drywell Coolers/CCW Heat Exchangers 1P44F054

## **OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL**

### 92701 - Followup

#### Followup (1 Sample)

- (1) Unresolved Item 05000416/2020012-04 Failure to Ensure Standby Service Water Pump House Dampers Would Withstand Pressure Differential Associated with a Tornado

**INSPECTION RESULTS**

Failure to Perform Diagnostic Testing of Low Margin Valve Within the Required Test Interval			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000416/2022013-01 Open/Closed	None (NPP)	71111.21N.02
<p>The inspectors identified a Green finding and associated Non-cited Violation (NCV) of 10 CFR 50.55a(b)(3)(ii) when the licensee failed to establish a program to ensure that motor-operated valves continue to be capable of performing their design basis safety functions. Specifically, the licensee failed to shorten the diagnostic test frequency for motor-operated valve E21F011 from 10 years to 6 years following the identification of low safety margin for the closed thrust.</p>			
<p><u>Description:</u> On March 18, 2016, the licensee completed motor-operated valve (MOV) static diagnostic testing of low pressure core spray minimum flow valve E21F011 following a complete replacement of the valve. E21F011 is a 4-inch gate valve which has safety functions in both the open and closed positions. E21F011 is categorized as a low risk, Joint Owners' Group (JOG) Class B valve.</p> <p>The licensee's MOV periodic verification program is described in procedure EN-DC-311, "MOV Periodic Verification." The licensee is committed to the JOG MOV periodic verification program summary as described in MPR-2524-A, Revision 1. The JOG program requires that the interval between periodic verification (i.e., static or dynamic diagnostic) tests be based upon the MOV's risk significance and safety margin. Valves with smaller margins or higher risk are tested more frequently to ensure that the MOV functional margin does not decrease below the acceptance criteria prior to the next test. Procedure EN-DC-311 includes a matrix which illustrates the required JOG test interval as a function of a valve's risk significance and safety margin.</p> <p>The inspectors reviewed work order 398999 which recorded the results from the March 18, 2016, test. The work order documented a margin of 2.5 percent for the closed thrust. Per the JOG MOV program and the EN-DC-311 JOG test interval matrix, Class B valves having a margin less than 5 percent are required to be tested every 6 years. The inspectors questioned why no periodic verification tests had occurred since 2016 for valve E21F011. In response, the licensee concluded that, when initially reviewing the test data in 2016, engineers had failed to recognize the low margin and had failed to initiate an action to change the periodic verification frequency from 10 years to 6 years</p> <p><u>Corrective Actions:</u> The licensee initiated condition report CR-GGN-2022-08682 to document the failure to adjust the periodic verification test frequency. The inspectors reviewed recent quarterly stroke time tests and preventative maintenance records for valve E21F011 and did not identify any adverse trends or indications of degradation since the 2016 test.</p> <p><u>Corrective Action References:</u> CR-GGN-2022-08682</p>			
<u>Performance Assessment:</u>			

Performance Deficiency: The failure of the licensee to adhere to the appropriate diagnostic test interval in accordance with the JOG test interval matrix in procedure EN-DC-311, "MOV Periodic Verification," for valve E21F011 was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to conduct testing to conduct more frequent periodic verification testing of a low margin valve can allow for degradation in the available thrust to go unrecognized and could lead to the failure of the valve to perform its safety-related functions. This is consistent with more than minor examples 2.a and 2.b of NRC Inspection Manual Chapter 0611, Appendix E.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using "Exhibit 2 – Mitigating Systems Screening Questions," the inspectors determined the finding was of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating system, structure, or component and that the system, structure, or component maintained its operability or probabilistic risk assessment functionality.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR 50.55a(b)(3)(ii) states, in part, the licensee must establish a program to ensure that motor-operated valves continue to be capable of performing their design basis safety functions. Procedure EN-DC-311, "MOV Periodic Verification," Revision 7, is the licensee procedure for establishing a program to ensure motor-operated valves continue to be capable of performing their design basis safety functions.

Contrary to the above, since March 18, 2022, the licensee failed to establish a program to ensure that motor-operated valves continue to be capable of performing their design basis safety functions. Specifically, the licensee failed to conduct periodic verification testing of valve E21F011 within six years in accordance with EN-DC-311 Table 1, "JOG Test Interval Matrix," to demonstrate that E21F011 continued to be capable of performing its safety function.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Ensure Standby Service Water Pump House Dampers Would Withstand Pressure Differential Associated with a Tornado

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000416/2022013-02	None (NPP)	92701



	Open/Closed		
<p>The inspectors identified a Green finding and associated Non-cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, Grand Gulf failed to correctly translate the design basis for tornado depressurization conditions into specifications for the standby service water system ventilation inlet and exhaust dampers.</p>			
<p><u>Description:</u> As documented in NRC Inspection Report 05000416/2020012(ADAMS No. ML20336A237), on October 8, 2020, the inspectors identified that the safety-related, standby service water system pump house inlet and exhaust ventilation dampers were not designed or purchased to withstand a tornado design basis pressure differential. Calculation MC-Q1Y47-17001, "Evaluation of Standby Service Water Pump House Safety Related Ductwork for Tornadic Conditions," Revision 0, was performed in response to condition report CR-GGN-2017-9728; this calculation evaluated the effect of a 3 pounds per square inch-differential atmospheric pressure change on the ductwork in the standby service water pump house to ensure it would remain functional. In October 2020, the inspectors noted that the calculation did not address the inlet and exhaust dampers which could be in their closed position and subject to differential pressure during a tornado. The inspectors also noted that the damper purchase specification, 9645-M-617.1, Rev. 11 did not require the dampers to remain functional after the pressure differential associated with a tornado event. The inspectors communicated a concern that questioned whether the licensee had assurance that the dampers would be capable of opening to perform their safety function after a design basis tornado event. The failure to design the dampers to remain functional after the pressure differential associated with a tornado event was entered into the corrective action program as CR-GGN-2020-10908.</p>			
<p>In response to this concern, the licensee issued calculation MC-Q1Y47-20001, "Evaluation of Standby Service Water Pump House Safety Related Dampers for Tornadic Conditions," Revision 0. This calculation determined the maximum pressure differential across the closed dampers, evaluated the structural integrity of the dampers, and concluded that dampers were robust enough to withstand a tornado depressurization event. However, the inspectors determined the calculation did not fully demonstrate that the dampers would remain functional. Specifically, the inspectors had additional questions on the volume of the pump rooms, the dimensional modeling of openings in the building, and the differences of the dampers' as-built configuration compared to the design assumed in the calculation. Based on inspectors' questions, the licensee completed additional walkdowns which identified additional as-built differences from the design for building openings and as-built damper configuration. Because of the additional as-built configuration issues, the licensee determined additional analysis was necessary to determine if the standby service water ventilation system would remain operable to meet the specified safety functions. The inspectors issued a unresolved item (URI 0500416/2020012-04) to review this analysis once it was complete. The licensee updated the analysis to address the as-built configuration differences and issued Revision 1 to calculation MC-Q1Y47-20001 in January 2021.</p>			
<p>In August 2022, the inspectors reviewed calculation MC-Q1Y47-20001, Revision 1, and completed a walkdown of the standby service water pump house ventilation system to confirm the calculations assumptions and initial conditions. The results of the calculation determined that the dampers would remain functional because the results met the acceptance criteria of ASME Boiler and Pressure Vessel Code Section III Appendix F-1323.1(a). Specifically, primary stresses in the damper blades did not exceed 120 percent of</p>			

the material's yield strength. However, the inspectors identified that the licensee did not apply the additional provisions of the Appendix F-1323.1(a) acceptance criteria; specifically, the results were not compared to the more limiting condition that primary stresses shall not exceed 70 percent of the material's ultimate stress. The inspectors determined that the results of the analysis failed the more restrictive acceptance criteria and did not support functioning of the inlet and exhaust dampers. This concern was entered into the corrective action program as CR-GGN-2022-08597. The licensee reperfomed the analysis with a more detailed physical model of the damper blades. The new analysis, MC-Q1Y47-20001, Revision 2, results determined that the dampers would remain functional.

Corrective Actions: In October 2020, the concern that the safety-related dampers inlet and exhaust dampers were not designed for design basis tornado differential pressure was entered into the corrective action program as CR-GGN-2020-10908. A compensatory measure was initiated for control room operators to start the ventilation system when notified of tornado warning, until the design analysis could be completed. This action ensured the standby service water pump house would depressurize to reduce differential pressure across the dampers. Following inspector review of the analysis, the licensee entered the misapplication of ASME Code acceptance criteria into the corrective action program as CR-GGN-2022-08597. The licensee maintained the compensatory measure while a new analysis was completed. The new analysis, MC-Q1Y47-20001, Revision 2, results determined that the dampers would remain functional.

Corrective Action References: CR-GGN-2020-10908 and CR-GGN-2022-08597.

Performance Assessment:

Performance Deficiency: The failure to translate design basis tornado design requirements into specifications for service water pump house ventilation dampers to ensure that the dampers remain functional following a design basis pressure differential in accordance with GDC 2, "Design basis for protection against natural phenomena," was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to design the dampers to withstand effects of tornado depressurization could cause them not to open, which causes standby service water pumphouse temperatures to exceed equipment limits.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using the significance determination process mitigating screening questions from MC 0609 Appendix A, the issue screens to a detailed risk evaluation because the degraded condition represents a loss of the PRA function. The NRC Senior Reactor Analyst performed an initial detailed risk evaluation.

*The Risk Assessment of Operational Events*, Volume 2, "External Events," Section 5.0, "Other External Event Modeling and Risk Quantification," provides the best method for quantifying the initiating events of concern for this evaluation. Referenced is the *Review of Methods for Estimation of High Wind and Tornado Hazard Frequencies*, prepared by Amitava Ghosh from the Center for Nuclear Waste Regulatory Analyses and Scot Rafkin, from the

Southwest Research Institute, in December 2012. Using these methods, the Office of Nuclear Reactor Research developed tornado hazard curves for U. S. nuclear power plants. The data for these curves were published in the *Tornado Frequencies by Plant*, spreadsheet. The published frequency of a tornado greater than 200 miles per hour striking the Grand Gulf Nuclear Station was 1.25E-06/year.

Using hand calculations that were corroborated by several wind loading calculators on the web, the analyst determined that it would take a wind speed of 400 miles per hour with negligible local friction to cause a loading equal to the licensee's design parameter of 3 pounds per square inch-differential. The inspectors compared the results of the licensee's calculations with the acceptance criteria of ASME Boiler and Pressure Vessel Code Section III Appendix F-1323.1(a) to determine that, under all conditions, the subject dampers would have survived a differential pressure of 1.9 pounds per square inch-differential. The analyst calculated that it would take a wind speed of at least 274 miles per hour to cause a loading of 1.9 pounds per square inch-differential.

A wind speed of 274 miles per hour would be greater than the highest wind ever officially recorded and is significantly above the 200 miles per hour wind used to calculate the frequency of an EF-5 tornado striking the Grand Gulf Nuclear Station. Using a qualitative assessment of this data along with a hand extrapolation of the hazard curve, the analyst determined that the frequency of a tornado striking the Grand Gulf Nuclear Station with maximum wind speed of 274 miles per hour is less than 1.0E-07/year. Because the frequency of the initiating event alone is below 1.0E-07, this finding is of very low safety significance (Green).

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion III, "Design Control," requires "Measures shall be established to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to this requirement, from initial licensing to November 2020, failed to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, Grand Gulf failed to correctly translate the design basis for tornado depressurization conditions into specifications for the standby service water system ventilation inlet and exhaust dampers.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

The disposition of this finding and associated violation closes URI: 05000416/2020012-04.

## EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On September 1, 2022, the inspectors presented the design basis assurance (programs) inspection and unresolved item follow-up inspection results to Mr. B. Kapellas, Site Vice President and other members of the licensee staff.
- On September 8, 2022, the inspectors presented the design basis assurance (programs) inspection and unresolved item follow-up inspection results to Mr. B. Kapellas, Site Vice President and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.02	Calculations	CC-Q1111-91037	Henry Pratt Valve Analysis	11
		GGNS-NE-10-00075	GGNS EPU Containment System Response	2
		GGNS-NE-12-00021	Grand Gulf Nuclear Station MELLLA+ Containment System Response	1
		M-242.0-Q1E22F004-8.0-1-0	Design and Seismic Analysis Report for 12 Inch Class 900 Flex Wedge Gate Valve With SB-3-150 Actuator	A
		MC-Q1111-91132	Minimum Stem Thrust Required for Motor Operated Gate and Globe Valves	16
		MC-Q1111-93035	Calculation of Degraded Voltage Actuator Capability Torque, Using Motor Torque Derated for Temperature Effect, for Select Generic Letter 89-10 Motor Operated Gate and Globe Valves With AC Motor Actuators	15
		MC-Q1111-97019	Design Torque Capability of the Actuator Assemblies Installed on GGNS Generic Letter 89-10 Motor Operated Butterfly Valves	1
		MC-Q1E12-94002	Calculation of the Maximum Expected Differential Pressure for Valves in the Residual Heat Removal System	3
		MC-Q1E21-04019	LPCS flow calc with min flow line open	0
		MC-Q1E21-93042	Calculation of the Maximum Expected Differential Pressure for Valves in the Low Pressure Core Spray System	0
		MC-Q1E22-93043	Calculation of the Maximum Expected Differential Pressure for Valves in the High Pressure Core Spray System	0
		MC-Q1E30-90054	Calculation of the Maximum Expected Differential Pressure for Valves in the Suppression Pool Makeup System	5
MC-Q1E51-93044	Calculation of the Maximum Expected Differential Pressure for Valves in the Reactor	1		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Core Isolation Cooling System	
		NPE-E12F004A,B,C	Supplement to the Powell Seismic Calculation S-67773	2
		NPE-E12F026A,B/F049/E21F011	Supplement to the Powell Seismic Calculation S-67776	3
		NPE-E12F042A,B/E21F005	Supplement to the Powell Seismic Calculation D-67770	5
		NPE-E22F015	Supplement to the Anchor Darling Seismic Calculation 1815-1	3
		NPE-E51F063/F064	Supplement to the Powell Seismic Calculation D-67761	5
		PC-Q1E22-00002	PPM Thrust Calculation for Motor Operated Valve Q1E22F004	0
		PC-Q1M41-02233	Calculation of the Maximum Differential Pressure for Air Operated Valve 1M41F035 for GGNS AOV Program	2
	Corrective Action Documents	Condition Report(CR-GGN-)	2014-06703, 2022-06459, 2019-0573, 2020-02283, 2021-01483, 2021-00599, 2022-00760	
	Corrective Action Documents Resulting from Inspection	Condition Report(CR-GGN-)	2022-08215, 2022-08218, 2022-08221, 2022-08226, 2022-08227, 2022-08229, 2022-08244, 2022-08597, 2022-08644, 2022-08681, 2022-08682, 2022-08597	
	Drawings	E-1161-013	B21 Automatic Depressurization System Safety/Relief Valves	10
		E-1183-003	E22 High Pressure Core Spray System Pump Injection Shut Off Valve F004-C Unit 1	7
		M-1086	P&I Diagram, High Pressure Core Spray System Unit 1	35
		M-KA97/0285-01-Q1E22F004-1.2-001	12"-900 LB Flex Wedge Gate Valve, Weld Ends, Carbon Steel, High Pull-Out Thrust Requirements, for Limatorque SB-3-150 Actuator	A
		SFD-1086	System Flow Diagram, High Pressure Core Spray System	4
	Engineering	51117	Flex M41 Vent Child EC 1 - Div 1 Valve and	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Changes		Tubing Modifications	
		84/3107	Replacement of the Main Steam Safety Relief Valve Solenoids.	0
		EC 78006	1E51F064 LLRT Failure Engr Input CR-GGN-2018-06132 and 05845	05/31/2018
		EC 91464	GGN Appendix J Program Scope Reduction Evaluation EC	0
		ER 97-0282	ER 97/0282-02, Revision 0 SCN 97/0009A to MS-25.0, Revision 11 SCN 97/0006A to ES-18, Revision 1	0
		ER-GG-1997-0279-000	MOV Torque Margin Improvement for Q1P44F067, Q1P44F054, Q1P44F042	0
		MCP 92-1059	Replacement of SMB-000-5/H2BC Actuator Assemblies on Motor Operated Valves Q1P41F001A, Q1P41F001B, Q1P41F005A, and Q1P41F005B with SMB-00-10/H3BC Actuator Assemblies	0
	Engineering Evaluations	GGNS-92-0035	Evaluation of Safety Related Gate Valves for Susceptibility to Thermal Binding and Bonnet Pressurization	3
	Miscellaneous	460000412	Henry Pratt Company Nuclear Class Butterfly Valves	06/23/05
		460002941	GH Bettis Operating and Maintenance Instructions Disassembly and Assembly, T3XX-SRX, T3XX-SRX-M3, T3XX-SRX-M3HW, T4XX-SRX, T4XX-SRX-M3, and T4XX-SRX-M3HW	05/09/1995
		EQDP-EQ27.1	Seitz Type 1166 Control Valves, and Type 6A39 Solenoids	3
		ES-18	Motor Operated Valve - Wiring and Limit Switch Control	5
		GGNS-E-100.0	Grand Gulf Nuclear Station Environmental Parameters for GGNS	10
		GGNS-EP-10-00001	Grand Gulf Nuclear Station JOG MOV Periodic	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Verification	
		GGNS-MS-25.0	Mechanical Standard for Motor Operated Valve Torque and Limit Switches	19
		GGNS-MS-56.0	Mechanical Standard for Program Air Operated Valves	1
		GGNS-SDC-E21	System Design Criteria Low Pressure Core Spray	2
		GNRO-2021/00014	Inservice Testing Program Relief Request VRR-GGNS-2021-1	06/01/2021
		SEP-GGNS-IST-1	GGNS Inservice Testing Basis Document	8
		SEP-GGNS-IST-2	GGNS Inservice Testing Plan	10
		SEP-MOV-GGN-001	GGNS MOV Torque Switch Setpoint Methodology	1
	Procedures	01-S-07-43	Control of Loose Items, Temporary Electrical Power, and Access to Equipment	7
		CEP-APJ-001	Primary Containment Leakage Rate Testing (10CFR50 Appendix J) Program Plan	7
		EN-DC-304	MOV Thrust / Torque Setpoint Calculations	4
		EN-DC-311	MOV Periodic Verification	7
		EN-DC-312	Motor Operated Valve (MOV) Test Data Review	9
		EN-DC-331	MOV Program	8
		EN-LI-108	Event Notification and Reporting	21
	PC-Q1M41-07014	Calculation of the Required Operating Thrust/Torque, Actuator Output Capability, and Available Actuator Capability Margin for Air Operated Valve 1M41F034/F035	1	
	Work Orders	Work Order (WO-GGN-)	00042100, 00072001, 00112295, 00150130, 00252759, 00252585, 00278961, 00317907, 00316562, 00348281, 00440583, 00440898, 00454435, 00455126, 00528777, 00529534, 52567149, 52567288, 52619778, 52625484, 52648937, 52694825, 52707023, 52703222, 52703475, 52704867, 52707196, 52711011, 52747632, 52762558, 52798141, 52814606,	



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			52831672, 52839483, 52839706, 52842249, 52849745, 52850392, 52858527, 52870462, 52876375, 52903814, 52907030, 52907031, 52925992, 52945246, 52935613, 52936488, 52936496, 52936861, 52936866, 52940666, 52941071, 52978087, 52982530, 52985700, 52986599, 52990981, 52993728, 52994677, 52999346, 53002185, 00167219, 00317902, 00423196, 00594499, 00352085, 52947772, 00284155, 00394896, 00398999, 00501196	
92701	Calculations	MC-Q1Y47-20001	Evaluation of Standby Service Water Pump House Safety Related Dampers for Tornadic Conditions	1
		MC-Q1Y47-20001	Evaluation of Standby Service Water Pump House Safety Related Dampers for Tornadic Conditions	2
		XC-Q1Y41-92007	SSW Pump House Room Temperature for a LOCA and for SSW Pump House Cooling Inoperable	0
	Corrective Action Documents	Condition Report(CR-GGN-)	2017-09728, 2017-09746, 2017-09755, 2020-10908	
	Drawings	J-1258-001	Outside Air Fans, SSW Pump House Ventilation System	4
		J-1258-002	SSW Pump House Ventilation System Motor Operated Dampers	5
		J-1258-004	SSW Pump House "A" Standby Outside Air Fan	3
		J-1258-005	SSW Pump House "A" Standby Motor Operated Dampers	3
		J-1258-006	SSW Pump House Ventilation System Motor Operated Dampers	1
	Engineering Evaluations	GGNS-NE-16-00004	Time Critical Operator Actions for Grand Gulf Nuclear Station	5
Miscellaneous	9645-M-619.0	Technical Specification for Miscellaneous Fans for Mississippi Power & Light Company, Grand	13	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Gulf Nuclear Station Units 1 and 2	
		E100.0	Engineering Standard Environmental Parameters for GGNS	10
	Procedures	04-1-01-Y47-1	Standby Service Water Ventilation System	104
		04-1-02-1H13-P870	Alarm Response Instruction Panel No: 1H13-P870	161