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

June 08, 2022

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

SUBJECT: GRAND GULF NUCLEAR STATION – NOTIFICATION OF NRC DESIGN BASES ASSURANCE INSPECTION (PROGRAMS) 05000416/2022013 AND REQUEST FOR INFORMATION

Dear Mr. Franssen:

On August 15, 2022, the U.S. Nuclear Regulatory Commission (NRC) will begin an onsite inspection at the Grand Gulf Nuclear Station. A three-person team will perform this inspection using NRC Inspection Procedure 71111, Attachment 21N.02, “Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements,” dated October 9, 2020.

This inspection will evaluate the reliability, functional capability, and design basis of risk-significant power-operated valves as required by 10 CFR 50.55a and applicable 10 CFR Part 50, Appendix A and Appendix B, requirements, and as required by the Grand Gulf Nuclear Station operating license. Additionally, the team will perform an inspection of the documentation files to verify that the plant activities associated with safety-related motor-operated valves meet your commitments to Generic Letter (GL) 89-10, “Safety-Related Motor-Operated Valve Testing and Surveillance,” and GL 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves." In conducting this inspection, the team will select power-operated valves used to prevent and mitigate the consequences of a design basis accident.

The inspection will include an information gathering site visit by the team leader and two weeks of onsite inspection by the team. The inspection team will consist of three NRC inspectors. The current inspection schedule is as follows:

Onsite Information Gathering Visit: July 27, 2022
Preparation Week: August 8 - 12, 2022
Onsite Weeks: August 15-19, 2022 and August 29 – September 2, 2022

The purpose of the information gathering visit is to meet with members of your staff to become familiar with the power-operated valve activities at Grand Gulf Nuclear Station. The lead inspector will request a meeting with your personnel to discuss the site power-operated valve procedures. Additionally, the lead inspector will request a discussion with your staff to become familiar with the regulations and standards applicable to power-operated valves at the site. Additional information and documentation needed to support the inspection will be identified during the inspection, including interviews with engineering managers and engineers.

To minimize the inspection impact on the site and to ensure a productive inspection, we have enclosed a request for information needed prior to the inspection. This information should be made available to the lead inspector during the July 27, 2022 visit. Since the inspection will be concentrated on safety-related and risk-significant power-operated valves, a list of such power-operated valves should be available to review during and following the information gathering visit to assist in our selection of appropriate power-operated valves to review.

Additional requests by inspectors will be made during the onsite weeks for specific documents needed to complete the review of specific power-operated valves and associated activities. It is important that all documentation is up-to-date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection. In order to facilitate the inspection, we request that a contact individual be assigned to each inspector to ensure information requests, questions, and concerns are addressed in a timely manner.

The lead inspector for this inspection is Mr. Gerond A. George. If there are any questions about the inspection or the requested materials, please contact the lead inspector by telephone at 817-200-1562 or by e-mail at Gerond.George@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

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Sincerely,

Vincent Gaddy Signed by Gaddy, Vincent on 06/08/22

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

Docket: 50-416
License: NPF-29

Enclosures:
Request for Information and
Valves of Interest

cc w/ encl: Distribution via LISTSERV®

GRAND GULF NUCLEAR STATION, UNITS 1 AND 2 – NOTIFICATION OF NRC DESIGN BASES ASSURANCE INSPECTION (PROGRAMS) (DOCKET/REPORT AND DOCKET/REPORT) AND REQUEST FOR INFORMATION – JUNE 08, 2022

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| OFFICE | DORS/EB1 | DORS/EB1 | | | |
|---|---|---|---|---|---|
| NAME | GGeorge | VGaddy | | | |
| SIGNATURE | ***/RA/*** | ***/RA/*** | | | |
| DATE | 6/7/2022 | 6/8/2022 | | | |

**OFFICIAL RECORD COPY**

**Request for Information**
**Design-Basis Capability of Power-Operated Valves**
**Grand Gulf Nuclear Station**

| | |
|---|---|
| Inspection Report: | 05000416/2022013 |
| EPID Number: | I-2022-013-0000 |
| Information Gathering Dates: | July 27, 2022 |
| Onsite Inspection Dates: | August 15 - 19, 2022, and August 29 – September 2, 2022 |
| Inspection Procedure: | IP 71111, Attachment 21N.02, “Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements” |
| Lead Inspector: | Gerond A. George, Senior Reactor Inspector |

## *I. Information Requested for Information Gathering Visit (due by July 25, 2022)*

The following information should be provided to the lead inspector in hard copy or electronic format, to the attention of the lead inspector by July 25, 2022, to facilitate the reduction in the items to be selected for a final list of components. The inspection team will finalize the selected list during the prep week using the documents requested in this enclosure. The specific items selected from the lists shall be available and ready for review on the day indicated in this request. *Please provide requested documentation electronically in “pdf” files, Excel, or other searchable formats, if possible. The information should contain descriptive names and be indexed and hyperlinked to facilitate ease of use. Information in "lists" should contain enough information to be easily understood by someone who has knowledge of pressurized water reactor technology. If requested documents are large and only hard copy formats are available, please inform the inspectors, and provide subject documentation during the first day of the onsite inspection.

1. Provide the valve characteristics for the valves listed in the attached list as described in Appendix C of NRC Inspection Procedure 71111, Attachment 21N.02, “Design Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements.”

2. List of power-operated valves (POVs) important to safety for the Grand Gulf Nuclear Station. The list should include (a) component identification number; (b) applicable plant system; (c) ASME *Boiler and Pressure Vessel Code* (BPV Code) Class; (d) safety-related or nonsafety-related classification; (e) valve type, size and manufacturer; and (f) actuator type, size, and manufacturer. If the NRC has granted a license amendment to categorize structures, systems, and component in accordance with 10 CFR 50.69, please provide the risk-informed safety category of the structure, system, or component.

3. List of POVs sorted by risk importance, including internal and external risk considerations.

4. Word-searchable updated final safety analysis report (UFSAR), license conditions, technical specifications, and most recent inservice testing (IST) program plan (and bases document), including any standards that have been committed to with respect to POV capability and testing. Also, identify which UFSAR sections address environmental, seismic, and functional qualification of POVs.

5. Provide copies of the latest POV program level procedures or manuals.

6. NRC Safety Evaluation Report(s) associated with the IST program including relief and alternative requests submitted in accordance with 10 CFR 50.55a for POVs.

7. Provide any responses to NRC Generic Letter (GL) 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," (and its supplements) and GL 96-05, Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves."

8. Provide the most recently completed audit, self-assessment, or benchmark of POV programs at Grand Gulf Nuclear Station.

9. List of systems, system numbers/designators, and corresponding names.

10. List of site contacts that will be associated with the inspection.

## *II. Discussions Requested During the Information Gathering Visit*

1. Interview with a representative to discuss site POV capability analyses, including plant drawings and assumptions. This includes analysis for accident conditions.

2. Interview with a representative to discuss POV maintenance elements as integrated into plant programs and procedures.

3. Interview with a representative to discuss maintaining the design-basis capability of POVs if they have entered a period of extended operation, if applicable.

## *III. Information Requested for Inspection Preparation* **(August 8, 2022) ***

1. Calculations and/or evaluations associated with the selected POVs, as applicable. For example, these may include those related to motor-operated valve (MOV) torque switch setpoint, MOV terminal (degraded) voltage, maximum expected differential and pressure, torque switch bypass settings, rate of loading, environmental and process conditions during normal/accident operation, seismic and weak-link analysis, and pressure locking and thermal binding, etc. **(Ten specific valves will be identified and communicated to you prior to July 29, 2022.)**

2. Environmental qualification files associated with the selected POVs, as applicable.

3. Vendor manuals and technical sheets associated with the selected POVs.

4. Provide results (i.e., completed work orders) from the last three performances of diagnostic (static and/or dynamic) testing and inservice testing (stroke time, leak rate, etc.) of the selected POVs.

5. Provide performance (or failure) trending data for the selected POVs.

6. List of modifications related to the selected POVs.

7. List of corrective action program documents, with a brief description, related to the selected POVs over the past five years.

8. List of preventive maintenance activities for the selected POVs (valve and actuator). Include the identification number, title and/or description, and frequency.

9. System training manuals and/or design basis documents associated with the selected POVs.

10. Piping and instrument diagrams for systems related to the selected POVs.

11. Tours of the rooms in which the selected POVs are installed. If the inspection will be performed remotely, multiple pictures of selected valve and valve location can be provided. The pictures must have an orientation reference, a size reference, pictures of the surrounding environment, and pictures of the nameplates of both valve and valve operator.

## *IV. Discussions Requested During the First Inspection Week* (August 15, 2022)

1. Brief presentation of POV programs at Grand Gulf Nuclear Station.

2. Interviews with representatives to discuss the design-basis capability of POVs based upon the team's review of gathered information.

** Please sort the Section III responses by each selected POV.*

Inspector Contact Information:


| | | |
|---|---|---|
| Gerond A George | Jonathan Braisted, Ph.D. | Dustin Reinert, Ph.D. |
| Senior Reactor Inspector | Reactor Inspector | Reactor Inspector |
| 817-200-1562 | 817-200-1469 | 817-200-1534 |
| Gerond.George@nrc.gov | Jonathan.Braisted@nrc.gov | Dustin.Reinert@nrc.gov |


Mailing Address:


U.S. NRC, Region IV
Attn: Gerond A George
1600 East Lamar Blvd.
Arlington, TX 76011-4511

## Valves of Interest
## Design-Basis Capability of Power-Operated Valves
## GRAND GULF NUCLEAR STATION

| No. | ACT | Valve Size | Valve Type | System Name | Utility ID |
|---|---|---|---|---|---|
| 1. | AOV | 28 | Globe | Nuclear Boiler System - MSL "A" Drywell Inboard Isolation | B21F022A |
| 2. | MOV | 24 | Gate | Nuclear Boiler System - Feedwater Inlet Shutoff Valve | B21F065A |
| 3. | AOV | 4 | Gate | Nuclear Boiler System - MSL Drains To Main Condenser | B21F113 |
| 4. | SOV | 1.25 | Globe | Nuclear Boiler System - Main Steam S/R Valve F041C Solenoid | B21F505C |
| 5. | Squib | 1.5 | Gate | Standby Liquid Control System - Squib Valve | C41F004B |
| 6. | MOV | 24 | Gate | Residual Heat Removal System - RHR Pump 'A' Suction from Suppression Pool | E12F004A |
| 7. | MOV | 18 | Gate | Residual Heat Removal System - RHR 'A' Test Return to Suppression Pool | E12F024A |
| 8. | MOV | 18 | Gate | Residual Heat Removal System - RHR 'A' System Shutoff Valve | E12F027A |
| 9. | MOV | 12 | Globe | Residual Heat Removal System - RHR 'A' Shutdown Cooling Return to Feedwater | E12F053A |
| 10. | MOV | 24 | Gate | Low Pressure Core Spray System - LPCS Pump Suction from Suppression Pool | E21F001 |
| 11. | MOV | 14 | Gate | Low Pressure Core Spray System - LPCS Injection Shutoff Valve | E21F005 |
| 12. | MOV | 4 | Gate | Low Pressure Core Spray System - LPCS Min Flow to Suppression Pool | E21F011 |
| 13. | MOV | 12 | Gate | High Pressure Core Spray System - HPCS Injection Shutoff Valve | E22F004 |
| 14. | MOV | 4 | Gate | High Pressure Core Spray System - HPCS Min Flow to Suppression Pool | E22F012 |
| 15. | MOV | 24 | Gate | High Pressure Core Spray System - HPCS Pump Suction from Suppression Pool | E22F015 |
| 16. | MOV | 30 | Butterfly | Suppression Pool Makeup System - SPMU Division 1 Inboard Dump Valve | E30F001A |
| 17. | MOV | 6 | Gate | Reactor Core Isolation Cooling - RCIC Injection Shutoff Valve | E51F013 |
| 18. | MOV | 10 | Gate | Reactor Core Isolation Cooling - RCIC Steam Supply Drywell Outboard Isolation | E51F064 |
| 19. | MOV | 6 | Gate | Reactor Water Cleanup System - RWCU Pump Suction Drywell Inboard Isolation | G33F001 |
| 20. | AOV | 4 | Gate | Reactor Water Cleanup System - RWCU Blowdown to Main Condenser | G33F234 |
| 21. | AOV | 4 | Gate | RWCU Filter/Demineralizer System - RWCU Backwash Receiving Tank Transfer to Radwaste | G36F101 |
| 22. | AOV | 20 | Butterfly | Containment Cooling System - Containment Cooling Exhaust Containment Vent | M41F035 |
| 23. | AOV | 6 | Gate | Condensate and Refueling Water Storage & Transfer System - CST Water Supply Header to Containment | P11F075 |
| 24. | MOV | 24 | Butterfly | Standby Service Water System - SSW Pump 'B' Discharge Valve | P41F001B |
| 25. | MOV | 24 | Butterfly | Standby Service Water System - SSW Loop 'B' Return to Cooling Tower 'B' | P41F005B |
| 26. | MOV | 8 | Butterfly | Plant Service Water System - SSW Inboard Supply to Drywell Coolers/CCW Heat Exchangers | P44F054 |
| 27. | AOV | 3 | Gate | Floor and Equipment Drains System - Drywell Floor Drain Sump Discharge | P45F003 |
| 28. | AOV | 6 | Gate | Floor and Equipment Drains System - Containment Floor Drain Sump Discharge | P45F061 |
| 29. | AOV | 3 | Gate | Service Air System - Service Air Supply Header to Containment | P52F105 |
| 30. | SOV | 3 | Globe | Standby Diesel Generator System - Division 1 Right Bank Starting Air Solenoid Valve | P75F508B |