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10 CFR 50.55a

GNRO-2019/00014

March 13, 2019

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Snubber Testing Program for Fourth Inspection Interval

Grand Gulf Nuclear Station, Unit 1
NRC Docket No. 50-416
Renewed Facility Operating License No. NPF-29

Title 10 of the Code of Federal Regulations (10 CFR) Part 50 Section 55a references the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) to include the 1995 Edition through the 2004 Edition. Specifically, ASME OM Code-2004 Edition, Subsection ISTA-3110 requires the development of test plans for each test interval. These plans are to be filed with the regulatory authorities having jurisdiction at the plant site. Entergy Operations, Inc. (Entergy) is therefore providing the test plan for the dynamic restraints (snubbers) at Grand Gulf Nuclear Station, Unit 1 (GGNS) for the fourth inspection interval. This interval commenced on December 1, 2017, and concludes on November 30, 2027. The plan is attached.

Entergy is providing this plan for information only. Entergy is not requesting NRC approval of the plan. Any relief requests associated with this plan will be submitted as separate documents.

This letter contains no new commitments.

Should you have any questions concerning the content of this letter, please contact Douglas A. Neve, Manager Regulatory Assurance, at 601-437-2103.

Respectfully,

A handwritten signature in black ink, appearing to read "E. Larson".

Eric A. Larson

EAL/rws

Enclosure: Snubber Examination, Testing, and Service Life Monitoring Program Plan, 10 Year Inservice Test Interval

cc: NRC Region IV, Regional Administrator
NRC Senior Resident Inspector, Grand Gulf Nuclear Station
NRC Project Manager, Grand Gulf Nuclear Station
State Health Officer, Mississippi Department of Health

Enclosure

GNRO-2019/00014

**Snubber Examination, Testing, and Service Life Monitoring Program Plan
10 Year Inservice Test Interval**

(9 pages)

**SNUBBER EXAMINATION, TESTING, AND SERVICE LIFE MOINITORING
PROGRAM PLAN**

10-YEAR INSERVICE TEST INTERVAL

**ENTERGY OPERATIONS, INC.
GRAND GULF NUCLEAR STATION**

Unit 1

Fourth Inservice Testing Interval
Beginning December 1, 2017—Ending November 30, 2027

**Grand Gulf Nuclear Station
7003 Bald Hill Rd
Port Gibson, MS 39150**

USNRC DOCKET NO.: 50-416

FACILITY OPERATING LICENSE NO.: NPF-29

COMMERCIAL OPERATION DATE: July 1st, 1985

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1.0 INTRODUCTION

1.1 Purpose:

To provide the test plan for maintaining the operational readiness of those dynamics restraints (snubbers) whose specific functions are required to ensure the integrity of the reactor coolant pressure boundary and safety-related systems.

1.2 Scope:

This program applies to those snubbers classified as safety-related (those attached directly to safety class 1, 2, or 3 piping) as well as those classified as safety-significant (those attached to non-safety-related portions of systems but included in the safety-related stress analysis). The testing and examination of non-safety related snubbers may occur at the discretion of the Snubber Program Owner. The Master Snubber List consisting of the safety-related and safety-significant snubbers within the Snubber Program will be identified and controlled in the SnubbWorks module of the IDDEAL software suite.

The examination, testing, and service life monitoring of snubbers at GGNS will be in accordance with the requirements of SEP-SNB-GGNS-001, *Grand Gulf Nuclear Station Snubber Program Section*; CEP-SNB-0001, *Dynamic Restraint (Snubber) Examination and Testing Program*; and EN-DC-333, *Dynamic Restraint (Snubber) Inspection Program*.

Entergy is required to update the ASME Section OM, IST Program for GGNS once every ten years. Title 10 CFR 50.55a(f)(4) establishes the effective edition and addenda of the American Society of Mechanical Engineers (ASME) Code to be used by licensees for performing inservice tests of components (including dynamic restraints). Paragraph 50.55a(f)(4)(ii) requires the use of the latest edition and addenda of the ASME OM Code that has been incorporated by 10 CRF 50.55a(a) 12 months before the start of the 120-month inspection interval. This is considered the Code of Record. The code that will be used during this interval is ASME OM Code 2004 Edition through 2006 Addenda with the limits and conditions contained in 10 CFR 50.55a(f)(2) and (3). This test plan satisfies the following subsections of the ASME OM Code:

- Subsection ISTA, *General Requirements*:
ISTA-3110 establishes the general requirements for the scope of an Inservice Test Plan.
- Subsection ISTD, *Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants*:
ISTD establishes the requirements for preservice and inservice examination, testing, and service life monitoring of Dynamic Restraints (Snubbers) in light-water reactor nuclear power plants.

1.3 Discussion:

The GGNS Snubber Program Interval is coincident with the GGNS IST Program Interval. Revision 0 of this document was issued for the Fourth Snubber Program Interval beginning on December 1, 2017 and ending on November 30, 2027. Table 1 below gives a listing of the historical and current Snubber Program Interval dates.

Table 1: Historical and Current Snubber Program Interval Dates

| Interval | Start Date | End Date | Comment |
|----------|------------------|-------------------|---|
| First | July 1, 1985 | June 1, 1997 | Interval Extended. Reference GNRI 96-00244 and GNRI 94-00184. |
| Second | June 2, 1997 | May 30, 2008 | Interval Extended per IWA-2430(c)(1) and CNRI-2007-00004 and CNRO-2007-00009. |
| Third | May 31, 2008 | November 30, 2017 | Interval Extended six months per IWA-2430(c)(1) and IWA-2430(c)(3) |
| Fourth | December 1, 2017 | November 30, 2027 | |

2.0 EXAMINATION, TESTING, AND SERVICE LIFE MONITORING REQUIREMENTS

2.1 General:

Visual Examinations, Operational Readiness (Functional) Testing, and Service Life Monitoring requirements will be performed to the extent specified within SEP-SNB-GGNS-001 and implementing procedures referenced therein.

2.2 Defined Test Plan Groups:

GGNS is implementing the 10% sampling plan per ISTD-5300 for Operational Readiness Testing. A 10% sample from each Defined Test Plan Group (DTPG) will be functionally tested each outage. The 10% sample selection is a random and, as practicable, representative snubber sample from each DTPG. A test plan shall be selected for each DTPG before the scheduled testing begins. The method of determining DTPGs is performed in accordance with ISTD-5250. The test plan for each DTPG shall be used throughout the refueling outage along with any Failure Mode Groups (FMGs) derived from it. The sample may also be selected from snubbers concurrently scheduled for activities related to service life monitoring. Table 2 below gives a listing of the DTPGs used by GGNS.

Table 2: Categorization of Defined Test Plan Groups (DTPGs)

| DTPG | Type | Safety-Related Plus Safety-Significant Population | Total Required for Functional Testing (10% Plan)* |
|---------|---------------------|---|---|
| Group 1 | PSA ¼ and PSA ½ | 109** | 11 |
| Group 2 | PSA 1 | 43 | 5 |
| Group 3 | PSA 3 | 91 | 10 |
| Group 4 | PSA 10 | 130 | 13 |
| Group 5 | PSA 35 and PSA 100 | 86 | 9 |
| Group 6 | Lisega Hydraulics | 59** | 6 |
| Group 7 | E-System Hydraulics | 76 | 8 |

*A conservative 10% sample size is determined by taking 10% of that group's program population and rounding up to the nearest integer.

**The population sizes for Group 1 and Group 6 can fluctuate from cycle to cycle. This is due to Lisega 301856-RF1 and Lisega 301856-RF2 snubbers being swapped for PSA ¼ and PSA ½ snubbers, respectively. This particular swap is allowed by GGNS Standard GGN-DCS-06. This does not affect the total programmatic snubber population number.

2.3 Systems Affected by the Snubber Program:

Table 3 below gives a list of the systems at GGNS that are affected by the Snubber Program (i.e., either safety-related or safety-significant snubber(s) are attached to some portion of the listed system).

Table 3: Systems Affected by the Snubber Program

| System Designator | System Description |
|-------------------|--------------------------------|
| B21 | Nuclear Boiler |
| B33 | Reactor Recirculation |
| C41 | Standby Liquid Control |
| E12 | Residual Heat Removal |
| E21 | Low Pressure Core Spray |
| E22 | High Pressure Core Spray |
| E31 | Leak Detection |
| E32 | MSIV Leakage Control |
| E38 | Feedwater Leakage Control |
| E51 | Reactor Core Isolation Cooling |
| E61 | Combustible Gas Control |
| G33 | Reactor Water Cleanup |
| G41 | Fuel Pool Cooling and Cleanup |
| N21 | Feedwater |
| P41 | Standby Service Water |

2.4 Service Life Monitoring General Requirements:

The GGNS Service Life Monitoring (SLM) Program includes the entire safety-related and safety-significant snubber population. This program establishes an initial service life for each installed snubber and is evaluated once per cycle. Adjustments to the service life, examination, and testing frequencies are based upon the evaluation results. SLM at GGNS shall be in accordance with site

procedure 17-S-05-12, *Snubber Service Life Program* and ISTD-6200 to ensure that service life is not exceeded.

3.0 EXAMINATION AND TESTING METHODS

3.1 Visual Examination Methods:

GGNS implements the VT-3 method, as described in ASME Section XI, IWA-2213, to examine snubbers. The extent of examination boundary is the snubber from pin-to-pin, inclusive. The snubber visual examination program is described in GGNS procedure 06-ME-1000-V-0001, *Snubber Visual Examination*. Visual examinations will be performed by individuals qualified in accordance with the GGNS Quality Assurance Program.

3.2 Operational Readiness Testing Methods:

GGNS will implement the Snubber Operational Readiness (Functional) Testing Program with adherence to site procedure 06-ME-1000-R-0002, *Snubber Function Test*. Functional tests will be performed to the standard required in SEP-SNB-GGNS-001, CEP-SNB-0001, and ISTD-5000.

4.0 EXAMINATION AND TESTING FREQUENCY

4.1 Visual Examination Frequency:

Frequency of snubber visual examination will be determined using approved ASME OM Code Case OMN-13 as well as ISTD-4250 and SEP-SNB-GGNS-001. In addition to the examination frequency prescribed in OMN-13, a pre-removal examination will be performed before each snubber is removed (for testing, rebuilding, regreasing, etc.), and a post-installation examination will be performed after each snubber is installed.

4.2 Operational Readiness Testing Frequency:

GGNS will perform Operational Readiness Testing each outage. As required by ISTD-5240, testing will begin no earlier than 60 days prior to the start of a refueling outage. In addition to periodic testing, snubbers that are new, rebuilt, or modified will be functionally tested in accordance with the requirements of SEP-SNB-GGNS-001, CEP-SNB-0001, and ISTD-5100.

5.0 EXAMINATIONS, TESTING, AND SERVICE LIFE MONITORING EVALUATION

5.1 Visual Examination Evaluation:

Snubbers determined to be unacceptable per the requirements of procedure 06-ME-1000-V-0001 during visual examination shall be functionally tested to determine operability.

5.2 Functional Testing Evaluation:

Should a snubber fail to meet its test requirements the snubber shall be evaluated to determine the cause of the failure. The evaluation shall include a review of information related to other failed snubbers found during the refueling outage. The evaluation results shall be used, as applicable, to determine FMGs to which snubbers should be assigned. Additional justifying information should be used in assigning an FMG to a snubber with prior failures that were identified as unexplained or isolated. In addition to this, an expanded sampling from the affected DTPG will be utilized in the

event of a random sample test failure. Additional testing for a snubber failure is addressed in GGNS procedure 06-ME-1000-R-0002.

5.3 Service Life Monitoring Evaluation:

The service life of each installed snubber is evaluated once per fuel cycle. Adjustments to the service life examination and testing frequencies are based upon the evaluation results as well as manufacturer recommendations.

6.0 REPAIR, REPLACEMENT, AND MODIFICATION REQUIREMENTS

6.1 Repair, Replacement, and Modification:

Repairs, replacements, and modifications performed on snubbers under this program conform, as applicable, to the requirements specified within the ASME Code Section XI, 2007 Edition through 2008 Addenda.

7.0 SCHEDULING

7.1 Initial Scheduling:

Scheduling for snubber visual examinations, functional testing, and service life replacements will be initiated, tracked, and maintained by the Snubber Program Owner in accordance with CEP-SNB-0001, SEP-SNB-GGNS-001, and Subsection ISTD.

7.2 Expanded Scope Scheduling:

The Snubber Program Owner will identify and track expanded sample plan examinations and tests as required by CEP-SNB-0001, SEP-SNB-GGNS-001, and Subsection ISTD.

8.0 REPORTS AND RECORDS

8.1 Retention of Examination and Test Records:

Reports and records for visual examinations and functional tests will be maintained for all program snubbers.

8.2 Retention of Repair and Replacement Records:

Applicable records and reports required for repair and replacement activities will be maintained.

8.3 Retention of Service Life Records:

Records of the service life of all Program Snubbers as well as associated installation and maintenance records will be maintained.

8.4 Retention Program:

The above mentioned applicable records will be maintained in accordance with CEP-SNB-0001 and the Entergy Document and Records Management Program.

9.0 EXCEPTIONS TO REQUIREMENTS

9.1 Code Requirement Exceptions:

At this time, GGNS has not identified any exceptions to the implementation of its snubber program. Further, GGNS has not submitted any regulatory relief requests applicable to their snubber program.