



Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802
Tel 479-858-4704

Stephenie L. Pyle
Manager, Regulatory Assurance
Arkansas Nuclear One

1CAN091802

September 24, 2018

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Snubber Testing Program for Fifth Inservice Test Interval
 Arkansas Nuclear One, Unit 1
 Docket No. 50-313
 License No. DPR-51

Dear Sir or Madam:

10 CFR50.55a references the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code to include the 2004 Edition through the 2006 Addenda. ASME OM Code 2004 Edition through the 2006 Addenda, 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 Arkansas Nuclear One, Unit 1 (ANO-1) for the fifth Inservice Test interval. This interval commenced on December 1, 2017, and concludes on November 30, 2026. 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 correspondence.

If you have any questions or require additional information, please contact me.

Sincerely,

ORIGINAL SIGNED BY STEPHENIE L. PYLE

SLP/dbb

Attachment: Snubber Test Plan for the Fifth Inservice Test Interval

cc: Mr. Kriss Kennedy
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

NRC Senior Resident Inspector
Arkansas Nuclear One
P. O. Box 310
London, AR 72847

U. S. Nuclear Regulatory Commission
Attn: Mr. Thomas Wengert
MS O-08B1A
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Mr. Bernard R. Bevill
Arkansas Department of Health
Radiation Control Section
4815 West Markham Street
Slot #30
Little Rock, AR 72205

Attachment 1

1CAN091802

Snubber Test Plan for the Fifth Inservice Test Interval

Snubber Test Plan for the Fifth Inservice Test Interval

Table of Contents

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	2
2.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING REQUIREMENTS	3
3.0 EXAMINATION AND TESTING METHODS	4
4.0 EXAMINATION AND TESTING FREQUENCY	4
5.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING EVALUATION	4
6.0 REPAIR, REPLACEMENT, AND MODIFICATION REQUIREMENTS	5
7.0 SCHEDULING	5
8.0 REPORTS AND RECORDS	5

1.0 INTRODUCTION

1.1 Purpose

To provide the test plan for maintaining the operational readiness of those dynamic restraints (Snubbers) whose specific functions are required to ensure the integrity of the reactor coolant pressure boundary and safety-related system as specified in paragraph 1.2 below.

1.2 Scope

This program meets the requirements of the following subsections of the American Society of Mechanical Engineers (ASME) OM Code 2004 Edition with Addenda through 2006.

- Subsection ISTA, “*General Requirements*”

ISTA contains the requirements directly applicable to inservice examination and testing including the Owner’s Responsibility and Records Requirements.

- Subsection ISTD, “*Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants*”

ISTD establishes requirements for preservice and inservice examination and testing, and service life monitoring of Dynamic Restraints (*Snubbers*) in light-water reactor nuclear power plants.

ANO-1 safety class piping was designed to ANSI B31.7 Class 1, 2, and 3 standards. In addition, certain systems important to safety that were designed to ANSI B31.1 are currently included within the scope of ASME Section XI and treated as Class 2 or 3. The snubbers classified as important to safety at ANO-1 are those attached directly to safety class 1, 2 or 3 piping (safety-related) and those attached to non-safety related portions of systems but included in the safety-related stress analysis (safety significant) as well as all snubbers attached to systems and components that are required in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident, or to ensure the integrity of the reactor coolant pressure boundary. These snubbers will be considered to be Program Snubbers. As documented in ULD-0-TOP-02 and ULD-0-TOP-22, ANO-1 was designed to achieve a safe shutdown condition equivalent to the hot shutdown mode of operation defined in Technical Specifications.

1.3 Discussion

In order to ensure the required operational readiness of all Program Snubbers for Arkansas Nuclear One (ANO) Unit 1 during seismic or other events that may initiate dynamic loads, as required by ANO-1 TRM 3.7.5 and TRM 5.5.1, the examination, testing and service life monitoring of these snubbers will be in accordance with the requirements of ANO Snubber Program Section SEP-SNB-ANO-001, Dynamic Restraint (Snubber) Examination and Testing Program CEP-SNB-0001, and Dynamic Restraint (Snubber) Inspection Program EN-DC-333.

The current interval snubber program began December 1, 2017 adhering to the requirements of the ASME OM Code, Subsection ISTD, 2004 Edition with Addenda through 2006, in accordance with 10 CFR 50.55a(b)(3)(v)B. The starting date for the fifth interval snubber program has been aligned with the corresponding inservice testing interval (IST) and will continue with that alignment in the future, subject to the limitations in ISTA-3120.

Examination Boundary - The examination boundary will include the snubber, all clearly visible portions of the attachment(s) to the supported component and the attachment(s) to intervening elements or building structures. Typically these are the boundaries depicted on the snubber installation drawings. This expanded boundary has been adopted to ensure structural integrity and snubber functionality.

The results of examinations on this expanded boundary will be evaluated independently from the Program pin-to-pin boundaries described in CEP-SNB-0001, paragraph 2.3. Integral and nonintegral attachments for snubbers will be evaluated within the site ISI program, in accordance with the requirements of the ASME Code Section XI, 2007 Edition through 2008 Addenda.

Visual Examination Procedure OP-1306.003 Attachment 1 contains the Master Snubber List of the safety related snubbers included in the Snubber Program for ANO-1.

2.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING REQUIREMENTS

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

2.2 Snubbers are grouped into Defined Test Plan Groups (DTPGs) in accordance with ISTD-5252. Snubbers in each DTPG will be tested using the 10% sample plan per ISTD-5300. Snubbers attached to the Reactor Coolant Pumps (RCP) will be in a separate DTPG per ISTD-5253. ANO-1 does not have Steam Generator snubbers installed.

2.3 Snubber DTPG's are currently defined as follows in the SnubbWorks Database.

Unit 1		
DTPG	QTY	DESIGN TYPE
H1	45	Small Grinnell Hydraulic Snubbers (1.5x5 through 4x5)
H2	22	Large Grinnell Hydraulic Snubbers (5x5 through 6x10)
H3	17	Lisega Type 30 Small Bore Hydraulic Snubbers
H4	8	Lisega Type 31 Large Bore Hydraulic Snubbers (RCP Snubbers)
M1	7	Small PSA Mechanical Snubbers (PSA ½ through PSA 10)
M2	13	Large PSA Mechanical Snubbers (PSA 35 and PSA 100)
M3	14	Small Anchor Darling Mechanical Snubbers (AD-40 through AD-500 Series)
M4	2	Large Anchor Darling Mechanical Snubbers (AD-1600 through AD-12500 Series)

2.4 The service life of all snubbers will be monitored and evaluated, and replaced or reconditioned in accordance with procedure SEP-SNB-ANO-001 and ISTD-6200 to ensure that the service life is not exceeded between surveillance examinations. The replacement or reconditioning of snubbers will be documented and records retained in accordance with ANO plant procedures.

3.0 EXAMINATION and TESTING METHODS

3.1 Visual examinations will be performed by individuals qualified in accordance with ANO plant or vendor procedures. These examinations are conducted to ensure the mechanical and structural integrity of the snubber installation and to observe conditions that could affect functional adequacy. Visual examinations and operational readiness testing will be performed to verify the requirements specified within procedure SEP-SNB-ANO-001 are met in accordance with Subsection ISTD. Operational readiness tests will be performed in accordance with plant procedures to demonstrate adequate snubber performance in accordance with SEP-SNB-ANO-001, CEP-SNB-0001, and ISTD-5000.

4.0 EXAMINATION and TESTING FREQUENCY

4.1 Visual Examinations and Operational Readiness Testing will be performed at the frequency specified within SEP-SNB-ANO-001 and ISTD-4250 and ISTD-5240.

4.2 Approved Code Case OMN-13 Rev. 0, which allows the extension of the visual examination interval specified in ISTD Table 4252-1, has been implemented for snubber examinations during the previous 10-year Interval and will continue through the upcoming 10-year Interval. Since the prescribed prerequisites of Code Case OMN-13 have previously been satisfied, the Visual Examination intervals specified in Table ISTD 4252-1 have been extended in accordance with Code Case OMN-13 and will be scheduled accordingly not to exceed 10 years between the previous and subsequent examinations for each snubber.

4.3 Post installation visual examinations of snubbers will be performed whenever new snubbers are installed, existing or swapped snubbers that were functionally tested are reinstalled, or after snubber repairs, replacements or modifications. Additional examinations will be performed on snubbers that are installed at new locations on existing systems or new systems in accordance with CEP-SNB-0001 and ISTD-4130.

4.4 Operational readiness testing requirements for new snubber installations or spare snubbers will be equal to or more stringent than those specified in SEP-SNB-ANO-001. Snubbers that are new, rebuilt, or modified will be functionally tested in accordance with the requirements of SEP-SNB-ANO-001, CEP-SNB-0001, and ISTD-5100.

5.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING EVALUATION

5.1 Snubbers that do not appear to conform to the visual examination requirements of SEP-SNB-ANO-001, will be reported for evaluation and appropriate corrective action.

5.2 Snubbers that do not appear to conform to the visual examination acceptance requirements and are later confirmed as operable as a result of operational readiness testing may be declared acceptable for the purpose of establishing the next visual examination interval, providing that the unacceptable condition did not affect operational readiness for the snubber location.

5.3 Snubbers that do not meet the operational readiness testing acceptance criteria in SEP-SNB-ANO-001 will be evaluated to determine the cause of the failure and appropriate corrective action will be taken.

5.4 The service life of each snubber will be evaluated once each fuel cycle using manufacturer's recommendations and engineering information gained through consideration of the snubber service conditions, visual examination results, periodic maintenance activities, and inservice operational readiness test results. A service life monitoring program is included in SEP-SNB-ANO-001.

6.0 REPAIR, REPLACEMENT, AND MODIFICATION REQUIREMENTS

6.1 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 Schedules for snubber visual examinations, operational readiness testing, and service life replacements will be established tracked and maintained in accordance with SEP-SNB-ANO-001, CEP-SNB-0001, and Subsection ISTD by the Snubber Program Owner.

7.2 The Snubber Program Owner will identify and track expanded sample plan or additional testing and/or examinations as required by SEP-SNB-ANO-001, CEP-SNB-0001, and Subsection ISTD.

8.0 REPORTS AND RECORDS

8.1 Reports and records for the visual examinations and operational readiness testing will be maintained for all Program Snubbers.

8.2 Applicable records and reports, as required for repair and replacements, will be maintained.

8.3 Records of the service life of all Program Snubbers, including the date at which the service life commences or expires, and associated installation and maintenance records will be maintained.

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