



July 15, 2015

L-2015-164
10 CFR 50.90

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

Subject: St. Lucie Unit 1
Docket No. 50-335
Fourth Ten-Year Inservice Inspection Interval License
Amendment Request Changes to Snubber Surveillance Requirements

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) is submitting a request for an amendment to the Technical Specifications (TS) for St. Lucie Unit 1.

The proposed amendment would revise the Technical Specification (TS) surveillance requirements (SRs) for snubbers to conform to revisions to the Snubber Testing Program.

Attachment 1 provides a description and assessment of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes. Attachment 3 provides revised (clean) TS pages. Attachment 4 contains a detailed comparison of the current TS 4.7.9 SR to the proposed Snubber Program requirements and justification of changes. Attachment 5 provides a copy of the proposed Snubber Testing Program Plan. Attachment 6 provides the revised snubber program bases description, for information only.

FPL is requesting that this be processed as a normal amendment request, with approval of the proposed amendment by September 1, 2016 to support the fall 2016 Unit 1 outage. Once approved, the amendment shall be implemented within 60 days.

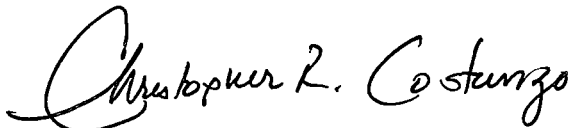
If you should have any questions, please contact Mr. Ken Frehafer at (772) 467-7748.

I declare under penalty of perjury that the foregoing is true and correct.

A047
MLR

Executed on July 15, 2015.

Sincerely,

A handwritten signature in black ink, reading "Christopher R. Costanzo". The signature is written in a cursive style with a large, stylized initial 'C'.

Christopher R. Costanzo
Site Vice President
St. Lucie Plant

cc: USNRC Regional Administrator, Region II
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant
Ms. Cindy Becker, Florida Department of Health

Attachments:

1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
4. TS 4.7.9 SR Comparison to ISI Program Requirements
5. Proposed Snubber Program Plan

DESCRIPTION AND ASSESSMENT

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.90, Florida Power & Light (FPL) is submitting a license amendment request to revise Technical Specification (TS) 3/4.7.10, "Snubbers," for St. Lucie Unit 1. The proposed change would revise the TS surveillance requirements for snubbers to conform to the revised St. Lucie Unit 1 Snubber Testing Program for the remainder of the fourth ISI interval to be made consistent with the 2004 Edition thru 2006 Addenda of the ASME OM Code, Subsections ISTA and ISTD and with similar proposed changes approved for the Snubber Testing Program at St. Lucie Unit 2.

2.0 DETAILED DESCRIPTION

The St. Lucie Unit 1 Fourth 10-year ISI interval began February 11, 2008 and will continue until February 10, 2018. Currently, as described in Technical Specifications, TS 3/4.7.10 and FPL Fourth 10-Year Inspection Interval Program submittal letter L-2008-043, dated March 13, 2008, (ML080810193) snubber testing and examination are performed in accordance with the requirements of 10 CFR 50.55a(b)(3)(v), which allows the use of Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," of the ASME OM Code, based upon the 2001 Edition through 2003 Addenda. As allowed by 10 CFR 50.55a(g)(4)(iv), FPL is proposing the use of Subsection ISTD, of the ASME OM Code, 2004 Edition with 2005 and 2006 Addenda for the remainder of the St. Lucie Unit 1 Fourth 10-year ISI interval, subject to Commission approval. The proposed changes to the St. Lucie Unit 1 TS are summarized below:

- TS Surveillance Requirement (SR) 4.7.10 would be revised to remove specific surveillance requirements for demonstrating snubber operability. The current requirements would be replaced by a reference to the "Snubber Testing Program."
- A new TS Section 6.8.4.p, "Snubber Testing Program," will be added to the Administrative Controls section (Section 6.0) of TS to provide a description of the snubber program requirements.

Mark-ups of the proposed TS pages are provided in Attachment 2. Retyped TS pages reflecting the proposed changes are provided in Attachment 3. Attachment 4 contains a detailed comparison of the current TS 4.7.10 SR to the proposed snubber program requirements and justification of the changes. Attachment 5 contains the Snubber Testing Program Plan.

3.0 TECHNICAL EVALUATION

Licensees are required by 10 CFR 50.55a(g) or 10 CFR 50.55a(b)(3)(v) to perform the ISI and testing of snubbers in accordance with the ASME OM Code and the applicable addenda, except where the NRC has granted specific written relief pursuant to 10 CFR 50.55a(g)(6)(i), or authorized alternatives pursuant to 10 CFR 50.55a(a)(3).

As noted in Regulatory Issue Summary 2010-06, licensees have the option to control the ASME Code-

required ISI and testing of snubbers through their TS or other licensee-controlled documents. For plants using their TS to govern ISI and testing of snubbers, 10 CFR 50.55a(g)(5)(ii) requires that if a revised ISI program for a facility conflicts with the TS, the licensee shall apply to the Commission for amendment of the TS to conform the TS to the revised program. Therefore, when proposing program alternatives in accordance with 10 CFR 50.55a(3) and 10 CFR 50.55a(g)(4)(iv), licensees must submit any requested amendments to ensure their TS remain consistent with the code of record or NRC-approved alternatives.

The proposed change revises the specific TS requirements for snubber examination, testing and service life monitoring with a reference to the Snubber Testing Program, thereby ensuring the TS requirements remain consistent with the revised snubber testing program.

Snubbers will continue to be demonstrated OPERABLE by performance of the Snubber Testing Program. This program will be maintained in compliance with 10 CFR 50.55a per the proposed TS section 6.8.4(p). The program for inspection and testing of snubbers in accordance with ASME OM Code and the applicable addenda as required by 10 CFR 50.55a(g) includes an evaluation of supported components or systems when snubbers are found to be unacceptable.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements

St. Lucie Unit 1 is currently operating within the fourth 10-year ISI interval, which began February 11, 2008.

Currently, snubber testing and examination are performed in accordance with the specific requirements of TS 3/4.7.10 and Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," of the ASME OM Code, based upon the 2001 Edition through 2003 Addenda as described in St. Lucie Unit 1 Fourth 10-Year Inspection Interval Program submitted in FPL letter L-2008-043, dated March 13, 2008.

10 CFR 50.55a(g)(3)(v) states all components (including supports) may meet the requirements set forth in subsequent editions to the "Code of Record" and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to conditions listed therein. If a revised ISI program for a facility conflicts with the TS for the facility, 10 CFR 50.55a(g)(5)(ii) requires licensees to apply to the Commission for amendment of the TS at least six months prior to the start of the period the provisions become applicable.

Once approval is received, for the remainder of the St. Lucie Unit 1 fourth 10-year ISI interval which ends February 10, 2018, FP&L intends to adopt the 2004 Edition with Addenda through 2006 of Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," in place of the ASME OM Code, 2001 Edition with 2003 Addenda and specific requirements of TS 3/4.7.10 as previously submitted in correspondence dated March 13, 2008.

The purpose of this amendment request is to revise the specific surveillance requirements for

demonstrating snubber operability in the TS since the surveillance program will be revised to include the requirements of the 2004 Edition with Addenda through 2006 of the OM Code Subsection ISTD for the Snubber Testing Program. As such, the proposed changes to TS 3/4.7.10 are necessary to conform the TS to the revised snubber testing program.

4.2 Precedent

The proposed changes are similar to those submitted for St. Lucie Unit 2 in FPL letter L-2014-027 dated January 30, 2014 (Accession No. ML14049A284) and supplemented by FPL letter L-2014-227 dated July 21, 2014 (Accession No. ML14212A395). These changes were subsequently approved by the NRC in their SER dated January 20, 2015 (Accession No. ML14342A785). The resulting changes would allow management of both snubber surveillance programs at FPL St. Lucie Units 1 and 2 to be utilizing the same ASME Code of reference year and addenda.

The changes proposed to TS 3/4.7.10 are also similar to changes submitted by Public Service Electric and Gas (PSEG) Nuclear, LLC for Salem Generating Station, Units 1 and 2 and Dominion Nuclear Connecticut (DNC), Inc. for Millstone Power Station Unit 2. The applicable references for NRC approval of these similar changes are provided below:

NRC Letter Dated August 25, 2011, Salem Nuclear Generating Station, Unit Nos. 1 and 2 – Issuance of Amendments Re: Technical Specification Requirements for Snubbers (TAC Nos. ME4796 and ME4797), (Accession No. ML112020359).

NRC Letter Dated June 28, 2012, Millstone Power Station, Unit 2 – Issuance of Amendment Re: Snubber Surveillance Requirements (TAC No. ME7221) (Accession No. ML12165A220).

4.3 No Significant Hazards Consideration Determination

FP&L requests adoption of an approved change to the plant specific Technical

Specifications for St. Lucie Unit 1, to revise TS 3/4.7.10, "Snubbers."

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes would revise SR 4.7.10 to conform the TS to the revised surveillance program for snubbers. Snubber examination, testing and service life monitoring will continue to meet the requirements of 10 CFR 50.55a(g).

Snubber examination, testing and service life monitoring is not an initiator of any accident previously

evaluated. Therefore, the probability of an accident previously evaluated is not significantly increased.

Snubbers will continue to be demonstrated OPERABLE by performance of a program for examination, testing and service life monitoring in compliance with 10 CFR 50.55a or authorized alternatives. The proposed change does not adversely affect plant operations, design functions or analyses that verify the capability of systems, structures, and components to perform their design functions therefore, the consequences of accidents previously evaluated are not significantly increased.

Therefore, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes do not involve any physical alteration of plant equipment. The proposed changes do not alter the method by which any safety-related system performs its function. As such, no new or different types of equipment will be installed, and the basic operation of installed equipment is unchanged. The methods governing plant operation and testing remain consistent with current safety analysis assumptions.

Therefore, it is concluded that this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed changes ensure snubber examination, testing and service life monitoring will continue to meet the requirements of 10 CFR 50.55a(g). Snubbers will continue to be demonstrated OPERABLE by performance of a program for examination, testing and service life monitoring in compliance with 10 CFR 50.55a or authorized alternatives.

Therefore, it is concluded that the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, it is concluded that the proposed amendments do not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusion

10 CFR 50.55a(g)(4)(iv) states that inservice examination of components may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject

to limitations and modifications listed in 10 CFR 50.55a(b) and subject to Commission approval.

If a revised inservice inspection program for a facility conflicts with the TS of the facility, 10 CFR 50.55a(g)(5)(ii) requires licensees to apply to the Commission for amendment of the TS to conform the TS to the revised program.

The proposed change amends the TS surveillance requirements to conform the TS to the revised testing program for snubbers which shall meet the requirements of 10 CFR 50.55a(g) except where the NRC has granted specific written relief, pursuant to 10 CFR 50.55a(g)(6)(i), or authorized alternatives pursuant to 10 CFR 50.55a(a)(3).

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL EVALUATION

The proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

6.0 REFERENCES

- 6.1 FPL letter L-2008-043, dated March 13, 2008, Subject: St. Lucie Unit 1, Fourth 10-Year Inspection Interval Program, (Accession No. ML080810193).
- 6.2 FPL letter L-2014-027, dated January 30, 2014, Subject: St. Lucie Unit 2, Fourth 10-Year Inspection Interval Program, (Accession No. ML14049A284).
- 6.3 NRC Regulatory Issue Summary 2010-06, "Inservice Inspection and Testing Requirements of Dynamic Restraints (Snubbers)," June 1, 2010 (Accession No. ML101310338).
- 6.4 St. Lucie, Unit No. 1, Current Facility Operating License DPR-67, Technical Specifications, Amendment 220.

Technical Specification Markups

3/4 7-29

3/4 7-29A

3/4 7-29B

3/4 7-30

3/4 7-31

6-15g

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All safety related snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more safety related snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

Snubber Testing Program.

SURVEILLANCE REQUIREMENTS

4.7.10 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program:

a. Inspection Types

As used in this specification, "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible or accessible) may be inspected independently according to the schedule determined by Table 4.7-3. The visual inspection interval for each category of snubber shall be determined based upon the criteria provided in Table 4.7-3 and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify that (1) the snubber has no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubber to the component and to the snubber anchorage are functional. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that (i) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (ii) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per specifications 4.7.10.e and 4.7.10.f, as applicable. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

**TABLE 4.7-3
SNUBBER VISUAL INSPECTION INTERVAL**

NUMBER OF UNACCEPTABLE SNUBBERS

Population or Category (Notes 1 and 2)	Column A Extend Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.
- Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.
- Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.
- Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.
- Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.
- Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. Functional Tests

At least once per 18 months during shutdown, a representative sample (10% of the safety related snubbers) shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.10.e or 4.7.10.f, an additional 10% of that type of snubber shall be functionally tested. Functional test shall continue until no additional snubbers are found inoperable or all safety related snubbers have been tested.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers.

Snubbers identified as "Especially Difficult to Remove" or in "High Exposure Zones During Shutdown" shall also be included in the representative sample.* Safety related hydraulic snubber listings and safety related mechanical snubber listings may be used jointly or separately as the basis for the sampling plan.

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers shall not result in additional functional testing due to failure.

* Permanent or other exemptions from the functional testing for individual snubbers in these categories may be granted by the Commission only if justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

e. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension.

f. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force.
2. Activation (restraining action) is achieved in both tension and compression.

g. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designed service life is based shall be maintained.

Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each safety related snubber shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded by more than 10% prior to the next scheduled snubber service life review. If the indicated service life will be exceeded by more than 10% prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. The results of the reevaluation may be used to justify a change to the service life of the snubber. This reevaluation, replacement or reconditioning shall be indicated in the records.

ADMINISTRATIVE CONTROLS (continued)

m. Control Room Envelope Habitability Program (continued)

- c. Requirements for (i) determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREVS, operating at the flow rate required by the VFTP, at a Frequency of 36 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 36 month assessment of the CRE boundary.
- e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 4.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

n. Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- (i) Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 - 1. An API gravity or an absolute specific gravity within limits,
 - 2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 - 3. A clear and bright appearance with proper color or a water and sediment content within limits;
- (ii) Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- (iii) Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days.

The provisions of SR 4.0.2 and SR 4.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.



Insert 1:

o. Snubber Testing Program

This program conforms to the examination, testing and service life monitoring for dynamic restraints (snubbers) in accordance with 10 CFR 50.55a inservice inspection (ISI) requirements for supports. The program shall be in accordance with the following:

1. This program shall meet 10 CFR 50.55a(g) ISI requirements for supports.
2. The program shall meet the requirements for ISI of supports set forth in subsequent editions of the Code of Record and addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure (BPV) Code and the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code) that are incorporated by reference in 10 CFR 50.55a(b) subject to the conditions listed in 10 CFR 50.55a(b) and subject to Commission approval.
3. The program shall, as required by 10 CFR 50.55a(b)(3)(v), meet Subsection ISTA, "General Requirements" and Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants".
4. The 120-month program updates shall be made in accordance with 10 CFR 50.55a(g)(4), 10 CFR 50.55a(g)(3)(v) and 10 CFR 50.55a(b) (including 10 CFR 50.55a(b)(3)(v)) subject to the conditions listed therein.

Word Processed TS Pages

Retyped TS Pages

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3/4 7-29a

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6-15h

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All safety related snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more safety related snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.10 Each snubber shall be demonstrated OPERABLE by performance of the Snubber Testing Program.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

DELETED

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

DELETED

ADMINISTRATIVE CONTROLS (continued)

o. **Snubber Testing Program**

This program conforms to the examination, testing and service life monitoring for dynamic restraints (snubbers) in accordance with 10 CFR 50.55a inservice inspection (ISI) requirements for supports. The program shall be in accordance with the following:

1. This program shall meet 10 CFR 50.55a(g) ISI requirements for supports.
2. The program shall meet the requirements for ISI of supports set forth in subsequent editions of the Code of Record and addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure (BPV) Code and the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code) that are incorporated by reference in 10 CFR 50.55a(b) subject to the conditions listed in 10 CFR 50.55a(b) and subject to Commission approval.
3. The program shall, as required by 10 CFR 50.55a(b)(3)(v), meet Subsection ISTA, "General Requirements" and Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants".
4. The 120-month program updates shall be made in accordance with 10 CFR 50.55a(g)(4), 10 CFR 50.55a(g)(3)(v) and 10 CFR 50.55a(b) (including 10 CFR 50.55a(b)(3)(v)) subject to the conditions listed therein.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

- 6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the NRC.

STARTUP REPORT

- 6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment of the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal or hydraulic performance of the plant.

**COMPARISON OF CURRENT TS REQUIREMENTS TO
REVISED ISI SNUBBER PROGRAM ASSESSMENT**

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
<p>4.7.10.a Inspection Types</p> <p>As used in this specification, "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity.</p>	<p>ISTD-5252 allows for DTPG's to be established based upon differences in design, application, size, or type.</p>	<p>The revised SNUBBER program requirements for inspection types allow the same distinction for DTPG's as SR 4.7.10.a</p>
<p>4.7.10.b Visual Inspections</p> <p>Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible or accessible) may be inspected independently according to the schedule determined by Table 4.7-3. The visual inspection interval for each category of snubber shall be determined based on the criteria provided in Table 4.7-3, and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect.</p>	<p>ISTD-4220(a) requires all snubbers to be considered one population for examination, or alternatively, to categorize them individually as accessible or inaccessible. The categories of accessible and inaccessible snubbers shall be considered separately for examination.</p> <p>ISTD-4220(b) requires the decision to examine the snubbers as one population or as separate categories to be made and documented before the scheduled examination begins and not changed during the examination.</p>	<p>Use of ISTD-4200 for snubber inservice examination in lieu of current SR 4.7.10.b does not change the number of snubbers required to be examined or the required examination intervals.</p>
<p>4.7.10.c Visual Inspection Acceptance Criteria</p> <p>Visual inspections shall verify that (1) the snubber has no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubber to the component and to the snubber anchorage are functional.</p>	<p>ISTD-4210 states that inservice examination shall be a visual examination to identify physical damage, leakage, corrosion, or degradation.</p> <p>ISTD-4231 requires snubber installations to be able to restrain movement and that examinations shall include observations for loose fasteners, or members that are corroded or deformed disconnected</p>	<p>10 CFR 50.55a(b)(3)(v) allows the use of subsection ISTD for inservice examination requirements.</p> <p>The revised Snubber program requirements will continue to examine the integrity of the attachments to the supporting structure.</p> <p>The revised snubber program requirements for inservice examination satisfy the visual</p>

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
	components or other conditions that might interfere with the proper restraint of movement.	inspection acceptance criteria in SR 4.7.10.c
<p>4.7.10.c Visual Inspection Acceptance Criteria (cont)</p> <p>Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that (i) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (ii) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.10.e and 4.7.10.f, as applicable.</p>	<p>ISTD-4240 permits snubbers classified as unacceptable during inservice examination to be tested in accordance with the requirements of ISTD-5210. Results that satisfy the operational readiness test criteria of ISTD-5210 shall be used to accept the snubber, provided the test demonstrates that the unacceptable condition did not affect operational readiness.</p>	<p>The revised SNUBBER program requirements for inservice examination is equivalent to the visual inspection acceptance criteria in SR 4.7.10.c</p>
<p>4.7.10.c Visual Inspection Acceptance Criteria (cont)</p> <p>All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber</p>	<p>ISTD-4233 requires that fluid supply or content for hydraulic snubbers shall be observed. If the fluid is less than the minimum amount, the installation shall be identified as unacceptable, unless a test establishes that the performance of the snubber is within specified limits.</p> <p>ISTD-4270 requires that snubbers that do not meet examination requirements of ISTD-4230 shall be evaluated to determine the root</p>	<p>The revised SNUBBER program requirements for inservice examination satisfy the visual inspection acceptance criteria in SR 4.7.10.c</p>

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
shall be declared inoperable and the ACTION requirements shall be met.	cause of the unacceptability. ISTD-4280 requires that unacceptable snubbers shall be adjusted, repaired, modified, or replaced.	
TABLE 4.7-3 SNUBBER VISUAL INSPECTION INTERVAL	ISTD-4252(b) requires inservice examinations to be conducted in accordance with Table ISTD-4252-1	Table ISTD-4252-1 is equivalent to SR Table 4.7-3 for population/category population sizes.
<p>4.7.10.d Functional Tests</p> <p>At least once per 18 months during shutdown, a representative sample (10% of the safety related snubbers) shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.10.e or 4.7.10.f, an additional 10% of that type of snubber shall be functionally tested.</p> <p>Functional test shall continue until no additional snubbers are found inoperable or all safety related snubbers have been tested.</p>	<p>ISTD-5200 requires snubber operational readiness testing to be performed each fuel cycle. Testing shall be performed during normal system operation, or during system or plant outages.</p> <p>ISTD-5223 and ISTD-5224 permit snubbers to be tested in their installed location or in a bench test.</p> <p>ISTD-5261 requires snubbers of each Defined Test Plan Group (DTPG) to be tested using either:</p> <p style="padding-left: 40px;">(a) the 10% testing sample plan</p> <p>ISTD-5330 requires the snubbers of each DTPG and failure mode group (FMG) to be tested as required. Testing is complete when the mathematical expressions of ISTD-5331 are satisfied, or all snubbers in the DTPG or FMG have been tested.</p>	<p>The frequency of snubber testing in the revised program is unchanged from the frequency specified in current TS SR 4.7.10.d.</p> <p>The initial sample size in the revised program is as large as the size specified in current SR 4.7.10.d.</p> <p>The revised program provides for an expanded sample of one half the initial sample be tested for each failed snubber when using the 10% test plan. Although the present program requires an additional sample of the same 10% for each failed snubber this is not considered to be a reduction in safety since the proposed program includes an increased emphasis on service life monitoring, and this proposed test program has been previously approved by the regulator and is widely in use elsewhere.</p>

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
	<p>ISTD-5331 requires that testing shall satisfy the mathematical expressions as follows:</p> <p>(a) for each DTPG $N \geq 0.1n + C(0.1n/2)$</p> <p>(b) for each FMG $N_F \geq C_F(0.1n/2)$</p>	
<p>4.7.10.d Functional Tests (cont.)</p> <p>The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers.</p> <p>Snubbers identified as "Especially Difficult to Remove" or in "High Exposure Zones During Shutdown" shall also be included in the representative sample. Safety related hydraulic snubber listings and safety related mechanical snubber listings may be used jointly or separately as the basis for the sampling plan</p> <p>In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber</p>	<p>ISTD-5311 requires, as practicable, the sample shall include representation from the DTPG based on the significant features (i.e., the various designs, configurations, operating environments, sizes, and capacities)</p> <p>ISTD-5311 requires, as practicable, the sample shall include representation from the DTPG based on the significant features (i.e., the various designs, configurations, operating environments, sizes, and capacities)</p> <p>ISTD-5500 requires that snubbers placed in the same location as snubbers that failed the previous inservice operational readiness test shall be retested at the time of next operational readiness testing unless the cause</p>	<p>The revised program provides for representative selection of the initial sample for functional testing to include all configurations and environments.</p> <p>The revised program provides for representative selection of the initial sample for functional testing to include all configurations and environments.</p> <p>Retests of failed snubber locations are required by the revised program as in SR 4.7.10.d</p>

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
(if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers shall not result in additional functional testing due to failure.	of the failure is clearly established and corrected.	
<p>4.7.10.d Functional Tests (cont.)</p> <p>If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria</p>	<p>ISTD-5271 states that snubbers that do not meet test requirements shall be evaluated to determine the root cause of the failure.</p> <p>ISTD-5272 states that snubbers found unacceptable according to operational readiness test requirements should be assigned to FMGs unless the failure is isolated or unexplained. FMGs shall include all unacceptable snubbers with the same failure mode and all other snubbers with similar potential for similar failure.</p> <p>As an alternative to additional testing for Design or Manufacturing FMGs, ISTD-5323 requires no additional testing when all snubbers in the FMGs are replaced or modified in accordance with ISTD-1600.</p> <p>If replacement or modification is not performed in accordance with ISTD-5323, additional testing is required in accordance</p>	<p>The revised program requires evaluations of all failed snubbers and for manufacturer or design deficiencies requires replacement or modification of all snubbers in the FMG or additional testing until the mathematical expression of ISTD-5331(b) is satisfied or all snubbers in the FMG have been tested. Therefore, the revised program requirements provide adequate assurance of snubber OPERABILITY because all potentially affected snubbers will be replaced or modified; or the acceptance limit for additional testing will be met, demonstrating an acceptable level of reliability</p>

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
	with ISTD-5324. Testing is required to continue until the acceptance limit is satisfied or all snubbers in the FMG have been tested.	
<p>4.7.10.e Hydraulic Snubbers Functional Test Acceptance Criteria</p> <p>The hydraulic snubber functional test shall verify that:</p> <ol style="list-style-type: none"> 1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression. 2. Snubber bleed, or release rate where required, is within the specified range in compression or tension. 	ISTD-5210(a), (b) and (c) require the same verification for operational readiness testing.	The revised SNUBBER program requirements for snubber acceptance criteria are equivalent to those of current SR 4.7.10.e
<p>4.7.10.f Mechanical Snubbers Functional test Acceptance Criteria</p> <p>The mechanical snubber functional test shall verify that:</p> <ol style="list-style-type: none"> 1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force. 2. Activation (restraining action) is achieved in both tension and compression 	ISTD-5210(a), (b) and (c) require the same verification for operational readiness testing.	The revised SNUBBER program requirements for snubber acceptance criteria are equivalent to those of current SR 4.7.10.f

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
<p>4.7.10.g Snubber Service Life Monitoring</p> <p>A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designed service life is based shall be maintained.</p> <p>Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each safety related snubber shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded by more than 10% prior to the next scheduled snubber service life review. If the indicated service life will be exceeded by more than 10% prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. The results of the reevaluation may be used to justify a change to the service life of the snubber. This reevaluation, replacement or reconditioning shall be indicated in the records</p>	<p>ISTA-9310 requires the maintenance of records in accordance with the Owners QA program.</p> <p>ISTD-6100 requires initial snubber service life to be predicted based on manufacturer's recommendation or design review.</p> <p>ISTD-6200 and ISTD-6200(c) requires service life to be evaluated at least once each fuel cycle. If the evaluation indicates that service life will be exceeded before the next scheduled system or plant outage, the snubber shall be reconditioned such that its service life will be extended to or beyond the next scheduled system or plant outage</p>	<p>The service life evaluation requirements in ISTD-6100 and ISTD-6200 are equivalent to the requirements in current TS SR 4.7.10.g.</p>

St. Lucie Plant Unit 1

Snubber Testing Program Plan Fourth 10-Year Interval February 11, 2008 to February 10, 2018

Revision 0

**Florida Power & Light Company
St. Lucie Plant
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Revision Log

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INTRODUCTION:

1.1 Purpose:

To provide requirements for the performance and administration of assessing the operational readiness of those quality related dynamic restraints (Snubbers) whose specific functions are required to ensure the integrity of the reactor coolant pressure boundary or any safety-related system.

1.2 Scope:

The program plan was prepared to meet the requirements of the following subsections of the American Society of Mechanical Engineers (ASME) OM Code 2004 Edition with 2005 and 2006 Addenda.

- 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 the service life monitoring of Dynamic Restraints (*Snubbers*) in light-water reactor nuclear power plants. The snubbers covered are required to support the 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.

1.3 Discussion:

In order to ensure the required operability of all safety related and quality related snubbers for the St. Lucie Plant during seismic or other events initiating dynamic loads, the inspection, testing and service life monitoring of these snubbers shall be implemented and performed in accordance with the requirements of the station Snubber Testing Program Requirements.

The examination boundaries for the Snubber Program shall include the snubber assembly from pin to pin inclusive. Integral and nonintegral structural attachments for snubbers, when examined, shall be examined in accordance with the requirements of the ASME Code Section XI, Article IWF-2500(a), (b), (c) and (d). Coordination with the ISI program owner will be required to complete the surveillance and documentation requirements for these piping and structural attachments.

The Snubber Program described in OSP-73.01 and QI-10-PR/PSL-6 adheres to the requirements of the ASME OM Code, Subsection ISTD, 2004 Edition with 2005 and 2006 Addenda, as required by 10CFR50.55a(b)(3)(v)(B).

2.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING REQUIREMENTS:

- 2.1 Visual Examinations, Functional Testing, and Service Life requirements shall be performed to the extent specified within OSP-73.01, QI-10-PR/PSL-6 and referenced Surveillance Test Procedures.
- 2.2 Snubbers are grouped into Defined Test Plan Groups (DTPGs) in accordance with ISTD-5252. Each DTPG will be tested using the 10% sample plan per ISTD-5300. Large equipment snubbers attached to the Steam Generators or Reactor Coolant Pumps will each comprise separate DTPG's.
- 2.3 The service life of all snubbers shall be monitored and snubbers evaluated, replaced, or reconditioned in accordance with OSP-73.01, QI-10-PR/PSL-6 and ISTD-6200 to ensure that the service life is not exceeded between surveillance inspections. The replacement or reconditioning of snubbers shall be documented and records retained in accordance with St. Lucie Plant procedures.

3.0 EXAMINATION and TESTING METHODS:

- 3.1 Visual examinations shall be performed by individuals qualified in accordance with St. Lucie Plant procedures. These examinations are conducted to ensure the mechanical and structural condition of the snubber support location and to observe conditions that could affect functional adequacy. Visual examinations and functional testing shall be performed to verify the requirements specified within OSP-73.01 and QI-10-PR/PSL-6 are met in accordance with Subsection ISTD.

4.0 EXAMINATION and TESTING FREQUENCY:

- 4.1 Visual Examinations and Functional Testing shall be performed at the frequency specified within OSP-73.01, QI-10-PR/PSL-6 and ISTD-4250 and ISTD-5240. Snubbers are categorized as inaccessible or accessible during reactor operation for visual examination. Each of these categories (inaccessible and accessible) may be examined independently according to the schedule determined by Table ISTD 4252-1.
- 4.2 Code Case OMN-13, which allows the extension of the visual examination interval, will be implemented for snubber inspections during this interval. Code Case OMN-13 is approved for use in Regulatory Guide 1.192 (June 2003). The Visual Examinations of Table ISTD 4252-1 may be extended in accordance with Code Case OMN-13 once the prerequisites of the code case have been satisfied.
- 4.3 Visual Examinations shall be performed whenever new snubbers are installed, reinstallation of existing or swapped snubbers that were functionally tested, or after repairs, replacements or modifications.
- 4.4 Functional testing requirements for new installations or spares shall be equal to or more stringent than that specified within OSP-73.01 and QI-10-PR/PSL-6.

5.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING EVALUATION:

- 5.1 Snubbers that do not appear to conform to the Visual Examination requirements of OSP-73.01 and QI-10-PR/PSL-6, shall 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 functional testing may be declared operable for the purpose of establishing the next visual inspection interval, providing that the unacceptable condition did not affect operational readiness.
- 5.3 Snubbers that do not meet the operability testing acceptance criteria in OSP-73.01 and QI-10-PR/PSL-6 shall be evaluated to determine the cause of the failure and appropriate corrective action shall be taken.
- 5.4 The service life of a snubber is predicted using manufacturer's input and contemporary information gained through consideration of the snubber service conditions and inservice functional test results. Service life monitoring program requirements are included in OSP-73.01 and QI-10-PR/PSL-6.

6.0 REPAIR, REPLACEMENT, AND MODIFICATION REQUIREMENTS:

- 6.1 Repairs, Replacements and Modifications performed on snubbers under this program shall conform, as applicable, to the requirements specified within the ASME Code, Section XI.

7.0 SCHEDULING:

- 7.1 The Visual Examinations, Functional Testing schedules, and Service Life Replacements shall be established, tracked and maintained in accordance with OSP-73.01, QI-10-PR/PSL-6 and Subsection ISTD by the Snubber Engineer.
- 7.2 A controlled listing of snubbers included in this program is maintained and is controlled within the NAMS Equipment Data Base.
- 7.3 The Snubber Engineer shall identify and track expanded or additional testing and/or examinations as required by OSP-73.01, QI-10-PR/PSL-6 and Subsection ISTD.

8.0 REPORTS and RECORDS:

- 8.1 Reports and records for the Visual Examinations and Functional Testing shall be maintained for all snubbers included within the Snubber Program in accordance with QI-17-PSL-1, Quality Assurance Records.
- 8.2 Applicable records and reports, as required for Repair and Replacements, shall be maintained.
- 8.3 Records of the service life of all snubbers listed in this program, including the date at which the service life commences or expires, and associated installation and maintenance records shall also be maintained in accordance with QI-17-PSL-1 and QI-10-PR/PSL-6.