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ACCESSION NBR: 8707300044 DOC. DATE: 87/07/24 NOTARIZED: NO DOCKET #
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STAHLE, C. Office of Nuclear Reactor Regulation, Director (Post 870411

SUBJECT: Forwards response to 870618 request for addl info on 811124 & supplemented 830801, 840720 & 851004 applications for amend to License DPR-18 re testing requirements for snubbers.

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July 24, 1987

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Mr. Carl Stahle
PWR Project Directorate No. 1
Washington, D.C. 20555

Subject: Technical Specification Testing Requirements for Snubbers
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Stahle:

Enclosed are responses to your request dated June 18, 1987 for additional information concerning proposed changes to the Technical Specification testing requirements for snubbers. This proposed amendment was originally submitted November 24, 1981 and was updated by submittals dated August 1, 1983, July 20, 1984 and October 4, 1985. Our response to you was requested to be within 30 days, or by July 22.

Because 30 days is a very short time to develop responses and to obtain both on-site and off-site review committee approval, this response is delayed a few days past the requested date. However, this delay has been discussed with you and Ms. Lodewyk at Region I and it was agreed that the delay was acceptable.

As part of our response, an updated proposed change to the Technical Specification is attached which replaces in total those provided previously. This latest submittal incorporates Staff comments and includes a revision to the Ginna Inservice Inspection Program. Tables 8.1 and 8.2 of the program provide up-to-date lists of safety-related snubbers. The proposed revision to Specification 3.13 to comply with Staff comments may require that additional snubbers that provide support for non-safety-related systems be included in the inspection and testing program. We will be reviewing snubbers associated with non-safety-related systems. It is anticipated that this review, along with inservice inspection, testing and plant maintenance procedures to insure full compliance with the proposed program, will be in place by November 1, 1987, or 60 days after acceptance by the Staff, whichever is later.

Very truly yours,

Roger W. Kober

Roger W. Kober

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Enclosures (2)

xc: Mr. Jay Dunkleberger
New York State Energy Office

U.S. Nuclear Regulatory Commission
Region 1
Attn: Ms. Audrey J. Lodewyk
631 Park Avenue
King of Prussia, PA 19406

Ginna Resident Inspector

ENCLOSURE 1

Responses to Staff Questions Relating to
Ginna Proposed Snubber Technical Specifications

Item 1: The proposed TS Applicability statement and ISI Program Section 8.1 wording confines the TS surveillance requirements to those safety related snubbers listed in the ISI Program Table.

Response: The proposed Specification 3.13 has been revised to incorporate wording similar to that found in Generic Letter 84-13. A specific reference to any snubber listing table has been deleted.

Item 2: Section 3.13.2 of the proposed TS does not require an engineering evaluation to be performed within the initial 72 hours of declaring a snubber inoperable as the STS do.

Response: The proposed Specification 3.13 has been revised to incorporate the requirement for an engineering evaluation within 72 hours.

Item 3: The proposed Quality Assurance Manual (QAM) Appendix B, Inservice Inspection (ISI) Program, does not include functional test criteria for mechanical snubbers.

Response: The proposed Specification 4.14 has been revised to incorporate mechanical snubbers into the functional and visual testing program. The initial inspection and functional testing for mechanical snubbers proposed in this submittal will be performed no later than the 1988 refueling outage. If less than two snubbers of each type are found inoperable during the first visual inspection, the second visual inspection shall be performed 12 months $\pm$ 25% from the date of the first inspection. A modified visual inspection was performed in April 1987 on approximately 70 accessible mechanical snubbers. No inoperable snubbers were observed.

Item 4: Proposed QAM, Appendix B, Section 8.3.1, states "Steam generator snubbers may be excluded from functional testing requirements". Current licensee submittals (Reference 2) indicate "steam generator" snubbers need not be functionally tested ... (as) snubber lockup is not a failure mode ... (and, in) addition, these snubbers are especially difficult to remove".

Response: The exemption of steam generator snubbers from functional testing is technically justifiable by the passive-type orifice design used in the Ginna steam generator snubbers. Control valves are not used and, therefore, the failure of such valves (the predominant failure mode of other large-bore snubbers as discussed in IE Bulletin 86-102) is not applicable. The Ginna snubbers were functionally tested at the manufacturer and the design has not been modified. The expected failure mode for these snubbers is failure of shaft seals or end plate O-ring seals. Periodic inspection and maintenance efforts will detect such failures, and post-maintenance hydrotesting in accordance with maintenance procedure M40.7 (the only functional test contained in M40.7) confirms seal integrity.

Beginning with the 1988 refueling outage, all of the steam generator snubbers will be visually inspected annually. Any steam generator snubber removed for maintenance will be inspected and tested in accordance with M40.7.

Item 5: Currently, changes to the snubber surveillance program are reported to the NRC pursuant to 10CFR50.90. The licensee's proposal removed portions of the snubber Technical Specifications (particularly the safety related snubber table listings and testing requirements) and placed them in the site QAM, Appendix B, Inservice Inspection Program.

Changes or modifications to the body of the QAM are submitted annually to the NRC per 10CFR50.54(a). Similarly, relief for changes or deviations from ASME Section XI, Inservice Inspection Program requirements, are reviewed by the NRC in accordance with 10CFR50.55(a)g. However, it is not apparent what type of reporting requirements would apply to future changes of the snubber inspection program testing criteria based upon the proposed amendment.

Response: The proposed Specification 4.14 has been revised to incorporate the snubber testing requirements, consistent with Standard Technical Specifications.

In response to the additional Staff comments, the functional testing acceptance criteria have been revised to require verification of activation within the specified range in both tension and compression. Also, the proposed ISI Program tables 8.1 and 8.2 provide a current list of installed safety related snubbers as requested by the Staff.

ENCLOSURE 2

Revised Proposed Snubber Technical Specification

Attachment A

Revise the Technical Specification pages as follows:

Remove	Insert
pages 3.13-1 thru 3.13-7	3.13-1
pages 4.2-1 thru 4.2-2	4.2-1 thru 4.2-3
pages 4.14-1 thru 4.14-5	4.14-1 thru 4.14-8
page 6.10-3	6.10-3

3.13 Snubbers

Limiting Condition for Operation

3.13.1 With RCS conditions above cold shutdown, all safety related snubbers shall be operable. This specification does not apply to those snubbers installed on non safety-related systems if the snubber failure, and a resulting failure of the supported non safety-related system shown to be caused by that snubber failure, would have no adverse effect on any safety-related system.

Action

3.13.2 With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to operable status and perform an engineering evaluation per Specification 4.14.1e on the supported component or declare the supported system inoperable and follow the appropriate action statement for that system.

Basis

Snubbers are required to be operable to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads.

4.2 Inservice Inspection

Applicability

Applies to the inservice inspection of Quality Groups A, B, and C Components, High Energy Piping Outside of Containment, Snubbers and Steam Generator tubes. It also applies to inservice pump and valve testing.

Objectives

To provide assurance of the continuing structural and operational integrity of the structures, components and systems in accordance with the requirements of 10 CFR 50.55a(g).

Specification

4.2.1 The inservice inspection program for Quality Groups A, B, and C Components, High Energy Piping Outside of Containment, Snubbers and Steam Generator tubes shall be in accordance with Appendix B of the Ginna Station Quality Assurance Manual. This inservice pump and valve testing program shall be in accordance with Appendix C of the Ginna Station Quality Assurance Manual. These inservice inspection programs shall define the specific requirements of the edition and Addenda of the ASME Boiler and Pressure Vessel Code, Section XI, which are applicable for the forty month period of the ten year inspection interval. The programs' ten year inspection intervals shall be based on the following commencing dates.

4.2.1.1 The inspection interval for Quality Group A components shall be ten year intervals of service commencing on January 1, 1970.

4.2.1.2 The inspection intervals for Quality Group B and C Components shall be ten year intervals of service commencing with May 1, 1973, January 1, 1980, 1990 and 2000, respectively.

4.2.1.3 The inspection intervals for the High Energy Piping Outside of Containment shall be ten year intervals of service commencing May 1, 1973, January 1, 1980, 1990 and 2000, respectively. The inspection program during each third of the first inspection interval provides for examination of all welds at design basis break locations and one-third of all welds at locations where a weld failure would result in unacceptable consequences. During each succeeding inspection interval, the program shall provide for an examination of each of the design basis break location welds, and each of the welds at locations where a weld failure would result in unacceptable consequences.

4.2.1.4 The inspection intervals for Steam Generator Tubes shall be specified in the "Inservice Inspection Program" for the applicable forty month period commencing with May 1, 1973.

4.2.1.5 Inservice Inspection of ASME Code Class 1, Class 2 and Class 3 components (Quality Groups A, B, and C) shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

4.2.1.6 The inspection interval for the Inservice Pump and Valve Testing Program shall be ten year intervals commencing with January 1, 1981, 1990 and 2000.

4.2.1.7 The inspection intervals for Snubbers shall be as defined in Specification 4.14.

Basis

The inservice inspection program provides assurance for the continued structural integrity of the structures, components and systems of Ginna Station. The programs comply with the ASME Boiler and Vessel Code Section XI "Rules for Inservice Inspection of Nuclear Power Plant Components" as practicable, with due consideration to the design and physical access of the structures, components and systems as manufactured and constructed. This compliance will constitute an acceptable basis for satisfying the requirements of General Design Criterion 32, Appendix A of 10 CFR Part 50 and the requirements of Section 50.55a, paragraph g of 10 CFR Part 50.

4.14 SNUBBER SURVEILLANCE REQUIREMENTS:

4.14.1 Each snubber required by Specification 3.13 to be operable shall be demonstrated operable by performance of the following inservice inspection program and the requirements of Specification 4.2.

a. Visual Inspections

The visual inspection period for snubbers under this program shall be based on the results of the previous inspections. Subsequent visual inspections shall be performed in accordance with the following schedule:

No. Inoperable Snubbers of Each Type* Found During Inspection	Time Until Subsequent Visual Inspection**
0	18 months ±25%
1	12 months ±25%
2	6 months ±25%
3, 4	124 days ±25%
5, 6, 7	62 days ±25%
8 or more	31 days ±25%

* Type of snubber, as used in this specification, shall mean snubbers of the same design and manufacturer, irrespective of capacity.

** The inspection interval for each type of snubber shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lengthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found.

Snubbers may be further categorized into two groups: those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify: (1) that there are no visible indications of damage or impaired operability, and (2) that the attachments to the foundation or supporting structure are secure. Snubbers which appear inoperable as a result of visual inspections may be determined operable for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and other snubbers, irrespective of type, that may be generically susceptible; or (2) the affected snubber is functionally tested in the as found condition and determined operable per Specification 4.14.1.d. When a fluid port of a hydraulic snubber is found to be uncovered the snubber shall be declared inoperable and shall not be determined operable via functional testing unless the test is started with the piston in the as-found setting, extending the piston rod in the

tension mode direction. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Functional Tests

At least once per 18 months during shutdown, a representative sample (at least 10% of the snubbers required by Specification 3.13) 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 4.14.1.d, an additional 10% of the snubbers shall be functionally tested until no more failures are found or until all snubbers have been functionally tested. The representative sample selected for functional testing shall, as far as practical, include the various configurations, operating environments, range of sizes and capacities of snubbers.

In addition to the regular sample, snubbers placed in the same locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test. Additionally, if a failed snubber has been repaired and reinstalled in another location, that failed snubber shall also be retested. These snubbers shall not be included in the regular sample. If during the

functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at that time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

Steam Generator snubbers are excluded from the functional testing requirements.

d. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1) Activation (restraining action) is achieved within the specified range in both tension and compression;

2) Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;

3) Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and

4) For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement is verified.

Testing methods may be used to measure parameters indirectly or parameters other than those specified

if those results can be correlated to the specified parameters through established methods.

e. Functional Test Failure Analysis

An analysis shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this analysis shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the operability of other snubbers, irrespective of type, which may be subject to the same failure mode. For the specific case of a snubber selected for functional testing which either fails to activate 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 type subject to the same defect shall be evaluated in a manner to ensure their operability. This testing requirement shall be independent of the requirements stated in Specification 4.14.1.c for snubbers not meeting the functional test acceptance criteria.

For any snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable

snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

f. Snubber Seal Service Life Monitoring

The seal service life of hydraulic snubbers shall be monitored and seals replaced as required to ensure that the service life is not exceeded between surveillance inspections during a period when the snubber is required to be operable. The seal replacements shall be documented and the documentation shall be retained in accordance with Technical Specification 6.10.2.

Basis:

Snubbers are provided to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the number of inoperable snubbers found during an inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal

time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to the snubber rejected or are those which are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation of the supported component is performed in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. This evaluation is in addition to the determination of the snubber mode of failure. The engineering evaluation shall determine whether or not the snubber failure has imparted a significant effect on or caused degradation of the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally testing during plant shutdowns at 18 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.

The service life of a snubber is evaluated via manufacturer input and engineering information through consideration of the snubber service conditions and functional design requirements. The only snubber components with service lives not expected to exceed plant life are seals and o-rings fabricated from certain seal materials. Therefore, a seal replacement program is required to monitor snubber seal and o-ring service life to assure snubber operability is not degraded due to exceeding component service life.

m. Records of the service lives of all hydraulic and mechanical snubbers listed in the Inservice Inspection Program including the date at which the service life commences and associated installation and maintenance records.

Attachment B

Proposed Inservice Inspection Program