



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Scope of the Snubber Program
Winter SNUG Meeting 2016
Orlando, FL

Gurjendra S. Bedi, PE

Dan V. Hoang, PhD, PE

Division of Engineering

Office of Nuclear Reactor Regulation

February 1-3, 2016



Disclaimer

- This presentation was prepared by staff of the U.S. Nuclear Regulatory Commission (NRC). It may present information that does not currently represent an agreed upon NRC staff position. NRC has neither approved nor disapproved the technical content.



Scope of the Snubber Program

- The scope of snubber examination and test programs is determined based on several sources.
- ASME *Boiler & Pressure Vessel Code* (BPV Code), Section XI; ASME Code for *Operation and Maintenance* (OM Code); Technical Specifications (TS); or Technical Requirements Manual (TRM) need to be considered in determining the full scope of the Snubber Program at a nuclear power plant.



Scope of the Snubber Program

- NRC Standard Review Plan (SRP) Section 3.9.6 states that review of the inservice testing (IST) program will include the ASME BPV Code Class 1, 2, and 3 system snubbers whose function is required for safety, as well as snubbers not categorized as ASME BPV Code Class 1, 2, and 3 but which are safety related.
- This presentation addresses scope only - not the frequency, method, or criteria for snubber testing.

Scope of the Snubber Program

Snubber Program Scope			
10 CFR 50.55a	Technical Specifications (TS)*/ Technical Requirements Manual (TRM)*	10 CFR 50 App. A and App. B	10 CFR 100
* Note: If the nuclear power plant's Snubber Program is still in TS/TRM			



Scope of the Snubber Program

- 10 CFR 50.55a
 - 10 CFR 50.55a(g)(4) requires that, throughout the service life of a BWR & PWR nuclear power facility, ASME BPV Code Class 1, 2, 3 and MC components (including supports) meet the inservice inspection and testing requirements of ASME BPV Code, Section XI, or ASME OM Code, as incorporated by reference in 10 CFR 50.55a(a)(i).
 - ASME BPV Code, Section XI, Article IWF-1000, “Scope and Responsibility,” and Article IWF-5000, “Inservice Inspection Requirements for Snubbers,” address scope and inservice examination and testing requirements.



Scope of the Snubber Program

- 10 CFR 50.55a
 - IWF-5200 and IWF-5300 reference ASME/ANSI OM Part 4
 - ASME/ANSI OM Part 4 provides examination and performance testing of snubbers, and Section 1.3.2, “Operational Readiness,” states that OM Part 4 intends to demonstrate operational readiness of ASME BPV Code Class 1, 2, 3, and MC snubbers.

Scope of the Snubber Program

- 10 CFR 50.55a
 - ASME OM Code, ISTA-1100, specifies the scope to be used for Subsection ISTD.
 - ISTA-1100 states that dynamic restraints (snubbers) include those used in a system that performs a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident.



Scope of the Snubber Program

- 10 CFR Part 50, Appendix A and Appendix B
 - General Design Criterion (GDC) 1, “Quality Standards and Records,” of Appendix A, “General Design Criteria for Nuclear Plants,” to 10 CFR Part 50 requires that all structures, systems, and components (SSCs) that are necessary for safe operation must be tested to demonstrate that they will perform satisfactorily in service. Among other things, GDC 1 requires that components that are important to safety must be tested to quality standards that are commensurate with the importance of the safety function(s) to be performed.
 - Appendix B to 10 CFR Part 50 describes the quality assurance program, which includes testing, for safety-related components.

Scope of the Snubber Program

- 10 CFR Part 100
 - 10 CFR Part 100, “Reactor Site Criteria,” specifies SSCs that must be designed to remain functional during and following a “safe shutdown earthquake” as those necessary to ensure
 - (1) the integrity of the reactor coolant pressure boundary,
 - (2) the capability to shutdown the reactor and maintain it in a safe shutdown condition, or
 - (3) the capability to prevent or mitigate the consequences of an accident that could result in potential offsite exposures comparable to the guideline exposures.



Scope of the Snubber Program

- Licensees have the responsibility to demonstrate the continued operability of all snubbers within the scope of their snubber inservice examination and testing program.



Scope of the Snubber Program

- NRC staff observed that some licensees have misinterpreted Section IWF-1230 of the ASME BPV Code, Section XI, while selecting snubbers for the snubber program.
- IWF-1200, “Components Supports Subject to Examination and Tests,” of Article IWF-1000 specifies the following:
 - IWF-1210, “Examination Requirements,” states that the examination requirements shall apply to (a) piping supports and (b) supports other than piping supports.
 - IWF-1220, “Snubber Inspection Requirements,” states that the inservice inspection requirements for snubbers shall be in accordance with the requirements of IWF-5000.



Scope of the Snubber Program

- IWF-1200 of Article IWF-1000 specifies the following:
 - IWF-1230, “Supports Exempt from Examination,” states that supports exempt from the examination requirements of IWF-2000 are those connected to piping and other items exempt from volumetric, surface, or VT-1 or VT-3 visual examination by IWB-1220, IWC-1220, IWD-1220, and IWE-1220. In addition, the portion of supports that are inaccessible by being encased in concrete, buried underground, or encapsulated by guard pipe are also exempt from examination requirements of IWF-2000.
- Article IWF-5000 specifies inservice examination and tests requirements.

Scope of the Snubber Program

- IWF-5200 and IWF-5300 states that preservice and inservice examination and testing shall be performed in accordance with ASME/ANSI OM Part 4.
- ASME/ANSI OM Part 4 provides examination and performance testing of snubbers, and Section 1.3.2, “Operational Readiness,” states that OM Part 4 intends to demonstrate operational readiness of ASME BPV Code Class 1, 2, 3, and MC snubbers.
- Licensees are cautioned that while using IWF-1230 to exempt some supports from inspection and tests, IWF-1230 shall not be used to exempt snubbers from inservice examination and testing.



Conclusions

- Licensees who believe that some of the items discussed are applicable to their facilities may wish to review their current snubber program and modify their program as appropriate.
- NRC staff may prepare a Regulatory Issue Summary (RIS) to clarify the Scope of the Snubber Program.



Questions?

Gurjendra.Bedi@nrc.gov

Phone: 301-415-1393