

NRC Workshop on Generic Letter 91-18 Guidance, August 14, 2003

NEI Comments

CONTENTS:

INTRODUCTION

RESPONSE TO 5 TOPIC QUESTIONS IN NRC MEETING ANNOUNCEMENT

ADDITIONAL COMMENTS ON NRC INSPECTION MANUAL GUIDANCE

REFERENCES

I. Introduction

The following comments have been prepared in response to NRC meeting announcement, "Forthcoming Workshop on Generic Letter (GL) 91-18, Guidance on Operability and Associated Issues," July 1, 2003.

To meet the due date for comments (August 7) specified in the meeting announcement, NEI comments have been prepared without benefit of industry peer review. They are offered as working comments for use at the August 14 Workshop.

II. Response to 5 topic questions in NRC meeting announcement

1. Can a degraded SSC ever be determined operable?

Yes, if the structure, system, or component (SSC) is capable of performing identifiable "specified functions" assuming a design basis accident (DBA). To be considered operable, a SSC does not have to be "fully qualified" in terms of its design and licensing bases as long as the licensee can demonstrate functionality. For example, demonstration of functionality could rely on compensatory action to supplement existing margin.

If so, what are the requirements for an operable but degraded determination?

A reasonable expectation of operability, i.e., functionality given a DBA challenge.

What is the distinction between operable but degraded and inoperable?

The SSC is either "capable" or "not capable" of performing a specified function. Sections 5.2 and 5.3 of the NRC Inspection Manual Chapter 9900 on Operable/Operability contain the baseline discussion of relevant terminology.

2. Where is guidance inconsistent with regard to definitions of operability; including supporting terms such as functional, available, reliable, or degraded?

The NRC has done this to some extent in the work leading up to and following publication of revised guidance for comment on September 13, 2001. NRC is now looking for confirmatory information and additional information from industry attendees at the workshop scheduled for August 14, 2003. Attendees at the workshop are expected to be prepared to point out specific sections, paragraphs, and sentences that could be revised to improve clarity. The starting point is the language in NRC Inspection Manual Chapter 9900 on Operable/Operability, Sections 5.2 and 5.3.

It may be feasible to combine the two Inspection Manual chapters (one on Operable/Operability, and one on Resolution of Degraded and Nonconforming Conditions) into

one chapter that is internally consistent with respect to the definition and use of key terms. The new chapter (or chapters) would need to cross-reference and be consistent with other guidance documents that pertain to the determination of operability.

3. If you remove a hazard barrier that is considered a support system but is not in tech specs, what analysis is needed to maintain the supported system operable?

Regulatory Issue Summary (RIS) 2001-09 on control of hazard barriers, Standard Technical Specification (STS) guidance on support systems, risk management guidance, and any other relevant guidance should be used to demonstrate that affected SSCs are capable of performing "specified functions." For example: (a) compensatory action alone could be used to provide an equivalent hazard barrier, or (b) risk management techniques could be used to show that operation with the degraded (or nonconforming) barrier satisfies practical risk-informed decisionmaking criteria.

Generic Letter 91-18 should be updated to be consistent with RIS 2001-09 and the Regulatory Guide series on risk-informed decisionmaking (Regulatory Guides 1.174 – 1.178). The process for making a barrier operability determination should be the same for all conditions, i.e., "planned evolutions" as well as "discovered conditions" should be evaluated using the same process.

Barrier operability is also part of Risk-Informed Technical Specification (RITS) Initiative 7, "Impact of Non Technical Specification Design Features on Operability Requirements." For additional detail, refer to comments provided by the Nuclear Utility Group on Equipment Qualification (NUGEQ).

4. Are there ever situations where the reliability of a SSC should impact the determination of operability? Explain.

The standard is "reasonable expectation of operability" under well defined conditions. Qualitative reliability is embodied in this concept. Near-term compensatory action and pending long-term corrective action are factors also. See Inspection Manual Chapter 9900 on Operability, Sections 5.2 and 5.3.

In addition, risk-assessment techniques should be permitted in the determination of operability. The expected frequencies of DBAs, initial condition values, single failures, and other factors are germane to operability determinations.

5. Please describe any cases where you have had questions about operational leakage? What were the conditions? What guidance did you use for making these determinations? What was the outcome? (Examples (a) Tech specs require zero pressure boundary leakage but also allow certain amounts of identified and unidentified leakage; (b) ASME code requirements (GL 90-05) regarding Class 1, 2, and 3 piping, and (c) steam generator leakage.)

STS Bases stipulate that seal, gasket, and steam-generator tube leakage are not considered RCS pressure boundary leakage. NRC should clarify that this statement applies to heat-exchanger tube leakage in general.

Unidentified leakage should not be considered pressure-boundary leakage, pending completion of a timely engineering evaluation.

II Additional Comments on Technical Guidance in NRC Inspection Manual Chapter 9900:

Operable/Operability: Ensuring the Functional Capability of a System or Component Resolution of Degraded and Nonconforming Conditions

Current guidance is fundamentally sound

Generic Letter 91-18, Rev. 1

Standard Technical Specifications (NUREG 1430-1434 series)

NEI Guidelines (10 CFR 50.59, design basis, FSAR update, and commitment management)

Licensee corrective action programs

NRC Regulatory Guides

NRC Generic Correspondence

Licensee training programs

Current guidance should be reformatted and updated

Consider consolidating the “operability” guidance and the “degraded and nonconforming” guidance into a single guidance document.

Explicitly define the scope of the “Generic Letter 91-18 Process.”

Issue the revised guidance using a Generic Letter rather than changing to a RIS format.

Incorporate a “background” section that describes the historical development of guidance on operability determinations and guidance on resolution of degraded and nonconforming conditions.

Incorporate a “references” sections that lists all the inter-related guidance documents.

Eliminate outdated information. Take this opportunity to “cancel” outdated generic correspondence and other outdated guidance.

Identify and define key terms, for example:

“specified function”

“full qualification”

“installed capability”

“operable” and “operability”

“compensatory action”

“reasonable expectation of operability”

The term “justification for continued operation” (JCO) should not be used in the context of degraded and nonconforming conditions. It should be reserved for special cases in which a plant might be justified in operating outside its license (e.g., contrary to a Technical Specification).

Ensure consistent use of terminology throughout related guidelines.

Incorporate new information since 1997 for Generic Letter 91-18, and since 1991 for Operable/Operability guidance:

10 CFR 50.59

maintenance rule (10 CFR 50.65)

Standard Technical Specifications (STS)

Reactor Oversight Process (ROP)

risk-management concepts

Consider the use of probabilistic safety assessments and risk management programs to help determine operability and resolve degraded/nonconforming conditions.

NRC & Industry coordinate to establish clear expectations with respect to:

Resolution of degraded and nonconforming conditions

Consistent definition and interpretation of key terms (e.g., operable, operability, ...)

Use periodic workshops to maintain an up-to-date GL 91-18 process:

The GL 91-18 process is one of the more important licensing processes at an operating commercial nuclear plant. NRC should maximize industry participation in revising the process and keeping it up to date.

NRC Headquarters Workshops, NRC Regional Workshops, and industry workshops and white papers can be used to compile practical experience in implementing the GL 91-18 process.

Lessons learned in field situations can be used to further refine associated guidelines.

Identify concerns about the application of NRC guidance in specific circumstances, for example: What examples would NRC cite as inadequate Operable/Operability assessments?

5. Comments on current NRC guidance

Inspection Manual (IM) guidance on Operable/Operability, Section 6.4, “Operability during TS Surveillances and Preventive Maintenance.”

The last sentence of the second paragraph states “If retesting to establish operability is not possible or practical because of safety concerns, analysis or other means should be used to demonstrate operability.” This statement should be reconciled with STS Bases SR 3.0.1, which indicates that, in certain situations, “ ... the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to

proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.”

Inspection Manual (IM) guidance on Operable/Operability, Section 6.6, “Missed Technical Specification Surveillance”

Update this section to incorporate TSTF Traveler 358 and the corresponding notice of CLIIP availability.

Inspection Manual (IM) guidance on Operable/Operability, Section 6.12, “Support System Operability”

Update this section to incorporate new STS provisions for support systems (LCO 3.0.6) and the associated Safety Function Determination Program (STS Administrative Controls 5.5.15).
Inspection Manual (IM) guidance on Operable/Operability, Section 6.14, “Flaw Evaluation”
Update this section to incorporate relevant sections of the STS.

Inspection Manual (IM) guidance on Operable/Operability, Section 6.15, “Operational Leakage”
Limit the scope of this section to Class 1 systems. Guidance for Class 2 and 3 components should be moved elsewhere.

Inspection Manual (IM) guidance on Resolution of Degraded and Nonconforming Conditions, Section 4.8, “Final Corrective Action”

Update this section to be consistent with revised 10 CFR 50.59, for example delete the acronym “USQ” (unreviewed safety question).

General Comment

Incorporate examples into GL 91-18 guidance using a format similar to NUREG-1022 event reporting guidelines) or NEI 96-07 (guidelines for 50.59 implementation). Experience from actual cases can help readers understand the guidance.

IV. References (in chronological order)

NRC Generic Letter 79-27, “Operability Testing Of Relief And Safety Relief Valves,” July 16, 1979.

NRC Generic Letter 80-30, “Clarification Of The Term "Operable" As It Applies To Single Failure Criterion For Safety Systems Required By TS,” April 10, 1980.

NRC Generic Letter 81-06, “Periodic Updating of Final Safety Analysis Reports (FSARs),” February 26, 1981.

NRC Inspection Manual, Part 9900: Technical Guidance, “Standard Technical Specifications,” May 12, 1986.

NRC Generic Letter 87-09, “Sections 3.0 And 4.0 of Standard Tech Specs on Limiting Conditions for Operation and Surveillance Requirements,” June 4, 1987.

NRC Memorandum, T. Murley to Regional Administrators, “Guidance on Action to be Taken Following Discovery of Potentially Nonconforming Equipment,” July 19, 1989.

NRC Memorandum, T. Murley to Regional Administrators, "Temporary Waivers of Compliance," February 22, 1990.

NRC Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping," June 15, 1990.

NRC Memorandum, D. Crutchfield to Distribution, "Licensee Actions for Resolution of Degraded and non-conforming Conditions: Request for comments," July 13, 1990.

NRC Inspection Manual, Part 9900: Technical Guidance, "Operable/Operability – Ensuring the Functional Capability of a System or Component," October 31, 1991.

NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," November 7, 1991.

NUMARC Letter to NRC, T. Tipton to J. Partlow, comments on NRC Generic Letter 91-18, October 7, 1992.

NRC Letter to NUMARC, J. Partlow to T. Tipton, response to 10/7/92 NUMARC comment letter on Generic Letter 91-18, November 2, 1992.

NRC Inspection Manual, Part 9900: Technical Guidance, "Resolution of Degraded and Nonconforming Conditions," October 8, 1997.

NRC Generic Letter 91-18, Revision 1, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions," October 8, 1997.

NEI 98-03, Revision 1, "Guidelines for Updating Final Safety Analysis Reports," June 1999.

Federal Register, 64 FR 38551, Final Rule, "Requirements for Managing the Effectiveness of Maintenance at Nuclear Power Plants," July 19, 1999.

NEI 99-04, "Guidelines for Managing NRC Commitment Changes," July 1999.

NRC Regulatory Guide 1.181, "Content of the Updated Final Safety Analysis Report in accordance with 10 CFR 50.71(3)," September 1999.

Federal Register, 64 FR 53582, Final Rule, "Changes, Tests, and Experiments," October 4, 1999.

NRC Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," May 2000.

NRC Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," September 21, 2000.

NRC NUREG-1022, Revision 2, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," October 2000.

NEI 96-07, Revision 1, Guidelines for 10 CFR 50.59 Implementation,” November 2000.

NRC Regulatory Guide 1.187, “Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments,” November 2000.

NRC Regulatory Guide 1.186, “Guidance and Examples of Identifying 10 CFR 50.2 Design Bases,” December 2000.

NEI 97-04, Revision 1, “Design Basis Program Guidelines,” February 2001.

NRC Regulatory Issue Summary 2001-09, “Control of Hazard Barriers,” April 2, 2001.

NRC NUREG series 1430-1434, Standard Technical Specifications, Revision 2, April 2001 (NUREG-1430 was used for the purpose of these Talking Points).

NRC Inspection Manual, Part 9900: Technical Guidance, “Resolution of Degraded and Nonconforming Conditions,” draft revision, August 2001 (comparative text shows substantive changes made to October 8, 1997 version from Generic Letter 91-18, Revision 1).

Federal Register, 66 FR 47700, “Proposed Generic Communication: Resolution of Degraded and Nonconforming Conditions; (‘Generic Letter 91-18 Process’),” September 13, 2001.

Industry TSTF-358, “Missed Surveillance Requirements,” Revision 6, September 14, 2001.

Federal Register, 66 FR 49714, “Notice of Availability of Model Application Concerning Technical Specification Improvement to Modify Requirements Regarding Missed Surveillances Using the Consolidated Line Item Improvement Process,” September 28, 2001.

NRC Regulatory Guide 1.174, Revision 1, “An Approach for using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” November 2002

NRC Memorandum (Kavanagh to Magruder), “Forthcoming Workshop on Generic Letter (GL) 91-18, Guidance on Operability and Associated Issues,” July 1, 2003