

## ATTACHMENT 71111.15

INSPECTABLE AREA: Operability Determinations and Functionality Assessments

CORNERSTONES: Mitigating Systems  
Barrier Integrity

INSPECTION BASES: Improperly evaluated degraded and/or non-conforming conditions may result in continued operation with a structure, system, or component (SSC) that is not capable of performing its design function.

This inspectable area verifies aspects of the Mitigating Systems and Barrier Integrity cornerstones for which there are no performance indicators.

LEVEL OF EFFORT: Review the following sample sizes of operability **determinations or functionality assessments** of degraded and non-conforming conditions which impact mitigating systems and barrier integrity: 15 to 21 per year at one reactor unit sites; 19 to 25 per year at two reactor unit sites; and 22 to 30 per year at three reactor unit sites. Although the number of required samples is an annual goal, available operability **determination or functionality assessment** samples should be inspected each quarter to ensure a reasonable distribution throughout the year.

### 71111.15-01 INSPECTION OBJECTIVE

01.01 To review operability **determinations or functionality assessments** affecting mitigating systems and barrier integrity to ensure that operability **or functionality** is properly justified and the component or system remains **capable of performing its design functions**, such that no unrecognized increase in risk has occurred.

### 71111.15-02 INSPECTION REQUIREMENTS

**Operability refers to a Technical Specification (TS) SSC's capability to perform its design safety function and functionality generally refers to a non-TS SSC's capability to perform its specified function set forth in the current licensing basis.**

02.01 Operability and Functionality Review

- a. Select operability **determinations or functionality assessments** involving risk significant SSCs. Inspectors may select **functionality assessments of TS support systems** and evaluate their effect on TS operability or select **functionality assessments of SSCs** which are not related to TS operability as a sample. Inspectors should apply risk informed insights together with other factors, such as engineering analysis and judgment, operating experience, and performance history, to determine which **operability determinations or functionality assessments** should be selected for review. Selection of **operability determinations or functionality assessments** can emerge from the inspector's review of plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation is warranted for a degraded component.
- b. Review the technical adequacy of the licensee's operability **determination or functionality assessment**, and verify it is justified. Verify that the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated. Refer to the **updated** final safety analysis report (UFSAR) and other design basis documents during the review. If operability **or functionality** is justified, no further review is required.
- c. If the operability **or functionality** evaluation involves compensatory measures, determine if the measures are in place, will work as intended, **do not cause system operation to be outside the design basis** and are appropriately controlled.
- d. Verify that degraded SSC or compensatory measures taken to address degraded SSC does not result in changes to tests or experiments described in UFSAR (for example a SSC utilized in a way either outside the design basis or inconsistent with the safety analyses). If the changes to tests or experiments are different than what is described in UFSAR, verify that these changes or experiments do meet the various criteria specified in 10 CFR 50.59 for not requiring a license amendment.
- e. If operability is not justified **determine** impact on any TS limiting condition for operation (LCO).
- f. **If operability or functionality is not justified, use IMC 0609, "Significance Determination Process"** to evaluate the risk significance.

02.02 **Problem Identification and Resolution**. Verify that the licensee is identifying problems with operability **determinations and functionality assessments** at an appropriate threshold and entering them in the corrective action program. For a sample of significant operability **determinations and functionality assessments** issues documented in the corrective action program, verify that the licensee has identified and implemented appropriate corrective actions. See Inspection Procedure 71152, "**Problem Identification and Resolution**," for additional guidance.

Determinations of operability are appropriate whenever a review, TS surveillance, or other information such as degraded conditions, nonconforming conditions, or unanalyzed conditions calls into question the ability of SSCs as described in TSs to perform their design functions. The operability determination process is used to assess operability of SSCs and support functions for compliance with TSs when a degraded or nonconforming condition is identified for a specific SSC described in TSs, or when a degraded or nonconforming condition is identified for a necessary and related support function. The licensee's process of ensuring operability for any SSC described in TSs is a continuous process. Functionality assessments of TS support systems are an integral part of operability determinations. Functionality assessments maybe required to provide assurance that TS SCCs are operable. Licensees are obligated to ensure the continued operability of SSCs as specified by TS, or to take the remedial actions addressed in the TS.

Functionality assessments are appropriate for risk significant SSCs or SCCs which perform specified functions described in the UFSAR, technical requirements manual, emergency plan, fire protection plan, regulatory commitments, or other elements of the current licensing basis when degraded or nonconforming conditions affecting non TS SSCs are identified. In general, functionality assessments should be integral to the licensee programs and controls used to comply with regulations such as 10 CFR Part 50 Appendix B (quality assurance / corrective action program), 10 CFR 50.65 (maintenance rule), 10 CFR Part 50 Appendix R or 10 CFR 50.48(c) (fire protection), 10 CFR 50.63 (station blackout), and 10 CFR 50.62 (anticipated transients without scram).

The intent of this inspection is to sample licensee's operability determinations and functionality assessments for risk significant SSCs to verify if immediate and prompt operability determinations and functionality assessments are justified, such that availability is assured, and no unrecognized increase in risk has occurred. Also, the inspections should verify that operability and functionality concerns associated with plant issues and events are being identified.

Where there is a reason to suspect that the licensee's operability or functionality determination is not, or was not correct based on the information reviewed, the inspector should discuss the issue with regional management for resolution. Depending on the complexity and risk significance of the issue, the inspector may need to consult with regional specialists to complete verification of licensee's operability determination or functionality assessment. The regional specialist's time spent on reviewing the issue should be charged to this procedure. The inspectors are not required to spend additional time in reviewing an issue if the discrepancies identified do not change the outcome of the operability determination or functionality assessment.

NRC Regulatory Issue Summary 2005-20, Revision 1, Revision to NRC Inspection Manual (IMC) Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety" provides guidance to NRC inspectors to assist their review of licensee determinations of operability, assessments of functionality, and resolution of

degraded and nonconforming conditions. The IMC Part 9900 guidance establishes NRC staff expectations and generally reflects licensee existing practices in making operability determinations and functionality assessments; however the guidance does not constitute an NRC requirement. Inspectors should realize that licensees implement plant-specific procedures used for making a determination or assessment. Inspectors should not mistakenly apply IMC Part 9900 in support of findings or violations.

IMC Part 9900 Technical Guidance defines a degraded condition as one in which the qualification of an SSC or its functional capability is reduced. Examples of degraded conditions are failures, malfunctions, deficiencies, deviations, or defective material and equipment. Examples of conditions that can reduce the capability of a system are aging, erosion, corrosion, improper operation, and maintenance. In the selection of inspection samples inspectors should consider the licensee’s evaluation and resolution of the degraded condition. Such approaches can include: “use-as-is” determinations, revision of engineering or operational acceptance criteria, reductions in design or operational margin, and repetitive work orders.

See table below for inspection guidance to assist the inspector in selecting inspection activities to achieve each cornerstone objective and to achieve those activities that have a risk priority.

Cornerstone	Inspection Objective	Risk Priority	Example
Mitigating Systems  Barrier Integrity	Identify any improperly evaluated degraded and/or nonconforming conditions which could potentially impact SSC’s availability and result in an unrecognized increase in risk.	Operating - mitigating system as determined by plant-specific information or Risk Importance Measure (e.g., Risk Achievement Worth).  Shutdown - Mitigating systems that perform key safety functions during shutdown (decay heat removal, inventory control, electrical power availability, reactivity control, and containment)	Improper conclusion on operability of the high-pressure coolant injection (HPCI) system such that the system could not perform its function during a station blackout event concurrent with planned unavailability of the reactor core isolation cooling (RCIC) system.

## 71111.15-04 RESOURCE ESTIMATES

The annual resource expenditure for this inspection procedure is estimated to be 90 to 108 hours for sites with one reactor unit; 102 to 124 hours for sites with two reactor units; and 114 to 142 hours for sites with three reactor units.

## 71111.15-05 COMPLETION STATUS

Inspection of the minimum sample size will constitute completion of this procedure in the Reactor Programs System (RPS) inspection tracking system. That minimum sample size will consist of 15, 19, and 22 operability **determinations or functionality assessments** of degraded and non-conforming conditions in a year at 1-unit, 2-unit, and 3-unit sites, respectively. **Refer to IMC 2515, "Light-Water Reactor Inspection Program - Operations Phase" for further guidance on procedure completion.**

## 71111.15-06 REFERENCES

[NRC Regulatory Issue Summary 2005-20, Revision 1](#), Revision to [NRC Inspection Manual Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety"](#)

NRC Inspection Manual, Part 9900, 10 CFR Guidance, "10 CFR 50.59 Changes, Tests and Experiments"

Title 10 CFR 50.59, "Changes, tests, and experiments."

NRC Regulatory Guidance 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Test, and Experiments," Rev. Nov 2000.

NEI 96-07, Revision 1 (Nov 2000), Guidance for 10 CFR 50.59 Implementation.

Information Notice 97-78, "Crediting of Operator Actions in Place of Automatic Actions and Modification of Operator Actions, including Response Times"

**IMC 0609, "Significance Determination Process"**

**IMC 2515, "Light-Water Reactor Inspection Program - Operations Phase"**

Inspection Procedure 71152, "**Problem** Identification and Resolution"

See the following Web link for reference documents:  
<http://nrr10.nrc.gov/rorp/ip71111-15.html>

END

Attachment 1 - Revision History for IP 71111.15

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
	04/03/00 <a href="#">CN 00-003</a> <a href="#">ML003729444</a>	Initial Issuance	Yes		
N/A	01/17/02 <a href="#">CN 02-001</a> <a href="#">ML020380579</a>	Revised to provide minor clarifications to inspection requirements and additional inspection guidance concerning operability determinations. In addition, inspection resource estimates and inspection level of effort are revised to provide a band for more inspection	No	N/A	N/A
N/A	02/02/04 <a href="#">CN 04-003</a> <a href="#">ML040690557</a>	Revised to include deferred modifications to the inspection sampling list.	No	N/A	N/A
N/A	01/05/06 <a href="#">CN 06-001</a> <a href="#">ML060060380</a>	Increased the estimated resources required to complete this inspection activity based on increased inspection hours charged to this IP during last several ROP cycles. Completed historical CN search.	No	N/A	N/A
N/A	07/26/06 <a href="#">CN 06-018</a> <a href="#">ML061730334</a>	Revised to reflect changes of reference documents: GL91-18 was superseded by RIS 2005-20. Revision history reviewed for the last four years.	No	N/A	N/A
N/A	01/31/08 <a href="#">CN 08-005</a> <a href="#">ML073050448</a>	Add inspection guidance to verify that licensee has correctly implemented 10 CFR 50.59 regulatory requirements if operability determinations warrant such 50.59 evaluations be performed.	No	N/A	N/A

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	11/16/09 <a href="#">CN 09-027</a> <a href="#">ML092300320</a>	Added 6 hours of inspection resources. See 2009 ROP Realignment Results ( <a href="#">ML092090312</a> )	No	N/A	N/A
N/A	ML110030073 04/05/11 CN 11-005	This change clarifies and enhances the sample selection guidance related to functionality assessments associated with TS SSC operability determinations and provides the additional latitude to select risk significant SSCs which may not be identified in TS for sampling (71111.15 – 1597). Added the definition of a degraded condition (71111.15 – 1625).	No	N/A	<a href="#">ML110630221</a>