

# NRC INSPECTION MANUAL

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## INSPECTION MANUAL CHAPTER 1245 APPENDIX C1

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### REACTOR OPERATIONS INSPECTOR TECHNICAL PROFICIENCY TRAINING AND QUALIFICATION JOURNAL

**Effective Date:** 11/09/2020

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## Introduction

Completion of IMC 1245, Appendix A is recommended before beginning activities or courses in this standard, but the trainee's branch chief can override this recommendation based on the trainee's experience. You may complete the General Proficiency requirements contained in Appendix B together with the Technical Proficiency requirements outlined in this journal.

### NOTE:

The following individual study activities required for certification as an operations inspector are similar to guides contained in Appendix C10, "Operator Licensing Examiner Technical Proficiency Training and Qualification Journal":

ISA-OPS-2, "Technical Specifications," parallels ISA-OLE-9  
ISA-OPS-3, "Operability," parallels ISA-OLE-10  
OJT-OPS-2, "Conduct of Operations," parallels OJT-OLE-2  
OJT-OPS-9, "Shutdown Operations," parallels ISA-OLE-11

You may document completion of equivalent activities on both signature cards.

Before signing up for any course, be sure that you have checked and have met any prerequisites.

## Required Reactor Operations Inspector Training Courses

- Reactor Type Full Series
- 10 CFR 50.59 Training Course in the Talent Management System (TMS) as part of ISA-OPS-1
- Maintenance Rule Training for Inspectors Course in TMS as part of ISA-OPS-5
- Power Plant Engineering (E-110) - TTC course or self-study course located in TMS

## Operations Inspector Individual Study Activities

## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-1) Title 10, "Energy," of the Code of Federal Regulations

PURPOSE: The *Code of Federal Regulations* (CFR) is a codification of the rules published in the *Federal Register* by the executive departments and agencies of the Federal Government. Title 10 represents the broad area of energy, and Chapter 1, Parts 1 through 199, pertain to the U.S. Nuclear Regulatory Commission (NRC), an independent agency established by the Congress of the United States under the Energy Reorganization Act of 1974. NRC rules and regulations are established to ensure adequate protection of public health and safety, the common defense and security, and the environment in the use of nuclear materials in the United States.

Accordingly, it is essential that all operations inspectors gain a working knowledge of the contents of Chapter 1 of Title 10 of the *Code of Federal Regulations*. This activity will provide you with a working knowledge of the contents of Chapter 10, Parts 1 through 199, and an understanding of the broad spectrum of requirements associated with your inspection activities.

COMPETENCY  
AREAS:

INSPECTION  
REGULATORY FRAMEWORK

LEVEL OF  
EFFORT:

40 hours

REFERENCES:

1. Chapter 1, Parts 1 through 199, of the Code of Federal Regulations
2. Energy Reorganization Act of 1974
3. Entry-Level Individual Study Activity (ISA) 22, "Overview of 10 CFR Part 50"
4. Entry-Level ISA 23, "Overview of 10 CFR Parts 19 and 20"
5. **10 CFR 50.59 Training Course in TMS**

EVALUATION  
CRITERIA:

At the completion of this activity, you should be able to do the following:

1. Discuss the broad requirements and significance of the following parts of Title 10 of the Code of Federal Regulations. You should develop a general sense of what the requirements are and where the following requirements are located:

- a. 10 CFR Part 2, Sections 2.201, "Notice of Violation," 2.202, "Orders," 2.204, "Demand for Information," and 2.205, "Civil Penalties"
  - b. "10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations"
  - c. 10 CFR Part 20, "Standards for Protection against Radiation"
  - d. 10 CFR Part 21, "Reporting of Defects and Noncompliance"
  - e. 10 CFR Part 25, "Access Authorization for Licensee Personnel"
  - f. 10 CFR Part 26, "Fitness for Duty Programs"
  - g. 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities" (see also Appendix A, ISA 22)
  - h. 10 CFR Part 55, "Operators' License"
  - i. 10 CFR Part 73, "Physical Protection of Plants and Materials"
  - j. 10 CFR Part 100, "Reactor Site Criteria"
2. Describe the 10 CFR 50.59 process and identify the process owner in NRR.
  3. Discuss the broad requirements and significance of the following appendices to 10 CFR Part 50. You should develop a general sense of what the requirements are and where the following requirements are located:
    - a. Appendix A, "General Design Criteria for Nuclear Power Plants"
    - b. Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants"
    - c. Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
    - d. Appendix J, "Primary Reactor Containment Leakage Test for Water-Cooled Power Reactors"
    - e. Appendix K, "ECCS Evaluation Models"
    - f. Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979"

#### TASKS:

1. Review several enforcement actions issued to the licensee of your assigned or reference site. Identify these actions by performing a search **using the Reactor Program System (RPS) application available at this url:** [https://hqvwdbbrps04.nrc.gov/reportserver/pages/reportviewer.aspx?/Inspections/Reports/IR+4+Advanced+Findings\\_Violations+Search](https://hqvwdbbrps04.nrc.gov/reportserver/pages/reportviewer.aspx?/Inspections/Reports/IR+4+Advanced+Findings_Violations+Search) Then review several enforcement actions for other reactor licensees by searching on the internal Office of Enforcement Web site. Specifically, in the "Quick Link" Section, click on Significant Enforcement Actions link, and then on the Escalated Enforcement Actions Issued to Reactor Licensees link. Discuss experiences with compliance issues associated with the various parts of Title 10 and the appendices to 10 CFR Part 50 with a senior project engineer, resident, or senior resident inspector.

2. Complete the 10 CFR 50.59, training course in TMS.
3. Meet with your supervisor or a designated qualified operations inspector, discuss any questions you may have, and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION: Operations Technical Proficiency-Level Qualification Signature Card  
Item ISA-OPS-1

## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-2) Technical Specifications

PURPOSE: The NRC requires that licensees operate their facilities in compliance with the Technical Specifications (TS)s approved by the NRC. The TS provide the limits for facility operation that the licensee must comply with or receive NRC approval to deviate from the requirements. For this reason, it is mandatory that all operations inspectors gain a detailed knowledge of the content of the TSs.

This activity will provide you with detailed knowledge of the contents of the TSs, where a requirement exists for any specific topic, and how to apply the TS requirements to the facility designated by your supervisor. This activity will also introduce you to another document, the Technical Requirements Manual (TRM).

COMPETENCY  
AREA:

INSPECTION  
REGULATORY FRAMEWORK

LEVEL

OF EFFORT: 26 Hours

REFERENCES:

1. The TSs for a facility designated by your -supervisor
2. Standard TSs for the vendor of your designated facility
3. Plant Technical Specifications External Site:  
(<https://www.nrc.gov/reactors/operating/list-power-reactor-units.html>)
4. 10 CFR 50.36, "Technical Specifications"
5. Risk Informed Completion Time Technical Specification Initiatives external website:  
<https://www.nrc.gov/reactors/operating/licensing/techspecs/risk-management-tech-specifications.html>
6. NRC Knowledge Management Session: "History and Evolution of the Technical Requirements Manual" available in Nuclepedia at the following url:  
[https://nuclepedia.usalearning.gov/index.php?title=Coordinated\\_Regional\\_%28Reactor%29\\_KM/training\\_Initiative#HQ\\_KM\\_Topics](https://nuclepedia.usalearning.gov/index.php?title=Coordinated_Regional_%28Reactor%29_KM/training_Initiative#HQ_KM_Topics)



EVALUATION  
CRITERIA:

At the completion of this activity, **you should be able to:**

1. For the facility TS designated by your supervisor, **be able to** identify each TS section, discuss the general content of the requirements contained in each section, and the basis for issuing the requirements.
2. **Discuss the following** with respect to the operating license: the legal basis, purpose, license conditions, and how the license can be changed.
3. Discuss the definition of the terms found in the TS.
4. Discuss the safety limits and limiting safety system settings listed and the significance of these limits.
5. Discuss the requirements for limiting conditions for operation (LCO) and surveillance testing, and what actions are required if the requirements are not met.
6. Discuss the different sections of LCOs and the reason for the basis section provided with each LCO **section**.
7. Discuss the Design Features section of the TS and the types of information located in this section.
8. **Identify and discuss the risk informed TS initiatives that have been implemented at your plant.**
9. Discuss the Administrative Controls section of the TS and the types of information located in this section.
10. **For the Technical Requirements Manual (TRM)**, discuss the: purpose, legal basis of using as a violation source document, and how requirements listed in the TRM can be changed.

TASKS:

1. Locate a copy of the TS for the facility designated by your supervisor.
2. Review the various sections of the TS, as listed in the Evaluation Criteria section.
3. **Watch the Knowledge Management session regarding the history of the Technical Requirements Manual located in Nuclepedia. Review the content of the TRM at your assigned plant or any other similar document referenced by the technical specifications to determine the types of requirements contained in the document. (Note: some licensees do not have a TRM).**

4. On the NRC External Web, locate the NRC Inspection Manual Part 9900, Technical Guidance, STS Chapters. Review the chapters that were designated by your supervisor.
5. Meet with your supervisor or a qualified inspector to discuss any questions you may have as a result of this activity. Discuss the answers to the questions listed under the Evaluation Criteria section of this study guide with your supervisor.

DOCUMENTATION: Operations Technical Proficiency Level Qualification Signature Card  
Item ISA-OPS-2 (also ISA-OLE-9)

## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-3) Operability

PURPOSE: The process of ensuring that structures, systems and components (SSCs), described credited for safe operation at nuclear power plants are capable of performing their specified safety function. Operability determination is continuous and primarily consists of observations, verification by surveillance testing and assessments of conditions which may impact the performance of a specified safety function. Whenever a condition has a substantive impact on the ability of an SSC to perform its specified safety function licensees should be able to demonstrate to the reasonable assurance standard that the affected SSC will perform the required specified safety function. It is important that NRC operations inspectors can effectively understand the basis for the licensee decision that the SSC remains operable; and that unrecognized increases in risk have not occurred.

This activity will familiarize you with the overall approach for reviewing operability determinations (evaluations) and the reference materials available to assist you in these reviews.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 20 hours

- REFERENCES
1. IMC 0326, "Operability Determinations"
  2. Inspection Procedure (IP) 71111.15, "Operability Determinations and Functionality Assessments"
  3. NEI 18-03, "Operability Determinations" and reference or assigned site (licensee) procedures addressing operability determinations
  4. Information Notice (IN) 97-78, "Crediting of Operator Actions in Place of Automatic Actions and Modifications of Operator Actions, Including Response Time," dated October 23, 1997
  5. Regulatory Issues Summary (RIS) 2001-09, "Control of Hazard Barriers," dated April 2, 2001
  6. GL 90-05, "Guidelines for Performing Temporary Non-Code Repair of ASME Code Class 1, 2 and 3 Piping." dated October 10, 1990.
  7. Familiarization with 10 CFR Part 73.58 "Safety/security interface requirements for nuclear power reactors".

EVALUATION  
CRITERIA:

Upon completion of the tasks, you should be able to do the following:

1. Discuss the following terms and provide examples of each:
  - a. operable/operability
  - b. presumption of operability
  - c. substantive functional impact
  - d. specified function –specified safety function
  - e. timing of operability determinations
  - f. single failure
  - g. consequential failure
  - h. required support system
  - i. compensatory measures
  - j. current licensing basis
  - k. reasonable assurance/expectation
2. Describe the licensee's process to address operability issues for safety or safety support systems.
3. Describe what the applicable NRC guidance indicates should be included in formal operability determinations.
4. Discuss the actions that should be taken if a licensee is unable to demonstrate equipment operability.
5. Perform the inspection described in IP 71111.15, including effective review of the technical adequacy of an operability evaluation and development of a conclusion on whether the operability is justified.

TASKS:

1. Locate the listed references for your facility. Nonlicensee documents can be located in the Electronic Reading Room on the NRC external Web site.
2. Review the references to develop an understanding of the actions specified in the NRC guidance and licensee procedures to be completed when an operability question is identified.
3. Review at least two recently completed operability evaluations involving a risk-significant system, support system, or component. Compare the evaluations to the reference material guidance.
4. Verify that the licensee considered other existing degraded conditions as compensatory measures and determine whether the measures are in place, will work as intended, and are appropriately controlled. Verify that the licensee's intended long-term resolution of any conditions meets the regulatory guidance.

5. Meet with your supervisor or a qualified operations inspector to discuss the operability evaluations. Discuss some questions you could ask to help you verify that the evaluations properly support the operability decision. In addition, discuss any questions that you have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION: Operations Technical Proficiency-Level Qualification Signature Card  
Item ISA-OPS-3 (also ISA-OLE-10)

## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-4) Notice of Enforcement Discretion

PURPOSE: The NRC requires that licensees operate their facilities in compliance with NRC regulations and the facility license. However, in some instances of noncompliance with specific license conditions, circumstances may arise in which the NRC believes that enforcement action is not appropriate. In these circumstances, the NRC may issue a specific type of enforcement discretion, called a notice of enforcement discretion (NOED).

This activity will familiarize you with the process established for the NRC to exercise enforcement discretion regarding LCOs in power reactor TSs or other license conditions.

COMPETENCY  
AREAS:

INSPECTIONS  
ASSESSMENT AND ENFORCEMENT

LEVEL OF  
EFFORT:

10 hours

REFERENCES:

1. NRC Enforcement Manual <https://www.nrc.gov/reading-rm/doc-collections/enforcement/notices/more.htm>
2. The Enforcement Policy (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>)
3. NRC Operating Reactor Project Managers Handbook (<http://portal.nrc.gov/edo/nrr/dorl/dorlhandbook/RegionalTechnicalSupport/Wiki%20Pages/NOED.aspx>)
4. NRC RIS 2005-01, "Changes to Notice of Enforcement Discretion (NOED) Process and Staff Guidance," dated February 2, 2005 (<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2005/ri200501.pdf>)
5. NRR Notice of Enforcement Discretion Portal <https://usnrc.sharepoint.com/teams/NRR-Regional-Technical-Support/Wiki%20Pages/NOED.aspx?PageView=Shared&InitialTabId=Ribbon.WebPartPage&VisibilityContext=WSSWebPartPage>
6. 10 CFR 50.91, "Notice for Public Comment; State Consultations" (<http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0091.html>)

EVALUATION  
CRITERIA:

At the completion of this activity, you should be able to do the following:

1. Locate the current NRC guidance on the NOED process.

2. Explain what nonconformances the NOED process is intended to address.
3. Explain the difference between NOEDs and license amendments (emergency, exigent, and temporary license amendments).
4. Explain the two types of NOEDs.
5. Discuss the criteria used to consider granting of a “regular” NOED for an operating unit, a shutdown unit, or a unit attempting to start up.
6. Discuss the considerations for situations arising from severe weather or other external conditions.
7. Explain how telephone discussions involving NOEDs are handled and who is typically involved.
8. Explain what documentation actions are required when a NOED is issued.

TASKS:

1. Locate the listed references **most of which can be found on the NRR NOED portal**. The NRC Operating Reactor Project Manager’s Handbook can be located on the NRC internal Web site at the URL cited above.
2. Review the references and develop a sufficient understanding of the NOED process to fulfill the evaluation criteria.
3. Identify a recently issued NOED. Review the NRC letter documenting the NOED.
4. Meet with your supervisor or a designated qualified operations inspector, discuss any questions you may have, and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION:

Operations Technical Proficiency-Level Qualification Signature Card  
Item ISA-OPS-4

## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-5) Maintenance Rule Implementation

PURPOSE: The NRC requires that licensees operate their facilities in compliance with 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (i.e., the Maintenance Rule). For this reason, it is mandatory that all operations inspectors gain a detailed knowledge of the content of the Maintenance Rule.

This activity will provide you with detailed knowledge of the Maintenance Rule requirements and their application.

COMPETENCY  
AREA:

INSPECTION

LEVEL OF  
EFFORT:

34 hours

REFERENCE:

1. 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"
2. Regulatory Guide 1.160, Revision 4, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"
3. NUMARC 93-01, Revision 4F, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," issued April 2018 by the Nuclear Energy Institute
4. NRC Enforcement Manual, Section 2.1.10, "Actions Involving the Maintenance Rule"
5. IP 71111.12, "Maintenance Effectiveness"
6. IP 71111.13, "Maintenance Risk Assessments and Emergent Work Control"
7. Maintenance Rule implementation documents for the facility designated by your supervisor
8. Maintenance Rule SharePoint site  
<https://usnrc.sharepoint.com/teams/NRR-Maintenance-Rule/RG%201160%20Guidance/Forms/AllItems.aspx>
9. Nuclepedia Knowledge Management Web Site March 5, 2020 Maintenance Rule 2.0 presentation:  
[https://nuclepedia.usalearning.gov/index.php?title=Coordinated\\_Regional\\_\(Reactor\)\\_KM/training\\_Initiative](https://nuclepedia.usalearning.gov/index.php?title=Coordinated_Regional_(Reactor)_KM/training_Initiative)
10. Maintenance Rule Training for Inspectors Course in TMS



EVALUATION  
CRITERIA:

At the completion of this activity, you should be able to do the following:

1. For the facility designated by your supervisor, identify which structures, systems, and components (SSCs) are classified as (a)(1), discuss the reason these SSCs are monitored in the (a)(1) status, and describe the recovery plan for each SSC.
2. Discuss the different categories in which the SSCs may be scoped by the licensee.
3. Discuss the Maintenance Rule inspection requirements outlined in IP 71111.12 and IP 71111.13.
4. Demonstrate the use of the flow charts in IP 71111.12 and IP 71111.13 to determine whether the licensee is appropriately applying all Maintenance Rule requirements.
5. Discuss what actions are required if the requirements of various aspects of the Maintenance Rule are not met.
6. Discuss the function and responsibilities of the expert panel.
7. Describe how the licensee performs a Maintenance Rule risk assessment before taking equipment out of service (planned) or for emergent work.
8. Be able to describe how Maintenance Rule 2.0 differs from the maintained rule process outlined in NUMARC 93-01, Revision 4F.

TASKS:

1. Complete Maintenance Rule Training for Resident Inspectors (available in TMS). Discuss the results of the knowledge checks with your supervisor or a senior inspector.
2. Obtain a copy of the Maintenance Rule procedures for the facility designated by your supervisor. Review the Maintenance Rule procedures to become knowledgeable about the criteria listed in the above section.
3. Contact the licensee's Maintenance Rule expert and discuss the licensee's approach to satisfying the Maintenance Rule requirements.
4. Watch the March 5, 2020 knowledge management training seminar on Nuclepedia that discusses maintenance rule 2.0.
5. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION: Operations Proficiency-Level Qualification Signature Card Item  
ISA-OPS-5

**TOPIC:** (ISA-OPS-6) Introduction to the ASME Code and Site Inservice Inspection (ISI) Programs

**PURPOSE:** Licensees are required to construct and maintain their safety-related piping systems and components in accordance with the ASME Code and their site-specific ISI program. The NRC monitors how well the ASME code and ISI programs are implemented at reactor plant sites through several different methods including, performing periodic focused inspection activities conducted by ISI Inspectors, and implementation of a continuous reactor coolant leakage monitoring program that is managed by site resident inspectors. As an operations inspector, you may be responsible for implementing the site leakage monitoring program and may encounter instances where ASME code piping or components have been identified as defective. The purpose of this ISA is to acquaint you with the organization and requirements of the ASME code and introduce you to some of the ASME code related issues that you may encounter at a site.

**COMPETENCY AREA:** INSPECTION AREA TECHNICAL EXPERTISE  
REGULATORY FRAMEWORK

**LEVEL OF EFFORT:** 30 Hours

**REFERENCES:**

1. ASME Section II, III, V, IX, XI
2. Regulatory Guide 1.147
3. Regulatory Guide 1.84
4. Regulatory Guide 1.26
5. 10 CFR 50.55a
6. NRC IMC 2515 Appendix D "Plant Status"
7. Plant Technical Specifications
8. Plant-specific leakage monitoring procedures.
9. IMC 0326, "Operability Evaluations" Section 08.12 and 08.13
10. "ASME ISI for Inspectors- August 13, 2020" Knowledge Management Training video on Nuclepedia at the following url:  
[https://nuclepedia.usalearning.gov/index.php?title=Coordinated\\_Regional\\_\(Reactor\)\\_KM/training\\_Initiative](https://nuclepedia.usalearning.gov/index.php?title=Coordinated_Regional_(Reactor)_KM/training_Initiative)

**EVALUATION CRITERIA:** Upon completion of the tasks, you should be able to describe the following:

1. The scope of 10 CFR 50.55a.
2. The processes licensees use to obtain approval for relief from ASME code requirements and the use of code cases.
3. The licensee's responsibility for the ISI program (Reference Section XI-IWA 1400 Owner's Responsibility)

4. The role of the Authorized Nuclear Inspector/Authorized Nuclear Inservice Inspector. (reference Section XI- IWA Duties of the Inspector)
5. The three types of non-destructive examination methods used during ISI and the specific techniques that fall under each of these categories.
6. The process used by the NRC to assess/evaluate licensee activities related to monitoring RCS leakage.
7. The Quality Group Classifications identified in Regulatory Guide 1.26 and the nuclear class 1, 2, and 3 classifications identified in ASME Section XI.
8. The general organization of ASME Section XI Subsection IWB, IWC, IWD, IWE, IWF, and IWL and the materials/components to which these requirements apply.
9. How defects in ASME code class piping are analyzed, assessed and corrected.
10. An ASME Code Section XI defect and a Code repair/replacement activity (Section XI, IWA-4000)
11. How a weld procedure is qualified (Section IX, QW-100 and QW-200) and explain essential and non-essential weld variables and the relationship between a weld procedure specification (WPS) and a procedure qualification record (PQR)

- TASKS:**
1. Review the Table of Contents and Introduction for each ASME section II, III, V, IX and XI.
  2. View the "ASME ISI for Inspectors- August 13, 2020" Knowledge Management Training video on Nuclepedia.
  - 3.. Review ASME Section XI Glossary (Article IW-9000), particularly definitions of indication, imperfection, flaw, discontinuity, defect, relevant condition, Authorized Nuclear Inservice Inspector. Identify the three types of non-destructive examination methods used to perform ISI inspections and the limitations of each method.
  4. Review Regulatory Guides 1.147, 1.84, and 1.26 (quality group classifications), and sections 0812 and 0813 of IMC 0326,"Operability Evaluations."
  5. Describe the options provided in the ASME Section XI Code when a defect is identified in a Code component.

6. Explain the difference between pressure boundary leakage, and mechanical joint leakage. Provide examples of each, and the plant technical specification limits regarding such leakage.
7. Review the Reactor Coolant System leakage monitoring program at your assigned or reference site. Explain how the program verifies leakage is within Technical Specification Values.
8. After reviewing the references in sufficient detail to perform adequately in accordance with the requirements of the Evaluation Criteria, meet with your supervisor, or the person designated to be your resource for this activity to discuss the material/subjects listed in the Evaluation Criteria.

DOCUMENTATION:            Operations Proficiency-Level Qualification Signature Card Item  
                                     ISA-OPS-6

## Operations Individual Study Activity

TOPIC: (ISA-OPS-7) Inservice Testing

PURPOSE: As required by 10 CFR 50.55a, the licensee must perform **inservice** testing (IST) on certain pumps and valves. IST is required for components classified as American Society of Mechanical Engineers (ASME) Code Class 1, 2, or 3. It is also required to perform a specific function in shutting down a reactor to the safe-shutdown condition, maintaining a safe-shutdown condition, mitigating the consequences of an accident, or providing overpressure protection. This activity will familiarize you with the requirements for IST and licensee implementation of the IST program **and introduce you to a rule, 10 CFR 50.69, that outlines an alternate testing approach depending on the safety classification of the system/components.**

COMPETENCY AREA: INSPECTION

LEVEL OF EFFORT: 18 hours

- REFERENCES:
1. Reference or assigned site (licensee) procedures addressing the IST program
  2. TSs; final safety analysis report; ASME Code, Section XI and Class 1, 2, and 3; and 10 CFR 50.55a
  3. NUREG-1482, "Guidelines for Service Testing at Nuclear Power Plants"
  4. NRC Inspection Manual, Part 9900: Technical Guidance on Preconditioning (PRECOND)."
  5. GL 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," dated April 3, 1989
  6. IP 71111.22, "Surveillance Testing," and IP 73756, "Inservice Testing of Pumps and Valves"
  7. ASME OM-Code-(year), "Code for Operation and Maintenance of Nuclear Power Plants," Subsections ISTA, ISTB, and ISTC
  8. ASME OM-S/G-(year), "Standards and Guides for Operation and Maintenance of Nuclear Power Plants"
  9. **10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors.**
  10. **Nuclepedia Knowledge Management Web Site 10 CFR 50.69 training session provided on May 7, 2020:**

EVALUATION  
CRITERIA:

Upon completion of the tasks, you should be able to do the following:

1. Describe the following terms and provide examples of each:
  - a. safety-related components or systems
  - b. ASME Code Class 1, 2, or 3 systems
  - c. Category A valves
  - d. various types of valves (e.g., manual valve, check valve, safety/relief valve, containment isolation valve, gate valve, globe valve, butterfly valve, stop valve)
  - e. centrifugal pump/positive displacement pump
  - f. minimum flow lines/recirculation flowpath
  - g. TS action statement
  - h. alert range limits
  - i. required action range limits
  - j. common-cause failure
  - k. preconditioning
  - l. post-maintenance testing
2. Describe the NRC's regulations for IST and the licensee's programs for meeting those requirements.
3. Discuss what actions should be taken when test results are obtained which are in the alert range or exceed the required action limits.
4. Demonstrate that you can determine the specific test method and frequency requirements for pumps and valves within each ASME class.
5. Describe the overall process to implement relief requests and requests for approval of alternatives.
6. Explain how you would select an IST activity for a risk-significant pump or valve to inspect.
7. Perform the inspection described in IP 71111.22.
8. Describe how the adoption of the requirements outlined in 10 CFR 50.69 may affect a licensee's IST program

TASKS:

1. Locate the listed references for your facility. In some cases, you may have to use references maintained by licensee staff.
2. Discuss with your supervisor or another qualified inspector, as appropriate, to gain an overall understanding of how licensees

implement IST programs. Review the references and licensee's procedures as necessary to understand how the specific licensee implements IST requirements. Select a risk-significant system and verify that the IST program includes all pumps and valves that perform a safety-related function(s).

3. Review the licensee's administrative controls for tracking tests performed quarterly, on a cold-shutdown frequency, or during refueling outage.
4. Review at least one recently completed valve test involving a risk-significant system. Verify that the test method, acceptance criteria (including the limit value for stroke time), and corrective actions met the requirements.
5. Review at least one recently completed pump test involving a risk-significant system. Verify that the pump test method, acceptance criteria, and any necessary corrective actions met the requirements.
6. Read 10 CFR 50.69, and describe how adoption of that rule into a licensee's operating license may impact a licensee IST program. Watch the May 7, 2020, knowledge management presentation that provides an overview of 10 CFR 50.69.
7. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of these activities and demonstrate that you can meet the evaluation criteria.

DOCUMENTATION:

Operations Inspector Proficiency-Level Qualification Signature Card  
Item ISA-OPS-7



## Operations Inspector Individual Study Activity

TOPIC: (ISA-OPS-8) Significance Determination Process

PURPOSE: The significance determination process (SDP), as described in Appendix A to NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," aids NRC inspectors and staff in determining the safety significance of inspection findings. The SDP outcomes for inspection findings and the performance indicator information are both used as inputs to the power reactor assessment program. The purpose of this activity is for you to gain the requisite knowledge, understanding, and practical ability to use the significance determination process for findings at power.

COMPETENCY  
AREAS: INSPECTION  
TECHNICAL AREA EXPERTISE  
REGULATORY FRAMEWORK

LEVEL OF  
EFFORT: 20 hours

- REFERENCES:
1. IMC 0609, "Significance Determination Process"
  2. IMC 0609, Attachment 0609.01, "Significance and Enforcement Review Panel Process"
  3. IMC 0609, Attachment 0609.02, "Process for Appealing NRC Characterization of Inspection Findings (SDP Appeal Process)"
  4. IMC 0609, Attachment 4, "Initial Characterization of Findings"
  5. IMC 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power"
  6. IMC 0612, Appendix B, "Issue Screening"
  7. Site-specific SDP Workspace and Plant Risk Information eBook (PRIB) accessed from the site-specific Standardized Plant Risk Analysis (SPAR) Model
  8. IMC 0308, Attachment 3 "Significance Determination Process Technical Basis"

EVALUATION  
CRITERIA:

At the completion of this activity, you should be able to do the following:

1. Explain the purpose, objectives, and applicability of the SDP.
2. Describe and discuss the objective of the initiating events, mitigating systems, and barrier integrity cornerstones found in IMC 0612, Appendix B.
3. **Be able to** process findings using the screening questions for the IE, MS, and BI cornerstones of Appendix A to IMC 0609.
4. Define the safety significance and give examples of Green, White, Yellow, and Red findings.
5. Discuss the Significance and Enforcement Review Panel (SERP) process and purpose, information contained in a SERP package, and the inspector's role during the SERP as described in IMC 0609, Attachment 1.
6. Discuss the "Process for Appealing NRC Characterization of Inspection Findings (SDP appeal process)" as described in IMC-0609, Attachment 2.
7. Explain the relationship between the licensee performance deficiency and the associated degraded condition, and how the SDP examines the risk increase from the degraded condition.
8. Explain why the proximate cause, not the root cause of the performance deficiency, is used to assess significance. Also, discuss the importance of the initial inspection effort to correctly characterize the performance deficiency.

TASKS:

1. Read the referenced section of IMC 0609, with a particular focus on Appendix A. In addition, be aware of Appendix B (Emergency Preparedness Significance Determination Process), Appendix C (Occupational Radiation Safety Significance Determination Process), Appendix D (Public Radiation Safety Significance Determination Process), Appendix E (Security Significance Determination Process for Power Reactors), Appendix F (Fire Protection Significance Determination Process), Appendix G (Shutdown Operations Significance Determination Process), Appendix H (Containment Integrity Significance Determination Process), Appendix K (Maintenance Risk Assessment and Risk Management Significance Determination Process), Appendix L (B.5.b Significance Determination Process), and Appendix M (Significance Determination Process Using Qualitative Criteria).

2. Go to the Reactor Oversight Process Web site and review a sample of Green, White, Yellow, and Red findings in each of the three cornerstones (if samples of each safety significance are posted).
3. Read Scenarios A-D and complete tasks a-c below for each scenario. Discuss your results with your supervisor or a qualified inspector.
  - a. Assess the indicated finding using IMC 0609, Attachment 4 and proceed to the applicable appendix as directed. Ensure that you **can** describe the nexus between the inspection finding and the degraded condition.
  - b. Use the applicable appendix to determine if the issue is Green or if a more detailed risk evaluation is required. Do not perform the additional detailed risk evaluation if applicable; however, discuss possible outcomes with a regional Senior Reactor Analyst (SRA). Be able to justify your determination.
  - c. Discuss your results with your supervisor or a qualified inspector.
4. Whenever possible, attend an **IFRB and/or** (SERP). If you are unable to attend **these meetings**, review IMC 0609, Attachment 1 and an actual **IFRB/SERP** package to develop an understanding of the **IFRB/SERP** purposes/processes, and the contents of **an IFRB/SERP** package. Discuss the rationale for the outcome/resolution of the panel with a qualified inspector.
5. Meet with your supervisor or a qualified inspector to discuss any questions you may have as a result of this training activity.

DOCUMENTATION: Operations Technical Proficiency-Level Qualification Signature Card Item ISA-OPS-8

#### Scenario A

During the Unit 1 Spring 1R16 refueling outage (RFO), plant staff identified control rod drive mechanism nozzle 21 as leaking. **To stop the leakage and repair the defect, the licensee applied for and received approval from the NRC to perform a non-code repair to the leaking nozzle weld.** Workers repaired the nozzle weld and returned the unit to operation for another cycle. When the unit was shut down for RFO 1R17, visual examination of the reactor vessel head revealed repeat leakage of the nozzle. **When reviewing the work order for the subject repair, the inspectors identified a number of issues regarding the welding process such as use of incorrect weld wire and improper post heat treatment. As a result, the nozzle repair was not performed in accordance with the conditions established in the relief request or in accordance with the licensee's repair plan. As a result, the inspectors and the licensee concluded that the repair method was inadequate to prevent recurrence of the original primary water stress-corrosion cracking.**

## Scenario B

On September 26, 2019, Unit 1 was at 99-percent reactor power, coasting down for a Refueling Outage (RFO) that was scheduled to begin on October 5. At 5:41 a.m., the Unit 1 control room received a condenser off-gas alarm. At 12:43 p.m., the condenser off-gas alarm actuated again, and the No. 2 steam generator main steam line N-16 monitor went into alarm. At 10:24 p.m., the N-16 alarm cleared, and the reading continued to trend downward.

On September 27, 2019, at 12:19 a.m., the condenser off-gas alarm cleared. At 10:25 a.m., the N-16 alarm returned. At 10:40 a.m., the condenser off-gas alarm came in again, followed by the condenser off-gas Hi alarm at 10:51 a.m. At 1:06 p.m., both alarms cleared. These alarms came in twice more on this day. At 7:54 p.m., the condenser off-gas alarm came in and at 10:32 p.m., the condenser off-gas HiHi alarm was reached. The alarms cleared in less than an hour.

On September 28, 2019, at 1:40 a.m., the Unit 1 control room operators commenced a power reduction in response to the steam generator tube leak. At 3:12 a.m., the Unit 1 control room operators performed a planned trip of the Unit 1 reactor.

Through subsequent inspection and testing, the licensee determined the source of the leakage to be a stress-corrosion crack initiating from the outer diameter surface in the U-bend region of tube R41C71 of the No. 2 steam generator. The licensee also determined through pressure testing that the tube failed to exhibit structural and accident leakage integrity margins consistent with Technical Specification 3.4.19 Steam Generator (SG) Tube Integrity and LCO 3.4.19 (SG tube integrity shall be maintained). Specifically, the tube could not sustain 3 times the differential pressure across a tube during normal full power (3 $\Delta$ PNO) but could withstand the differential pressure induced across the tube by a main steam line break ( $\Delta$ PMSLB). Although the tube leakage exceeded the "accident leakage" performance criterion, it remained within the capacity of the charging system (e.g. tube did not burst).

An NRC inspection team independently reviewed eddy current test data (ECDT) from the previous outage (1RF08) inspection in 2018 for the specific tube location where the leakage developed in September 2019. The team found that a clearly detectable indication was present at the leak location during the previous outage (1RF08) inspection in 2018. The indication did not meet the reporting criteria in the RFO 1RF08 analysis guidelines, and therefore neither the primary or secondary analyst reported it in 2018.

The inspection team concluded that an experienced analyst should have recognized that a significant ECT signal interference (noise) was encountered in the 2018 data obtained during the examination of several low-row U-bend tubes. This significant noise level reduced the probability of identifying an existing PWSCC tube defect. However, the 2018 -SG inspection program was not adjusted to compensate for the negative effects of the noise in detecting flaws, particularly when conditions that increased susceptibility to PWSCC existed, e.g., did not develop specific criteria for plugging tubes based on noise and/or enhance the analysis of existing data.

As a direct consequence of the failure to detect the flaw, the tube was not removed from service and subsequently degraded to the point that it leaked and no longer satisfied the applicable tube integrity performance criteria. This occurred because the examination methods and analysis

guidelines used during the RFO were not effective for ensuring that tubes would maintain their integrity until the next scheduled inspection.

#### Scenario C

During a design assurance inspection, inspectors noted that the assumptions regarding the instruments used for safety-related heating, ventilation, and air conditioning (HVAC) systems (the auxiliary building ventilation system and the control room HVAC system in the licensee's 120-volt alternating current (Vac) degraded voltage calculation) did not reflect the actual plant configuration. Specifically, the 120-Vac degraded voltage calculation, "Evaluation of the 120 Vac Distribution Circuits Voltage at the Degraded Voltage Setpoints," assumed the input voltage to specific HVAC process instrumentation to be at 95 Vac. While the vendor information associated with the instrumentation specified a higher voltage for proper operation, the licensee had stated in the assumption for the calculation that the instrumentation would be able to operate because a one-time test on the instrumentation while in service demonstrated that the control circuits would perform their design function at a reduced voltage of 95 Vac. It was unclear whether the licensee had a program in place for testing replacement instrumentation put in service at this reduced voltage. Without a test for each instrument placed in service, the inspectors determined the licensee would have to use the vendor's specification for voltage as it could not guarantee that the replacement instruments would operate at these assumed reduced voltages.

While the licensee was able to determine the operability of the affected instruments through the bounding voltage drop calculation, the licensee's existing design basis (the assumptions in the degraded voltage calculation) had not been adequately verified or maintained. Specifically, although the design-basis assumption relied on testing the instruments at 95 Vac; the inspectors identified that some instruments had been replaced without retesting the specific instrument at the assumed degraded voltage included in the calculation. For example, although several ASCO solenoid valves had recently been replaced, the licensee had not verified that they would correctly operate at voltage levels that were below the vendor recommended design values. Therefore, the licensee had failed to maintain accurate design-basis assumptions that were essential for its design-basis calculation.

#### Scenario D

The inspectors identified a licensee did not identify a design flaw that created a potential common-mode failures that involved power supplies to the recirculation line for an air-operated valve in the auxiliary feedwater (AFW) system and other system components. The common-mode failure was contrary to the system design requirements as described in the plant Updated Final Safety Analysis Report. When this issue was identified by the inspectors, the licensee's corrective actions for the potential common-mode failure associated with a loss of instrument air did not prevent the failures from repeating. Specifically, although the licensee upgraded the safety function of the air-operated recirculation valve, this corrective action failed to ensure that successful operation of the recirculation line air-operated valve depended only on safety-related support systems. After the corrective actions, successful operation of the valve still depended upon nonsafety-related power to an interposing relay. In addition, the corrective actions did not correct a single failure mechanism involving a system orifice modification.

## Operations Inspector On-the-Job Activities

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-1) Site System Reviews

PURPOSE: The purpose of this activity is to familiarize you with the proper method for walking down a system to: verify that the system is properly aligned and maintained and supporting operating, abnormal and emergency procedures, provide acceptable guidance to use the system. This activity can also be used to verify that contingency equipment and procedures that have been developed in response to the 9-11 and Fukushima events are capable of meeting the requirements outlined in the applicable NRC requirements. This verification is one means of ascertaining that a system can perform its intended accident mitigation functions.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 80 hours

- REFERENCES:
1. IP 71111.04, "Equipment Alignment"
  2. TSs for assigned facility
  3. Piping and instrumentation drawings (P&ID)s for each selected system
  4. Licensee system operating, abnormal, and emergency procedures for each selected system
  5. Final safety analysis report for assigned facility
  6. Licensed operator training manual for each selected system, if available
  7. B.5.b Regulatory Commitments, Safety Evaluation, and TI 2515/171 inspection reports, available at the following SharePoint site at: <https://usnrc.sharepoint.com/teams/OCHCO-KC/B5binspections/SitePages/Home.aspx> on the NRC Knowledge Center under the Topic "Licensee specific documents."
  8. Reactor OpE Information Gateway <https://usnrc.sharepoint.com/teams/NRR-Operating-Experience-Branch>
  9. Other pertinent reference material, such as corrective action program documents, work history, and surveillance history.
  10. Fukushima lessons learned and site specific changes available at the following url: <https://www.nrc.gov/reactors/operating/ops-experience/post-fukushima-safety-enhancements.html>

EVALUATION  
CRITERIA:

Upon completion of the tasks, you should be able to do the following:

1. Discuss the accident mitigation functions of each selected system.
2. Discuss the TS operability requirements for each selected system (if applicable).
3. During a tour of each selected system, locate the major components identified by your supervisor.
4. During a tour of each selected system, discuss the function of the major system components identified by your supervisor. Also, discuss any system issues identified in Generic Communications, OpE Smart Samples, or significant findings at other facilities in the last two years.
5. During a tour of the selected systems and/or equipment storage location(s)/staging area(s), identify to your supervisor the important instrumentation and other indicators that should be monitored during a routine plant tour and explain the reason for monitoring these indications.
6. Identify to your supervisor any anomalies that you discovered during the walkdown of each selected system and/or equipment storage location(s)/staging area(s) and discuss the basis for your classification of each item as an anomaly. Discuss how the information should be conveyed to the licensee.
7. Describe to your supervisor some ways in which the walkdown areas of emphasis could be shifted for walkdown of the same system and/or equipment storage location(s)/staging area(s), in the future for increased effectiveness.

TASKS:

1. In conjunction with your supervisor and/or the senior resident inspector at your assigned facility, select two systems to be walked down. The selections should be risk-important, mitigating systems and should be readily accessible based on plant conditions.
2. Once the two systems have been identified, collect the information specified in References 2 through 10 for each system.
3. Review and understand the inspection requirements specified in Section 02.02 of IP 71111.04 for a complete system walkdown.
4. For the two selected systems, review information at the Reactor OpE Information Gateway. Specifically, determine if related components have been the subject of an OpE Smart Sample. Review recent Generic Communications and the most significant findings associated with the selected systems in the past two years.



5. Perform a walkdown of each selected system **and/or equipment storage location(s)/staging area(s)**, to ensure that the requisite knowledge specified in the evaluation criteria (listed above) has been obtained.
6. During the walkdowns, record any conditions that appear to be anomalies and review the list with a qualified operations inspector.
7. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION: Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-1

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-2) Conduct of Operations

PURPOSE: The overall conduct of operations is an essential element in the safe operation of a nuclear power plant. Licensee procedures typically address operator attentiveness and professionalism, control room environment, shift turnover, configuration controls, and the conduct of evolutions. This activity will familiarize you with the various licensee procedural controls over these activities and applicable regulatory requirements.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 40 hours

REFERENCES:

1. Licensee procedures addressing the conduct of operations, including procedures covering such issues as use of procedures, independent verification, responsibilities of licensed operators, definition of "at the controls," shift manning and turnover, control of evolutions, equipment status and alignment, tagging, annunciator controls, and entry into TS LCOs.
2. Plant operating license and TSs
3. IMC 2515D, "Plant Status"
4. IP 71715, "Sustained Control Room and Plant Observation"
5. Regulatory Guide (RG) 1.33, Revision 2, "Quality Assurance Program Requirements (Operation)," issued February 1978
6. American National Standards Institute (ANSI)/ANS-3.2-1994, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

EVALUATION  
CRITERIA: Upon completion of the tasks, you should be able to do the following:

1. Describe the licensee's processes for conduct of operations. The description **may** include activities such as procedure **use**, independent verification, responsibilities of licensed operators, definition of "at the controls" or other control room areas, shift manning and turnover, control of evolutions, equipment status and alignment, annunciator controls, and entry into TS LCOs.

Where applicable, explain the regulatory requirements which require the development and implementation of these procedures.

2. Be able to identify active TS LCOs and major equipment out of service through reviews of control room documentation or status boards.
3. Tour the control room, observe operating practices, and determine whether operators are correctly implementing procedural guidance, maintaining shift professionalism, and properly controlling and coordinating activities.
4. Evaluate the adequacy of control room shift turnovers, response to annunciators, and control room communications.
5. Verify that procedures for annunciator controls, such as disabled annunciators and nuisance alarms, are implemented properly.

TASKS:

1. Locate the listed references for your assigned or reference facility.
2. Review the licensee's procedures and develop an understanding of the licensee's expectations for the conduct of operations. These efforts should include comparison to implementation such as control room logs, equipment out of service logs, standing orders, night orders, **usage of personal communication devices**, operator workarounds, work control center activities, and briefings.
3. Observe at least two different shift turnovers, including reactor operator and senior reactor operator turnover, and verify that activities are conducted in accordance with procedures.
4. Observe the implementation of tagging procedures, including development and review of at least one tagout, hanging of tags, verifications of tags, and removal and restoration activities.
5. Observe portions of a valve alignment/alignment verification involving an important system as necessary to understand the licensee's processes.
6. Perform the activities described in IMC 2515D, "Plant Status."
7. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of these activities and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION:

Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-2 (also OJT-OLE-2)

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-3) Security Plan and Implementation

PURPOSE: The purpose of this activity is to familiarize you with the security plan for your assigned facility.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 12 hours

REFERENCES:

1. Security plan for your assigned facility
2. **Licensee Defensive Strategy** for your assigned facility
3. 10 CFR Part 73.1, "Purpose and Scope"
4. **10 CFR Part 73.22, "Protection of Safeguards Information: Specific Requirements."**
5. 10 CFR Part 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Plants against Radiological Sabotage"
6. 10 CFR Part 73.58, "Safety/Security Interface requirements for Nuclear Power Reactors"
7. 10 CFR 50.54 "Conditions of Licenses" (p)(1) & (2)
8. **IMC 2201, Appendix D, "Facility Status Reviews for Security and Safeguards Inspection Program."**

EVALUATION  
CRITERIA:

Upon completion of the tasks, you should be able to do the following:

1. Describe how the site will implement 10 CFR Part 73.55 requirements through the establishment and maintenance of a security organization, the use of security equipment and technology, the training and qualification of security personnel, the implementation of predetermined response plans and strategies, and the protection of digital computer and communication systems and networks.
2. Describe how the site security force maintains access control of the owner-controlled, protected, and vital areas at your assigned site(s).

3. Describe the appropriate procedures for escorting visitors into and out of the protected and vital areas.
4. Explain the site-specific protection strategy, including methods used to detect, assess, interdict, and neutralize threats up to and including the design basis threat of radiological sabotage as stated in 10 CFR 73.1.
5. Describe what actions are required when the security threat condition changes. Describe how communications between security and the control room are conducted.
6. Describe the requirements for the control and storage of Safeguards Information.

#### TASKS:

1. Review the references listed above, as appropriate, to develop an understanding of the site security system and how to contact the central or secondary alarm station or security shift supervisor.
2. Conduct a walkdown of the protected and vital areas to identify the various types of intruder detection equipment used, defensive positions and security officer ready room locations.

Caution: The licensee physical security plan and defensive strategy presentation contain Safeguards Information. Control appropriately in accordance with applicable regional or site requirements.

3. Discuss with appropriate licensee security and plant operation management how the licensee will assess and manage the potential for adverse effects on safety and security, before implementing changes to plant configurations, facility conditions, or security.
4. Tour the central and secondary alarm stations. Discuss the duties and responsibilities of personnel stationed in those facilities with the watchstanders and the security shift supervisor.
5. Discuss inspector responsibilities related to site security and safeguards with your supervisor or a qualified operations or physical security inspector. Your discussion should include the following:
  - a. practical circumstances that you may encounter, such as loss of security badge, identification of an inattentive guard, receipt of suspicious package, or receipt of a bomb threat, including actions to be taken by the licensee and you, as appropriate.
  - b. actions required when threat conditions change
  - c. questions that you may have as a result of this activity and a demonstration that you can meet the evaluation criteria listed

above

6. Discuss with appropriate licensee security management the sites protective strategy.

DOCUMENTATION: Operations Inspection Proficiency-Level Qualification Signature  
Card Item OJT-OPS-3

## Operations Inspector On-the-Job Activity

|                      |  |
|----------------------|--|
| TOPIC:               | (OJT-OPS-4) Radiation Protection Program and Implementation  |
| PURPOSE:             | The Radiation Protection Program and implementing procedures are intended to ensure adequate protection of worker health and safety from exposure to radiation from radioactive material during routine nuclear reactor operation. Licensee procedures and 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspections and Investigations," and 10 CFR Part 20, "Standards for Protection Against Radiation," address programs to keep exposures at as low as reasonably achievable (ALARA) levels, external exposure, internal exposure, respiratory protection, posting and labeling, survey, and reporting requirements. This activity will provide you a general understanding of the applicable regulatory requirements, the licensee's radiation protection program, and implementing procedures. |
| COMPETENCY AREA:     | INSPECTION   |
| LEVEL OF EFFORT:     | 16 hours   |
| REFERENCES:          | <ol style="list-style-type: none"><li>1. Reference or assigned site (licensee) procedures addressing the radiation protection program and implementation</li><li>2. Plant TSs and updated final safety analysis report and 10 CFR Part 19 and 10 CFR Part 20</li><li>3. RG 8.38, Revision 1, "Control of Access to High and Very High Radiation Areas," issued May 2006</li><li>4. IP 71124, "Radiation Safety—Public and Occupational"</li></ol>  |
| EVALUATION CRITERIA: | <p>Upon completion of the tasks, you should be able to do the following:</p> <ol style="list-style-type: none"><li>1. Describe the following terms and provide examples of each term:<ol style="list-style-type: none"><li>a. unrestricted area</li><li>b. controlled area</li><li>c. radiological restricted area</li><li>d. radiation area</li><li>e. high radiation area</li><li>f. technical specification locked high radiation area</li><li>g. very high radiation area</li><li>h. hot spots</li><li>i. contaminated area</li></ol></li></ol>  |

- j. hot or discrete particle area
  - k. airborne radiation area
2. Identify the locations of the process and area radiation monitoring systems and their major components at your site.
  3. Briefly describe the purpose and scope of the Offsite Dose Calculation Manual (ODCM) including 10 CFR 50 Appendix I.
  4. Explain the ALARA concept and how it is applied to performance of radiological work at your site.
  5. Describe the plant's overall administrative procedures for control of external exposure, internal exposure, and airborne exposure.
  6. Describe how personnel and materials are checked for free release from contaminated areas. Review the actions **that must be taken** when contamination is detected **on an individual or a component** before **they are allowed to be removed from a** radiation - controlled area.
  7. Describe physical and administrative controls for radiation areas, high radiation areas, very high radiation areas, and airborne radioactivity areas at your site.

#### TASKS:

1. Locate the listed references for your facility.
2. Review the references and licensee's procedures to develop an overall understanding of the regulatory requirements and the implementation of the radiation protection program at your site.
3. Select several important radiation detection and measurement instruments (e.g., portable survey instruments, fixed monitoring equipment, constant air monitors, portable air samplers). Examine them as necessary to verify operability, including proper alarm settings (if applicable).
4. Use the ODCM for your referenced facility to identify the authorized liquid and gaseous radioactive effluent release points.
5. During a plant tour, identify at least one contaminated area, radiation area, high radiation area, technical specification locked high radiation area, very high radiation area, hot spots area, and airborne radioactivity area and verify that access to each is controlled in accordance with regulations and the licensee's requirements.



6. Review the results of at least one completed radiation survey and verify that the survey was conducted in accordance with procedures.
7. Observe radiation worker and radiation protection technician performance during high-dose-rate or high-exposure jobs and determine whether workers demonstrate the ALARA philosophy in practice (e.g., workers are familiar with the job scope and tools to be used, workers are using ALARA low-dose waiting areas).
8. Meet with an NRC inspector who performs the inspection series described in IP 71124. Discuss how he/she completes the procedures at your site.
9. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of these activities and demonstrate that you can meet the evaluation criteria.

DOCUMENTATION: Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-4

## Operations On-the-Job Activity

|                      |   |
|----------------------|---|
| TOPIC:               | (OJT-OPS-5) Fire Protection Program and Implementation  |
| PURPOSE:             | This activity will provide you with working knowledge of the regulatory requirements for the fire protection program and how the licensee implements these requirements.  |
| COMPETENCY AREA:     | INSPECTION  |
| LEVEL OF EFFORT:     | 40 hours  |
| REFERENCES:          | <ol style="list-style-type: none"><li>1. Appendices A and R to 10 CFR Part 50</li><li>2. Reference sites Fire Protection Program</li><li>3. Technical requirements manual</li><li>4. 10 CFR 50.48, "Fire Protection"</li><li>5. Appendix F to IMC 0609</li><li>6. Applicable branch technical positions</li><li>7. GL 86-10, "Implementation of Fire Protection Requirements," dated April 24, 1986</li><li>8. Licensee's response plans to mitigate the effects of large fires and explosions</li><li>9. NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition of the Code)</li><li>10. Site Fire Protection System P&amp;IDs and Fire Barrier Inspection procedures</li><li>11. Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants"</li><li>12. NRC Regulatory Issue Summary 2006-10, "Regulatory Expectations with Appendix R Paragraph III.G.2 Operator Manual Actions"</li></ol> |
| EVALUATION CRITERIA: | At the completion of this activity, you should be able to do the following:   |

1. Discuss the general content of Appendices A and R to 10 CFR Part 50, as well as 10 CFR 50.48.
2. Discuss the principle strategy and methodologies for achieving safe shutdown.
3. Discuss, in general terms, the contents of the licensee's fire hazards analysis and safe-shutdown analysis and Pre-Fire Plan Strategies.
4. Discuss the principle of defense in depth as it applies to the licensee's Fire Protection Program.
5. Discuss the Fire Protection Program administrative and design controls that are essential in implementing defense-in-depth.

**TASKS:**

1. Locate the listed references for your assigned facility.
2. Review and discuss with your supervisor or qualified inspector the methods of preventing fires from starting; rapid detection, control, and extinguishing of fires that occur; and design attributes that ensure that safe plant shutdown is achieved, should a fire occur.
3. At your assigned facility, walk down several plant areas to observe various detection and automatic/manual suppression systems. Observe the remote and/or alternate shutdown panel(s), as applicable and review Alternate Safe Shutdown Procedures. Discuss what areas of the site are most risk significant from a fire protection viewpoint.
4. At your assigned facility, observe one or more fire brigade drills, if practical.
5. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of these activities and demonstrate that you can meet the evaluation criteria listed above.
6. At your assigned facility, review and field check fire system impairments and out of service systems for operability and compensatory measures.

**DOCUMENTATION:**

Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-5

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-6) Post Transient/Trip Review

PURPOSE: Following a reactor trip or transient, operations inspectors frequently verify that equipment functioned as intended and operators responded in an appropriate manner. To conduct an adequate review of equipment and operator performance, it is vital that the inspector obtain the necessary information to make an informed judgment. Upon completion of this guide, you will be able to identify the information sources that can be used to assess equipment and operator performance following a transient.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 24 hours

REFERENCES:

1. Licensee post-trip response procedure(s)
2. Plant final safety analysis report
3. Licensee's NRC approved emergency action level (EAL) scheme
4. Regional or office plant transient check list (as applicable)
5. IP 71153, "Follow-up of Events and Notices of Enforcement Discretion"

EVALUATION  
CRITERIA: Complete the tasks specified in this guide and meet with your supervisor to discuss any questions that you may have as a result of this activity. Upon completion of the tasks, you should be able to do the following:

1. Describe which plant data recording systems you would use to verify that plant equipment responded as designed following a transient.
2. Describe which plant reference documents you would consult to verify that plant equipment responded as designed following a transient.
3. Describe how you would verify that plant operators responded appropriately to the plant transient.
4. Demonstrate how you would verify that the licensee made the appropriate emergency classification declaration for the event in accordance with its NRC approved EAL scheme.

NOTE: Ideally, you will be able to complete these tasks immediately following an unplanned reactor shutdown. If such an **occurrence** does not **happen** during your training period, you can perform these tasks by reviewing historical documents of a previous event and by successfully demonstrating that you could obtain the necessary information to conduct a review.

TASKS:

1. Read IP 71153 and the regional or office transient response guidance (if applicable) that defines management expectations regarding event follow-up at a reactor site.
2. Following a transient at your site, obtain pertinent data of the transient that was compiled by the plant process computer. Such data may include the following items:
  - a. sequence of events printout
  - b. control room annunciator record
  - c. first out annunciator report
3. Obtain any pertinent records of plant or system process variables of the event, such as system temperature, pressure, or water levels that exist on plant chart recorders.
4. Review the licensee's post trip procedure.
5. As appropriate, discuss the event with personnel who were directly involved in the transient. This may include control room operators, maintenance personnel, and instrumentation and control technicians. The focus of meeting with personnel who were involved in the transient is the following:
  - a. confirm that plant systems responded as intended
  - b. ensure an understanding of the sequence of events that led up to the transient
6. Using the data obtained from the plant process computer and chart recorders and information obtained from discussions with plant personnel and the plant documents, such as the plant final safety analysis report, verify that important plant equipment operated as designed following the transient.
7. Attend the licensee post-trip meeting (if conducted). Verify that the licensee conducted an adequate review of the transient and identified the following:
  - a. possible or probable root cause(s) for the event
  - b. equipment or plant performance anomalies
  - c. corrective actions that should be implemented

8. Using the licensee's NRC approved EAL scheme, verify that the event was properly classified, and the appropriate offsite notifications were completed both accurately and timely.
9. Compare the conclusions that the licensee reached regarding the event to your own. If the conclusions are significantly different, discuss the differences with your supervisor to understand why you reached different conclusions.

DOCUMENTATION: Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-6

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-7) Emergency Response

PURPOSE: The purpose of this activity is to familiarize you with the emergency response plan for your assigned facility and the NRC's expectations during response to an emergency by an operations inspector. Emergency response is vital to the NRC, fulfilling one of its primary mandates of protecting the health and safety of the public.

COMPETENCY  
AREA: EMERGENCY RESPONSE

LEVEL OF  
EFFORT: 20 hours

REFERENCES:

1. Emergency plan for your assigned facility
2. Regional policy guide for emergency response
3. NUREG-0728 (<http://www.nrc.gov/about-nrc/emerg-preparedness/respond-to-emerg/ml050970236.pdf>) and regional supplement
4. Appendix E to 10 CFR Part 50 and 10 CFR 50.54(x)
5. NEI 99-01 "Methodology for Development of Emergency Action Levels," Rev. 4, Rev. 5, or Rev. 6
6. Entry-Level IMC 1245 Appendix A OJT-3

EVALUATION  
CRITERIA: Upon completion of the tasks, you should be able to do the following:

1. Describe the types of emergency classifications and give examples of each.
2. Describe how the emergency action level (EAL) basis document is related to the NRC approved EAL scheme.
3. Describe how the NRC response to an event changes based upon the classification of the event and conditions at the site.
4. Describe the post-accident effluent monitors and other installed instrumentation (e.g., seismic, process flows/levels, etc.) and their use by licensees in evaluating potential EAL criteria." Identify compensatory measures a licensee could implement in the event a monitor or other installed instrument was out of service.

5. Describe your response (i.e., where would you go) for each event classification if you are on or off site when the emergency is declared.
6. Describe how the licensee's emergency response changes for security-related events, and how those differences affect your role as an NRC responder under those conditions.
7. Describe how and with whom you report the event for each classification.
8. Describe your responsibilities during an event.
9. Given a scenario, be able to describe what actions you would take in response to the emergency situation.

TASKS:

1. Locate the references for your facility and be able to discuss the items that are identified in the evaluation criteria.
2. Observe emergency response activities during a sitewide emergency drill in the technical support center, operations support center, and emergency operations facility. If scheduling permits, participate in at least one sitewide emergency drill as the NRC resident inspector.
3. Determine the routes that can be taken to the plant from off site during various weather conditions and wind directions. Consider both radiological and toxic chemical sources on and off site.
4. Locate the telephone for NRC inspector use (NOT the emergency notification system line) in the control room, technical support center, and emergency operations facility. Learn the telephone protocol expected of the resident inspector.
5. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION:

Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-7



## Operations On-the-Job Activity

TOPIC: (OJT-OPS-8) Emergent Work Control and Maintenance Risk Assessments

PURPOSE: The purpose of this activity is to (1) familiarize you with the typical licensee process for controlling emergent work activities, and (2) familiarize you with the various methods (such as an online risk monitor) that licensees use to assess and manage plant risk associated with scheduled or emergent work activities.

COMPETENCY  
AREA: INSPECTION

LEVEL OF  
EFFORT: 32 hours

REFERENCES:

1. Licensee procedure(s) for control of emergent work
2. Licensee procedure(s) for conducting risk assessments and managing the resultant risk
3. 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." section (a)(4)
4. IP 71111.13, "Maintenance Risk Assessments and Emergent Work Control"

EVALUATION  
CRITERIA: Upon completion of the tasks, you should be able to do the following:

1. Describe how licensees control emergent work activities, including entering LCOs, control of troubleshooting, conduct of tagging, implementing temporary modifications, and restoring equipment to service.
2. Demonstrate knowledge of the functioning of a typical work control center at a nuclear power plant. This should include knowledge of work planning and scheduling and the processing of work orders.
3. Explain how you would select risk-significant work activities to inspect.
4. Explain why licensees assess and manage plant risk for both scheduled maintenance and emergent work.
5. Demonstrate knowledge of methods that licensees use to assess and manage plant risk, such as use of an online risk monitor.

TASKS:

1. Locate the listed references for your facility.
2. Review the references to develop a sufficient understanding of how the licensee controls emergent work activities.
3. Review the references to develop a sufficient understanding of how the licensee conducts risk assessments and manages the resultant risk.
4. Discuss with a qualified operations inspector, the functions typically performed by a licensee's work control center.
5. Discuss with a qualified operations inspector, licensee controls for emergent work activities, risk assessment, and management of resultant risk, as well as the implementation of IP 71111.13. Specifically discuss sample selection and use of the flow chart in Appendix A.
6. Identify a risk-significant emergent work activity at your site and implement IP 71111.13. As a minimum for this emergent work activity review, observe, and/or verify as appropriate the following:
  - a. work planning and scheduling activities
  - b. entry into appropriate TS LCOs
  - c. troubleshooting activities
  - d. tagging
  - e. implementation of any temporary modifications
  - f. equipment restoration to ensure that the plant is not placed in an unacceptable configuration
  - g. licensee assessment and management of plant risk
7. Meet with your supervisor or a qualified operations inspector to discuss any questions that you may have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION:

Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-8

## Operations Inspector On-the-Job Activity

TOPIC: (OJT-OPS-9) Shutdown Operations

PURPOSE: The purpose of this activity is to provide you with detailed knowledge of shutdown operations that **may** impose **increased** risks to public health and safety even though the facility is shutdown. When vital structures, systems, and components are removed from service for maintenance or refueling, **safety margins can be reduced if sites do not implement compensatory actions**. The systems and activities that **impact plant** risk include decay heat removal systems, containment isolation systems, reduced water inventory periods (i.e., mid-loop in PWRs), switchyard work, refueling operations, and transient activity (i.e., cooldown, heat-up, startup, etc.).

COMPETENCY  
AREA: INSPECTION  
TECHNICAL AREA EXPERTISE

LEVEL  
OF EFFORT: 30 Hours

REFERENCES:

1. Technical Specifications for your assigned facility designated by your supervisor
2. Licensee procedures for loss of decay heat removal, reactivity control, containment integrity, and refueling for your assigned facility
3. Regional policy and instructions, if available
4. Inspection Procedure 71111.20, "Refueling and Other Outage Activities"
5. NUREG-1449, "Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States"
6. Information Notice 95-57, "Risk Impact Study Regarding Maintenance During Low-Power Operation and Shutdown"
7. Information Notice 93-72, "Observations **from** Recent Shutdown Risk and Outage Management Pilot Team Inspections"
8. IMC-0609, Appendix G, "Shutdown Operations Significance Determination Process"

EVALUATION  
CRITERIA: At the completion of this activity, for your assigned facility, you should be able to:

1. Discuss the **potential** risks **that can result during** shutdown operations.
2. Discuss the importance of maintaining decay heat removal during shutdown.
3. Discuss the methods of reactivity control during core alterations both in the core and in the spent fuel pool.
4. Discuss the requirements for containment/reactor building integrity during shutdown, refueling, and **during** maintenance activities that require large equipment to be moved into and out of the reactor building/containment.
5. Discuss the importance of mode changes and what constitutes a mode change.
6. Discuss the risks involved with reduced inventory operations.
7. Discuss the risk involved with electrical work both in the plant and in the switchyard.
8. Discuss what type of items should be reviewed when reviewing the outage schedule.
9. Discuss the various means of monitoring **reactor** vessel level and the importance of knowing the level.
10. Discuss the purpose of a containment/**drywell/torus** closeout walkdown**(s)**.
11. Briefly discuss the purpose of IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," and who primarily uses it.

NOTE: Ideally, you will complete these tasks at your assigned or reference site, but you can perform some of the actual inspection activities at a different site (of similar design) if necessary, because of RFO schedules

**TASKS:**

1. Review your designated facility licensee's TS and procedures for loss of decay heat removal, reactivity control, containment integrity, and refueling for your assigned facility
2. Review the requirements of Inspection Procedure 71111.20, as designated by your supervisor.

- |
3. Meet with your supervisor or a qualified **operations inspector** to discuss any questions that you may have as a result of this activity and demonstrate that you can meet the evaluation criteria listed above.

DOCUMENTATION: Operations Inspector Proficiency-Level Qualification Signature Card  
Item OJT-OPS-9 (also OJT-OLE-11)

Reactor Operations Technical Proficiency-Level  
Signature Card and Certification

|  |                           |                                |
|--|---------------------------|--------------------------------|
| Inspector Name: _____  | Employee<br>Initials/Date | Supervisor's<br>Signature/Date |
| <b>A. Training Courses</b>   |                           |                                |
| 10 CFR 50.59 training course in TMS  |                           |                                |
| Maintenance Rule training course in TMS  |                           |                                |
| Power Plant Engineering (E-110) (TTC course or self-study)                           |                           |                                |
| Reactor Full Series (either BWR or PWR)  |                           |                                |
| <b>B. Individual Study Activities</b>  |                           |                                |
| ISA-OPS-1 Title 10, "Energy," of the Code of Federal Regulations                     |                           |                                |
| ISA-OPS-2 Technical Specifications (also ISA-OLE-9)                                  |                           |                                |
| ISA-OPS-3 Operability (also ISA-OLE-10)  |                           |                                |
| ISA-OPS-4 Notice of Enforcement Discretion   |                           |                                |
| ISA-OPS-5 Maintenance Rule Implementation  |                           |                                |
| ISA-OPS-6 Introduction to the ASME Code and Site Inservice Inspection (ISI) Programs |                           |                                |
| ISA-OPS-7 Inservice Testing Program  |                           |                                |
| ISA-OPS-8 Significance Determination Process   |                           |                                |
| <b>C. On-the-Job Training Activities</b>   |                           |                                |
| OJT-OPS-1 Site System Reviews  |                           |                                |
| OJT-OPS-2 Conduct of Operations (also OJT-OLE-2)                                     |                           |                                |
| OJT-OPS-3 Security Plan and Implementation   |                           |                                |
| OJT-OPS-4 Radiation Protection Program and Implementation                            |                           |                                |
| OJT-OPS-5 Fire Protection Program and Implementation                                 |                           |                                |
| OJT-OPS-6 Post trip/Transient Review   |                           |                                |
| OJT-OPS-7 Emergency Response   |                           |                                |
| OJT-OPS-8 Emergent Work Control and Maintenance Risk Assessments                     |                           |                                |
| OJT-OPS-9 Shutdown Operations (also ISA-OLE-11)                                      |                           |                                |

Supervisor's signature indicates successful completion of all required courses and activities listed in this journal and readiness to appear before the Oral Board.

Supervisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

The appropriate Form 1, "Reactor Operations Inspector Basic-Level Equivalency Justification," must accompany this signature card and certification, if applicable.

(The electronic signature card, which is located on the Digital City and other internal NRC websites is also acceptable.) Record completion in TMS by sending a request to [TrainingSupport.Resource@nrc.gov](mailto:TrainingSupport.Resource@nrc.gov).

| Form 1: Reactor Operations Technical Proficiency-Level Equivalency Justification     |  |
|--|--|
| Inspector Name: _____  | Identify equivalent training and experience for which the inspector is to be given credit. |
| A. Training Courses  |  |
| 10 CFR 50.59 course in TMS   |  |
| Maintenance Rule training course in TMS  |  |
| Power Plant Engineering (E-110) (TTC course or self-study)                           |  |
| Reactor Full Series (either BWR or PWR)  |  |
| B. Individual Study Activities   |  |
| ISA-OPS-1 Title 10, "Energy," of the Code of Federal Regulations                     |  |
| ISA-OPS-2 Technical Specifications   |  |
| ISA-OPS-3 Operability  |  |
| ISA-OPS-4 Notice of Enforcement Discretion   |  |
| ISA-OPS-5 Maintenance Rule Implementation  |  |
| ISA-OPS-6 Introduction to the ASME Code and Site Inservice Inspection (ISI) Programs |  |
| ISA-OPS-7 Inservice Testing  |  |
| ISA-OPS-8 Significance Determination Process   |  |
| C. On-the-Job Training Activities  |  |
| OJT-OPS-1 Site System Reviews  |  |
| OJT-OPS-2 Conduct of Operations  |  |
| OJT-OPS-3 Security Plan and Implementation   |  |
| OJT-OPS-4 Radiation Protection Program and Implementation                            |  |
| OJT-OPS-5 Fire Protection Program and Implementation                                 |  |
| OJT-OPS-6 Post trip/Transient Review   |  |
| OJT-OPS-7 Emergency Response   |  |
| OJT-OPS-8 Emergent Work Control and Maintenance Risk Assessments                     |  |
| OJT-OPS-9 Shutdown Operations  |  |

Supervisor's Recommendation                      Signature/Date \_\_\_\_\_

Division Director's Approval                      Signature/Date \_\_\_\_\_

Send copies to the inspector, Human Resources Office, and the supervisor.

Revision History Sheet for IMC 1245 Appendix C-1  
Attachment 1

| Commitment Tracking Number   | Accession Number<br>Issue Date<br>Change Notice | Description of Change   | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|--|---|---|--|---|
|  | 04/05/202<br>CN 02-014                          | Initial issuance  |  |   |
|  | ML031200261<br>05/01/03<br>CN 03-014            | IMC 1245 has been revised to:<br>1. Incorporate feedback from the first year of use.<br>2. Create an Appendix for the Construction Inspector Qualification Journal<br>3. Move the Vendor Inspector and the Operator Licensing Examiner Qualification Journals from the Advanced Level (D Appendices) to the Proficiency Level (C Appendices). |  |   |
|  | ML042450266<br>08/24/04<br>CN 04-022            | Revised in OJT-OPS-3, Security Plan and Implementation, to better understand NRC response to security issues.   |  |   |
| C-1<br>Reference:<br>OIG-05-A-06<br>recommendation<br>7<br>(ML052520204) | ML052580058<br>9/02/05<br>CN 05-024             | Add a requirement that operations inspectors take the appropriate vendor-specific training within 2 years of assignment to a new reactor type.  | None   | N/A   |
| N/A  | ML062400471<br>10/31/06<br>CN 06-032            | To update reference lists and incorporate minor editorial changes. Completed 4 year historical CN search  | None   | ML062890456   |
| N/A  | ML073530647<br>01/10/08<br>CN 08-001            | To update fire protection training, add G-204 as a post qualification training requirement, update reference lists, and incorporate minor editorial changes.  | None   | ML073510727   |



| Commitment Tracking Number | Accession Number<br>Issue Date<br>Change Notice | Description of Change  | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number<br>(Pre-Decisional, Non-Public Information) |
|----------------------------|---|--|--|--|
| N/A                        | ML090360621<br>07/08/09<br>CN 09-017            | To update a reference in OJT-OPS-6, incorporate minor editorial changes, and move post qualification and refresher training requirements into Appendix D-1.  | None   | ML091590710  |
| N/A                        | ML11175A317<br>12/29/11<br>CN 11-044            | This revision modifies the objective of ISA-1 from a “detailed” to a “general” understanding of the CFR requirements, updates operability training in ISA-3, adds training on the Maintenance Rule in ISA-5, adds training on the SERP in ISA-7, adds training on B.5.b in OJT-1, adds key radiation protection terms in OJT-4, and updates references and guidance. | None   | ML11322A093  |
| N/A                        | ML12248A361<br>12/19/12<br>CN 12-029            | This revision updates training on the SDP in ISA-7 to reflect recent changes to IMC 0609, “Significance Determination Process.” Specifically, references to the At-Power SDP (0609, Appendix A) Phase 1, 2, and 3 were replaced and the reference section and scenarios were updated.  | None   | ML12290A180<br>Closed FF:<br>1245C1-1765<br>1245C1-1799  |
| N/A                        | ML15177A309<br>01/13/16<br>CN 16-002            | This revision updates format and references and removes writing guidance in ISA-7 (SDP), including two scenarios that are out of date. This revision also closes a feedback form by adding training (on 10 CFR 50.72, 50.73, and NUREG-1022) to the initial (R-624 series) and refresher (R-704 series) simulator courses.   | None   | ML15195A155<br>Closed FF:<br>1245C1-2069<br>ML15075A079<br>1245C1-2126<br>ML15068A066                    |
| N/A                        | ML16301A167<br>12/19/16<br>CN 16-034            | This revision adds training on 10 CFR 50.59 to ISA-1, updates ISA-7 (SDP), OJT-3 (security plan), OJT-6 (post trip review), OJT-7 (emergency response), and relaxes a prerequisite (to complete Appendix A before beginning this qualification standard) to a “recommendation” the branch chief can override. This revision also updates references and hyperlinks.  | None   | ML16301A342<br>Closed FF:<br>1245C1-2200<br>ML16301A076  |

| Commitment Tracking Number | Accession Number<br>Issue Date<br>Change Notice | Description of Change   | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|----------------------------|---|---|--|---|
|                            | ML20112F347<br>11/09/20<br>CN 20-061            | This revision removed references to out of date websites, programs and procedures. ISA-OPS-3 was significantly revised to reflect new NRC Operability guidance. ISA-OPS-6 was added to introduce inspectors to the ASME code and ISI inspection programs based upon feedback received during focus groups involving resident inspectors. OJT-OPS-3 was updated to provide additional security program inspection guidance for inspectors. | None   | ML20112F452   |