

NRC INSPECTION MANUAL

NSIR/DSO

INSPECTION MANUAL CHAPTER 1245 APPENDIX C4

REACTOR SECURITY INSPECTOR TECHNICAL PROFICIENCY
TRAINING AND QUALIFICATION JOURNAL

Effective Date: 12/16/2022

Table of Contents

INTRODUCTION 1

 Required Reactor Security Inspector Training Courses: 1

Reactor Security Inspector Technical Proficiency Individual Study Activities 2

 (ISA-SG-1) Title 10 of The *Code of Federal Regulations* (10 CFR) 3

 (ISA-SG-2) Security Plan and Implementing Procedures 6

 (ISA-SG-3) Licensee Protective Strategies..... 9

 (ISA-SG-4) Physical Barrier System and Intrusion Detection and Assessment Equipment..11

 (ISA-SG-5) Baseline Security SDP15

 (ISA-SG-6) Access Authorization and Fitness-for-Duty19

 (ISA-SG-7) Security Programs during Construction.....21

Reactor Security Inspector On-the-Job Activities23

 (OJT-SG-1) Licensee Security Training and Qualification Program24

 (OJT-SG-2) Physical Barrier Systems27

 (OJT-SG-3) Access Controls.....29

 Form 1: Regional/Headquarters Reactor Security Inspector Technical Proficiency Level
 Signature Card and Certification.....31

 Form 2: Regional/Headquarters Reactor Security Inspector Technical Proficiency Level
 Equivalency Justification32

Attachment 1: Revision History for IMC 1245 Appendix C4..... Att1-1

INTRODUCTION

Complete Inspection Manual Chapter 1245 (IMC 1245), Appendix A, “Basic Inspector Certification Journal” before completing any activities or courses in this journal. You may complete the General Proficiency requirements contained in IMC 1245, Appendix B together with the Technical Proficiency requirements outlined in this journal.

This journal includes the certification requirements for reactor security inspectors at the Regions and Headquarters. The signature card and equivalency justification forms are at the end of this Appendix. Inspectors, who have qualified under a previous revision of Appendix C4 qualification journal, are not required to take these courses. However, if these inspectors and their supervisor determine that one or all these courses may be beneficial in enhancing the inspector’s abilities to accomplish the mission, then these courses may be taken by previously qualified inspectors.

Security supervisors who would like to enhance their knowledge, skills, and abilities in the area of security are encouraged to consider taking the security courses listed below. These are not required classes for supervisors.

Required Reactor Security Inspector Training Courses:

- [Online Introduction to the Design and Evaluation Process Outline \(DEPO\) for Nuclear Security, Self-Study \(S-118S\)](#)
- Nuclear Technology for Security Course (R-105)
- Security Fundamentals Course (S-301)
- Access Authorization and Fitness for Duty Course (S-302)
- Weapons and Tactics Fundamentals Field Course (S-501)
- Explosives, Blast Effects and Breaching Field Course (S-502)
- Advanced Intrusion Detection Course (S-503)
- Introduction to Emergency Preparedness (H-107)
- Plant Drawing Familiarization for Security (self-study)

If the Regional or Headquarters inspector cannot attend one or more of the required courses listed above because of circumstances beyond his/her control, an alternative acceptable course may be substituted with the documented permission of the Regional or Headquarters inspector’s Branch Chief. Courses selected as an alternative should contain the fundamental information that will provide the inspector the basic knowledge, skills, and abilities as the course or courses being replaced.

Reactor Security Inspector Technical Proficiency
Individual Study Activities

(ISA-SG-1) Title 10 of The *Code of Federal Regulations* (10 CFR)

PURPOSE:

The Nuclear Regulatory Commission (NRC) requires that power reactor licensees establish, operate, and maintain a physical protection system and security organization in accordance with prescribed requirements identified in (10 CFR) Part 73. The 10 CFR provide the content and scope that various licensees must comply with or receive NRC approval to deviate from the requirements. For this reason, it is mandatory that all security inspectors gain a comprehensive knowledge of the contents of applicable security requirements in the 10 CFR. This activity will provide the inspector with detailed knowledge of the contents of the requirements and how to apply the appropriate security regulation requirements.

COMPETENCY AREA: REGULATORY REQUIREMENTS
TECHNICAL EXPERTISE:

LEVEL OF EFFORT: 48 hours

REFERENCES:

- 10 CFR 2.390 (d) "Public Inspections, Exemptions, Request for Withholding"
- 10 CFR Part 26, "Fitness For Duty Programs"
- 10 CFR 50.54(p), "Conditions of Licenses"
- 10 CFR 72 Subpart (H), "Physical Protection"
- 10 CFR 73.1 "Purpose and Scope"
- 10 CFR 73.2, "Definitions"
- 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements"
- 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements"
- 10 CFR 73.23, "Protection of Safeguards Information—Modified Handling: Specific Requirements"
- 10 CFR 73.54, "Protection of Digital Computer and Communication Systems and Networks"
- 10 CFR 73.55, "Requirements for the Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage"
- 10 CFR 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants"

- 10 CFR 73.57, “Requirements for Criminal History Checks Records Checks of Individuals Granted Unescorted Access to a Nuclear Power Facility or Access to Safeguards Information”
- 10 CFR 73.58, “Safety/Security Interface Requirements for Nuclear Power Reactors”
- 10 CFR 73.70, “Records”
- 10 CFR 73.71, “Reporting of Safeguards Events”
- 10 CFR Part 73, Appendices B, C, G, and H
- 10 CFR Part 74, “Material Control and Accounting of Special Nuclear Material”

EVALUATION CRITERIA:

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

- Identify, recognize, and locate specific security related topics presented in the CFR and Appendices referenced above.
- Describe the general objective of a licensee’s security program with a focus on design basis threat.
- Recognize and discuss the definitions of terms and security processes identified in the CFR and Appendices referenced above.
- Delineate specific testing frequencies for security equipment identified in the CFR. Delineate the qualification and requalification for security personnel and weapons. Recognize and discuss security event reporting requirements.
- Recognize and discuss security licensing activities.
- Describe the role of the Federal Bureau of Investigation (FBI) with respect to the licensee’s Access Authorization program.
- Discuss the purpose of performing background checks and fingerprint checks.
- Discuss fitness-for-duty and access authorization requirements pertaining to normal and reactive activities.
- Discuss activities regarding the proper control of classified, safeguards, and other sensitive information.
- Discuss activities related to the control and accounting of special nuclear material.

TASKS:

- Locate and review general and specific security activities described in the 10 CFR.

- Review the definition of classified, safeguards information, and other sensitive information, and determine the appropriate control measures for the information.
- Review the information in the CFR related to the physical protection of nuclear power reactors, access authorization, fitness for duty, cyber security, safety/security interface, and material and control requirements.
- Determine what types of licensing actions can be submitted by licensees using 10 CFR 50.54(p), 10 CFR 73.55(r), 10 CFR 73.5, and 10 CFR Part 72.
- Review the description and application of the DBT
- Meet with your supervisor or a qualified reactor security 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: Reactor Security Inspector Proficiency Level Qualification Signature Card Item ISA-SG-1.

(ISA-SG-2) Security Plan and Implementing Procedures

PURPOSE:

The NRC requires each power reactor licensee to establish and implement Physical Security, Training and Qualification and Safeguards Contingency Plans. Each licensee is also required to have procedures in place to implement the security plans. The security plans describe how the licensee will implement regulatory requirements. Because the security plans provide the basis for the implementation of the regulatory requirements in 10 CFR Part 73, security inspectors should be familiar with a licensee's security plans before conducting an inspection at the facility. This activity will provide guidance on how to review facility's security plans, which are available in the regional offices and in Headquarters, before an inspection; and how to review the site's security implementing procedures, which are available at the facility, during an inspection.

COMPETENCY AREA: INSPECTION
TECHNICAL EXPERTISE

LEVEL OF EFFORT: 16 Hours

REFERENCES:

- The NRC-approved Physical Security Plan for a facility designated by your supervisor
- The NRC-approved Training and Qualification Plan for a facility designated by your supervisor.
- The NRC-approved Contingency Plan for a facility designated by your supervisor.
- The NRC-approved Cyber Security Plan for a facility designated by your supervisor.
- 10 CFR 50.54(p), 73.1, 73.2, 73.21, 73.22, 73.23, 73.54, 73.55, 73.56, 73.57, 73.58, 73 Appendix B and Appendix C.
- Regulatory Guide 5.44, "Perimeter Intrusion Alarm Systems," (latest revision).
- Regulatory Guide 5.66, Revision 2, "Access Authorization Program for Nuclear Power Plants," (latest revision).
- Regulatory Guide 5.74, "Managing the Safety/Security Interface," (latest revision).
- Regulatory Guide 5.75, "Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities," (latest revision).
- Regulatory Guide 5.76, "Physical Protection Programs at Nuclear Power Reactors," (latest revision) dated (Safeguards Information).
- Regulatory Guide 5.54, "Standard Format and Content of Safeguards Contingency Plans for Nuclear Power Plants," (latest revision) (Safeguards Information).

- Regulatory Guide 5.71, “Cyber Security Programs for Nuclear Facilities,” (latest revision).
- Regulatory Guide 5.79, “Protection of Safeguards Information,” (latest revision).
- NUREG-1959, “Intrusion Detection Systems and Subsystems,” (latest revision).
- NUREG-1964, “Access Control Systems,” (latest revision).
- NEI 03-01 “Nuclear Power Plant Access Authorization Program” (latest Revision).
- NEI 99-02 “Regulatory Assessment Performance Indicator Guideline” (latest revision).

EVALUATION CRITERIA:

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

- Discuss the general content of each of the security plans and their regulatory basis.
- Discuss specific areas where you would expect the licensee to have developed more detailed implementing procedures (i.e., access authorization, compensatory measures, equipment testing, training, etc.).
- Describe the components of vital area access controls, physical security equipment, intrusion detection and assessment equipment. Describe how these are used by licensees to satisfy 10 CFR 73.55 requirements.
- Discuss the definition of terms provided in the security plans.
- Discuss recent changes made to the security plans in accordance with 10 CFR 50.54(p), and the reasons for the changes.
- Discuss security plan commitments that may be more or less restrictive than the applicable regulatory requirements.

TASKS:

- Locate a copy of the security plans for the assigned facility.

CAUTION: The Physical Security Plan and the Safeguards Contingency Plan generally contain safeguards information and should be controlled accordingly. The Training and Qualifications Plan may contain either safeguards or proprietary information and should also be controlled accordingly.

- Locate copies of the regulatory requirements, regulatory guides, and NUREG documents identified in the reference section above.

- Review the security program plans, regulatory and guidance documents, and any other supporting documentation necessary to be able to discuss the topics identified in the Evaluation Criteria above.
- 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: Reactor Security Inspector Proficiency Level Qualification Signature Card Item ISA-SG-2.

(ISA-SG-3) Licensee Protective Strategies

PURPOSE:

The NRC requires that a licensee be able to adequately defend its plant against the design basis threat (DBT) addressed in 10 CFR 73.1. This rule specifies the specific elements of the DBT against which each licensee is required to defend. For this reason, it is essential that all security inspectors gain a detailed knowledge of the actions that a licensee must complete to meet these requirements. This activity will provide security inspectors with detailed knowledge of the contents of the rule requirements and how to apply the DBT requirements.

COMPETENCY AREAS: TECHNICAL EXPERTISE

LEVEL OF EFFORT: 24 hours

REFERENCES:

- 10 CFR 73.1, 73.55(a), 73.55(b), and Appendices B and C
- Inspection Procedure 71130.05, "Protective Strategy Evaluation"
- Inspection Procedure 71130.03, "Contingency Response – Force-on-Force Testing".
- EA-03-086, "Design Basis Threat for Radiological Sabotage for Operating Power Reactors," (Safeguards Information).
- Regulatory Guide 5.54, "Standard Format and Content of Safeguards Contingency Plans for Nuclear Power Plants," (latest revision) (Safeguards Information).
- Regulatory Guide 5.69, "Guidance for the Application of the Radiological DBT in the Design, Development and Implementation of a Physical Security Protection Program that Meets 10 CFR 73.55 Requirements" (Safeguards Information).
- Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities," (latest revision).
- Regulatory Guide 5.75, "Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities," (latest revision).
- Regulatory Guide 5.76, "Physical Protection Programs at Nuclear Power Reactors," (latest revision).
- Force-on-Force (FOF) evaluation inspection reports.

EVALUATION CRITERIA:

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

- Discuss the regulatory requirements for the design, development, and implementation of a security defense strategy.
- Discuss the Design Basis Threat (DBT) and its associated characteristics.
- Demonstrate the ability to review and evaluate a licensee's overall Safeguards Contingency Response Plan. This should include an evaluation of the licensee's ability to respond to the external DBT by focusing on: (a) the interactions between a licensee's Operations and Security departments in establishing priorities for protecting equipment, (b) the overall protective strategies used, and (c) results of table-top and force-on-force exercises.
- Discuss a licensee's: (1) established target sets and its responsiveness and effectiveness in implementing its strategy to protect these sets, (2) conduct of table-top drills and real-time force-on-force exercises, (3) use of force training, and (4) ability to interdict adversarial forces.
- Discuss how to evaluate the level of security officers' regulatory and site-specific training to include proper application, weapons employed, overall weapons training, manipulation of weapons, and marksmanship proficiency.
- Discuss how to evaluate the effectiveness of licensee's communication system, security alarm stations, detection and assessment aids, and physical barrier systems during conduct of drills, exercises, and FOF inspections.
- Discuss how to evaluate the licensee's command and control during conduct of tactical response drills, and FOF exercises.

TASKS:

- Read and obtain an in-depth understanding of the regulatory requirements included in 10 CFR 73.1, 73.55, Part 73 App B and Part 73 App C.
- Review and evaluate the protective strategy by reviewing at least one licensee protective strategy briefing. If able, attend and observe either IP 71130.03 or IP 71130.05 inspection at a licensee facility designated by your supervisor.
- Review two FOF inspection reports to understand how the evaluations were used to assess the licensee response to the simulated event.
- Meet with your supervisor or a reactor security 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: Security Inspector Proficiency Level Qualification Signature Card, Item ISA-SG-3.

(ISA-SG-4) Physical Barrier System and Intrusion Detection and Assessment Equipment

PURPOSE:

The NRC requires each power reactor licensee to establish and implement physical barriers in accordance with 10 CFR 73.55(e). A description of the physical barrier system is provided in the facility's security plans. Operation, maintenance, and testing of the physical barrier system are described in the facility's Security Plan Implementing Procedures. Because security plans provide the basis for the implementation of the regulatory requirements in 10 CFR Part 73 associated with physical barriers, reactor security inspectors should be familiar with a licensee's security plans before conducting an inspection at the facility. This activity will provide guidance on how to review a facility's security plans, which are available in the NRC's Regional offices and in Headquarters, before an inspection and the security implementing procedures associated with the physical barrier system, which are available at the facility, during an inspection.

Additionally, the NRC requires that each nuclear power reactor licensee establishes, maintains, and uses onsite intrusion detection and assessment equipment as part of a physical protection system, which is designed to protect against the design basis threat of radiological sabotage. The detection and assessment of penetration or attempted penetration of the protected area or the isolation zone adjacent to the protected area barrier is required to assure that the security organization can adequately respond. The licensee's Physical Security Plan provides the required specifications and capabilities related to this equipment. Consequently, it is mandatory that all of NRC's security inspectors have a detailed understanding of the design, capability, and requirements relating to licensee's intrusion detection and assessment equipment as required by 10 CFR 73.55(i)

NOTE: The following courses must be completed before beginning this activity:

1. [Online Introduction to the Design and Evaluation Process Outline \(DEPO\) for Nuclear Security, Self-Study \(S-118S\)](#)
2. Safeguards Information Course (SGI) self-study course

COMPETENCY AREA: INSPECTION
TECHNICAL AREA EXPERTISE

LEVEL OF EFFORT: 32 Hours

REFERENCES:

- The NRC-approved Physical Security Plan for a facility designated by your supervisor
- The NRC-approved Training and Qualification Plan for a facility designated by your supervisor.
- The NRC-approved Safeguards Contingency Plan for a facility designated by your supervisor.
- 10 CFR 50.54(p), ["Process for Changes to Security Plans Without NRC Prior Approval"](#)

- 10 CFR 73.55, 73.71, 73 Appendix B, C and G.
- Regulatory Guide 5.44, Revision 3, “Perimeter Intrusion Detection Systems,” (latest revision).
- Regulatory Guide 5.61, “Intent and Scope of the Physical Protection Upgrade Rule Requirements for Fixed Sites”.
- Regulatory Guide 5.68, “Protection Against Malevolent Use of Vehicles at Nuclear Power Plants,” (latest revision).
- Regulatory Guide 5.69, “Guidance for the Application of the Radiological Design-Basis Threat in the Design, Development and Implementation of a Physical Security Protection Program that meets 10 CFR 73.55 Requirements” (Safeguards Information).
- IP 71130.04, “Equipment Performance Testing and Maintenance”.
- NUREG/CR-6190, Revision 1, “Protection Against Malevolent Use of Vehicles at Nuclear Power Plants—Updated to Reflect Revised DBT,” (latest revision) (Safeguards Information).
- NUREG-1959, “Intrusion Detection Systems and Subsystems,” (latest revision 0).
- NUREG-1964, “Access Control Systems,” (latest revision).
- GL 89-07 Supplement 1 and NUREG/CR-4250, “Vehicle Barriers: Emphasis on Natural Features,” (latest revision).
- RIS 2008-06, “Protection Against the Malevolent Use of Vehicles When Utilizing Landform Obstacles” (latest revision) (ML071560313).
- PDC-TR 06-03, “Vehicle Barrier Maintenance Guidance,” (latest revision).
- W-A-450C/1, “Federal Specification Components for Interior Alarm Systems, Balanced Magnetic Switches”.
- W-A-450B, “Federal Specification Interior Security Components for Alarm Systems”.
- Security Frequently Asked Question (SFAQ) 10-15, “Augmenting Illumination with Technology,” (ADAMS Accession number ML102800178).
- Report on Interaction (ROI) 12-002, “SOCA-ROCA Considerations,” (ADAMS Accession number ML12352A025).

EVALUATION CRITERIA:

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

- Discuss the general content of the applicable portions of the security plans related to physical barriers and their regulatory basis.

- Discuss specific areas where you would expect the licensee to have developed more detailed implementing procedures. (i.e., compensatory measures, physical barrier testing and surveillance, etc.).
- Discuss the definition of terms associated with physical barriers provided in the security plans.
- Discuss in general terms the operation of various types of intrusion detection systems currently used at power reactor facilities.
- Discuss design goals of the vehicle barrier system. Describe how licensees use barriers and vehicle controls to satisfy the requirements of 10 CFR 73.55.
- Discuss the concept of multiple physical barriers to protect a vital area.
- Discuss security plan commitments associated with physical barriers that may be more or less restrictive than the applicable regulatory requirements.
- Discuss the fundamental principles of operation and typical design features associated with commonly used protected area perimeter and vital area detection devices including:
 - E-field detection devices.
 - Infrared detection devices.
 - Microwave detection devices.
 - Motion detection devices.
 - Vibration detection devices.
 - Balanced magnetic switches.
 - Any other intrusion detection systems sensors and devices utilized by licensees.
- Discuss the fundamental principles of operation and typical design features associated with commonly used protected area perimeter and vital area intrusion assessment equipment including:
 - Pan-tilt-zoom cameras (PTZ).
 - Closed circuit televisions (CCTV).
 - Low light/night vision camera systems.
 - Video image capture systems (VICS).
 - Video recording systems.
 - Any other assessment systems and devices utilized by licensees.
- Identify the 10 CFR 73 requirements for nuclear power reactors associated with the above intrusion detection and assessment devices and equipment.
- Explain how a licensee incorporates applicable requirements into its plant specific requirements (e.g., system performance criteria and plant procedures).
- Explain how an NRC security inspector inspects the above intrusion detection and assessment devices and equipment through use of the associated NRC inspection procedures.

- Describe how NRC advisors that work with FOF and licensees test the above intrusion detection and assessment devices.
- Describe what security requirements are applicable to Security Owner Controlled Areas (SOCAs), Restricted Owner Controlled Areas (ROCAs), Early Warning Systems (EWS), or any other system that a licensee has that is not specifically a protected area or vital area system.
- Discuss lighting and the use of technology to augment lighting capabilities at a site in a loss of offsite power situation.

TASKS:

- Locate copies of the regulatory requirements, guides, and NUREG documents identified in the References section above.
- Locate a copy of the Security Plans for the assigned facility.

CAUTION: The Physical Security Plan and the Contingency Plan generally contain safeguards information and should be controlled accordingly. The Training and Qualifications Plan may contain either safeguards or proprietary information and should also be controlled accordingly.

- Review the security plans, regulatory and guidance documents, and any other supporting documentation necessary to be able to discuss the topics identified in the Evaluation Criteria section above.
- 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: Reactor Security Inspector Proficiency Level Qualification Signature Card Item ISA-SG-4.

(ISA-SG-5) Baseline Security SDP

PURPOSE:

The Significance Determination Process (SDP), as described in Appendix E of Inspection Manual Chapter (IMC) 0609, aids NRC inspectors and staff in objectively determining the significance of inspection findings, including categorization of individual findings into one of four response bands, using risk insights when appropriate. The SDP determinations for inspection findings and the performance indicator information are combined for use in assessing licensee performance. The purpose of this activity is for a security inspector to gain the requisite knowledge, understanding, and practical ability to be able to use the Baseline Security SDP to determine the significance of security-related inspection findings.

COMPETENCY AREAS: REGULATORY FRAMEWORK
TECHNICAL AREA EXPERTISE
INSPECTION
PROBLEM ANALYSIS
ASSESSMENT AND ENFORCEMENT

LEVEL OF EFFORT: 8 hours

REFERENCES:

- NRC IMC-0305, "Operating Reactor Assessment Program"
- NRC IMC 2201, "Security Inspection Program for Commercial Power Reactors"
- NRC IMC 0609, "Significance Determination Process" including Appendix E, "Physical Protection Significance Determination Process for Power Reactors"
- NRC IMC 0608, "Performance Indicator Program"
- NRC IMC 0612 Appendix B, "Additional Issue Screening Guidance"
- Security Issues Forum Charter (ADAMS accession number ML091620477)
- NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Section 2.7, "Security Cornerstone"
- 10 CFR Part 26, "Fitness-for-Duty Programs"
- Appendix A to 10 CFR Part 26, "Guidelines for Drug and Alcohol Testing Programs"
- 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements"
- 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements"
- 10 CFR 73.23, "Protection of Safeguards Information—Modified Handling: Specific Requirements"

- 10 CFR 73.55, “Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage”.
- 10 CFR 73.56, “Personnel Access Authorization Requirements for Nuclear Power Plants”.
- 10 CFR 73.57, “Requirements for Criminal History Records Checks of Individuals Granted Unescorted Access to a Nuclear Power Facility or Access to Safeguards Information”.
- 10 CFR 73.58, “Safety/Security Interface Requirements for Nuclear Power Reactors.
- Appendix B to 10 CFR Part 73, “General Criteria for Security personnel”.
- Appendix C to 10 CFR Part 73, “Licensee Safeguards Contingency Plans”.
- Appendix G to 10 CFR Part 73, “Reportable Safeguards Events”
- Appendix H to 10 CFR Part 73, “Weapons Qualification Criteria”.
- RIS 08-04, “Discontinuation of Two Performance Indicators Associated with the Security Reactor Oversight Process”.
- NEI 03-01, “Nuclear Power Plant Access Authorization Program”.

EVALUATION CRITERIA:

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

- Identify documentable security-related findings from either a licensee’s problem identification system, events, or NRC inspector observations using IMC-0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening”.
- Screen the above findings with respect to using Appendix E of NRC IMC 0609.
- Verify the efficacy of the licensee’s efforts to correct weaknesses and deficiencies associated with the screened findings to ensure the objective of the security cornerstone is met.
- Assign the above findings, using the Baseline Security SDP flow chart logic, into one of the following: green, white, yellow, or red.
- Discuss the various types of cross-cutting findings.
- Discuss the make-up and purpose of the Security Issues Forum.
- Discuss your role during the process described in IMC 0609, Attachment 1, “Significance and Enforcement Review Process”.
- Discuss the SDP appeal process described in IMC 0609, Attachment 2, and “Process for Appealing NRC Characterization of Inspection Findings (SDP appeal process)”.

TASKS:

- Read NEI 99-02, Section 2.7, “Security Cornerstone” and familiarize yourself with the security cornerstone performance indicator and its thresholds.
- Read all sections of 10 CFR Part 26 and Appendix A.
- Read all sections of 10 CFR 73.55 and Appendixes B, C, G, and H.
- Read all sections of 10 CFR 73.56.
- Read all sections of 10 CFR 73.57.
- Read the introduction to IMC 0609 and all of Appendix E and become well-versed in the use of the Baseline SDP flow chart logic diagrams.
- Read IMC 0612 Appendix B and understand the process for determining if a security issue is suited for SDP analysis and documentation in an inspection report
- Obtain from your supervisor or a qualified reactor security inspector at least three actual security inspection findings (two of which have been evaluated using the SDP) and perform the following:
 - Using IMC 0612 Appendix B, determine whether each of the issues has sufficient significance to warrant SDP analysis or documentation in an inspection report.
 - Using the Baseline Security SDP flow chart logic of IMC 0609, Appendix E, formulate an outcome as to the security significance category (green, white, yellow, red) for each of the above issues.
 - Using IMC 0305, determine if any cross-cutting issues are applicable to your example findings, and explain the reasons for your determination.
 - Prepare a Security Issues Forum worksheet.
 - Attend a Security Issues Forum meeting.
 - Compare your conclusions with those provided by the actual findings.
 - Discuss your results with your supervisor or a qualified senior reactor security inspector.
- Read IMC 0609 Attachment 1, “Significance and Enforcement Review Process” to understand your role in the process.
- Read IMC 0609 Attachment 2, “Process for Appealing NRC Characterization of Inspection Findings (SDP Appeal Process)” to understand the process and your role in it.
- Be able to write a security-related contrary to statement.

- Meet with your supervisor or a qualified senior security 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: Reactor Security Inspector Proficiency Level Qualification Signature Card Item ISA-SG-5.

(ISA-SG-6) Access Authorization and Fitness-for-Duty

PURPOSE:

Each nuclear power plant is required to ensure that only authorized and cleared personnel are granted unescorted access to the plant protected area and vital areas. Additionally, licensees are required to have a drug and alcohol testing program to ensure workers are fit for duty. The purpose of this activity is to provide information and guidance for a security inspector to adequately review the licensee's Access Authorization and Fitness-for-Duty programs to ensure that the licensee has granted unescorted access to its protected area and vital areas to only authorized and cleared personnel and licensee personnel are fit for duty.

COMPETENCY AREAS: REGULATORY FRAMEWORK
TECHNICAL AREA EXPERTISE
INSPECTION
ASSESSMENT AND ENFORCEMENT:

LEVEL OF EFFORT: 24 hours

REFERENCES:

- 10 CFR 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants," 10 CFR 73.57, "Requirements for Criminal History Checks of Individuals Granted Unescorted Access to a Nuclear Power Facility or Access to Safeguards Information by Power Reactor Licensees," and
- 10 CFR 73.21, "Requirements for the Protection of Safeguards information".
- 10 CFR Part 26, "Fitness-for-Duty Programs".
- 10 CFR 73.55(b)(9), "The licensee shall establish, maintain, and implement an insider mitigation program and shall describe the program in the Physical Security Plan"
- EA -02-261, "Issuance of Order for Compensatory Measures Related to Access Authorization."
- Inspection Procedure IP 71130.01, "Access Authorization."
- Inspection Procedure IP 71130.08, "Fitness-for-Duty Program."
- NEI 03-01, "Nuclear Power Plant Access Authorization Program."
- Information Notices regarding access authorization. 10 CFR Part 26, Subpart I, "Managing Fatigue".
- Regulatory Guide 5.66, "Access Authorization Programs for Nuclear Power Plants."
- Regulatory Guide 5.77, "Insider Mitigation Program".

- Regulatory Guide 5.73, “Fatigue Management for Nuclear Power Plant Personnel”.

EVALUATION CRITERIA:

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

- Describe the process licensee would use for granting an individual unescorted access to the plant.
- Describe the elements of the required background investigation that licensees must complete on all individuals seeking unescorted access to the plant protected and vital areas.
- Describe the elements of a licensee’s fitness-for-duty program including pre-access drug testing, for-cause testing, random testing, and post-accident testing.
- Describe the other requirements that a licensee must complete prior to issuing an individual a security badge granting unescorted plant access (i.e., fitness-for-duty, plant radiation training, etc.).
- Describe the fatigue requirements for security officers and their work hour controls.
- Describe the Insider Mitigation Program, its purpose, and its elements.

TASKS:

- Read all the reference documents listed above.
- Read Inspection Procedure (IP) 71130.01, “Access Authorization”.
- Read Inspection Procedure (IP) 71130.08, “Fitness-for-Duty Program”.
- Read 10 CFR 73.56, “Personnel access authorization requirements for nuclear power plants.” and 73.57, “Requirements for criminal history records checks of individuals granted unescorted access to a nuclear power facility, a non-power reactor or access to Safeguards Information.”
- Read information notices regarding access authorization.
- Read NEI 03-01, “Nuclear Power Plant Access Authorization Program”.
- Meet with your supervisor or a senior security inspector to discuss any questions you may have as a result of this activity.

DOCUMENTATION: Reactor Security Inspector Proficiency Level Qualification Signature Card Item ISA-SG-6.

(ISA-SG-7) Security Programs during Construction

PURPOSE:

There has been a renewed interest in the nuclear power industry to build new reactors. The NRC developed a streamline approach for licensing a new reactor which is delineated in 10 CFR Part 52. Additionally, there could be a reactor that is licensed and constructed under 10 CFR Part 50 which would be considered a new reactor and construction requirements apply. Reactors under construction are required to have a fitness-for-duty and information security program. Therefore, it is imperative for a security inspector to understand the regulatory requirements associated with new reactors under construction. (NOTE: Only required for Region II inspectors or as assigned by your supervisor).

COMPETENCY AREAS: REGULATORY FRAMEWORK
TECHNICAL AREA EXPERTISE
INSPECTION

LEVEL OF EFFORT: 8 hours

REFERENCES:

- 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants".
- 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities".
- 10 CFR Part 26, "Fitness-for-Duty Programs".
- 10 CFR Part 26, Subpart K, "FFD Programs for Construction".
- 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements".
- 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements".
- Inspection Manual Chapter 2200, "Security Inspection Program for Construction".
- Inspection Procedures under the 81000 series.
- Inspection Procedure 71130.06, "Protection of Safeguards Information".
- Inspection Procedure 71130.08, "Fitness-for-Duty (FFD) Program".
- Inspection Manual Chapter 0609, Appendix E.

EVALUATION CRITERIA:

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

- Describe what two types of programs a licensee could have during construction for FFD (i.e., full program or Subpart K).
- Describe the elements of an FFD Program at a construction site with a full program.
- Describe the elements of an FFD Program at a construction site doing solely 10 CFR Part 26, Subpart K.
- Describe and discuss which inspection procedures are used for a licensee that implements a full FFD program during construction. Additionally, describe and discuss which inspection procedures are used for a licensee that implements a Subpart K program.
- Describe the applicability of an information protection program for a site under construction.
- Take an FFD and SGI finding that occurred at a new reactor during construction and run it through the applicable SDP.
- Describe what physical protection requirements you would expect to see at a construction site.

TASKS:

- Read all the reference documents listed above.
- Obtain two case studies, one fitness-for-duty and one Safeguards Information finding, for a construction site and process them through the appropriate significance determination process (SDP) and discuss your results with a security inspector.
- Meet with your supervisor or a security inspector to discuss any questions you may have as a result of this activity.

DOCUMENTATION: Reactor Security Inspector Proficiency Level Qualification Signature Card
Item ISA-SG-7

Reactor Security Inspector
On-the-Job Activities

(OJT-SG-1) Licensee Security Training and Qualification Program

PURPOSE:

The purpose of this activity is to prepare the inspector to independently perform NRC inspections of licensee's security training programs to ensure that personnel assigned security duties meet the minimum criteria in accordance with 10 CFR Part 73 Appendix B & H to perform their assigned security-related job duties.

COMPETENCY AREA: TECHNICAL AREA EXPERTISE:

LEVEL OF EFFORT: 24 hours

REFERENCES:

- Licensee Training and Qualification Plan
- Licensee Physical Security Plan.
- Licensee Contingency Response Plan.
- 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage".
- 10 CFR Part 73, Appendices B and H.
- Inspection Procedure 71130.03, "Response to Contingency Events".
- Inspection Procedure 71130.05, "Protective Strategy Evaluation".
- Inspection Procedure 71130.07, "Security Training".
- Regulatory Guide 5.75, "Training & Qualification of Security Personnel at Nuclear Power Reactor Facilities," (latest revision).
- Section 17.5 (1) National Rifle Association High-Power Rifle Rules Book.
- Any applicable Federal, State, or Local references licensees have adopted for safety and construction of the range.

EVALUATION CRITERIA:

When you have completed this activity, you will be able to do the following:

- Determine which aspects of licensee training relate to regulatory requirements.
- Describe the training and qualification criteria that must be met by personnel assigned to the licensee's security organization before assuming security-related duties.

- Evaluate the licensee's employment of weapons (rifles, handguns, and shotguns) to determine if the employment of those weapons is safe and effective.
- Evaluate firing range safety conditions according to Federal, State, or Local references licensees have adopted to be used at the range.
- Evaluate the effectiveness of the licensee's tactical qualification course and the licensee's training facilities to determine whether the course of fire is representative of the conditions a security force member would encounter during a contingency response at the nuclear power plant.

TASKS:

- Locate the security officer training-related requirements in 10 CFR Part 73 Appendix B and in the licensee's Security Training and Qualification plan.
- Before going to a site, meet with a qualified reactor security inspector or your supervisor and discuss the following:
 - NRC policy related to handling licensee weapons.
 - NRC policy on evaluating licensee staff shooting at the firing range.
 - NRC expectations on basic firearm safety.
- Review previous inspection reports for items related to security training. Remember to look for issues where the corrective action involved training the security officers.
- Identify and review security implementing procedures related to training.
- Review the licensee's security officer training schedule to identify training or qualification activities that will be occurring during the inspection.
- Observe tactical weapons training or qualification activities and make an independent assessment in the following areas:
 - Firing distances or alternate training methodologies (such as reduced target sizes) that account for firing distances that closely resemble the licensee's protective strategy.
 - Firing from a reasonable and representative facsimile of licensee defensive positions, elevations, and distances.
 - The combined use of handguns and shoulder fired weapons employed during a contingency event according to the site's protective strategy.
 - Adequate levels of stress and physical demands on security force members (e.g., engaging targets while on the move).
 - Ability to effectively engage targets through smoke.

- Proper cover and concealment tactics while engaging multiple targets, moving targets, and decision-making targets.
- Ability to communicate via radio while responding to contingencies.
- Proper and effective manipulation of weapons (adherence to safe handling while loading, reloading, clearing of malfunctions, sight alignment/sight picture, breath control, transition to another weapon).
- The ability to recover from simulated weapon malfunctions (e.g., dummy rounds).
- Firing at multiple targets, loading, and reloading while wearing a protective mask.
- Non-dominant/support hand shooting.
- Effective individual and team movement techniques.
- Use of the minimum quantity of combined handgun and shoulder-fired weapon ammunition necessary to effectively implement the licensee's protective strategy.
- Review training records to determine if they reflect the Security Training and Qualification Plan.
- Meet with a qualified reactor security inspector to discuss your independent assessment of the licensee performance relative to the tasks above. Be prepared to defend your assessment and provide examples to support your conclusions.
- Meet with your supervisor or a qualified reactor security inspector to discuss any questions you may have as a result of this activity and to demonstrate that you can meet the evaluation criteria listed in this activity.

DOCUMENTATION: Reactor Security Inspector Proficiency Level Qualification Signature Card Item OJT-SG-1.

(OJT-SG-2) Physical Barrier Systems

PURPOSE:

Nuclear facilities are required to install and maintain physical barriers that protect the facility and high-risk plant equipment in conformance with regulatory requirements. Failure of this element of the security program compromises the ability to protect high-risk plant equipment and activities. It is vital that the inspector obtain the necessary information to make an informed and knowledgeable judgment regarding the effectiveness of security barriers. Upon completion of this guide, you will be able to identify information sources that could be used to assess the adequacy and appropriateness of security barriers.

COMPETENCY AREA: INSPECTION

LEVEL OF EFFORT: 80 hours

REFERENCES:

- Licensee security plan and implementing procedures
- 10 CFR Part 73, "Physical protection of plants and material".
- Inspection Procedure IP 71130.04, "Equipment Performance Testing and Maintenance," (latest revision).
- Regulatory Guide 5.66, Revision 2, "Access Authorization Program for Nuclear Power Plants," (latest revision).
- Regulatory Guide 5.68, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," (latest revision).
- Regulatory Guide 5.77, "Insider Mitigation Program," (latest revision).
- NUREG/CR-6190, Revision 1, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants - Updated to Reflect Revised DBT," (latest revision) (Safeguards Information).

EVALUATION CRITERIA:

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

- Describe and categorize physical barrier systems and intrusion detection systems that are required by regulations to be installed and maintained.
- Describe how you would verify the effectiveness of physical barriers.
- Describe how a licensee tests different intrusion detection equipment at a site.

- Describe which reference documents you would consult to verify that physical barriers were installed and maintained in accordance with commitments.
- Identify methodologies to verify security organization activities that evaluate physical barrier effectiveness.

TASKS:

- Read security plan commitments that identify and describe how physical barriers are installed and maintained to ascertain that the barriers are in conformance with regulatory requirements.
- Observe physical barriers to ascertain whether the barriers are adequate and appropriately installed for their intended function.
- Review appropriate licensee documentation that identifies maintenance-related activities and problem identification and resolution issues. Verify that maintenance and testing activities are conducted in a timely and effective manner and in accordance with 73.55(n) and licensee implementing procedures.
- Observe functionality testing or challenge testing of an intrusion detection system at a licensee facility. Identify the process the licensee utilizes to receive an alarm during the test, how they conduct the test, and which procedures they used to test the equipment.
- Interview selected security personnel to determine their duties and responsibilities related to physical barrier activities testing, maintenance, and oversight.
- Conduct an evaluation of results regarding physical barrier effectiveness against those reached by the licensee. If there are differences, discuss the differences with your supervisor or a senior security inspector to understand why the difference exists.

DOCUMENTATION: Security Inspector Proficiency Level Qualification Signature Card Item OJT-SG-2.

(OJT-SG-3) Access Controls

PURPOSE:

Each nuclear power plant is required to insure that only authorized and cleared personnel, materials, and vehicles enter the protected area and vital areas. Licensees are required to check personnel, materials, and vehicles for proper identification and authorization, and search for devices such as firearms, explosives, and incendiary devices or other items which could be used for radiological sabotage prior to admittance into the protected area. The purpose of this activity is to provide information and guidance for a security inspector to adequately review a licensee's Access Control program and methods in place to ensure that personnel controlling access points properly identify, authorize, and search all personnel, materials and vehicles entering the protected area.

COMPETENCY AREAS: REGULATORY FRAMEWORK
TECHNICAL AREA EXPERTISE
INSPECTION
ASSESSMENT AND ENFORCEMENT

LEVEL OF EFFORT: 12 hours

REFERENCES:

- 10 CFR 73.55.
- Inspection Procedure IP 71130.02 Access Control.
- Regulatory Guide 5.7, "Entry/Exit Control for Protected Areas, Vital Areas, and Materials Access Areas".
- ASTM F792-82, "Standard Practice for Design and Use of Ionizing Radiation Equipment for the Detection of Items Prohibited in Controlled Access Areas".

EVALUATION CRITERIA:

Complete the tasks specified in this OJT guide and meet with your supervisor or a senior security inspector to discuss any questions that you may have as a result of this activity. Upon completion of this activity, you should be able to:

- Describe which reference documents you would consult to verify that hardware devices and physical barriers in place to control access were installed and maintained in accordance with commitments.
- Describe how you would verify the effectiveness of the access control methods.
- Describe the purpose and use of an electronic key card system for gaining access to the plant protected area and vital areas.

- Describe the purpose, use, and types of available biometric devices in use at many plants.
- Describe the functions served by the central and secondary alarm stations in insuring that only authorized personnel are granted unescorted access to the plant protected area and vital areas.
- Describe “tailgating” and methods that licensees may use to prevent or minimize it.
- Describe the NEI Personnel Access Data System (PADS) and its interfaces with licensees’ access authorization programs.
- Describe the importance of always wearing a security badge while inside the plant protected and vital areas. Describe what occurs if an individual loses his/her security badge.

TASKS:

- Read Inspection Procedure (IP) 71130.02, “Access Control”.
- Read 10 CFR 73.55.
- Read information notices regarding access control.
- Read Regulatory Guide 5.7, “Entry/Exit Control for Protected Areas, Vital Areas, and Materials Access Areas”.

DOCUMENTATION: Security Inspector On-the-Job Qualification Signature Card,
Item OJT- SG-3.

Form 1: Regional/Headquarters Reactor Security Inspector Technical
Proficiency Level Signature Card and Certification

Inspector's Name:	Employee Initials Date	Supervisor's Signature/Date
Required Training Courses		
Nuclear Technology for Security Course (R-105)		
Online Introduction to the Design and Evaluation Process Outline (DEPO) for Nuclear Security, Self-Study (S-118S)		
Security Fundamentals Course (S-301)		
Access Authorization and Fitness-For-Duty (S-302)		
Weapons and Tactics Fundamentals Field Course (S-501)		
Explosives, Blast Effects and Breaching Field Course (S-502)		
Advanced Intrusion Detection & Assessment Course (S-503)		
Introduction to Emergency Preparedness (H-107)		
Safeguards Information Course (self-study)		
Plant Drawing Familiarization for Security (self -study)		
Individual Study Activities		
(ISA-SG-1) Code of Federal Regulations (CFRs)		
(ISA-SG-2) Security Plan and Implementing Procedures		
(ISA-SG-3) Licensee Protective Strategies		
(ISA-SG-4) Physical Barrier System and Intrusion Detection and Assessment Equipment		
(ISA-SG-5) Baseline Security SDP		
(ISA-SG-6) Access Authorization and Fitness-For-Duty		
(ISA-SG-7) Security Programs during Construction (Required for RII or as assigned by supervisor)		
On-the-Job Activities		
(OJT-SG-1) Licensee Security Training and Qualification Program		
(OJT-SG-2) Physical Barrier Systems		
(OJT-SG-3) Access Controls		

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: _____

Form 2: Regional/Headquarters Reactor Security Inspector Technical
Proficiency Level Equivalency Justification

Required Training Courses	
Inspector Name:	Identify equivalent training and experience for which the inspector is to be given credit.
Nuclear Technology for Security Course (R-105)	
Introduction to Physical Security Fundamentals (S-101)	
Security Fundamentals Course (S-301)	
Weapons and Tactics Fundamentals Field Course (S-501)	
Explosives, Blast Effects and Breaching Field Course (S-502)	
Advanced Intrusion Detection & Assessment Course (S-503)	
Introduction to Emergency Preparedness (H-107)	
Safeguards Information Course (self- study)	
Plant Drawing Familiarization for Security (self-study)	
Individual Study Activities	
(ISA-SG-1) Code of Federal Regulations (CFRs)	
(ISA-SG-2) Security Plan and Implementing Procedures	
(ISA-SG-3) Licensee Protective Strategies	
(ISA-SG-4) Physical Barrier Systems and Intrusion Detection and Assessment Equipment	
(ISA-SG-5) Baseline Security Significance Determination Process	
(ISA-SG-6) Access Authorization and Fitness-for-Duty	
(ISA-SG-7) Security Programs during Construction (Required for RII or as assigned by supervisor)	
On-the-Job Activities	
(OJT-SG-1) Licensee Security Training and Qualification Program	
(OJT-SG-2) Physical Barrier Systems	

(OJT-SG-3) Access Controls	
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Supervisor's Recommendation: _____ Date: _____

Division Director's Approval: _____ Date: _____

Copies to: Inspector and official training file

END

Attachment 1: Revision History for IMC 1245 Appendix C4

Commitment Tracking Number	Accession Number Issue Date 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)
N/A	ML083540494 03/11/09 CN 09-009	Major revisions to update references and guidance documents, incorporate training courses developed by NSIR, and include new qualification requirements for Security Inspectors	None	ML090640149
N/A	ML13595A440 11/29/13 CN 13-027	Major restructuring of the document based on four feedback forms to streamline qualification and update reference documents that have been revised since the last qualification standard revision and to include a study activity for security programs during construction of a new reactor.	None	ML13295A443 Closed Feedback Forms: 1245-1708; 1245-1709; 1245-1710; 1245-1711
N/A	ML20223A135 11/18/20 CN 20-063	Minor changes to update reference documents and minor editorial/formatting changes.	None	ML20223A133
NA	ML22265A208 12/16/22 CN 22-027	Editorial changes to align with required course title change implemented at the TTC	None	