

# NRC INSPECTION MANUAL

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## MANUAL CHAPTER 1245

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### QUALIFICATION PROGRAM FOR THE OFFICE OF NUCLEAR REACTOR REGULATION PROGRAMS

#### 1245-01 PURPOSE

01.01 To define the initial training and qualification requirements for staff performing activities in the Nuclear Reactor Regulation (NRR) programs.

01.02 To establish the requirements for completing refresher and continuing training as a means for updating and maintaining qualification.

01.03 To establish the requirement and define the process for evaluating the effectiveness of the inspector training and qualification process.

#### 1245-02 OBJECTIVES

02.01 To ensure that the NRC staff has the necessary knowledge and skill to successfully implement the NRR programs.

02.02 To ensure that the inspector training and qualification program remains effective in preparing inspectors to implement the inspection program.

#### 1245-03 DEFINITIONS

03.01 Attitude. A manner of performing tasks that demonstrates an understanding of and an appreciation for the NRC's organizational values of integrity, excellence, service, respect, cooperation, commitment, and openness.

03.02 Basic Inspector Certification. A certification made by the trainee's supervisor which signifies that the individual has successfully completed all basic level inspector training and qualification activities. Achieving Basic Inspector Certification allows an individual to perform limited scope inspection activities. Inspection activities will be specifically assigned and are to be performed with an appropriate degree of detailed supervision.

03.03 Competency. The group of related knowledge, skills and attitudes describing the characteristics needed to perform successfully as an inspector.

03.04 Continuing Training. Activities designed to build on what a trainee learned in initial training by:

- a. Providing more in-depth knowledge in areas that are covered in initial training.
- b. Addressing changes to the programs and processes that affect how NRC staff conducts job related activities.
- c. Providing lessons learned from recent industry and agency activities.

03.05 Basic-Level Training and Qualification. The activities designed to provide newly hired staff with an awareness of basic information related to the Agency, the role of the inspector, and the technology being regulated, and to provide a context for the development of proficiency as an inspector. Successful completion of Basic-Level Training leads to Basic Inspector Certification.

03.06 Equivalency Examination. An examination administered through the training organization or its contractors, in lieu of specific course attendance.

03.07 Full Inspector Qualification. A certification by the Regional Administrator or Office Director, the basis of which is a recommendation by the Inspector Qualification Board. Full Inspector Qualification indicates that the individual has completed all Basic-Level and Proficiency-Level inspector training and qualification activities. Achieving Full Inspector Qualification allows an individual to be assigned the full scope of inspection related activities to be independently performed with routine oversight and supervision.

03.08 Initial Training and Qualification. The complete set of training activities (individual-study, classroom, on-the-job training) that covers the knowledge, skills and attitudes needed to successfully achieve Full Inspector Qualification.

03.09 Inspector. An individual who conducts on-site activities including individual or team inspections, examinations, audits, or reviews. For the purpose of this manual chapter, requirements for inspectors apply also to examiners unless specifically noted otherwise.

03.10 Knowledge. The facts, concepts, ideas, and relationships that support successful on-the-job performance. Normally referenced together with skills and attitudes and abbreviated as KSAs.

03.11 On-the-job Training (OJT). A training method that uses structured hands-on activities to develop the required job-related knowledge and skills.

03.12 Post-Qualification Training. Training received after qualification to supplement or enhance the professional development of NRC staff. (See also Refresher Training and Continuing Training.)

03.13 Proficiency-Level Training and Qualification. The activities designed to develop the technical knowledge and interpersonal skills of inspectors already qualified at the basic level. Successful completion of the Proficiency Level Training and Qualification activities leads to Full Inspector Qualification.

03.14 Inspector Qualification Board. A board, consisting of management and inspection staff, established to assess the qualifications of an individual to independently perform the prescribed NRR inspections.

03.15 Qualification Journal. The document listing the requirements for achieving qualification and containing the documentation of successful completion of the formal classroom instruction, on-the-job training, and individual-study requirements.

03.16 Refresher Training. Activities designed to maintain the overall level of performance by:

- a. Readdressing some KSAs presented in initial training, particularly those that are related to important tasks that are hard to do and not performed very often.
- b. Providing training in areas where individual or program performance has been identified as needing improvement.

03.17 Skill. A demonstrated ability and expertness to perform tasks successfully on-the-job.

03.18 Specialized and Advanced Training. Technical training which increases the depth of an individual's knowledge in a specific area. Specialized and advanced training can be completed after completing the inspector qualification requirements or concurrent with other Proficiency-Level training. However, unless specifically identified in the proficiency-level training for the inspector classification, specialized and advanced training are not required for Full Inspector Qualification. (Examples include: Fire Protection, Design Engineering, Diesels)

#### 1245-04 RESPONSIBILITIES AND AUTHORITIES

04.01 Associate Director for Training and Development, Office of Human Resources. Administers and implements the formal training programs for NRR as identified in this manual chapter. Assesses training course effectiveness and identifies areas where the course content needs to be revised.

04.02 Director, Office of Nuclear Reactor Regulation. Ensures that the headquarters staff achieves and maintains qualifications in accordance with the guidelines in this manual chapter. Establishes the training qualification requirements for staff who perform activities for which NRR is responsible. Certifies the headquarters staff who qualify under this manual chapter.

04.03 Director, Office of Nuclear Security and Incident Response. Ensures that the headquarters staff achieves and maintains qualifications in accordance with the guidelines in this manual chapter. Establishes the training qualification requirements contained in Appendix C4, Safeguards Inspector Training and Qualification Journal. Certifies the headquarters staff who qualify under this manual chapter.

04.04 Regional Administrator. Ensures that the regional staff achieves and maintains qualifications in accordance with the guidelines in this manual chapter. Develops procedures for implementing this manual chapter for regional staff. Certifies that regional staff are qualified under this manual chapter.

04.05 Directors, NRR and Regional Divisions. Approves the use of and accepts the justification for using an alternate method for meeting qualification program requirements. Assists the Office of Human Resources in developing, monitoring, and reviewing formal training courses for NRR qualification programs. Ensures that the Expectations for Inspectors Seminar is presented each calendar year according to the following schedule:

1<sup>st</sup> Quarter - Region IV; 2<sup>nd</sup> Quarter Region I; 3<sup>rd</sup> Quarter - Region III; and 4<sup>th</sup> Quarter - Region II.

04.06 Chiefs, NRR Program Branches. Develops and maintains, in conjunction with the Associate Director for Training and Development, the regions, and headquarters staff, the qualification journals listed in Appendices A, B, C, and D of this chapter. Evaluates proposed changes to the NRR programs for impacts on training. Periodically reviews and assesses the effectiveness of staff in implementing NRR programs to identify needed refresher and continuing training topics. Assesses the inspector training and qualification program effectiveness and identifies areas where the program needs to be revised. Approves deviation requests.

04.07 Immediate Supervisor of qualifying individuals. Assigns fully qualified individuals to work with trainees during the qualification process. Ensures that qualifying individuals have successfully completed the basic level requirements. Requests Deviations, as appropriate, from the Program Office. Certifies that the individual is qualified to the Basic Level. Assesses the ability of the qualifying individual and provides appropriate levels of detailed supervision based on the individual's level of proficiency. At the Proficiency Level, ensures an individual's readiness to independently perform job responsibilities. Recommends each qualifying individual assigned to them as prepared for review by the Inspector Qualification Board.

## 1245-05 REQUIREMENTS

Staff implementing NRR programs must understand the facilities, equipment, processes, and activities of those programs, as well as the criteria, techniques, and mechanics of implementing the programs. The qualification process is intended to provide staff with sufficient information to perform program activities that are technically correct and in accordance with NRC regulations, policies, and procedures.

Attachment 1, "General Overview of the Inspector Training and Qualification Program," is a complete description of the program for qualifying inspectors. Attachment 2, "Inspector Competencies," lists the competencies which serve as the basis for the inspector qualification requirements. Attachment 3, "General Orientation Topics," lists topics, which are not part of the formal inspector qualification program, but are important for general employee administrative knowledge and are provided as a convenience for supervisors.

05.01 Training and Qualification Requirements. Staff assigned to perform inspections or to perform licensed operator examinations in NRR program areas must have successfully completed the applicable requirements of the applicable qualification program within 24 months.

Each inspector must complete the "Basic-Level Training and Certification Journal" contained in Appendix A, the "General Proficiency-Level Training and Qualification Journal" contained in Appendix B, and the "Technical Proficiency-Level Training and Qualification Journal" contained in Appendix C for one of the following inspector classifications:

1. Operations Inspector
2. Reactor Engineering Inspector
3. Reactor Health Physics Inspector
4. Reactor Physical Protection Inspector
5. Non-Power Reactor Inspector
6. Emergency Preparedness Inspector

7. (Reserved)
8. Vendor Inspector
9. Construction Inspector
10. Operator Licensing Examiner

05.02 Alternate Methods for Meeting a Program Requirement. All staff must successfully meet all of the training and qualification program requirements. However, previous work experience and training may be accepted as evidence that an individual already possesses the required knowledge or skills normally achieved by completing parts of the program. Individuals should be given credit for previous experience and training when completing the requirements outlined in this manual chapter.

- a. The individual's division director has the authority to accept previous experience and training as an alternate method for meeting the requirements contained in this Manual Chapter. Justification for accepting previous experience and training to meet program requirements must be documented and recorded in the individual's training record. Forms for documenting the equivalency justification are located in each qualification journal.
- b. The individual's division director may request that the individual demonstrate the appropriate level of knowledge or skill by successfully completing an equivalency examination. Requests for equivalency examinations should be made by the individual's supervisor to the Associate Director for Training and Development.

### 05.03 Final Qualification Activity

- a. Inspector Qualification Board. The inspector qualification board is used to evaluate how well an individual can integrate and apply inspector competencies to field situations. Upon completion of all requirements identified in the Inspector Qualification Journals, an inspector qualification board will be conducted to confirm the individual has the necessary knowledge, skills and attitudes to independently conduct the prescribed NRC inspections. The list of knowledge, skills and attitudes to be assessed by the board is contained in Attachment 2, "Inspector Competencies."
  1. Members. A qualification board will consist of at least three members. The board should contain a cross-section of knowledgeable staff ranging from a peer-level inspector to a division director. Each board will contain a manager of at least the branch chief level. The board chairman shall be at the branch chief level as a minimum but cannot be the individual's immediate supervisor. Whenever practical, the immediate supervisor of the individual seeking qualification should observe the board if the supervisor is not a member of the board.
  2. Board Conduct
    - a. The board chairman should assign topics for questioning to each of the board members to ensure that the questioning will address all of the KSAs to be verified by the board. Board members are encouraged to have a planning meeting to discuss how various questions or scenarios will ensure the various KSAs will be covered.
    - b. Specific questions can be selected from those used in previous qualification boards or new questions can be written. Each question

must relate to at least one of the KSAs to be verified by the board. Questions should allow and encourage the individual to provide answers that demonstrate a knowledge of NRC policy and philosophy, as they relate to the licensee and in particular to the implementation of the nuclear reactor inspection program and inspector self-management.

- c. Technical questions should be limited in number, pertain to the technical area in which qualification is being sought, and should not be the primary focus of the board's assessment. Technically based scenarios and examples can be used to determine how well an individual can translate their technical knowledge into appropriate inspector actions. However, lengthy questioning merely to determine if an individual can recall specific technical facts should not be used.
  - d. The board should typically require about 2 hours to complete its assessment but the time may vary based on the individual board and the candidate.
3. Board Recommendations. The board will document the results of their assessment in writing to the regional administrator or office director each time a board examines an individual.
- a. If the board's assessment is favorable, the recommendation will be to grant Full Inspector Qualification. Any areas where additional review was required (look-up items) must be completed by the individual and verified by an assigned member of the board before forwarding the recommendation to the regional administrator or office director.
  - b. If the board has identified areas of weakness requiring formal remediation, the board will identify the areas for improvement in writing and recommend that the individual appear before a board for reexamination when the remediation activities are complete. The board and the individual's supervisor will agree on a schedule for reexamination.
  - c. If the board has identified performance deficiencies that could not be successfully addressed with a remediation effort, the board will document the full scope of the deficiencies and recommend that the individual not be remediated or reexamined.
  - d. A copy of each board's results, identifying any weaknesses and deficiencies, and the inspector classification but not the individual's name, will be sent to the Chief, Inspection Program Branch, for use in routine inspector training program effectiveness evaluations.
  - e. The employee will receive a copy of the board's findings and recommendation.
4. Re-examination Board. A reexamination board must include at least one individual from the original board. The board questioning during reexamination will focus on the areas of identified weakness. The board may explore any area where weakness is identified during the conduct of the reexamination.

5. Board Documentation. The Board's recommendations are forwarded to the regional administrator or office director for certification. Upon certification, the qualification will be documented in the inspector's personnel file at the regional personnel office or the OP service center and will identify the effective date of the certification.
  
- b. Examiner Certification. An audit of an examiner's administration of an operating test is used to evaluate how well an individual can demonstrate the performance attributes identified in Inspection Manual Chapter-0102, "Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities." Successful administration of a complete operating test is required of all examiner candidates.
  1. Evaluation Criteria. The certification test must be audited by a certified chief examiner, preferably the regional operator licensing branch chief, who will assess and document the examiner candidate's performance on all the individual attributes identified in Section 02.02 of IMC 0102.
  2. Auditor Recommendation. The auditor will provide a written recommendation whether or not to certify the examiner candidate, including the need for any remedial training, to the Chief, regional Operator Licensing Branch with a copy to the individual's immediate supervisor, as appropriate. The Chief, regional or Program Office Operator Licensing Branch and the Director, Regional Division of Reactor Safety or NRR Division of Inspection Program Management will concur in the auditor's recommendation by signing the individual's Operator Licensing Examiner Certification Card.
  3. Limited Certification. The Regional Administrator or Director NRR shall certify that operator licensing examiners are qualified to independently administer operating tests by granting a limited certification.
  4. Full Examiner Certification. Completion of the remaining items for full examiner qualification shall be certified by the Division Director. An examiner's certification will automatically extend to multiple reactor technologies upon satisfactorily completing the full course series or the cross-training course for the applicable reactor technology.

05.04 Maintaining Qualification. All qualified staff are expected to maintain their qualification by completing all required refresher training for their job classification and continuing training as required by the program office. The requalification cycle will be a full 24- or 36-month period as indicated in the specific Technical Proficiency Qualification Journal. Inspectors may complete the required training at any time during that period, up until the end of the calendar year in which the training is required. For example, if the initial qualification/refresher was completed in 2000, the refresher training needs to be completed by the end of 2003. In some cases, there may be more than three years between subsequent refresher courses, but normal supervisory oversight and the existing requirement for supervisors to observe inspectors in the field would identify any instances when immediate refresher training may be needed. Approval to extend an inspector's refresher training beyond the established calendar year due date must be approved as a deviation in accordance with 05.07, Deviations.

05.05 Changing Inspector Classification. An individual who changes inspector classifications after being fully qualified, must meet or complete the training and qualification requirements for the new classification within two years of the date the change is made. In such cases, previous equivalent training requirements in common between the

two classifications need not be repeated, and credit for the previous similar training will be indicated in the current qualification journal. A fully qualified inspector is not required to complete another qualification board for the new classification. Completion of the requirements for the new inspector classification will be certified by the individual's division director. An inspector may have multiple classifications as long as all are maintained current.

#### 05.06 Other Administrative Requirements

##### a. Formal Training Requirements and Expectations.

1. Trainees are expected to attend all parts of a formal training program in order to receive credit for the course.
2. Written examinations are administered for designated formal courses to evaluate the employee's understanding of the material. The passing grade for most examinations is 70 percent.
3. Individuals who fail examinations will be given the opportunity to review the material that they did not pass through self-study and then be reexamined on that material. If deemed necessary, individuals who fail an entire course may also repeat the course with the approval of the division director.
4. In courses where a formal examination is not given, satisfactory course completion is determined by attendance and completion of class activities.
5. In all cases, completion of formal training courses will be documented by the Office of Human Resources. The individual is responsible for making sure that the course completion record is noted on the signature cards in the Qualification Journals.

##### b. Previously Qualified Inspectors. Individuals who were inspector qualified prior to April 2002, and whose qualification has lapsed because they did not complete required refresher, can be assigned to independently conduct inspection activities if the following conditions are met:

1. Before being assigned inspection activities, the individual must complete the following individual study activities related to the current inspection program from Appendix A:
  - a) ISA- 9, Exploring the Operating Reactor Inspection Program
  - b) ISA-19, Entrance and Exit Meetings
  - c) ISA-20, Documenting Inspection Findings
2. Complete the signature card in Appendix A for the three individual study activities listed above and have the signature card filed in the individual's training folder.

##### c. Technical Experts. Technical experts who have never been qualified as an inspector may be used to support inspection activities but must work under the guidance of a fully qualified inspector.

05.07 Deviations. The qualification journals listed in this manual chapter specify the total requirements for an individual to be qualified. Regions and headquarters divisions may not



incorporate additional requirements and make them a condition of qualification under this manual chapter.

Only the program office can authorize deviations from the requirements in this manual chapter. Deviations are needed to take courses out of sequence or to extend the refresher training past the due date. The Inspector Training and Qualification Program has been sequenced to optimize learning by ensuring that trainees have completed basic courses before beginning more complex ones. Therefore, requests for deviations to take courses out of sequence must identify how the individual will be able to obtain full benefit of a course without having completed the prerequisites. Requests for extending the date for completing refresher training must identify the reasons why the required training can not be completed on schedule.

Deviation requests can be submitted by the immediate supervisor of the qualifying individual to the Chief, Inspection Program Branch, who will forward the request to the appropriate program office for review. Requests can be made via email or memorandum.

## 1245-06 POST-QUALIFICATION TRAINING

An inspector's training does not end upon being certified as a Fully Qualified Inspector.

06.01 Refresher Training. All inspectors are required to complete refresher training to maintain the overall level of inspector performance.

- a. Qualified inspectors are expected to complete annual refresher training on the Reactor Oversight Process (ROP). The purpose of this refresher training is to improve and maintain consistent implementation of the ROP, address areas of identified deficiencies, and maintain overall level of ROP performance. The process for accomplishing this training will be as follows:
  1. During the Spring of each year, IIPB will solicit input for the development of that year's ROP refresher training. Inspectors should use the Feedback Process to submit suggestions.
  2. The IMC 1245 Management Steering Group (MSG), consisting of a Division Director/Deputy Director from each region, will determine (1) the topics for the refresher training; (2) the method of training (read, read and sign, counterpart session, or other); and (3) the timing of the training.
  3. IIPB will have the lead on developing the training based on the MSG's selection of ROP refresher topics.
  4. The ROP refresher training will be provided during the Fall.

Regardless of the method of training selected by the IMC 1245 MSG, training material will be made available to all inspectors.

- b. Qualified inspectors are expected to complete the technical refresher training identified in Appendix C for their specific inspector classification.

- c. Qualified staff are expected to complete other refresher training as determined by the applicable program office. This training will address areas where overall program implementation has been identified as declining.

06.02 Continuing Training. Staff are expected to build on what was learned in initial training as well as to keep up-to-date on changes to the inspection program.

- a. Temporary instructions (TIs) that focus on a specific area may necessitate inspectors receiving special training before performing inspections. The NRR program area division having lead responsibility for preparing the TI, together with Inspection Program Branch, will identify the special training requirements and determine the most appropriate delivery method. Inspectors implementing a TI are expected to complete any training associated with it.
- b. Changes to inspector procedures (IPs), Inspection Manual Chapters (IMCs), or other aspects of the inspection program may necessitate training. The need for continuing training will be evaluated by the Inspection Program Branch whenever the inspection program is modified. Any training requirements must be completed by all qualified inspectors who are expected to implement the changed inspection procedure.
- c. Inspection Program Branch will evaluate lessons learned from recent industry events and agency activities to determine the need for staff training.
- d. Staff members are encouraged to expand their technical knowledge. Appendix D identifies specialized and advanced level training in specific areas. Unless otherwise noted in Appendix D, the advanced and specialized level training should not be taken until an individual has completed inspector qualification. The need for advanced training will be determined by the individual's supervisor and will be based on the previous work experience and planned work activities in specific technical areas.

#### 1245-07 MONITORING PROGRAM EFFECTIVENESS

The implementation of the NRR programs will be monitored by the program office to identify any areas where performance may be declining. Staff may use the Reactor Oversight Program Feedback Process to provide comments and recommendations on the content and effectiveness of the inspector qualification program outlined in this manual chapter. Qualification board documentation, ROP feedback forms, and changes to the current inspection policy and procedures will be reviewed at least annually by the Inspection Program Branch for possible impacts to the inspector training and qualification program outlined in this manual chapter.

#### 1245-08 PROGRAM REVISIONS

This manual chapter is periodically revised to reflect new training needs of staff as determined by changes to current policy or changes to procedures, or both. An individual who is qualified prior to the time any revisions are made to inspection manual chapter (IMC) 1245, will continue in that status. However, applicability of new requirements to previously qualified staff will be determined by the Chief, of the applicable Program Branch.

Those individuals previously qualified to perform limited scope activities will continue in that status. However, new requirements must be met in order to achieve Full Inspector Qualification.

Staff in the process of qualifying when a new revision is issued will transition to and complete their qualification under the new program. Individuals will be given credit in the new program for training activities completed in the old program based on Section 1245-05.03, Alternate Methods of Meeting a Program Requirement, of this manual chapter.

Major program revisions will be issued with specific guidance on how training and work completed under the old program should be applied within the new program. Qualification records converted in accordance with this guidance will not require additional approvals.

END

Attachments:

Attachment 1: General Overview of the Inspector Training and Qualification Program

Attachment 2: Inspector Competencies

Attachment 3: General Orientation Topics

Appendices:

Appendix A, Basic-Level Training and Qualification Journal

Appendix B, General Proficiency-Level Training and Qualification Journal

Technical Proficiency-Level Training and Qualification Journals

C1, Reactor Operations Inspector Technical Proficiency Qualification Journal

C2, Reactor Engineering Inspector Technical Proficiency Qualification Journal

C3, Reactor Health Physics Inspector Technical Proficiency Qualification Journal

C4, Reactor Physical Protection Inspector Technical Proficiency Qualification Journal

C5, Research and Test Reactor Inspector Technical Proficiency Qualification Journal

C6, Emergency Preparedness Inspector Technical Proficiency Qualification Journal

C7, (Reserved)

C8, Vendor Inspector Technical Proficiency Qualification Journal

C9, Construction Inspector Technical Proficiency Qualification Journal

C10, Operator Licensing Examiner Technical Proficiency Qualification Journal

Advanced Level Training and Qualification Programs

D1, Senior Reactor Analyst Training and Qualification Program

D2, Engineering Specialties Training Areas - UNDER DEVELOPMENT

- Appendix R/Fire Protection/Safe Shutdown Analysis

- MOV/AOV

- Concrete

- NDE

- IST/ISI

- Instrumentation & Control

- Calculations

- PRA Courses - Advanced