

NRC INSPECTION MANUAL

IRAB

INSPECTION MANUAL CHAPTER 1245, APPENDIX D1

MAINTAINING QUALIFICATIONS

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Introduction

This appendix consolidates post-qualification and refresher training requirements needed to maintain full inspector qualification for each inspector classification. Unless otherwise noted in this appendix, this training should not be taken until an individual has completed inspector qualification and obtained supervisor's approval.

Unless specifically stated in this appendix, new post-qualification training requirements are not applicable to an individual who is qualified before the effective date of the revision to Inspection Manual Chapter (IMC) 1245, "Qualification Program for New and Operating Reactor Programs," adding the new requirement. However, previously qualified inspectors should consider expanding their technical knowledge by completing **the courses** based on previous work experience and planned work activities in specific technical areas. The requirements to maintain full qualification for each inspector classification follow.

Post-Qualification Training

1. As noted in the specific inspector classification, post-qualification training is required to be completed as prescribed in the specific inspector classification below. This training will assist in increasing the depth and breadth of an inspector's skills, thereby increasing inspector performance.
2. Unless specifically permitted in this appendix, post-qualification training shall not be completed until an individual has completed full inspector qualification.

If an individual completes any subsequent inspector classification(s) beyond the initial, full qualification, the individual shall be required to complete the post qualification training requirements of the new inspector classification in effect at the time of completing the subsequent qualification. For example, if a fully qualified Reactor Operations Inspector (Appendix C1) completed the requirements for Health Physics Inspector (Appendix C3), the individual is required to complete the post qualification requirements for the new inspector classification, Health Physics Inspector, within the time specified by the new inspector classification as required by the revision of this appendix in effect at the time.

3. Although not a requirement, qualified inspectors should consider expanding their technical knowledge by completing other courses listed in the Talent Management System (TMS) or the professional development training **database** source maintained by the Division of Reactor Oversight (DRO) **on the Digital City SharePoint site** based on previous work experience and planned work activities in specific technical areas. Repeating previously completed courses that were part of the initial inspector training program is acceptable if retaking the course(s) **would be** the most effective approach to close knowledge gaps. Specific examples where repeating a course may be acceptable include: a previously **boiling-water reactor (BWR)** qualified inspector retaking the initial **BWR Technical Training Center (TTC)** series of courses to refresh skills after an extended absence from the technology (e.g., ten years) while assigned to a pressurized water reactor site, and a headquarters operations engineer that has transferred to a regional office as an Inservice inspector retaking a previously completed course on Non-Destructive Examination techniques that **he/she** completed ten years ago.
4. Unless otherwise stated, inspectors are required to complete the post qualification training prior to the end of the third calendar year after achieving full qualification. For example, if

full qualification was completed in May 2020, the post qualification training is required to be completed before the end of 2023.

5. A fully qualified inspector, who did not complete post qualification training due to reassignment (e.g., an inspector did not complete post qualification training after transferring to headquarters), may participate as a member of a team inspection under the supervision of the team leader. However, this inspector must complete the post qualification training requirements before conducting independent inspection activities.

Refresher Training Overview

To maintain proficiency, all inspectors are required to complete refresher training in accordance with the requirements of this Appendix to maintain a satisfactory level of inspector performance. Although specific course requirements are listed for each inspector type, inspectors are also encouraged to continue to develop their competencies by taking additional courses outlined in TMS or other professional development training data base sources, such as the one maintained by DRO.

Refresher Training Details

1. *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. [C-1]*

The process for accomplishing this training will be as follows:

- a. During the spring of each year, DRO will solicit input for the development of that year's ROP refresher training. Inspectors should use the Feedback Process to submit suggestions.
 - b. 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, inspector seminar session, or other), and (3) the timing of the training.
 - c. The responsible technical branch in DRO will have the lead to develop the training based on the MSG's selection of ROP refresher topics and the method/approach used to track completion of the training activity e.g. in the TMS.
 - d. Regardless of the method of training selected by the IMC 1245 MSG, training material will be made available to all inspectors.
2. Qualified inspectors are expected to complete all required refresher training for their specific inspector classification within the established requalification cycle. Each individual requalification cycle will be calculated based on the month of achieving full inspector qualification or, if that is not known, the month in which the current cycle was begun. The requalification cycle will be 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 2020, the refresher training needs to be completed by the end of 2023 and the next refresher by the end of 2026. 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 per IMC 0102, "Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities," should identify any instances when immediate refresher training or additional supervisory oversight 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 the guidance below. Refresher training requirements for the current requalification cycle are considered complete if the inspector completes training courses for another reactor technology.

3. A fully qualified inspector, who does not maintain qualification due to reassignment (e.g., an inspector stops taking refresher training after moving to headquarters or transfers to a position that does not involve the inspection of reactor licensees), may participate as a member of a team inspection under the supervision of the team leader. However, this inspector must complete additional training before conducting independent inspection activities. Specifically, the inspector must complete the refresher training stipulated for the applicable inspector classification and any additional training identified by the inspector's supervisor or Division Director prior to conducting independent inspection activities.
4. The periodic refresher training requirements were established to maintain inspector's knowledge and proficiency. If an inspector does not complete all refresher training requirements, the supervisor must evaluate the inspector's proficiency to conduct independent inspections. Any inspector deemed proficient, remains qualified to conduct independent inspections while the supervisor seeks a deviation. Any inspector who needs additional training must stop conducting independent inspections until the inspector receives an approved deviation and the supervisor is satisfied that remedial training has been effective.
5. Qualified staff are expected to complete additional refresher training if determined by the applicable program office. This supplemental refresher training generally is intended to address areas where performance gaps in overall program implementation have been identified.

Deviations from Post Qualification and Refresher Training Requirements

Deviations are needed to extend post qualification and refresher training requirements past the due date. Therefore, these deviations must identify the reasons why the required training cannot be completed on schedule, the bases for concluding that the individual has maintained inspector proficiency, and any needed compensatory measures that need to be implemented to compensate for the training deficiency.

A regional division director can authorize deviations to extend the due date by up to one year without program office approval. Only the responsible program office can authorize deviations that extend a due date beyond one year from the requirements listed in IMC 1245.

Deviation requests can be made via email or memorandum and should be submitted by the immediate supervisor of the qualifying individual to the regional division director or to the Chief, Reactor Assessment Branch (IRAB), in DRO as applicable.

Special Instructions Regarding COVID Related Refresher Training Deferrals

Because of the COVID-19 public health emergency (PHE), a number of refresher training courses sponsored by the NRC TTC, such as simulator refresher training, were canceled in calendar years 2020 and 2021. The course cancellations may impact training cycles into CY 2023 for certain individuals. Because of the unique situation regarding the COVID-19 PHE, DRO has authorized a onetime deviation from the applicable refresher training requirements outlined in this IMC for impacted inspectors and examiners. Affected inspectors, examiners and their supervisors, are highly encouraged to monitor the TTC training catalog located in TMS, and complete missed in-person refresher training at the earliest opportunity, but no later than one calendar year from the date after the COVID-19 PHE has been terminated by the Office of the Secretary of Health and Human Services. It is not expected that this onetime deviation will continue past the end of CY 2023. This deviation is only for TTC course that have to be completed in a classroom type setting.

Post-Qualification and Refresher Training Requirements

Appendix C-1, Reactor Operations Inspector

1. Post-qualification requirements:

For inspectors who are fully qualified after the effective date of these courses, attendance at these courses is a post-qualification requirement to be completed prior to the end of the third calendar year after achieving full qualification. For example, if full qualification was completed in May 2020, the post qualification training is required to be completed before the end of 2023:

- Root Cause Report Evaluation (G-204) (effective date January 10, 2008)
- Probabilistic Risk Assessment Technology and Regulatory Perspectives (P-111) (effective date September 2, 2005)
- Reactor -specific series training course

Operations inspectors must complete the reactor specific series training for their assigned site. If reassigned to a new site after initial qualification, the inspector must complete the reactor specific series training for the new assignment. This training should be completed as soon as feasible after reassignment and must be completed within 24 months of assignment to a new site. [C-2]

2. Refresher training requirements:

- Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) and simulator refresher (i.e., R-704 B/P, R-705P, R-706P or R-707P) are both required every three-year training cycle. When taking the refresher courses, it is also recommended that the simulator and technology review courses be scheduled as close together as possible.
- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

If you are qualified to inspect more than one reactor type, you must complete either the BWR or pressurized water reactor (PWR) refresher training every three-year training cycle,

reflective of the assigned sites. For example, a region-based C1 inspector qualified in more than one type and assigned to a branch with BWR and PWR sites, should alternate between technologies. A senior resident inspector stationed at a BWR but qualified in more than one type should only take the BWR refresher series.

With the permission of their Branch Chief or Division Director as applicable, inspectors may substitute the Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) refresher training courses with TTC-sponsored or other third party provided training course(s), if the alternative(s) provides instruction/training that satisfies a specific need of the agency/inspector. Because the Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) refresher training curriculum has been designed, in part, to address a number of potential knowledge gaps that have been identified in the inspector community, attending the Technology refresher training courses **should be the** preferred course of instruction. However, there may be circumstances when taking an alternative training course of similar duration, in lieu of the TTC-developed technology review courses may be a desired alternative. Examples include the following: an Inservice inspector requests to attend a vendor supplied course on advanced non-destructive engineering techniques that are being deployed at plants that are under **his/her** purview, an engineering inspector requests to attend a TTC-sponsored motor operated valve course in preparation for a Power Operated Valve inspection that **he/she** is about to perform, an operations inspector elects to attend the TTC-sponsored diesel training course to increase **his/her** knowledge of diesel generator performance issues that have occurred at **an** assigned site.

The alternative training approach is selected and tracked using TMS. Accordingly, inspectors, examiners, and supervisors who are interested in using this program should search the TMS course catalog for this program option.

Note: Inspectors are cautioned that the availability of certain TTC-sponsored and third party provided courses **that may be utilized as part of the alternate training approach** are subject to the availability of funding and as such, may not be available during a requalification cycle.

If **the** alternative refresher training **approach** is selected, inspectors must ensure that they receive instruction/training on any mandatory refresher training subject matter that would have been provided had they attended the applicable TTC-developed refresher training course(s). Mandatory subject matter refresher training that is currently required includes instruction on 10 CFR 50.59 and the plant design basis. **These** courses are identified in TMS. Instruction on these subject matters was developed by the TTC in response to the Fort Calhoun and San Onofre lessons learned reports.

In total, reactor operations inspectors require at least 72 cumulative hours of technology related training every three-year training cycle, of which 36 hours, must include at least one of the simulator refresher training courses (i.e., R-704 B/P, R-705P, R-706P or R-707P).

Appendix C-2, Reactor Engineering Inspector

1. Post-qualification requirements:

For inspectors fully qualified after the effective date of these courses, attendance at these courses is a post-qualification requirement to be completed prior to the end of the third calendar year after achieving full qualification. For example, if full qualification was

completed in May 2020 the post qualification training is required to be completed before the end of 2023.

- Root Cause Report Evaluation (G-204) (effective date January 10, 2008)
- Probabilistic Risk Assessment Technology and Regulatory Perspectives (P-111) (effective date September 2, 2005)

For inspectors performing inspections of licensee Power Operated Valve/Motor Operated Valve (POV/MOV) programs, completion of the following courses is a post qualification requirement before conducting inspections of licensee POV/MOV programs per NRC Inspection Procedure (IP) 71111.21N.02, "Design Basis Capability of Power Operated Valves Under 10 CFR 50.55a Requirements."

- Motor Operated Valve Training Course (effective date October 16, 2019)
- Power Operated Valve Inspector Training Course (effective date October 16, 2019)

2. Refresher training requirements:

- Technology review (i.e. R-904 B/P, R-905P, R-906P or R-907P) is required every three-year cycle.
- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

If you are qualified to inspect more than one reactor type, you must complete either the **BWR** or **(PWR)** refresher training every three-year training cycle, reflective of the assigned sites. With the permission of their Branch Chief or Division Director as applicable, inspectors may substitute the Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) refresher training courses with TTC-sponsored or other third party provided training course(s), if the alternative(s) provides instruction/training that satisfies a specific need of the agency/inspector. Because the Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) refresher training curriculum has been designed, in part, to address a number of potential knowledge gaps that have been identified in the inspector community, attending the Technology refresher training courses **should be** the preferred course of instruction. However, there may be circumstances when taking an alternative training course of similar duration, in lieu of the TTC-developed Technology review courses may be a desired alternative. Examples include the following: an Inservice inspector requests to attend a vendor supplied course on advanced non-destructive engineering techniques that are being deployed at plants that are under **his/her** purview, an engineering inspector requests to attend a TTC-sponsored motor operated valve course in preparation for a Power Operated Valve inspection that **he/she** is about to perform, an operations inspector elects to attend the TTC-sponsored diesel training course to increase **his/her** knowledge of diesel generator performance issues that have occurred at/her assigned site.

The alternative training approach is selected and tracked using TMS. Accordingly, inspectors, examiners, and supervisors who are interested in using this program should search the TMS course catalog for this program option.

Note: Inspectors are cautioned that the availability of certain TTC-sponsored and third party provided courses **that may be utilized as part of the alternate training approach** are

subject to the availability of funding and as such, may not be available during a requalification cycle.

If the alternative refresher training approach is selected, inspectors must ensure that they receive instruction/training on any mandatory refresher training subject matter that would have been provided had they attended the applicable TTC-developed refresher training course(s). Mandatory subject matter refresher training that is currently required includes instruction on 10 CFR 50.59 and the plant design basis. These courses are identified in TMS. Instruction on these subject matters was developed by the TTC in response to the Fort Calhoun and San Onofre lessons learned reports. In total, reactor engineering inspectors require at least 36 cumulative hours of technology related training every three-year training cycle.

Appendix C-3, Health Physics Inspector

1. Post-qualification requirements:

All health physics inspectors are required to participate in ongoing post-qualification training to maintain and enhance their knowledge and skills. This training should include elements of both continuing and refresher training as defined in IMC 1245-03.

2. Refresher training requirements:

- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

In addition to the site access training course, at least 36 cumulative hours of training is required every three-year training cycle. This training can be either continuing or refresher training as defined in IMC 1245. This training requirement can be met by completing one or more of the following:

- Instructor-led training courses related to health physics (e.g., H-401 courses).
- Training/instruction in topics relating to the inspector's duties (training can be completed via webinars, Microsoft Teams, WebEx or similar platforms).
- Participation in health physics conferences, lectures or workshops.
- Commercial or government-sponsored technical training courses related to health physics.
- Online training courses related to health physics.

All continuing or refresher training must be approved by the inspector's Branch Chief as being appropriate to meet, or partially meet, the requirements of this section

Appendix C-4, Reactor Security Inspector

1. Post-qualification requirements: None

2. Refresher training requirements:

- Security Counterpart & Technology Refresher (S-402) every three-year training cycle.

- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

With the exception of the site access refresher training requirements course, if the inspector cannot attend the course listed above because of circumstances beyond his/her control, an alternative acceptable course may be substituted with the documented permission of the inspector's Branch Chief and the Branch Chief of the Office of Nuclear Security and Incident Response (NSIR) Nuclear Security Oversight Branch. The documented permission should be entered into the inspector's training file/database as appropriate.

Appendix C-5, Research and Test Reactor Inspector

1. Post-qualification requirements:

- Attend classes beyond the core requirements (e.g. TMS), if needed for oversight mission.
- Read relevant RTR license amendments, incident reports, new regulatory requirements, etc.

2. Refresher training requirements:

- Attend courses that have been taken previously or refresher courses on the subject matter.
- Participate in information exchange forums with counterparts (e.g., RTR inspectors, RTR PMs, RTR operator license examiners, other NRC groups, and TRTR).
- Perform a joint inspection with another RTR inspector with an emphasis on exchanging good practices and techniques.
- Complete a site access refresher training course once every five years by completing course H-101S in TMS. A comparable licensee facility site specific access course, where available, may be substituted for completion of H-101S.

Appendix C-6, Emergency Preparedness Inspector

1. Post-qualification requirements:

- Attendance at courses will be determined by your supervisor and is dependent on your previous work experience and planned inspection activities (e.g., lead emergency preparedness inspector, RAC member).

2. Refresher training requirements:

- Attend courses that have been taken previously or refresher courses on the subject matter.
- Support other inspection programs or program offices as desired/needed.
- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

Appendix C-7, Fire Protection Inspector

1. Post-qualification requirements:

- Root Cause Report Evaluation (G-204)
- Attend classes beyond the core requirements (e.g., see TMS or Appendix D-3, “Fire Protection Advanced-Level Training,” to IMC 1245)

2. Refresher training requirements:

- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

Additional suggestions for refresher training include but are not limited to the following:

- Attend courses that have been taken previously or refresher courses on the subject matter.
- Assist in the presentation of fire protection training.
- Participate in information exchange forums with counterparts (e.g., regional fire protection workshops).

Appendix C-8, Vendor Inspector

1. Post-qualification requirements:

- Vendor Inspector group training conducted at least three times per fiscal year that concentrates on core competencies and lessons learned.

2. Refresher training requirements:

- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

With the exception of the site access refresher training requirements course, if the inspector cannot meet the post-qualification and refresher training requirements because of circumstances beyond the inspector’s control, an alternative acceptable training may be substituted with the documented permission of the Quality Assurance and Vendor Inspection (IQVB) Branch Chief. The documented permission should be tracked by the IQVB training coordinator as appropriate.

Appendix C-9, Senior Reactor Analyst

1. Post-qualification requirements:

For analysts fully qualified after the effective date of these courses, attendance at these courses is a post-qualification requirement to be completed prior to the end of the third calendar year after achieving full qualification:

- Accident Consequence Analysis (P-301) (effective date November 24, 2015)

- Bayesian Inference in Risk Assessment Advanced Topics (P-502) (effective date November 24, 2015)

For example, if full qualification was completed in May 2019, the post qualification training is required to be completed before the end of 2022.

2. Refresher training requirements:

- Technology review (i.e. 904 B/P, R-905P, R-906P or R-907P) and simulator refresher (i.e., R-704 B/P, R-705P, R-706P or R-707P) are both required every three-year training cycle. When taking the refresher courses, it is also recommended that the simulator and technology review courses be scheduled as close together as possible. It is recommended that refresher training for SRAs be alternated between PWR and BWR technologies.
- If possible, attend a professional meeting at least once during the three-year training cycle. The meetings may be either NRC or industry sponsored and should address PRA applications or specific aspects of PRA (e.g., human reliability assessment, Common Cause failure analysis, fault tree/event tree modeling, risk communications, etc.,) that are of interest to the SRA and important for continued development in the SRA's understanding of risk technology.
- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.
- Other training needs should be evaluated based on the needs of the individual. For example, although a qualified SRA had previously received training on SAPHIRE, it may be appropriate to retake the course, assuming the SAPHIRE code had changed sufficiently to warrant the need for additional training.

Appendix C-10, Operator Licensing Examiner

1. Post-qualification requirements: None.

2. Refresher training requirements:

- Technology review (i.e., R-904 B/P, R-905P, R-906P or R-907P) and simulator refresher (i.e., R-704 B/P, R-705P, R-706P or R-707P) are both required every three-year training cycle. When taking the refresher courses, it is also recommended that the simulator and technology review courses be scheduled as close together as possible. The due date will be determined based on the individual's full inspector qualification or Operator Licensing (OL) examiner qualification date, whichever came first. Examiners who are certified on more than one reactor technology, including AP1000, should alternate their attendance among the vendors for which they are certified during successive refresher training periods.
- To maintain their examination skills, OL examiners shall complete at least one of the following options every three-year training cycle:
 - (1) Complete a refresher training class presented by the NRR OL program office in conjunction with the national Operator Licensing examiners' training conference,

- (2) Complete an examination techniques refresher course scheduled by special arrangement with the NRR OL program office, or
- (3) Complete either the written examination or the operating test techniques portion of the Operating Examination Techniques course (G-107).
- Attend every national Operator Licensing examiners’ training conference and other special continuing training programs presented by the NRR OL program office or receive the training related information that was presented via alternate means.
- Administer at least one complete operating test every calendar year. Any examiner who fails to administer an operating test must be assessed (following a process similar to the certification test described in the General Requirements section of IMC 1245, Appendix C-10, “Operator Licensing (OL) Examiner Technical Proficiency Training and Qualification Journal”) by a certified chief examiner (preferably the regional OL Branch Chief). Both the chief examiner and the examiner being audited should sign Form ES-303-1 as the “Examiner of Record.” The chief examiner should verify satisfactory administration of a complete operating test on any reactor technology in which the examiner has maintained technical proficiency (by attending the required refresher training discussed above). Any examiner who has been inactive for more than 24 months shall also complete some form of examination techniques refresher training, as discussed above, to reactivate their OL examiner certification.
- Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

Note: Examiners assigned to the OL program office and certified regional OL Branch Chiefs are generally exempt from the aforementioned proficiency and observation requirements by virtue of their day-to-day involvement in program development and oversight, including the administration of operating test audits and teaching the operating test portion of the Operating Examination Techniques course (G-107). The Chief of the NRR Operator Licensing and Human Factors Branch will determine the need for proficiency testing and observations on a case-by-case basis.

Appendix C-11, Security Risk Analyst

1. Post-qualification requirements: None.
2. Refresher training requirements:
 - Security Counterpart & Technology Refresher (S-402) every three-year training cycle.
 - Once every three-year training cycle, both the technology review (R-904B or R-904P) refresher and simulator/emergency operating procedures (R-704B or R-704P) refresher are required for at least one reactor type in which an inspector is qualified. If the individual is qualified on more than one reactor type, the inspector should alternate between PWR and BWR technologies.
 - Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

With the exception of the site access refresher training requirements course, if the analyst 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 inspector's Branch Chief and the Branch Chief of the NSIR Nuclear Security Oversight and Support Branch.

The documented permission should be entered into the inspector's training file/database as appropriate. In total, security risk analysts require at least 72 cumulative hours of technology related training every three-year training cycle.

Appendix C-12, Safety Culture Assessor

1. Post-qualification requirements: None.
2. Refresher training requirements:
 - Complete a site access refresher training course once every five years at a licensee facility or by completing course H-101S in TMS.

Complete the following training every three-year training cycle:

 - Focus group refresher training or participation in an inspection such as one under IP 95003, preferably one using focus groups.

Appendix C-13⁴, Cyber Security Inspector

1. Post-qualification requirements: None
2. Refresher training requirements:
 - Attend the Cyber Security Inspector Annual Counterpart meeting and
 - Participate in at least one week of cyber inspection activities in a three -year cycle.

If unable to attend the Cyber Security Inspector Annual Counterpart meeting, the inspector may fulfill this requirement by choosing one or more of the options listed below:

- Take recommended training from the list of cyber security courses identified in the DRO professional development training data SharePoint site that is referenced in this IMC.
- External or internal cyber security training courses or supervisor-approved alternative training courses to maintain an advanced technical knowledge in cyber security.
- Cyber security training as identified by the branch chief.
- Preparing and delivering a presentation or teaching information that is specific related to cybersecurity for computer or industrial control systems, or NRC cyber security oversight program implementation.

If the inspector cannot complete the refresher training requirements listed above because of circumstances beyond his/her control, an alternative acceptable training may be substituted with the documented permission of the inspector's Branch Chief or the Branch Chief from the Office of NSIR Cyber Security Branch.

An inspector seeking to maintain his/her qualifications can take credit for training or activities other than those listed in the DRO professional development training data SharePoint site. However, the course(s), or training material, or activities must include in the curriculum one of the following criteria to be considered for credit:

- The primary goals of cyber security methodologies for computer or industrial systems protection to include detection, protection, threat identification, incident response, and recovery from cyber-attacks.
- The cyber security framework based on the National Institute of Standards and Technology (NIST) Special Publication 800.53 or any specialized cyber security framework for the protection of industrial controls systems (ICS) or distributed control systems (DCS).
- Activities that include cyber security auditing practices, attending cyber security seminars, taking a higher education course, or formal training **toward** cyber security industry certifications (e.g., CEH, CISSP, A+, Security +, GIAC-ICS, GICSP) from a reputable organization (e.g., CompTia, IC2, GIAC, ISA, SANS, EC-Council, ISACA).
- Specialized training in cyber security for Automated Industrial Control Systems.
- Preparing and delivering a presentation or teaching information that is **specifically** related to cybersecurity for computer or industrial control systems, or NRC cyber security oversight program implementation.

Appendix C-145, Construction Inspector

1. Post-qualification requirements:

For inspectors fully qualified after the effective date of these courses, attendance at one of these courses is a post-qualification requirement to be completed prior to the end of the third calendar year after achieving full qualification. For example, if full qualification was completed in May 2020~~129~~, the post qualification training is required to be completed before the end of 2023~~2~~. Only one course is required.

- Civil/Structural Functional Area: Civil/Structural Codes and Inspection Course (effective date December 7, 2009)
- Mechanical Functional Area: Mechanical Codes and Inspection Course (effective date December 7, 2009)
- Electrical Functional Area: Electrical Codes and Inspection Course (Including Digital I&C and fiber optics) (effective date December 7, 2009)

2. Refresher training requirements:

- Attend classes beyond the core requirements (e.g. TMS).

Appendix C15, Research and Test Reactor Operator Licensing Examiner

1. Post-qualification requirements: None.

2. Refresher training requirements:

- Attend courses that have been taken previously or refresher courses on the subject matter.
- Participate in information exchange forums with counterparts (e.g. RTR inspections, RTR PMs, RTR operator license examiners, NRR OL Program office, other NRC groups and TRTR).
- Develop, Administer and Grade at least one complete written examination and operating test every calendar year. Any examiner who fails to administer a written examination and operating test must be assessed (following a process similar to the certification test described in the General Requirements section of IMC 1245 C16, “Research and Test Reactor Operator Licensing Examiner Technical Proficiency Training and Qualification Journal”) by a certified chief examiner or RTR Operator Licensing Branch Chief.
- Complete a site access refresher training course once every five years by completing course H-101S in TMS. A comparable licensee facility site specific access course where available, may be substituted for completion of H-101S.

END

Attachment 1: Revision History for IMC 1245, Appendix D1

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)
C-1 Reference: Davis-Besse Lessons Learned Task Force, Recommendation 3.3.4.6	ML041950500 6/29/04 CN 04-019	IMC 1245 is being revised to provide clarification to Section 05.04, Maintaining Qualification, regarding the timing of refresher training. In addition, a requirement for annual refresher training on the Reactor Oversight Process (ROP) was added to Section 06.01 to improve and maintain consistent implementation of the ROP, address areas of identified deficiencies, and maintain overall level of ROP performance.	None	N/A
C-2 Reference: OIG-05-A-06 Recommendation 7 (ML052520204)	ML052580014 9/02/05 CN 05-024	IMC 1245 has been revised to incorporate several changes including: adding responsibility sections for the IMC 1245 Management Steering Group and the IMC 1245 Working Group; permitting a 3 month extension to the 24 month requirement for completion of inspector qualification for individuals in the Nuclear Safety Professional Development Program; and adding a requirement for vendor specific training for operations inspectors who are assigned to a different vendor design	None	N/A
N/A	ML090360633 07/08/09 CN-09 017	Makes "Maintaining Qualifications," a separate appendix, updates inspector titles, adds two new training standards (C-7 and C-11), and consolidates post-qualification and refresher training requirements needed to maintain full inspector qualification for each inspector classification.	None	N/A

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	ML11073A004 12/29/11 CN-11-044	This revision clarifies refresher training requirements, moves refresher training guidance from IMC 1245 into Appendix D-1, broadens the scope of deviations to include late completion of post-qualification training, adds post-qualification training for vendor inspectors, and authorizes the supervisor (with concurrent IOLB/NRR approval) to approve alternate refresher training for Health Physics inspectors.	None	ML11321A232
N/A	ML12243A502 12/19/12 CN-12-029	This revision adds requalification requirements for inspectors who have not maintained qualification due to reassignment, broadens the scope of deviations to include post-qualification requirements, and authorizes a regional division director to approve deviations that extend deadlines by up to six months without program office approval.	None	N/A
N/A	ML13269A122 10/23/13 CN13-026	This revision modifies refresher requirements for security inspectors that are qualified or qualify under Appendix C-4 and clarifies language and refresher requirements for Security Risk Analysts that are qualified or qualify under Appendix C-11.	None	ML13269A124

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	ML15177A324 11/24/15 CN 15-026	This revision updates IMC format and the location of deviation guidance for refresher training. This revision also revises the following qualification standards, modifies the process to approve alternative refresher training for health physics inspectors (C-3), adds two courses (P-301 and P-502) to post qualification for SRAs (C-9), and adds AP1000 as a reactor technology for examiner's (C-10) refresher training. To close the feedback form, this Revision History summary documents that HRTD is adding training topics (recommended by the Fort Calhoun lessons learned team) to the Technology Review Courses (R-904, R-905, and R-906).	None	ML15195A195 Closed FBF: 1245D1-2001 ML15207A052
N/A	ML17072A353 08/24/17 CN 17-015	This revision adds requirements for Appendix C-15, Construction Inspector	None	ML17089A365
N/A	ML18047A201 06/07/18 CN 18-014	This revision gives additional time and flexibility for C1, C2, C3, C9, and C15 qualified individuals to complete their post-qualification requirements, eliminates the need for SRA's to take P-501 as refresher training, and updates the contact for deviations from the Operator Licensing and Training Branch to the ROP Support and Generic Communications Branch.		ML18065A659
	ML19324C998 02/18/20 CN 20-008	This revision expanded the time allowed for training deviation requests that can be granted for all inspectors by a Regional division director from six months to one year. Added the expectation that when training waivers are provided, inspectors should return to the original training schedule.	None	ML19324C996
(continued next page)				

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		<p>Based upon feedback from program offices, a number of inspector refresher training programs were updated to remove references to out of date courses and expectations. The most far reaching change involved reactor engineering inspectors who will now be required to attend the Technology review courses (i.e., R-327C, R-904 B/P, R-905P, or R-906P) every three-year cycle in lieu of simulator courses to ensure they receive training on the following engineering related subjects:</p> <ul style="list-style-type: none"> • 50.59 and design basis training that was developed in response to the Fort Calhoun and San Onofre lessons learned reports. <p>Risk informed licensing actions including the Technical Specification Initiative 4.B, Risk Informed Completion Times (RICT); and Risk-Informed Technical Specification Initiative 5.B, Surveillance Frequency Control Program (SFCP).</p> <p>This change added new training requirements for inspectors who are performing POV/MOV inspection activities.</p> <p>This revision removed references to discontinued courses and manuals such as the NRC course catalog and inserted references to recently introduced applications such as TMS, and updated titles to reflect organizational changes. e.g. changed DIRS to DRO.</p> <p>This change also reformatted the layout of a number of inspector training program descriptions, so they appear more similar.</p>		

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)
	ML20246G611 12/16/20 CN 20-073	This revision described expectations regarding refresher training during the COVID-19 public health emergency. It also provided an additional refresher training option for operations and engineering inspectors. With the approval of their Branch Chief, these individuals may now substitute the reactor technology courses for other training courses if the alternate course curriculum meets the needs of the agency and individual inspector. Inspector site access training requirements were added to this document to centralize refresher training requirements and inspector proficiency expectations in one document. Several format changes were made to standardize the layout of the qualification requirements. As recommended by a March 2017 self-assessment of the inspector refresher training program, a list of suggested refresher/continuing training courses was developed and placed on a SharePoint site.		ML20246G737
	ML22174A408 08/11/22 CN 22-017	Revised to add requalification requirements for RTR licensed operator examiners. Modified the COVID waiver to encourage inspectors and examiners to complete in-person refresher training courses at the earliest opportunity. Provided additional instructions regarding how to select the Alternative Refresher Training program for reactor inspectors.	None	None Closed FBF: 1245D1-2301