

IMC 1245 Inspector Training and Qualification Basis Document

-

Table of Contents

Organization of Inspector Competencies	7
Group I: Legal Basis and Regulatory Processes	8
Competency: Regulatory Framework	8
Group II: Technical Disciplines	9
Competency: Basic Technologies	9
Competency: Fundamental Plant Design and Operation	9
Competency: Inspection Area Technical Expertise	10
Group III: Regulatory Practices	11
Competency: Inspection	11
Competency: Emergency Response	12
Competency: Problem Analysis	12
Competency: Assessment and Enforcement	13
Group IV: Personal and Interpersonal Effectiveness	14
Competency: Communication	14
Competency: Teamwork	15
Competency: Self-Management	15
Competency: Information Technology	16
Section IV - Inspector Training and Qualification Program Overview	17
Section V:	20
Appendix A: Revised Inspector Task List	21
Appendix B: Inspector Task vs Competency Matrix	25
Appendix C: Inspector Training and Qualification Activities vs Inspector Competency	34
Appendix D: Glossary	37
Appendix E: Inspector Survey 1	38
List of Tasks Surveyed for Frequency and Difficulty Using Inspector Survey 1	38
Table 1: Frequency and Difficulty Data	41
Appendix F: Survey 2	43
Table 2: Training Effectiveness Ratings	43
Survey 2 Results	45
Survey 2 Comment Summary	47

Section I - The Role of the Inspector

The primary responsibility of NRC inspectors is to implement the inspection program as stated in the related Inspection Manual Chapters. An effective inspector has the following characteristics:

- Obtains objective evidence that reactors are operated safely and that licensee activities do not pose an undue risk to public health and safety.
- Monitors declining performance to ensure that the licensee takes action before performance reaches a level that may result in undue risk to public health and safety.
- Supports agency decision making by providing information that is technically sound and realistic.
- Identifies those safety significant issues that may have generic applicability.

Section II - Development of a Competency-Based Inspector Training and Qualification Program

In 1996-97, Los Alamos National Laboratory (LANL) completed a job assessment of several region- based positions, including resident inspector, senior resident inspector, and project engineer (regional office-based inspector), which identified all of the tasks performed by each position. The implementation of the revised Reactor Oversight Program (ROP) significantly changed the jobs of the site-based and regional office-based inspectors. A variety of tasks were eliminated while other tasks remained but were modified. In early 2000, LANL updated the task lists to reflect changes to those positions resulting from implementation of the ROP. These updates were undertaken early in the implementation and evolution of the ROP and as a result, received limited review and validation and did not reflect the final list of inspector tasks resulting from full ROP testing and implementation.

A working group was established in mid-2000 and tasked with updating the inspector training and qualification program to reflect the needs of an inspector to implement the ROP. The group began by combining the ROP task lists for the resident inspector, senior resident inspector, and project engineer (regional office-based inspector) developed by LANL in early 2000, into a single list and limiting the list to those tasks related to inspection activities. The list was refined by the working group to incorporate the scope, approach, and language of the ROP and served to define the scope of the training and qualification activities to become a qualified inspector. The list of inspector tasks is shown in Appendix A.

The refined inspector task list served as the basis for a survey of inspectors conducted in October 2000. In that survey, site-based and region-based inspectors were asked to rate each item on the inspector task list in two ways. Each incumbent inspector rated each task related to how frequently they had performed the task during the last year and how difficult the ROP tasks were to perform. As new users of the ROP inspection products and processes, the responses of the incumbents were representative of the experience of trainees in the process of becoming qualified as an inspector.

The list of tasks surveyed in October 2000 is contained in Appendix E, Inspector Survey 1. The survey was sent to 406 inspectors in the regional offices and at licensee sites. A total of 169 surveys were returned, a return rate of 42 percent. The responses were from the full range of inspector types and included inspectors with varying degrees of experience. The frequency and difficulty ratings for the surveyed tasks were reviewed individually and within the following six key inspection task areas: 1) Licensee assessment and inspection planning; 2) Reactor baseline inspection; 3) Other baseline and supplemental inspections; 4) Event follow-up and emergency response; 5) Significance determination process; and 6) Other inspection-related activities. A summary of the frequency and difficulty data is shown as Table 1 in Appendix E. The tight range of responses for each of the tasks and collectively within each group of tasks indicated a similar experience with the implementation of the ROP among the regions. The degree of consistency among the regions was viewed as a validation of the accuracy of the task list.

Upon validation of the inspector task list, the working group was asked by the NRC's Office of Human Resources to base our revision to the inspector qualification requirements on a competency-based model. The NRC was involved in an international effort led by the International Atomic Energy Agency (IAEA) to develop a generic competency framework which could be used by regulatory bodies world-wide.

A competency model maintains a focus on the underlying knowledge, skills, and attitudes (KSAs) needed to perform a task rather than on the task itself. An emphasis on the KSAs rather than on tasks was viewed as a benefit because it would increase the stability of the training and make it less likely that major changes would need to be made to the inspector training program if major changes were again made to the inspection program.

The four-quadrant competency model established by the IAEA effort was adopted. The areas within each quadrant and the underlying KSAs were edited to reflect the responsibilities, authorities, approaches, and expectations associated with the NRC and the ROP. The inspector competency model and the full inventory of supporting KSAs is documented in Section III of this document. A link was established between the competency areas and the tasks. This cross-reference was used as a means of verifying that the list of competency areas was complete. Appendix B: Inspector Task to Competency Matrix identifies those links.

The individual task frequency and difficulty information collected in Survey 1 was also used to make the determination whether or not a specific task would require initial training and routine refresher training. The criteria used to make the train/no train decisions can be found in Appendix F, Training Decision Tree.

Training recommendations were based on the following:

- Initial training is recommended for all tasks with a high or medium difficulty rating regardless of frequency.
- Initial and refresher training is recommended for tasks where the frequency of task performance may not be sufficient to maintain satisfactory performance.
- No training is recommended for tasks that have low difficulty and higher frequency.

Results of the frequency and difficulty information for each task indicated that routine retraining on topics other than technical refresher was unnecessary. Working group members reviewed the results and were given the opportunity to take exception to the train/no train determination for all tasks. No deviations were identified based on that review.

In the absence of routine refresher training, monitoring of overall inspector performance gained importance. The identification of areas where inspector performance is declining or where questions repeatedly arise were determined to be sources of topics to be addressed, as needed in inspector refresher training. Inspection Manual Chapter 1245, the training and qualification standard for inspectors, was modified to incorporate the requirement for the Inspection Program Branch in NRR to conduct an annual assessment to identify continuing and refresher training topics for inspectors in any areas where difficulty was noted or to update inspector knowledge when new inspection requirements are identified.

A second survey of inspectors and their supervisors was conducted in January 2001 to collect data on the effectiveness of various training methods used in the existing IMC-1245 inspector qualification program. Inspectors were asked to rate the effectiveness of four different training methods that had been used in preparing them to perform the work of an inspector. The methods were self-study and discussion, on-site inspection as a trainee (On-the-job training), formal classroom training, and oral qualification board. Topics for the survey were selected from the qualification journals. Supervisors were surveyed on the same topics but were asked to

answer the questions about the inspectors based on their experiences in working with them to obtain and maintain their inspector qualification.

The results are documented in Appendix F, and show that, in general, supervisors considered training to be more effective than inspectors. The largest differences were noted in the area of the oral qualification board. Overall, the program used to train and qualify inspectors was viewed by both inspectors and their supervisors as somewhat effective in preparing individuals to do that job. Inspectors were given the opportunity to provide written comments on what was needed to improve the quality of the program. Those comments are summarized in Appendix F and provided information in several key areas. Inspectors felt that it is important to spend as much time in the field as possible particularly with experienced good inspectors. However, comments indicated a need for more consistency in the training experience. This led to the development of more structured individual study and on-the-job training activities. Specific evaluation criteria were incorporated into each activity to improve the learning outcomes.

Section III - Competency Model

Organization of Inspector Competencies

<p>Group IV <u>Personal and Interpersonal Effectiveness</u></p> <p>Communication Teamwork Self-Management Information Technology</p>	<p>Group I <u>Legal Basis and Regulatory Processes</u></p> <p>Regulatory Framework</p>
<p>Group III <u>Regulatory Practices</u></p> <p>Inspection Emergency Response Problem Analysis Assessment and Enforcement</p>	<p>Group II <u>Technical Disciplines</u></p> <p>Basic Technologies (assumed) Fundamental Plant Design & Operation Inspection Area Technical Expertise</p>

Group I: Legal Basis and Regulatory Processes

The legal basis for and the regulatory processes
used to achieve the NRC's regulatory objectives

Competency: Regulatory Framework

Acquiring a fundamental understanding of the USNRC organizational structure and objectives, the basis for the authority of the agency, and the processes established to achieve the regulatory objectives.

KSAs for Regulatory Framework:

1. Applies NRC mandate, vision, objectives, and safety philosophy to inspection program activities.
2. Understands the organizational structure of the Commission, Offices, divisions, their mandate, roles and responsibilities, and interrelationships.
3. Generally, understands the Atomic Energy Act.
4. Understands how codes and standards relate to power reactor design and operation.
5. Appreciates the interface of federal, state, and local government in the regulation of nuclear power facilities.
6. Comprehends and appreciates the rights and concerns of all stakeholders.
7. Appreciates how legal requirements relate to routine tasks.
8. Comprehends and appreciates the relationship between legal, regulatory guidance and licensing documents.
9. Comprehends the relevant policies and procedures that are used in carrying out specific regulatory tasks.
10. Appreciates the need to adhere to the principles of good regulation which means that the regulatory body carries out its activities in an independent, open, efficient, clear, reliable, and fair manner.
11. Conducts activities in accordance with relevant NRC processes and procedures.

Group II: Technical Disciplines

The technology and technical area concepts
needed by the inspector to carry
out the NRC's overall responsibilities

Competency: Basic Technologies

Understanding of science and engineering fundamentals in a particular field equivalent to a university degree. Fields may be, but are not limited to the following science and engineering areas:

- Nuclear engineering
- Nuclear physics
- Chemical engineering
- Materials science
- Mechanical engineering
- Civil engineering
- Earth sciences
- Environmental engineering
- Computer science
- Electrical engineering

KSAs for Basic Technologies:

1. Comprehension of one of the science fields at a basic-level and which is not necessarily applied to nuclear industry applications, problems, or situations.

Competency: Fundamental Plant Design and Operation

Developing and maintaining an understanding of how basic nuclear plant design and operations provide for protection of public health and safety.

KSAs for Fundamental Plant Design and Operation:

1. Understands the basic nuclear principles including purpose of and need for control of the fission process; types of radiation generated; and secondary hazards of neutron activation of components outside the core.
2. Understands the basic primary/secondary loops and steam cycle, defense-in-depth concepts of the protection provided by the physical barriers of fuel clad, RCS, and containment.
3. Understands the occupational safety hazards (industrial/high press, temp, toxic, etc.) and controls (equipment tagging, personal protective gear, etc.) to assure personal protection in an industrial environment.
4. Understands the radiological hazards and controls thermoluminescent dosimeter (TLD) entry/exit personnel monitoring, rad signs/posting, RWPs, locked areas,

effluent/transportation controls, etc. to minimize personal occupational radiation exposure.

5. Understands the reason for and implementation of basic security controls (e.g., escort requirements, physical access controls, Fitness-for-Duty requirements, etc.)

Competency: Inspection Area Technical Expertise

Using a knowledge of a reactor type or specialized area to identify, address and resolve regulatory issues.

KSAs for Inspection Area Technical Expertise:

1. Comprehends how the design and operation of the structures, systems, and components are related to the specific technical area of expertise.
2. Understands the technical issues associated with the specific technical area of expertise.
3. Applies basic technical area specific principles during the conduct of inspections.
4. Comprehends the risk assessment tools and techniques and how risk assessment is applied in the specific technical area of expertise.
5. Identifies safety issues even those outside their area of expertise.

Group III: Regulatory Practices

The techniques and skills needed to collect, analyze, and integrate information using a safety focus to develop a supportable regulatory conclusion

Competency: Inspection

Independently gathering information through objective review, observation, and open communications and determining acceptability of information by comparing to established criteria.

KSAs for Inspection:

1. Uses inspection procedures to guide inspection activities.
2. Applies appropriate inspection techniques.
3. Recognizes the role of risk in the implementation of the inspection program.
4. Uses drawings/prints and other reference documents to gather information.
5. Integrates inspection planning with licensee schedule and facility status.
6. Observes activities within area of specialty to determine facility or equipment status.
7. Recognizes, receives, documents and processes allegations in accordance with agency guidance.
8. Demonstrates sensitivity when following up on allegations.
9. Documents and processes occupational safety issues in accordance with the Memorandum of Understanding (MOU) with OSHA.
10. Uses 3rd party information appropriately by following guidance.
11. Recognizes the nature of information and treats that information in accordance with the appropriate guidance.
12. Identifies valid facts.
13. Approaches others in a way that elicits cooperation.
14. Identifies when circumstances are different or unusual and require follow-up.
15. Discerns when information or assertions should be independently verified.
16. Recognizes situations that may have safety implications.
17. Identifies basic non-compliance situations.
18. Provides appropriate rationale for all findings of non-compliance.
19. Differentiates between minor violations.
20. Evaluates thoroughly the corrective measures proposed by the licensee and determines if these will rectify the identified non-compliance.

Competency: Emergency Response

Responding to events or conditions involving potential or actual adverse safety consequence.

KSAs for Emergency Response:

1. Applies regional and headquarters emergency response procedures during an emergency exercise.
2. Recognizes the characteristics of severe reactor incidents and understands the appropriate use of severe accident management guidelines (SAMGs).
3. Recognizes the role of the licensee's emergency response procedures.
4. Seeks, evaluates, and accurately relays information to headquarters or regions for analysis.
5. Recognizes and responds with an appropriate sense of urgency to incidents as they arise and ensures that others are appropriately informed.
6. Uses sound judgement in exercising the appropriate level of caution, planning, and contingency planning for each situation.

Competency: Problem Analysis

Approaching problems objectively, gathers and integrates information, and develops a comprehensive understanding to reach conclusions.

KSAs for Problem Analysis:

1. Asks appropriate questions to obtain correct information that will assist in understanding the issue.
2. Obtains data from various sources and builds an appropriate information base that is sound and valid.
3. Analyzes problems by breaking them into components to determine cause and effect.
4. Uses a variety of analysis techniques to determine the root cause of an issue.
5. Approaches problems objectively, considering all potential outcomes on an equal basis.
6. Grasps complexities and critical details.
7. Makes appropriate generalizations from data.
8. Draws sound conclusions based on the available data and the history associated with the issue.
9. Recognizes and responds with an appropriate sense of urgency to problems/issues as they arise and ensures that others are appropriately informed.
10. Considers the linkage among all parts of the problem and evaluates the impacts of possible outcomes.
11. Looks behind symptoms to uncover root causes and anticipates generic implications.
12. Recognizes and identifies basic non-compliance problems and communicates anticipated generic implications.
13. Digs for information to determine root causes of problems and observes discrepancies, trends and/or interrelationships in information or data.

Competency: Assessment and Enforcement

Objectively analyzing and integrating information using a safety focus to identify the appropriate regulatory conclusion and regulatory response

KSAs for Assessment and Enforcement:

1. Develops an appropriate context for issues by maintaining knowledge of pertinent historical information.
2. Maintains an awareness of current NRC priorities and sensitivities.
3. Expresses and deals with issues or conditions without distortion by external influences or prejudices.
4. Understands the pertinent details of an issue.
5. Reviews and integrates diverse information to identify or develop and understanding of the significance of the issue(s).
6. Uses the Significance Determination Process (SDP) to process appropriate issues.
7. Understands the PSA context of SDP issues.
8. Identifies key issues, understands the safety significance, and applies the appropriate regulatory framework.
9. Applies the agency action matrix to determine the level of agency response.
10. Proposes supportable enforcement action based on a review of the subject.
11. Develops enforcement packages in accordance with agency policy.
12. Matches enforcement action to appropriate regulations.

Group IV: Personal and Interpersonal Effectiveness

The personal and interpersonal skills needed to carry out the regulatory activities either individually or as part of a team.

Competency: Communication

Clearly expressing ideas or thoughts, carefully listening, and speaking and writing with appropriate safety focus and context.

KSAs for Communication:

1. Implements agency guidance for writing, editing, revising, and issuing inspection reports.
2. All communication reflects an awareness of public concerns, focus of local official needs and media perspectives.
3. Implements agency guidance for preparation of written materials such as briefing packages, preliminary reports, morning reports, enforcement actions.
4. Effectively exchanges information.
5. Elicits information from personnel using open ended questions and paraphrases.
6. Clearly articulates the NRC position regarding an issue.
7. Listens attentively to the message being conveyed to obtain additional information or further instructions.
8. Directs relevant information to the right people.
9. Shares information with others in a clear, concise, logical, and timely manner. Seeks clarification when lack of understanding.
10. Determines the required level of detail and key points to be made in written documents and organizes it to facilitate understanding by the reader.
11. Uses tact and diplomacy in conveying message ensuring the licensee understands the rationale and logic behind it.
12. Resolves conflict by facilitating discussion and proposing mutually beneficial solutions and seeks advice when appropriate.
13. When communicating with licensee takes the time to check their level of understanding prior to and following interaction.
14. Recalls key points and takes them into account in when communicating.
15. Takes notes when appropriate to recall important information and details.
16. Seeks input from other experienced inspectors, and acts on the information constructively.
17. Acquires information by promoting dialogue through effective facilitation to determine needs, interests, and expectations of various groups.
18. Recognizes contradictory or competing messages.
19. Communicates complex or simple messages with clarity and impact to widely varied forums and provides answers which reflect an awareness of the sensitivities and interests of the audience.
20. Responds appropriately to on-the-spot questions even when specific responses have not been scripted beforehand.
21. Provides factual answers that are in keeping with the regulatory body's position and views.

22. Is not afraid to admit not having an answer; but investigates further and gets back with an answer.
23. Maintains trust by giving consistent information and answers on issues.

Competency: Teamwork

Working collaboratively with others toward common objectives.

KSAs for Teamwork:

1. Contributes individual expertise and experience towards the achievement of project objectives.
2. Shares knowledge and information with team members.
3. Maintains commitment to team objectives even when own ideas are not supported.
4. Seeks to resolve differences, encouraging discussion and proposing mutually beneficial solutions.
5. Makes suggestions/recommendations to improve work quality, processes, or flow.
6. Offers assistance and seeks assistance when necessary.
7. Shows flexibility in response to change.

Competency: Self-Management

Working independently, exercising judgement, and exhibiting flexibility in the completion of activities including during difficult or challenging situations.

KSAs for Self-management:

1. Conforms to NRC management expectations and adheres to licensee, regional, and HQ procedures applicable to inspector conduct while on-site.
2. Recognizes limits of authority and uses the authority in a fair and equitable manner.
3. Firmly conveys and upholds agency policy or positions to a licensee.
4. Answer questions from media and members of the public with appropriate professionalism and adherence to agency policy on public disclosure of draft, pre-decisional, or otherwise sensitive information.
5. Resolves conflicting opinions or approaches in a professional manner and with an appropriate attitude.
6. Honors commitments made and informs others in advance if commitment may be at risk.
7. Takes initiative for own learning and development.
8. Asks for assistance and questions ways of doing things to acquire better understanding.
9. Learns from mistakes and seeks ways to improve personal effectiveness.
10. Approaches each new challenge objectively.
11. Adapts behavior to maintain an acceptable level of performance in changing situations.

12. Demonstrates initiative by undertaking or proposing appropriate actions to address issues or situations.
13. Exercises diplomacy and discretion during interactions with difficult audience and situation.
14. Stays with a plan of action until agency objective is achieved.
15. Remains productive through periods of transition and addresses ambiguity and uncertainty in the environment.
16. Prioritizes, and plans work tasks to accomplish agency objectives effectively and efficiently.
17. Projects a positive and professional image of self and the agency.
18. Maintains composure when challenged, producing explanations calmly and reasonably to achieve results.
19. Uses sound judgement in exercising the appropriate level of caution and contingency planning in an emergency response situation (e.g., knows where to go and who to contact and limits of authority as an NRC representative).
20. Accomplishes inspection program objectives with minimum necessary burden on the licensee.

Competency: Information Technology

Using technology to gather, manipulate, and share information.

KSAs for Information Technology:

1. Effectively uses the NRC's off-the-shelf software packages. (Examples: WordPerfect, Lotus, Microsoft Office, Excel, Power Point).
2. Effectively uses the NRC's special software packages. (ADAMS, Starfire, Regional database tracking plant issues, RPS.)
3. Records, stores, and retrieves information electronically.
4. Manipulates electronic information using appropriate software packages.
5. Accesses the agency's network from remote locations using agency approved software.
6. Schedules and initiates video- and tele-conferences.
7. Navigates the agency's web site to locate information related to the ROP.

Section IV - Inspector Training and Qualification Program Overview

General Overview of the Inspector Training and Qualification Program

The inspector training and qualification program is designed to ensure the development of competency in the four general areas of 1) legal basis and regulatory processes, 2) technical expertise, 3) regulatory practices, and 4) personal and interpersonal effectiveness. A more detailed listing of competency information is provided in Attachment 2.

The Basic-Level Program

The inspector qualification process begins with the Basic-Level Program. This program is designed to allow individuals to begin their training the first day they begin work at the NRC. The emphasis in the Basic-Level Program is mainly on structured, self-paced and self-directed individual study and on-the-job activities. The number of formal classroom training requirements at this level has been minimized. Minimizing the amount of formal classroom training and providing detailed guidance for self-study and OJT will allow for maximum flexibility in completing the Basic-Level Certification Journal.

Completing the Basic-Level Certification Journal will develop an awareness in everyone, of the role of the agency, the role of the inspector, and the technology being regulated. At the Basic-Level, individuals work on activities that will introduce them to the Regulatory Framework, Fundamental Plant Design and Operation, Information Technology, Emergency Response, Communication, and Inspection (general ROP framework and inspection program framework). In addition, two interpersonal skills courses have been identified as appropriate for the Basic-Level. If time permits, these courses may be completed with other Basic-Level requirements but in all cases must be completed prior to becoming a fully qualified inspector.

This overview approach provides the context for meaningful learning during on-site work, a foundation for in-depth training in the next level, and serves as the basis for granting individuals some independence in performing limited job-related activities while they are in the qualification process. To that end, upon completion of all requirements in the Basic-Level Training and Certification Journal, the individual will be certified by their immediate supervisor. This Basic Inspector Certification allows an inspector to perform limited scope inspection activities, as assigned, under close but not direct supervision. The Basic-Level Journal will take several months to complete. As a competency-based program, the emphasis is on practicing specific activities until the individual can meet the evaluation criteria. The time needed to achieve that goal will vary based on each person's previous experience and prior training. The foundation information presented in the Basic-Level must be completed before the other qualification activities can be started.

The Proficiency Level Program

Successful completion of the Basic-Level is a prerequisite to beginning the Proficiency- Level. There are two aspects of inspector performance that are addressed at the Proficiency Level, General Proficiency and Technical Proficiency. General Proficiency focuses on developing the Inspection, Teamwork and Interpersonal Skills needed by an inspector to function either independently or as part of a team to implement the inspection and oversight program. General Proficiency training activities are common to all seven inspector classifications.

Technical Proficiency focuses on developing the appropriate depth of knowledge in one of the seven specific technical inspection areas. Technical Proficiency training activities are unique to each inspector classification. General Proficiency, Technical Proficiency, and any remaining Personal and Interpersonal Skills training activities may be completed in parallel.

The Qualification Board is a culminating evaluation activity in the inspector training and qualification process. The Qualification Board evaluates the ability of an individual to integrate and apply the knowledge, skill, and attitudes they have learned to field situations. Training and qualification records for individuals who have successfully completed the Qualification Board will be sent to the Regional Administrator or Office Director for certification as a qualified inspector. Being certified as a fully qualified allows an inspector to be assigned the full scope of inspection-related activities to be independently performed with routine oversight and supervision.

Specialized and Advanced Training and Qualification

In most cases, specialized and advanced training is not a required part of the qualification program. The needs of the Agency as well as an individual's desire for professional growth may result in some fully qualified inspectors completing advanced training. Some advanced training consists only of individual courses addressing limited scope topics. Others are prescribed programs designed to provide in-depth knowledge and advanced skills and resulting in an additional level of qualification. Examples of an advanced level training program are the Senior Reactor Analyst and the Operator Licensing Examiner. The requirements for enrolling and completing in training at this level are detailed in the specific program descriptions contained in Appendix D.

The overall sequence of the Inspector Training and Qualification Program is outlined in a flow chart shown on the next page.

Inspector Training and Qualification Program Sequence

Basic-Level (Appendix A)

Training Courses:

Site Access
Reactor Concepts
PRA Basics
Seminar: Expectations for Inspectors

Individual Study Activities

Structured On-the-Job Activities

BASIC INSPECTOR CERTIFICATION



Personal and Interpersonal Skills

Training Courses:

Can be taken any time during qualification:

Effective Communication

Gathering Information

General Proficiency (Appendix B)

Training Courses:

Conducting Inspections
Field Techniques for Inspectors
Root Cause Analysis
Media Workshop

Structured On-the-Job Activity

Technical Proficiency (Appendix C)

Training Courses

Individual Study Activities

On-the-Job Activities

Specific inspector classifications:

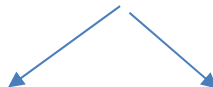
C-1: Operations
C-2: Engineering
C-3: Health Physics
C-4: Safeguards
C-5: Research and Test Reactors
C-6: Emergency Preparedness
C-7: Decommissioning



Qualification Board



FULL INSPECTOR QUALIFICATION



Various Advanced and Specialized Training Courses and Qualification Programs (Appendix D) Programs

Required Refresher and Continuing Training

Section V: Appendices

Appendix A: Revised Inspector Task List (Reflects the Reactor Oversight Program)

Duty Area 1.0 Onsite NRC presence

- 1.2 Intervene in problems and conflicts between NRC and licensee personnel

Duty Area 2.0 Assessment and Inspection Planning

- 2.1 Provide input to quarterly inspection plans
- 2.2 Provide input to mid-cycle inspection plans
- 2.3 Provide input to end-of-cycle inspection plans
- 2.4 Recommend appropriate response in accordance with the action matrix

Duty Area 3.0 Baseline Inspection Program

- 3.1 Plan baseline inspections
 - 3.1.1 *Select systems or activities to be inspected for each baseline area.*
 - 3.1.2 *Schedule inspection based on inspection planning and completion status tools*
 - 3.1.3 *Review background materials during inspection preparation*
 - 3.1.4 *Coordinate the inspection with licensee and NRC staff*
 - 3.1.5 *Conduct entrance meeting with licensee management*
- 3.2 Perform baseline inspections in the area(s) of assigned responsibility
 - 3.2.1 *Perform Reactor Safety baseline inspections related to initiating events, mitigating systems, and barrier integrity*
 - 3.2.2 *Perform Reactor Safety baseline inspections related to emergency preparedness*
 - 3.2.3 *Perform Occupational and Public Radiation Safety baseline inspections*
 - 3.2.4 *Perform Physical Protection baseline inspections*
 - 3.2.5 *Perform other baseline inspections*
- 3.3 Perform plant status reviews
 - 3.3.1 *Determine plant status by conducting a routine control room walkdown*
 - 3.3.2 *Determine plant status by conducting plant walkdowns of safety-significant areas.*
 - 3.3.3 *Determine plant status by monitoring emergent work activities*
 - 3.3.4 *Determine plant status by attending plan-of-the-day meetings*
 - 3.3.5 *Determine specific samples for inspections within inspectable areas*

Duty Area 4.0 Event Follow-up

- 4.1. Observe plant parameters and discuss the current plant status including mitigation systems/trains and fission product barriers with licensee
- 4.2 Evaluate performance of mitigating systems and licensee's actions
- 4.3 Confirm the classification of the event in accordance with the emergency plan and the off-site notification of the event
- 4.4 Communicate details to region and headquarters (HQ) to support determination of initial agency response

Duty Area 5.0 Emergency Response

- 5.1 Participate as a member of an emergency response team.

Duty Area 6.0 SDP

- 6.1 Perform prescreening activities
- 6.2 Determine significance of findings in the area(s) of assigned responsibility
 - 6.2.1 *Determine significance using the Reactor Safety SDP*
 - 6.2.2 *Determine significance using the emergency preparedness SDP*
 - 6.2.3 *Determine significance using the Occupational and Public Radiation Safety SDP*
 - 6.2.4 *Determine significance using the Physical Protection SDP*
 - 6.2.5 *Determine significance using the Shutdown Operations SDP*
 - 6.2.6 *Determine significance using the Fire Protection SDP*
 - 6.2.7 *Determine significance using the Containment Integrity SDP*

Duty Area 7.0 Supplemental Inspections (IP 95001, 95002, 95003)

- 7.1 Evaluate licensee's identification of the problem
- 7.2 Evaluate licensee's root cause analysis
- 7.3 Evaluate licensee's corrective action plan
- 7.4 Conduct an independent assessment of extent of condition and generic implications
- 7.5 Conduct an independent assessment of licensee processes and programs

Duty Area 8.0 Generic Safety Inspections or other Special Activity Inspection Activities

- 8.1 Identify potential generic safety issues to region and HQ
- 8.2 Perform TI inspections

Duty Area 9.0 Special Inspection Team, Augmented Inspection Team, or Incident Investigation Team

- 9.1 Collect, analyze, and document factual information
- 9.2 Assess the safety significance of the event or degraded condition
- 9.3 Determine that the root cause and contributing cause evaluations were complete and correct
- 9.4 Determine that corrective actions were identified, appropriately scheduled, and implemented

Duty Area 10.0 Post Inspection Activities

- 10.1 Conduct NRC pre-exit briefing with team members and/or regional staff
- 10.2 Conduct pre-brief with licensee, summarize findings, and acknowledge areas of conflict

10.3 Conduct exit meeting with licensee

Duty Area 11.0 Documenting Inspection Results

- 11.1 Document scope of inspection
- 11.2 Document findings
- 11.3 Document significance of findings using the SDP
- 11.4 Document violations and non-cited violations, unresolved items, PI verification results, and review of significant plant events
- 11.5 Provide input to cover letter/summary of findings
- 11.6 Provide input to agency inspection program tracking system

Duty Area 12.0 Enforcement

- 12.1 Prepare enforcement package
- 12.2 Review enforcement related materials
- 12.3 Participate in enforcement related meetings or briefings

Duty Area 13.0 Allegations and Investigations

- 13.1 Receive and document allegations
- 13.2 Participate on allegation panels
- 13.3 Perform allegation follow-up
- 13.4 Document allegation results
- 13.5 Assist with investigations

Duty Area 14.0. Interactions with other NRC personnel

- 14.1 Draft morning reports and preliminary notifications
- 14.2 Participate in conference calls between residents, region, and HQ, as requested
- 14.3 Participate in regional seminars and counterpart meetings
- 14.4 Respond to requests for plant specific information
- 14.5 Review draft agency documents
- 14.6 Recommend improvements in NRC inspection and other programs
- 14.7 Provide input for Notices of Enforcement Discretion

Duty Area 15.0 Interactions with public, governmental agencies and media

- 15.1 Provide information and assistance to state, federal, and local agencies
 - 15.1.1 Represent NRC to licensee, state and local officials, and news media*
 - 15.1.2 Prepare input to inquiries regarding assigned facility and NRC activities*
- 15.2 Participate in public meetings
- 15.3 Represent NRC to various professional organizations
- 15.4 Provide input to media packages for management press briefings
- 15.5 Testify at hearings in support of proposed NRC actions

Duty Area 16.0 Maintaining Job Knowledge

- 16.1 Maintain inspector qualifications
- 16.2 Participate in technical and other training

Appendix B: Inspector Task vs Competency Matrix

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
On-site NRC Presence											
1.1 Intervene in problems and conflicts between NRC and licensee personnel.					x		x				
Assessment and Inspection Planning											
2.1 Provide input to quarterly inspection plans					x						x
2.2 Provide input to mid-cycle inspection plans					x						x
2.3 Provide input to end-of-cycle inspection plans					x						x
2.4 Identify appropriate NRC response in accordance with action matrix					x						x
Baseline Inspection Program (Planning)											
3.1.1 Select systems or activities to be inspected for each baseline area	x	x	x	x	x					x	
3.1.2 Schedule inspection based on inspection planning and completion status tools			x		x					x	
3.1.3 Review background materials during inspection preparation	x	x	x	x						x	x

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
3.1.4 Coordinate the inspection with licensee and NRC Staff			X		X	X	X			X	
3.1.5 Conduct entrance meeting with licensee management				X	X		X			X	
Baseline Inspection Program (Performing)											
3.2.1 Perform Reactor Safety baseline inspections related to initiating events, mitigating systems and barrier integrity	X	X		X	X	X	X		X	X	
3.2.2 Perform Reactor Safety baseline inspections related to Emergency Preparedness	X	X		X	X	X	X		X	X	
3.2.3 Perform Occupational and Public Radiation Safety baseline inspections	X	X		X	X	X	X		X	X	
3.2.4 Perform Physical Protection baseline inspections	X	X		X	X	X	X		X	X	
3.2.5 Perform other baseline inspections	X	X		X	X	X	X		X	X	X
Baseline Inspection Program (Plant Status)											
3.3.1 Determine plant status by conducting a routine control room walk-down		X		X			X		X	X	
3.3.2 Determine plant status by conducting plant walk-downs of safety significant systems		X		X					X	X	

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
3.3.3 Determine plant status by monitoring emergency work activities		X		X					X	X	
3.3.4 Determine plant status by attending plan-of-the day meetings		X		X	X		X		X	X	
3.3.5 Determine specific sample for inspection within inspectable areas		X		X	X					X	
Event Follow-up											
4.1 Observe plant parameters and discuss the current plant status with the licensee including mitigation systems/trains and fission product barriers	X	X		X	X		X	X	X	X	
4.2 Evaluate performance of mitigating systems and licensee=s actions	X	X		X	X		X	X	X	X	
4.3 Confirm the classification of the event in accordance with the emergency plans and the off-site notification of the event	X	X		X	X		X	X	X	X	
4.4 Communicate details to the region and headquarters to support the determination of initial agency response	X	X		X	X		X	X		X	
Emergency Response											
5.1 Participate as a member of an emergency response team	X	X	X	X	X	X	X	X	X	X	X
Significance Determination Process (SDP)											
6.1 Perform pre-screening activities											

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
	X	X		X		X			X		X
6.2.1 Determine signification using the Reactor Safety SDP		X		X		X			X		X
6.2.2 Determine signification using the Emergency Preparedness SDP		X		X		X			X		X
6.2.3 Determine signification using the Occupational and Public Radiation Safety SDP		X		X		X			X		X
6.2.4 Determine signification using the Physical Protection SDP		X		X		X			X		X
6.2.5 Determine signification using the Shutdown Operations SDP		X		X		X			X		X
6.2.6 Determine signification using the Fire Protection SDP		X		X		X			X		X
6.2.7 Determine signification using the Containment Integrity SDP		X		X		X			X		X
Supplemental Inspections											
7.1 Evaluate licensee's identification of the problem		X		X	X	X	X		X	X	X
7.2 Evaluate licensee's root cause analysis		X		X	X	X	X		X	X	X
7.3 Evaluate licensee's corrective action plan		X		X	X	X	X		X	X	X

	Regulatory Framework	Fundamental Plant Design & Operations	Information Technology	Inspection Technical Expertise	Communication	Teamwork	Self-management	Emergency Response	Problem Analysis	Inspection	Assessment and Enforcement
7.4 Conduct an independent assessment of the extent of condition and generic implications		X	X	X	X	X	X		X	X	X
7.5 Conduct an independent assessment of licensee processes and programs		X		X	X	X	X		X	X	X
Generic Safety Inspections or Other Special Activities											
8.1 Identify potential generic safety issues to region and headquarters		X	X	X	X				X	X	
8.2 Perform TI inspections	X	X		X	X	X	X		X	X	
Specialty Inspections (Special Team Inspections, Augmented Inspection Team (AIT), Incident Inspection Team (IIT))											
9.1 Collect, analyze and document factual information	X	X	X	X	X	X	X		X	X	X
9.2 Assess the safety significance of the event or degraded condition	X	X		X	X	X	X		X	X	X
9.3 Determine if the root cause and contributing cause evaluations were complete and correct	X	X		X	X	X	X		X	X	X
9.4 Determine if corrective actions were identified, appropriately scheduled, and implemented	X	X		X	X	X	X		X	X	X

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
Post Inspection Activities											
10.1 Conduct NRC pre-exit briefing with team members and/or regional staff	x	x	x	x	x	x	x			x	x
10.2 Conduct pre-brief with licensee, summarizing findings and acknowledging areas of conflict	x	x	x	x	x	x	x			x	x
10.3 Conduct exit meeting with licensee	x	x	x	x	x	x	x			x	x
Documenting Inspection Results											
11.1 Document scope of inspection											
11.2 Document findings											
11.3 Document significance of findings using the SDP											
11.4 Document violations and non-cited violations, unresolved items, PI verification results and review of significant plant events											
11.5 Provide input to the cover letter or summary of findings											

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
11.6 Provide input to agency inspection program tracking system	X		X	X	X						
Enforcement											
12.1 Prepare enforcement package	X	X	X	X	X	X			X		X
12.2 Review enforcement related materials	X	X		X		X			X		X
12.3 Participate in enforcement related meetings or briefings	X	X		X	X	X	X				
Allegations and investigations											
13.1 Receive and document allegations	X	X	X	X	X	X	X				
13.2 Participate in allegations panels	X	X		X	X	X	X		X	X	X
13.3 Perform allegations follow-up	X	X		X	X	X	X		X	X	
13.4 Document allegations results		X	X	X	X					X	X
13.5 Assist with investigations		X		X	X	X	X		X	X	
Interactions with other NRC Personnel											
14.1 Draft morning reports and preliminary notifications	X	X	X	X	X	X					

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
14.2 Participate in conference calls between residents, region and headquarters as requested	X	X	X	X	X	X	X				
14.3 Participate in regional seminars and counterpart meetings				X	X	X					
14.4 Respond to requests for plant specific information		X	X	X	X	X					
14.5 Review and provide comments on draft agency documents	X	X	X		X					X	
14.6 Recommend improvements in NRC inspection and other programs	X	X	X		X					X	
14.7 Provide input for Notices of Enforcement Discretion	X	X	X	X	X	X			X	X	X
Interactions with public, governmental agencies and media											
15.1.1 Represent the NRC to licensees, state and local officials and media	X	X		X	X		X	X		X	
15.1.2 Prepare inputs to inquiries regarding assigned facility and NRC activities	X	X	X	X	X	X		X		X	
15.2 Participate in public meetings	X	X		X	X	X	X	X		X	
15.3 Represent NRC to various professional organizations	X	X	X	X	X		X			X	

	R e g u l a t o r y F r a m e w o r k	F u n d a m e n t a l P l a n t D e s i g n & O p s	I n f o r m a t i o n T e c h n o l o g y	I n s p e c t i o n T e c h n i c a l E x p e r t i s e	C o m m u n i c a t i o n	T e a m w o r k	S e l f - m a n a g e m e n t	E m e r g e n c y R e s p o n s e	P r o b l e m A n a l y s i s	I n s p e c t i o n	A s s e s s m e n t a n d E n f o r c e m e n t
15.4 Provide input to media packages for management press briefings	X	X	X	X	X	X		X		X	
15.5 Testify at hearings in support of proposed NRC actions	X	X		X	X		X	X		X	
Maintaining Job Knowledge											
16.1 Maintain inspector qualifications		X			X		X			X	
16.2 Participate in technical and other training		X			X		X			X	

**Appendix C: Inspector Training and Qualification Activities
vs
Inspector Competency**

	Regulatory Framework	Fundamental Design & Operations	Informational Technology	Inspection Techniques	Communication	Teamwork	Self-Management	Emergency Response	Problem Analysis	Inspection	Assessment and Enforcement
Basic Level Training Courses											
H-100, Site Access Training	x	x					x	x			
R-100, Reactor Concepts	x	x		x				x			
P-105, PRA Basics	x	x		x							x
Inspector Expectations Seminar					x	x	x				
Basic Level Individual Study Activities											
Navigating the NRC's Internal and External Web Pages			x								
History and Organization of the Nuclear Regulatory Commission	x										
Inspector Objectivity, Protocol, and Professional Conduct							x			x	
Allegations					x		x			x	
Fitness for Duty (FFD) Rule							x			x	
NRC Interagency Agreements	x										
Institute of Nuclear Power Operations (INPO), Nuclear Energy Institute (NEI), and National Organization of Test, Research and Training Reactors (TRTR)	x						x				
Commission Policy Statements	x										
Interaction with the Public	x				x		x				

	Regulatory Framework	Funding Plant Design & Operations	Information Technology	Inspection Technical Expertise	Communication	Teamwork	Self-Management	Emergency Response	Problem Analysis	Inspection	Assessment and Enforcement
Exploring Reactor Oversight Program's (ROP) Internal Webpage			X	X						X	
Overview of 10 CFR Part 50	X										
Overview of 10 CFR Parts 19 and 20	X										
The Office of Investigations	X									X	
The Enforcement Process	X										X
NRC's Response to an Emergency at a Nuclear Facility								X			
Organization and Content of the NRC Inspection Manual	X									X	
Exploring the Operating Reactor Inspection Program	X									X	
Augmented Inspection Team (AIT), Special Inspection Team (SIT) and Incident Inspection Team (IIT) Activities										X	
Entrance and Exit Meetings					X	X				X	
Documenting Inspection Findings					X	X	X			X	X
Differing Professional Opinions (DPO) and Differing Professional Views (DPV)					X		X			X	
Contacts with the Media					X		X				
Freedom of Information Act and the Privacy Act	X				X		X				
Licensee-specific regulatory documents and procedures	X										
Basic Level On-the-Job Training Activities											
Plant Familiarization Tour with a Qualified Inspector		X			X			X		X	
Control Room Tour with Resident Inspector		X					X	X		X	

	Regulatory Framework	Fundamental Design & Operations	Information Technology	Inspection Techniques	Communication	Teamwork	Self-Management	Emergency Response	Problem Analysis	Inspection	Assessment and Enforcement
Licensee Plan-of-the-Day (POD) Meeting				X		X			X		
Inspection Activities				X	X	X			X		
Documenting Inspection Findings		X		X	X				X	X	
General Proficiency Level Training Courses											
Conducting Inspections	X	X			X	X	X	X	X	X	X
Field Techniques for Inspectors	X			X	X	X	X	X	X	X	X
Effective Communication for Inspectors					X	X	X		X		
Gathering Information					X	X	X		X		
Root Cause Analysis Training					X	X	X		X		
Media Workshop					X	X	X				
General Proficiency Level On-the-Job Training Activity											
Emergency Drill Observation	X	X		X	X	X	X	X	X		
Technical Proficiency Level Training and Activities											
All activities for all inspector classifications	X	X		X				X	X	X	X
Qualification Board											
Oral Examination by Qualification Board	X				X	X	X		X		

Appendix D: Glossary

Competency:	the group of related KSAs needed to perform a particular job
Knowledge:	the facts, concepts, ideas, relationships that support successful on-the-job performance
Skill:	a practiced ability and expertness to perform tasks successfully on-the-job
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.
Initial training:	the set of training activities (self-study, classroom, OJT) that covers the knowledge, skills and attitudes an inspector must have to successfully perform the inspector core tasks.
Continuing training:	activities designed to build on what a trainee learned in initial training by: <ul style="list-style-type: none">• Providing more in-depth knowledge in areas that are covered in initial training• Addressing changes to the programs and processes that effect how an inspector conducts job-related activities
Refresher training:	activities designed to maintain the overall level of performance of inspectors by: <ul style="list-style-type: none">• 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• Providing training in areas where inspector or inspection program performance has been identified as declining
On-the-job training:	activities that provide an inspector with job-related skills and knowledge and ensure successful performance before an inspector is given independent work assignments.
Individual study activity:	a structured set of tasks designed to enable an inspector to independently study a topic. Each activity provides a purpose and evaluation criteria to help the inspector maintain a focus on what is important to learn when completing the activity.

Appendix E: Inspector Survey 1

List of Tasks Surveyed for Frequency and Difficulty Using Inspector Survey 1

Licensee Assessment and Inspection Planning

Assessment Activities

- B1:* Provide input to quarterly inspection plans
- B2:* Provide input into mid-cycle inspection plans
- B3:* Provide input to end-of-cycle inspection plans
- B4:* Determine appropriate response in accordance with the action matrix

Plant Status Reviews

- B5:* Determine plant status by conducting a routine control room walkdown
- B6:* Determine plant status by conducting plant walkdowns of safety-significant areas.
- B7:* Determine plant status by monitoring emergent work activities
- B8:* Determine plant status by attending plan-of-the-day meetings
- B9:* Determine specific samples for inspections within inspectable areas

Baseline Inspection Planning

- B10:* Select systems or activities to be inspected for each baseline area.
- B11:* Schedule inspection
- B12:* Review background materials during inspection preparation.
- B13:* Coordinate the inspection with licensee and NRC staff
- B14:* Conduct entrance meeting with licensee management
- B15:* Perform problem identification and resolution verification with the cornerstone inspections
- B16:* Participate in an annual problem identification and resolution inspection

Reactor Safety Baseline Inspections

Reactor Safety Baseline Inspections Initiating Events, Mitigating Systems, and Barrier Integrity

- C1:* Adverse weather protection (71111.01)
- C2:* Changes, tests, or experiments (71111.02)
- C3:* Equipment alignment (71111.04)
- C4:* Fire protection (71111.05)
- C5:* Flood protection measures (71111.06)
- C6:* Heat sink performance (71111.07)
- C7:* Inservice inspection activities (71111.08)
- C8:* Licensed operator requalification activities (71111.11)
- C9:* Maintenance rule implementation (71111.12)
- C10:* Maintenance risk assessment and emergent work evaluation (71111.13)
- C11:* Operability evaluations (71111.15)
- C12:* Operator work-arounds (71111.16)
- C13:* Permanent plant modifications (71111.17)
- C14:* Post maintenance testing (71111.19)
- C15:* Refueling and outage activities (71111.20)
- C16:* Safety system design and performance capability (71111.21)
- C17:* Surveillance testing (71111.22)
- C18:* Temporary plant modifications (71111.23)

Other Baseline Inspections and Supplemental Inspections

Reactor Safety Baseline Inspections -- Emergency Preparedness

- D1*: Emergency preparedness exercises (71114.01)
- D2*: Alert notification system testing (71114.02)
- D3*: Emergency response organization augmentation testing (71114.03)
- D4*: Action level and emergency plan changes (71114.04)
- D5*: Correction of emergency preparedness weaknesses and deficiencies (71114.05)
- D6*: Emergency preparedness drills (71114.06)

Occupational and Public Radiation Safety -- Baseline Inspections

- D7*: Access control to radiologically significant areas (71121.01)
- D8*: ALARA planning and controls (71121.02)
- D9*: Radiation monitoring instrumentation (71121.03)
- D10*: Radioactive gaseous and liquid effluent treatment and monitoring systems (71122.01)
- D11*: Radioactive material processing and transportation (71122.02)
- D12*: Radiological environmental monitoring program (71122.03)

Physical Protection -- Baseline Inspections

- D13*: Access authorization (71130.01)
- D14*: Access control (71130.02)
- D15*: Response to contingency events (71130.03)
- D16*: Security Plan changes (71130.04)

Other baseline inspections

- D17*: Performance indicator verification (71151)
- D18*: Identification and resolution of problems (71152)
- D19*: Licensee event follow-up (71153)

Supplemental Inspection Activities -- IMC 95001, 95002, 95003

- D20*: Review licensee identification of problems
- D21*: Review licensee root cause analyses
- D22*: Review licensee determination of extent of condition
- D23*: Review licensee corrective actions

Event Follow-up and Emergency Response

Event Follow-up

- E1*: Observe plant parameters and discussing plant status with the licensee.
- E2*: Evaluate performance of mitigating systems and licensee's actions
- E3*: Confirming the classification of the event in accordance with the emergency plan and the off-site notification of the event.
- E4*: Communicate details from initial event follow-up to the region and headquarters to support determination of initial agency response

Emergency Response--actual and exercises

- E5*: Participate as a member of an emergency response site team
- E6*: Participate as a member of an emergency response base team

Significance Determination Process (SDP)

Reactor safety SDP

F2: Characterize the finding and screen-out those which are low-significance

F3: Approximate the risk-significance of the finding and develop the basis for this determination for those findings that pass through the Phase 1 Screening

F4: Finalize and justify the risk-significance of Phase 2 findings

F5: Support Phase 3 analysis, if required

Other SDPs

F6: Determine significance using the emergency preparedness SDP

F7: Determine significance using the occupational radiation safety SDP

F8: Determine significance using the public radiation safety SDP

F9: Determine significance using the physical protection SDP

F10: Determine significance using the shutdown operations SDP

F11: Determine significance using the fire protection SDP

F12: Determine significance using the containment integrity SDP

Other Inspection-Related Activities

Post-Inspection Activities

G1: Conduct NRC pre-exit briefing with team members and/or regional staff

G2: Conduct pre-brief with licensee, summarize findings, and acknowledge areas of conflict

G3: Conduct exit meeting with licensee

Documenting Inspection Results

G4: Document scope of inspection

G5: Document findings

G6: Document significance of findings as determined through the SDP

G7: Document violations and non-cited violations, unresolved items, PI verification results, and review of significant plant events

G8: Provide input to cover letter/summary of findings

G9: Enter results of inspection into the plant issues matrix

Enforcement Activities

G10: Prepare enforcement package

G11: Review enforcement package

G12: Participate in enforcement related meetings or briefings

Allegations or Investigations

G13: Receive and document allegations

G14: Participate in allegation panels

G15: Perform allegation follow-up

G16: Document investigation results

G17: Assist with investigations

Table 1: Frequency and Difficulty Data from Survey 1

Licensee Assessment and Inspection Planning

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	GpAv
Combined F x D	6.84	9.13	10.15	8.71	3.91	4.98	5.34	4.06	5.61	6.14	6.80	5.43	5.32	6.94	7.89	13.52	6.92
Region 1 F X D	7.12	9.81	10.65	8.20	4.28	5.86	6.22	4.22	5.76	6.51	6.80	5.75	5.14	6.27	8.24	14.00	7.18
Region 2 F X D	6.92	9.05	10.06	11.17	3.38	4.18	4.35	3.44	4.69	5.37	6.21	4.80	5.11	6.76	7.29	13.71	6.66
Region 3 F X D	5.20	8.43	9.45	8.79	3.45	4.80	5.25	3.83	5.85	6.34	6.60	5.63	5.36	6.76	8.24	13.64	6.73
Region 4 F X D	7.74	9.09	10.17	8.50	3.81	4.44	4.91	4.13	5.52	5.80	6.62	4.75	5.18	7.46	7.10	13.34	6.78

Reactor Baseline Inspection

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	GpAv
Combined F x D	11.27	11.26	7.47	7.45	12.32	12.20	10.27	10.45	8.74	7.48	8.49	9.38	11.64	7.34	13.53	12.06	7.01	10.03	10.08
Region 1 F X D	12.16	10.74	8.38	8.23	12.35	12.95	10.87	10.32	9.62	8.16	8.90	10.16	12.41	8.06	13.88	12.79	7.71	10.33	10.62
Region 2 F X D	10.55	12.46	6.81	6.51	13.41	12.14	10.24	11.21	8.91	7.41	8.66	9.54	12.85	7.37	13.87	12.68	6.79	10.36	10.29
Region 3 F X D	11.61	11.64	6.82	6.88	13.82	12.56	9.90	11.08	7.62	6.94	7.92	7.57	12.36	6.77	14.47	14.08	6.50	9.93	10.13
Region 4 F X D	11.42	10.51	7.03	7.25	11.17	12.09	10.09	9.48	8.17	7.38	7.96	9.39	10.10	6.74	12.68	9.82	6.25	9.19	9.45

Other Baseline and Supplemental Inspections

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	GpAv
Combined F x D	11.12	9.03	9.22	9.45	10.40	10.92	6.93	9.02	8.38	9.18	9.53	8.77	8.39	7.54	11.59	10.02	10.02	11.89	10.55	8.92	10.29	9.69	9.02	9.34
Region 1 F X D	11.43	12.00	10.13	8.89	10.63	11.09	7.65	9.02	8.16	10.56	8.67	11.56	5.33	5.67	10.00	10.00	9.97	12.24	9.67	8.72	9.62	8.73	8.05	9.42
Region 2 F X D	12.14	11.67	9.63	9.39	10.93	11.29	6.07	7.89	8.50	7.89	8.57	9.17	8.00	9.75	10.00	11.25	10.28	11.69	11.76	9.85	10.32	10.63	9.24	9.51
Region 3 F X D	10.75	8.25	8.39	8.96	10.73	11.30	7.21	11.14	8.77	14.69	13.57	12.04	2.00	2.04	1.00	2.42	9.73	12.67	11.18	11.37	13.44	11.99	11.24	8.33
Region 4 F X D	10.51	7.70	8.51	9.86	10.39	10.58	7.89	9.86	8.96	8.20	10.15	8.15	6.67	6.72	8.00	8.56	10.05	11.75	10.55	8.03	9.96	9.13	8.89	8.79

Event Follow-up and Emergency Response

	E1	E2	E3	E4	E5	E6	GpAv
Combined F x D	8.11	9.75	11.01	11.64	12.36	11.45	10.72
Region 1 F X D	8.20	10.34	11.35	11.73	12.73	12.11	11.07
Region 2 F X D	7.21	9.02	11.06	11.53	12.89	12.89	10.77
Region 3 F X D	7.78	9.09	9.47	11.19	13.07	11.83	10.41
Region 4 F X D	8.86	10.27	11.27	12.15	12.45	11.10	11.02

Significance Determination Process

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	GpAv
Combined F x D	8.45	8.47	10.30	12.58	12.51	10.45	10.29	9.57	11.43	13.35	14.78	12.39	11.21
Region 1 F X D	8.34	8.79	10.02	11.80	11.00	11.58	9.82	8.88	7.08	14.52	14.21	12.01	10.67
Region 2 F X D	8.91	8.66	10.74	13.87	14.74	10.50	12.23	9.80	9.58	14.99	15.48	13.57	11.92
Region 3 F X D	7.95	7.78	9.67	12.77	13.95	10.35	10.40	10.76	0.00	15.26	15.88	13.17	10.66
Region 4 F X D	8.74	8.60	11.07	13.11	12.42	9.28	10.63	10.28	11.20	12.31	15.27	13.16	11.34

Other Inspection-Related Activities

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	GpAv
Combined F x D	8.85	8.41	8.70	7.20	8.16	9.83	9.63	8.32	7.58	14.22	11.57	11.56	11.05	10.44	11.91	11.25	11.29	9.92
Region 1 F X D	8.37	7.94	8.35	7.15	8.16	9.69	9.61	8.19	7.24	14.78	12.08	12.04	11.44	10.55	11.77	11.69	12.32	9.94
Region 2 F X D	8.85	8.24	9.00	7.49	8.53	10.33	10.56	8.95	7.89	14.33	12.37	11.66	11.91	11.20	12.95	12.19	12.13	10.40
Region 3 F X D	8.75	8.12	8.38	7.07	8.00	9.83	9.48	8.20	7.42	14.96	13.11	12.53	9.98	10.09	10.90	9.58	9.58	9.77

Region 4 F X D	8.98	8.84	8.90	7.35	7.75	9.71	9.02	8.14	8.13	14.06	11.25	11.27	10.95	11.00	12.22	11.63	12.17	9.95
----------------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	------

Appendix F: Survey 2

Table 2, Training Effectiveness Ratings from Survey 2

Effectiveness Response Scale

- 1 = Not effective
- 2 = Somewhat effective
- 3 = Adequate
- 4 = Too much information

Related Competency Codes:

- R = Reg Frame
- IT = Info technol
- C = Commun
- S = self manage
- P = prob anal
- AE = assessment and enforcement
- F = Fund plant design /ops
- T= Tech area expertise
- TW = Teamwork
- EP = emergency response
- I = inspection

Survey Number	Item	Related Competency	Inspector Response	Supervisor Response	Delta
S1	Familiarity with the topics contained in various parts of 10 CFR.	R	2.42	2.75	0.33
S2	Familiarity with the expectations for inspector objectivity	I	2.45	2.61	0.16
S3	Familiarity with inspector protocol and limits	I,S	2.31	2.48	0.17
S4	Familiarity with the NRC and regional organization	I	2.66	2.63	-0.03
S5	Familiarity with NRC enforcement policies and procedures	AE	2.04	2.09	0.05
S6	Familiarity with the NRC safety program under OSHA.	R	1.93	2.25	0.32
S7	Familiarity with an inspector's role during public meetings including entrance and exit meetings.	I	2.24	2.21	-0.03
S8	Familiarity with the contents of the NRC Management Directives.	I	2.17	2.33	0.16
S9	Familiarity with the role of the Office of Investigations	R	2.21	2.48	0.27
S10	Familiarity with the NRC Operations Center functions.	EP	1.98	2.04	0.06
S11	Familiarity with the contents of the Updated Safety Analysis Report	R	2.44	2.58	0.14
S12	Familiarity with the role of the Office of Investigations.	R	2.19	2.35	0.16
S13	Working knowledge of the applicability of guidance in the Inspection Manual Chapters to your specific inspector qualification type	T	2.30	2.33	0.03
S14	Working knowledge of the various codes and standards that may apply to your specific inspector qualification type. (ASME, ANSI, IEEE, etc.)	R, T	1.84	2.13	0.29
S15	Working knowledge of NRC Documents related to your specific inspection qualification type. Documents include: Reg Guides, Information Notices, NUREGs, and Generic Letters	R, T	2.25	2.21	-0.04
S16	Working knowledge of the site emergency plan for a selected plant.	S	2.25	2.29	0.04
S17	Working knowledge of the site security plan for selected plant.	S	2.17	2.38	0.21
S18	Working knowledge of the site radiation protection plan for a selected plant.	S	2.32	2.39	0.07
S19	Working knowledge of how to receive, document, and follow-up on allegations.	C,R,T	2.23	2.38	0.15

Effectiveness Response Scale

- 1 = Not effective
2 = Somewhat effective
3 = Adequate
4 = Too much information

Related Competency Codes:

- R = Reg Frame
IT = Info technol
C = Commun
S = self manage
P = prob anal
AE = assessment and enforcement
F = Fund plant design /ops
T= Tech area expertise
TW = Teamwork
EP = emergency response
I = inspection

Survey Number	Item	Related Competency	Inspector Response	Supervisor Response	Delta
OJT1	Working knowledge of the inspection program	I	2.60	2.71	0.11
OJT2	Familiarity with how to schedule and prepare for an inspection	I	2.48	2.67	0.19
OJT3	Working knowledge of how to define the scope of an inspection	I	2.41	2.71	0.30
OJT4	Working knowledge of an inspector's role in an entrance and exit meeting	S,I	2.77	2.75	-0.02
OJT5	Working knowledge of how to conduct document reviews	I	2.36	2.67	0.31
OJT6	Working knowledge of how to observe work activities	S	2.52	2.71	0.19
OJT7	Working knowledge of how to communicate effectively during the conduct of an inspection	I,C,S	2.56	2.58	0.02
OJT8	Working knowledge of preparing an inspection report package	I,C,S	2.39	2.70	0.31
OJT9	Working knowledge of handling and documenting inspection findings	I,C	2.40	2.58	0.18
OJT10	Working knowledge of the NRC enforcement policy	A	2.27	2.33	0.06
OJT11	Working knowledge of how to review non-routine licensee events	EP,I	2.20	2.33	0.13
OJT12	Working knowledge of how to handle public inquiries including how to communicate outside the NRC about inspection activities	C,I	1.92	2.08	0.16
OJT13	Familiarity with the licensee's management organization	C	2.50	2.71	0.21
OJT14	Working knowledge of plant systems and components related to the specific area of inspector qualification	T	2.54	2.63	0.09
CR1	Working knowledge of how to conduct an inspection	I, TW	1.89	1.67	-0.22
CR2	Working knowledge of how to conduct a root cause analysis	TW, P,C	2.30	2.42	0.12
CR3	Working knowledge of how to communicate effectively.	C	2.34	2.13	-0.21
CR4	Working knowledge of how to conduct observations in the field	I	1.88	1.75	-0.13
CR5	Working knowledge of how to use PRA when conducting inspections	I	2.01	2.04	0.03
CR6	Working knowledge of the operation of power plant systems and components.	F, T	2.63	2.58	-0.05
CR7	Working knowledge of how to conduct effective interviews	C,I	2.10	2.21	0.11

Effectiveness Response Scale

- 1 = Not effective
2 = Somewhat effective
3 = Adequate
4 = Too much information

Related Competency Codes:

- R = Reg Frame F = Fund plant design /ops
IT = Info technol T= Tech area expertise
C = Commun TW = Teamwork
S = self manage EP = emergency response
P = prob anal I = inspection
AE = assessment and enforcement

Survey Number	Item	Related Competency	Inspector Response	Supervisor Response	Delta
CR8	Working knowledge of how to assemble facts to support conclusions	C,I	2.40	2.27	-0.13
CR9	Working knowledge of how the NRC inspection program is implemented.	I	2.19	2.00	-0.19
CR10	Working knowledge of how to review licensee corrective action systems.	P, I, T	1.74	1.74	0.00
CR11	Familiarity with the handling of enforcement actions	AE	1.95	2.17	0.22
CR12	Familiarity with the handling of Freedom of Information Act requests	C	1.90	2.27	0.37
CR13	Working knowledge of your role and responsibilities when responding to events or participating in drills.	EP	2.07	2.00	-0.07
CR14	Working knowledge of how to conduct performance-oriented inspections	I	2.10	2.04	-0.06
CR15	Working knowledge of your responsibilities under the OSHA/NRC Memorandum of Understanding	I	1.97	2.35	0.38
CR16	Working knowledge of power reactor safety, operational and regulatory limits, and their application.	F, T, R	2.40	2.39	-0.01
CR17	Working knowledge of power reactor integrated operation and response during normal, transient and accident conditions.	F,T,R	2.63	2.43	-0.20
CR18	Working knowledge of expected facility staff response during normal, transient and accident conditions	F,T,R,EP	2.17	2.22	0.05
CR19	Working knowledge of the contributions to risk of facility systems, structures, and components.	F,T,R,EP	2.17	2.13	-0.04
CR20	Working knowledge of power reactor mechanical, instrument control and protective system design and operations	F,T,R	2.53	2.26	-0.27
OB1	Assessing ability to independently conduct inspections	S, P,C	2.09	2.50	0.41
OB2	Assessing the ability to implement NRC policies and philosophy related to the reactor inspection program	S,P,C	2.31	2.50	0.19
OB3	Understanding of the purpose of the board		2.96	3.13	0.17
OB4	Expectations of the board experience		2.69	2.92	0.23
OB5	Emphasis not on technical topics		2.88	3.13	0.25
OB6	Board requires application of knowledge to new situations		2.79	3.25	0.46
OB7	Board experience increases confidence		2.21	3.00	0.79

Survey 2 Results

Survey 2 Comment Summary

On-the-job training / inspection accompaniments

26 comments indicated that there was value in completing the on-the-job training aspects of the program

Other related comments:

- qualification cards need to be completely changed (multiple)
- more shadowing during inspections is needed (multiple)
- experienced inspectors need to have it emphasized to them that helping to develop new inspectors is an important task
- need to set a schedule for the qualification card signoffs
- look for ways to use the best inspectors to provide guidance and training on-the-job (multiple)
- there is too much OJT since the effectiveness depends on who trains you
- make OJT more structured with better defined outcomes
- specific job tasks need to be laid out, so all inspectors get the same training
- evaluate the number of qualification cards
- more consistency with the quality of the people selected to provide OJT
- need to set up the mentoring so that you learn from someone who really knows
- more emphasis should be placed on an inspector-in-training teaming up with someone that has good inspection and management techniques
- supervisors should be given training on how to make OJT as effective as possible

standards of acceptable completion of each item in the qualification journal need to be specific

Comments from region management:

- structure the administration of OJT to assure consistent implementation
- consider more OJT

Oral boards

13 comments indicated that oral boards should be kept because they are a good indicator of how well an inspector will perform under stressful situations

Other related comments:

- board members should have been qualified inspectors
- institute a mini board with peers
- add a comprehensive written exam
- needs to be more formal preparation for the board. Inspectors should have the opportunity to practice the thought processes they are looking for during the board
- oral boards should be more sensitive to the goal of establishing that candidates have the basic tools to do well as an inspector rather than trying to find out if there is a trivial technical weakness
- needs to be more emphasis on gaining inspector skills as opposed to passing the board
- the two-step qualification board was difficult because there was no way to guess at the possible range of questions
- seems to be a reduction in the overall approach to qualification boards. Boards are now considered to be a burden by new inspectors
- the qualification board should emphasize skills (to conduct inspections)

Inspection skills 19 comments indicated that inspection skills needed to be improved

Specific areas for improvement are:

- more on field techniques
- effective communication
- interviewing skills
- inspection planning
- root cause
- conflict resolution should be added
- documenting information, particularly findings
- gear training more to how to conduct effective inspections, review documents and how to make accurate and timely assessments

Self-study 6 comments indicated improvements needed to self-study

Specific areas for improvement are:

- eliminate self-study with no application
- make it more structured with better defined outcomes
- develop guidance for completing self-study including identifying critical learning outcomes
- improve self-study materials, use more computer aided training to increase interest

Reactor technical training 30 comments indicated that the reactor series courses should be kept and remain unchanged

Other related comments:

- too much on nuclear trivia
- little is learned because the courses are exercises in memorizing a large volume of information
- update training to incorporate risk insights into plant operations and design
- keep the focus on what an inspector needs to know rather than what an operator needs to know
- focus on observations of problems in the simulator courses

Other technical training 7 comments indicated the value of specific technical training

Specific courses mentioned are:

- D/G training
- environmental courses at Oak Ridge
- EP and RP courses
- PRA courses
- MOVs
- NDE and NDT

Other training content or process improvements needed each mentioned at least twice

- more detailed training on application of regulatory requirements
- more is needed on enforcement and assessment

- more use of case studies and practical examples
- more PRA training
- more training on codes and standards
- more on the SDP process
- better training on what findings is and what can go into reports
- more integration of regulations and codes and standards into technical training
- better training on how the agency wants information to be applied
- too much on systems and too little on how to implement the regulations
- more training on various aspects of the ROP is needed, but not until everything stops changing so fast

Administrative issues each mentioned at least twice

- consistent, decisive, and clear expectations from management is needed
- keep TTC where it is
- program needs to be continuously updated. Need a good mechanism for assessing and critiquing the program
- nothing should be saved in the existing training program
- put together an integrated program so that there is a focus on what is important to learn during the qualification process
- more detailed and ongoing involvement by supervisors in tracking an individual inspector's progress and answering the inspectors' questions

Other related single comments:

- region-based training should not be used
- only need one week of refresher
- too many cooks deciding what trainees will do
- someone needs to oversee the entire program
- use the systems approach to training that the licensee's use
- keep the objectivity visits
- new residents should spend 4-6 weeks in the regional office so that they get the big picture

Comments from regional management:

- consider how and when to present courses based on hiring practices / unavailability of courses at sometimes in problematic
- revise elements and standards and position descriptions
- consider the impact of allegations follow-up on program
- need to consider the changing entry level of new hires - they have less experience
- IMC need to provide guidance on what to do when trainee does not or cannot successfully complete the program

Appendix G: Training Decision Tree

Note: The difficulty and frequency rating for each task was determined through survey of the inspector population.

<i>Difficulty</i>	<i>Frequency</i>	<i>Training Recommendation</i>
High Difficulty ≥ 2.67	High ≥ 3.34	Initial training
	Medium 1.69 - 3.33	Initial and refresher training
	Low ≤ 1.68	Initial and refresher training
Medium Difficulty 1.34 - 2.66	High ≥ 3.34	Initial training
	Medium 1.69 - 3.33	Initial training
	Low ≤ 1.68	Initial and refresher training
Low Difficulty ≤ 1.33	High ≥ 3.34	No training
	Medium 1.69 - 3.33	No training
	Low ≤ 1.68	Initial training