

# NRC INSPECTION MANUAL

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## INSPECTION PROCEDURE 41501

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### REVIEW OF TRAINING AND QUALIFICATION PROGRAMS

PROGRAM APPLICABILITY: 2504 and 2513

CORNERSTONE: All

INSPECTION BASES: 10 CFR 50.120 (a) requires that each applicant for an operating license issued under part 50 and each holder of a combined license issued under part 52 shall, no later than 18 months before the scheduled date for initial loading of fuel, establish, implement, and maintain a training program derived from a systems approach to training, as defined in 10 CFR 55.4 and must provide for the training and qualification of the following categories of nuclear power plant personnel:

- Non-licensed operator.
- Shift supervisor.
- Shift technical advisor.
- Instrument and control technician.
- Electrical maintenance personnel.
- Mechanical maintenance personnel.
- Radiological protection technician.
- Chemistry technician.
- Engineering support personnel.

The training program must incorporate the instructional requirements necessary to provide qualified personnel to operate and maintain the facility in a safe manner in all modes of operation. The training program must be developed to be in compliance with the facility license, including all technical specifications and applicable regulations.

LEVEL OF EFFORT: This is a one-time inspection conducted prior to accreditation and after the non-licensed plant staff training programs, licensed operator training programs, and licensed operator requalification programs have been implemented and are being maintained.

## 41501-01 INSPECTION OBJECTIVES

To ensure, prior to training program accreditation by the National Nuclear Accrediting Board (NNAB), that the training and qualification programs for licensed operators and non-licensed staff are analyzed, designed, developed, implemented, evaluated, and maintained as required by regulatory requirements and licensee commitments.

## 41501-02 INSPECTION REQUIREMENTS AND GUIDANCE

The safety of nuclear power plant operations and the assurance of general public health and safety depend on personnel performing at adequate levels. The systematic determination of qualifications and provisions for effective initial training and periodic retraining enhance public confidence that workers can perform their jobs. In 10 CFR 50.120 and 10 CFR 55, the Commission requires that applicants and licensees use the systems approach to training (SAT) to analyze, design, develop, implement, and evaluate (ADDIE) personnel training programs. This approach provides for flexibility and site-specific adaptations in the training and qualification programs.

Consistent with the SAT process as defined in 10 CFR 55.4, each applicant and licensee is required to include the following key elements in their training programs

- a. Systematic analysis of job performance requirements and training needs.
- b. Derivation of learning objectives, based upon the preceding analysis, which describe desired performance after training.
- c. Training program design and implementation based on the learning objectives.
- d. Evaluation of trainee mastery of learning objectives during training.
- e. Training program evaluation and revision based upon the performance of trained personnel in the job setting.

The inspectors will use NUREG-1220, Revision 1, "Training Review Criteria and Procedures," to evaluate the effectiveness of training and qualification programs in meeting and maintaining job performance needs and to evaluate the licensee's SAT process for analyzing, designing, developing, implementing, and evaluating training and qualification programs.

Section 13.2 of the Safety Evaluation Report for the facility includes a description of the training and retraining programs for licensed and non-licensed staff.

### 02.01 Licensed Operator Training.

- a. Verify that the licensee has designed, developed, implemented, and maintains a licensed operator training and requalification program that complies with 10 CFR 55, "Operators' Licenses," Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," and any licensee commitments for:

1. Licensed reactor operators
  2. Instant senior reactor operators
  3. Licensed reactor operators upgrading to senior reactor operator licenses
  4. Licensed senior reactor operators
  5. Senior reactor operators limited to fuel handling
- b. Verify that licensed operator training and requalification training is based on position specific task analyses; ensure that the tasks performed in each job category are defined; and ensure that training, education, and experience provide assurance that the tasks can be effectively executed.

#### 02.02 Non-licensed Staff Training.

- a. Verify that the licensee has designed, developed, implemented, and maintains non-licensed staff training and retraining programs for the following programs and plant personnel:
1. Training programs and personnel required by 10 CFR 50.120, "Training and qualification of nuclear power plant personnel."
  2. Training positions and processes described in Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."
  3. The fire protection program and fire protection program staff.
  4. The radiological emergency plan and emergency response organization staff.
  5. The security plan and security personnel.
  6. The radiation protection program and radiation protection program staff.
- b. Verify that non-licensed staff training, as appropriate, is based on position specific task analyses; ensure that the tasks performed by persons in each job category are defined; and ensure that staff training, education, and experience provide assurance that the tasks can be effectively executed.

#### 02.03 Accreditation.

- a. The staff recognizes that NNAB accredited training programs developed in accordance with Institute of Nuclear Power Operations (INPO) guidelines have been developed using SAT principles. The NRC has endorsed NNAB accreditation as a method of complying with the requirements of 10 CFR Part 55 for licensed operator training and of 10 CFR 50.120 for non-licensed staff training.

- b. If the licensee has not already achieved **NNAB** accreditation, verify that the licensee has a plan and schedule for attaining accreditation. Verify the plan is consistent with the fuel load and startup schedules such that all fuel load and startup required staff positions will be filled with fully trained and qualified personnel when required.
- c. **Licensees and applicants** have committed to achieving accreditation for the categories of nuclear power plant personnel listed in 10 CFR 50.120 and 10 CFR 55. It should be noted that training programs for which regulations are in place (e.g., fire brigade, emergency response, security) are not subject to accreditation and are not affected by endorsement of accreditation.

#### 41501-03 RESOURCE ESTIMATES

A training inspection will typically require four individuals: a team leader, two subject matter experts, and a person familiar with systems approach to training **processes**. A subject matter expert should be assigned for each program being inspected. For inspections of **licensed operator initial** and/or **licensed operator** requalification **training** programs, an operator licensing examiner **shall** act as **one of the subject matter experts**. **This inspection is expected to expend a minimum of 120 hours** for each program inspected.

#### 41501 -04 PROCEDURE COMPLETION

**Completion of this procedure consists of completing the steps in Section 41501-02 either by analysis** for accredited training programs **or by inspection** for training programs that have not achieved accreditation.

#### 41501-05 REFERENCES

10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"

10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel"

10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants"

10 CFR Part 55, "Operators' Licenses"

Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants"

NUREG-1021, "Operator Licensing Examination Standards for Power Reactors"

NUREG-1220, "Training Review Criteria and Procedures"

ANSI/ANS 3.1- **2014**, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants"

END

Attachment 1 - Revision History for IP 41501

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment and Feedback Resolution Accession Number (Pre-Decisional, Non-Public)
N/A	ML110310646 04/25/11 CN 11-007	Initial issue to support inspections of operational programs described in IMC 2504, NON-ITAAC INSPECTIONS. Completed 4 year historical CN search.	N/A	
N/A	ML16103A237 04/27/16 CN 16-011	Revised to indicate that training program Accreditation by the National Nuclear Accrediting Board is an acceptable method of meeting regulatory requirements negating the need for a planned training inspection prior to fuel load.	N/A	ML16103A238