

# NRC INSPECTION MANUAL

FCOB

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## INSPECTION PROCEDURE 88061

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### CHEMICAL SAFETY TRAINING

PROGRAM APPLICABILITY: 2603

#### 88061-01 INSPECTION OBJECTIVES

01.01 To understand and assess the effectiveness of the licensee's programs to provide training on chemical safety to employees. These programs should clearly specify what is to be achieved, how, and by whom.

01.02 To verify that the licensee's training program adequately covers Standard Operating Procedures (SOPs), and to verify that the training programs for chemical safety are effective. The inspector should verify by interviewing the training staff as well as the trainees.

01.03 To verify that the licensee's training program adequately covers safe work practices and chemical hazards, and has been implemented to ensure that employees understand the requirements of safe work practices. The inspector should verify by interviewing the training staff as well as the trainees.

01.04 To verify that the licensee's training program effectively covers safety and health training. The inspector should verify by interviewing the training staff as well as the trainees.

#### 88061-02 INSPECTION REQUIREMENTS

02.01 Review the licensee's training program to determine whether the licensee has established written procedures for: a) identification of training requirements; b) identification of training material; c) selection and qualification of instructors; d) measurement of ongoing performance and effectiveness of the training program; e) maintenance of employee training records; and f) determination of frequency of retraining.

02.02 Review the licensee's training program to determine whether the licensee has in place a mechanism to update the facility's training program through the incorporation of management-approved recommendations coming out of other Nuclear

Chemical Process Safety Program (NCPSP) elements (e.g., Hazard Identification and Assessment (HIA); Management of Change (MOA); Incident Investigation and Audits) pertaining to employee training.

General Guidance

The inspection should be directed at assessing the sufficiency of the training program in addressing the chemical safety aspects of hazards that can affect operations with Special Nuclear Material (SNM) at the facility. The principal objective of the training program is to ensure that employees have been adequately prepared to perform their job tasks in a safe and effective manner. The NCPSP inspector should consult with the primary HIA reviewer of the licensee's training program to verify that the inspection requirements identified in Section 88061-02 above have been adequately addressed.

Specific Guidance

Specific guidance is provided for each of the inspection requirements listed in Section 88061-02, to help the inspector determine whether the licensee's program for training is adequate or not.

03.01 The licensee should have available a training outline that defines requirements, needs, material, and testing.

- a. In-house training programs for each position shall cover initial orientation, as well as specific process training (both classroom and on-the-job) and refresher training. Procedures should be available for trainee evaluation and final qualification/ certification as an operator.
- b. Training material addressing at least the following topics should be available:
  1. Process Safety Information (PSI) elements (such as safety and health hazards, relevant Material Safety Data Sheets (MSDSs), personal protective equipment, etc.).
  2. Safe work practices (such as confined space entry, lockout/tagout procedures, opening process equipment, hot work, control of entry into hazardous areas, etc.).
  3. Process technology (as required).
  4. Operating procedures for all phases of operation.
  5. Emergency procedures (such as HAZWOPER).
  6. Reporting unusual events or non-routine operations.

On-the-job training should, as a minimum, include: equipment familiarization, completing logsheets, equipment startup/shutdown activities, limiting operating conditions, control of process variables, and applying operating procedures in the field.

- c. The inspector should verify that the trainer adequately demonstrates competence regarding both training skills and course curriculum, by interviewing both the trainers and the trainees.
- d. Measurement of the programs effectiveness should be documented through employee testing and feedback.
- e. Documentation of all training, evaluations, and qualification/certification activities for all employees should be verified. Training records should be accessible and easily referenced. Information should include at least name of employee, date of training, name of trainer, and means used to determine that training was understood.
- f. Refresher training should be provided at least every 2 years, or as specified in the facility license. Content of material to be covered should include at least the following: safety and health hazards, relevant MSDSs, job-specific chemical hazards, safe work practices, emergency procedures, and SOPs. Employee participation/feedback in deciding course content is highly recommended. The inspector should interview trainers and trainees to verify that refresher training is actually conducted according to the schedule.

NOTE: Refresher training is different from training provided because of deficiencies that other NCPSP elements have identified in the training program.

- g. The training program for contractors, maintenance personnel, and visitors should be appropriate, given the hazards in the area they will be working in or visiting. Every person who enters the facility should go through a site-specific general orientation covering safety and health hazards, emergency procedures, and alarms. In addition, maintenance employees and contractors (if relevant) should undergo training in safe work practices, process hazards, etc., as relevant to the work they will be performing.

03.02 The licensee must have in place a mechanism for ensuring that recommendations from other NCPSP elements (HIA, Incident Investigation, MOC, and Audit programs), pertaining to employee training are incorporated into the training program. As a minimum the following should be addressed in updating the licensee's training program:

- a. A tracking system to ensure that each recommendation is addressed on a timely basis. The inspector should cross-check with the features of the tracking system identified in the HIA element.
- b. Management-approved findings, from Incident Investigations or Audit programs, that highlight deficiencies in the training program, should be addressed in a timely manner to ensure that chemical hazards at the facility are covered sufficiently. The inspector should cross-check with the Incident Investigation and Audit elements.

- c. Training actions activated by MOC procedures should be addressed before the change is implemented. All personnel affected by the change should undergo training - this should be verified by the pre-startup safety checklist.

#### 88061-04 RESOURCE ESTIMATE

An inspection performed using this inspection procedure is estimated to require 8 hours of inspector resources. This estimate is only for the direct inspection effort and does not include preparation for and documentation of the inspection.

#### 88061-05 REFERENCES

NRC Inspection Manual, *Inspection Procedure 88010, Operator Training/ Retraining*, Latest revision.

Center for Chemical Process Safety, *Guidelines for the Technical Management of Chemical Process Safety*, American Institute of Chemical Engineers, New York, 1989, Chapter 10, pp. 105 - 110.

OSHA, *Process Safety Management of Highly Hazardous Chemicals*, 29 CFR 1910.119 (g), "Training."

Chemical Manufacturers Association, *Process Safety Code of Management Practices*, Washington, 1990, Practices 17, 18, 19, 20.

Kletz, T.A., *What Went Wrong*, Gulf Publishing, Houston, 1985, Section 3.3, pp. 57 - 62.

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