

NRC INSPECTION MANUAL

FCOB

INSPECTION PROCEDURE 88059

SITE-WIDE SAFETY PROCEDURES

PROGRAM APPLICABILITY: 2603

88059-01 INSPECTION OBJECTIVES

01.01 To determine whether the licensee has implemented safe work procedures, for chemical processes, to protect the health and safety of workers performing both routine and non-routine tasks within the facility.

01.02 To determine whether adequate written procedures exist for the facility's site-wide safety practices and whether they are applied and enforced in a consistent manner.

01.03 To determine whether the facility has a contractor management program in place to ensure that contractors are aware of potential hazards associated with their jobs and are adequately trained to perform their job tasks in a safe manner.

88059-02 INSPECTION REQUIREMENTS

02.01 Review the licensee's site-wide safety procedures to ensure that adequate control measures are in place to carry out non-routine job-tasks, such as access control, hot work permits, radiation work permits, confined space permits, lockout/tagout procedures, and opening of process equipment, in a safe manner.

02.02 Review the licensee's contractor management program to ensure that contractors are adequately prepared to perform their job tasks in a competent manner.

- a. Contractors should be trained and tested in relevant process hazards, the facility's emergency plan and applicable response procedures, and the facility's safe work practices.
- b. The licensee should have a system in place to audit contractor safety performance at the facility on a regular basis to ensure that contractors do not in any way compromise the facility's safety.

- c. Contractor safety logs should be maintained and reviewed regularly to ensure that the contractors are performing their job tasks in a safe manner.

02.03 Review the licensee's mechanism for updating the facility's site-wide safety procedures through the incorporation of management-approved recommendations coming out of Nuclear Chemical Process Safety Program (NCPSP) investigation elements (such as Hazard Identification and Assessment (HIA), Incident Investigation, and Audit programs) pertaining to site-wide safety practices.

88059-03 INSPECTION GUIDANCE

General Guidance

The inspection should be directed at assessing whether the site-wide safety procedures adequately address the potential chemical hazards that can affect operations with Special Nuclear Material (SNM) at the facility.

Specific Guidance

Specific guidance is provided for each of the inspection requirements listed in Section 88059-02, to help the inspector determine whether the licensee's program for providing sitewide safety procedures is adequate.

03.01 The inspector should verify that the licensee's site-wide safety procedures (including work control procedures) address both routine and nonroutine work conducted in the process areas. These are referred to as "Work control procedures" in NRC Inspection Manual, Inspection Procedure 88025, "Maintenance and Surveillance Testing." As a minimum, procedures should be in place to control activities related to safely performing non-routine tasks through the effective use of permitting, communication, and frequent observation of compliance onsite.

- a. Work permits should be issued for performing non-routine tasks such as those identified in (a-e) below. These permits should clearly outline the steps to be taken to safely carry out the activities. As a minimum, these steps should include:
 - the period of validity of the permit.
 - the potential chemical hazards associated with the process under consideration.
 - any special safety requirements and/or precautions.
 - a method to inform operations personnel of non-routine activities in their area.
 - closure, when an activity is complete, and a mechanism to let operations personnel know that conditions have returned to normal.
 - any actions to be taken during an emergency.

A sample permit (for hot work) has been included in Appendix A as an example.

1. Hot work permits: Document measures to be taken for fire prevention and protection.
2. Confined space entry permits: Document measures to be taken for explosion, engulfment, and asphyxiation prevention within confined spaces.
3. Lockout/tagout procedures: Define rules and methods for deactivation of process equipment while maintenance work is being performed on or around it.
4. Procedures for line-breaking/opening process equipment: Document measures to be taken to ensure personal protection and safety of maintenance personnel.
5. Lifting over active chemical processing equipment/piping or excavating near underground process/ utility piping: Ensures that the facility has adequate controls in place to minimize process hazards that may result from these activities.

NOTE: Where pertinent, procedures should also be available for elevated work, trenching and excavation, lifting and hoisting, compressed gas handling, and sampling or testing.

- b. The inspector should observe the above procedures to ensure that safe work procedures are being followed in the field. Also, the inspector should talk with employees and contractors to ensure that they were trained and adequately understand the safe work procedures in effect at the facility. Check to see if plant management adequately supervises nonroutine operations, to ensure that defects and minor failures do not escalate into catastrophic failures that could compromise the safety of operations with SNM at the facility.

03.02 Contractors are often responsible for maintenance work on chemical processing systems, both routine and nonroutine, at a facility. The inspector should verify that contractors are made aware of potential hazards that could affect the safety of operations with SNM at the facility. As a minimum, the contractor management program should address the following:

- a. The chemical hazards related to contract work should be communicated to the contractor and all contract employees.
- b. Evidence of contractor training and testing in relevant chemical process hazards, the facility's emergency plan and response procedures, and other applicable safety requirements should be documented.
- c. The contractor should be made aware of all activities in the work area, and the safety requirements of the job, including the contractor's responsibility to bring any potential hazards identified to the attention of plant management.

- d. The contractor's safety performance should be reviewed before awarding the contract, to ensure that the contractor has a good safety record.
- e. The contractor should be required to establish safety logs to ensure that a good safety record is maintained onsite.
- f. An audit of contractor performance in the field should be performed to ensure that the required practices are being followed.

03.03 The facility should have in place a mechanism for ensuring that management-approved recommendations pertaining to site-wide safety procedures (from inspection programs such as HIA, Incident Investigation, and Audit programs) are incorporated into the site-wide safety procedures. As a minimum the following should be addressed in updating the facility's site-wide safety procedures:

- 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. Findings, from Incident Investigations or Audit programs, which highlight deficiencies in the site-wide safety procedures (including the contractor 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.

88059-04 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.

88059-05 REFERENCES

OSHA, *Process Safety Management of Highly Hazardous Chemicals*, 29 CFR 1910.119 (h) "Contractors" and (k) "Hot work permits."

Chemical Manufacturers Association, *Responsible Care®*, *Process Safety Code of Management Practices*, Washington, 1990, Practices 12 "Standards, Codes and Regulations", 18 "Safe Work Practices" and 22 "Contractors".

Center for Chemical Process Safety, *Guidelines for Auditing Process Safety Management Systems*, AIChE, 1993, Chapter 7, "Process Equipment Integrity", pp. 78 - 79.

END

Appendix A
Sample Hot Work Permit

Appendix A

SAMPLE HOT WORK PERMIT

ISSUED FOR [Date] [Shift][Time: From _____ A.M. to _____ P.M.]

Unit: _____

_____ Date: _____

Time Started: _____

Time Finished: _____

Description of Work to be Done: _____

SITE PREPARATION

1. Equipment preparation

Steam cleaned Water-washed Purged w/ inert (e.g., nitrogen).

2. Equipment internals checked for flammability, corrosivity, toxicity, reactivity, etc.

Yes No

3. Equipment grounding checked

Yes No

4. Adjacent areas (buildings, equipment, pipe racks, sewers, etc.) checked for hazards

Yes No

5. Explosimeter check: Done Not done

Time of check: _____

Name of person performing check: _____

SAFETY EQUIPMENT

Fire protection Ventilation Eye Protection

Clothing Respirator Other

WORK PROCEDURES

6. Is confined space permit required?

Yes No

7. Fire watch Yes No

SPECIAL PROCEDURES: _____

The location and conditions for the hot work described above have been personally examined, safety requirements and precautions have been reviewed/ explained, and necessary training provided. Permission is granted to perform the hot work. All conditions and requirements listed on next page have been complied with.

Appendix A

Signed by:

1. Operations Dept Representative: _____ Date: _____
2. Safety Dept Representative: _____ Date: _____
3. Maintenance Dept Representative: _____ Date: _____
4. Contractor: _____ Date: _____

PERMIT REQUIREMENTS/ PRECAUTIONS:

1. This permit is required for all welding, cutting, burning, or other spark-producing activity in any area within the facility's fence line, other than the maintenance/ repair shops.
2. The work site has to be inspected and signed off by authorized personnel before the permit is issued.
3. The permit is valid only for the time period for which it was issued. A new permit has to be issued if the work extends beyond this period.
4. A fully charged fire extinguisher and/or fire hose is required to be available in the immediate area of the hot-work activity. Personnel who might need to use it should be trained to do so.
5. A "fire watch " is required until there is no danger of fire from the hot-work activity.
6. Personal protective equipment is required in the hot-work area (e.g., goggles, welder's shield, hard hat, respirator, etc.) as determined by the plant safety management program.
7. Removal of flammable materials from vicinity (or blanketing with tarpaulin).
8. All hot-work activity is to be suspended during an "emergency/ evacuation" situation.
9. All paperwork for completed hot work should be closed out and completed work permits filed with the industrial safety department.

END