

NRC INSPECTION MANUAL

FCOB

INSPECTION PROCEDURE 88063

MAINTENANCE OF CHANGE

PROGRAM APPLICABILITY: 2603

88063-01 INSPECTION OBJECTIVES

01.01 To assess the Management of Change (MOC) program at the facility. The program should outline what is to be achieved, how, and by whom.

01.02 To determine whether the application of the MOC procedure is defined and understood. A general definition of change would be any change in materials, technology, procedures, or equipment that results in a change in the Process Safety Information (PSI) elements.

01.03 To verify that changes are reviewed in an appropriate manner.

01.04 To verify that once a change is identified, a formal procedure is activated for approving, reviewing, authorizing, implementing, verifying, and documenting the change.

01.05 To determine whether operating or maintenance procedures are revised as necessary.

01.06 To verify that training in the change is provided.

01.07 To verify that the MOC procedure has a provision for updating documents (e.g., Standard Operating Procedures (SOPs) and engineering drawings) in a timely and accurate manner.

01.08 To ensure that changes to technology or materials being processed are addressed in MOC procedures.

88063-02 INSPECTION REQUIREMENTS

02.01 Review the licensee's MOC program to determine whether the following aspects of a change are adequately addressed: a) definition of change; b) technical basis of change; c) safety impact analysis of change; d) authorization required before change can be implemented; e) modification of relevant documentation such

as operating and maintenance procedures, and PSI; and f) retraining of personnel affected by the change. The licensee should have available a pre-startup safety review checklist to verify that all applicable elements of the change have actually been implemented.

02.02 Review the MOC program to determine whether the licensee has a mechanism in place to correct deficiencies in the program through the incorporation of management-approved recommendations arising from the investigative programs of the Nuclear Chemical Process Safety Program (NCPSP) (Hazard Identification and Assessment (HIA) studies, Incident Investigation (II), and Audits and Inspection (A&I) program) relating to MOC.

88063-03 INSPECTION GUIDANCE

General Guidance

The inspection should focus on the sufficiency of the licensee's MOC program by evaluating any not-in-kind changes that can affect operations with Special Nuclear Material (SNM) at the facility. The MOC program should ensure that all plant personnel clearly understand the change, and have been sufficiently trained to recognize these changes and bring them to the attention of responsible personnel who can initiate the appropriate review action.

Specific Guidance

Specific guidance is provided for each of the inspection requirements listed in Section 88063-02, to help the inspector determine whether the licensee's program for MOC is adequate.

03.01 The inspector should verify that the licensee's MOC program addresses as a minimum, the following:

- a. A systematic means of determining the depth, extent, appropriate method and responsibility for reviewing the change. These should be consistent with the potential hazard involved (e.g., very brief on-shift reviews may be consistent with the need, or if a significant hazard is involved, a full study may be necessary).

The facility might have expedited MOC procedures for off-shift approval of changes, operating emergencies, and for temporary changes. The inspector should interview employees, both management and hourly personnel, to verify whether these procedures are available and being followed.

- b. The facility's MOC program should ensure that temporary changes are considered to the same depth and extent as permanent changes. In addition, there should be a time limitation requirement imposed on them.

NOTE: Many of the accidents in the chemical industry have been a result of implementation of temporary changes without adequate management review and approval.

- c. Definition of change for process equipment, devices, or controls should include any additions or deletions, other than identical replacement. The definition for identical replacement should be clear and the licensee should develop

a comprehensive list of examples to help employees recognize and manage change in a systematic manner.

Some examples of changes include change to process technology or materials being processed, change in materials of construction, relocation of existing equipment, rerouting of pipelines, exceeding stated maximum inventory levels.

Unit operators, maintenance personnel, purchasing personnel, stores personnel, engineering personnel, and process/technical personnel should be aware of the meaning and implications of the definition for change and how it affects their duties.

MOC procedures should be applied to changes in alarm and interlock setpoints, bypassing of controls, alarms, and interlocks; and to any permanent or temporary experimental changes.

- d. The technical basis for the change should be considered. Changes in process technology should address reactions, reaction thermodynamics, operating parameters, corrosion, catalysts, inhibitors, control philosophy and logic, and relief system philosophy and logic.
- e. The impact of the change on employee safety and health and on radiological safety should be specifically addressed.
- f. Any changes in inherent hazards, including new materials or new quantities, should be specifically addressed.
- g. The person in responsible charge of the operation (e.g., plant manager or division manager) must authorize the change. Approval of cognizant safety professionals at the nuclear fuel cycle facility (e.g., senior health physicists and criticality safety personnel), should also be required.
- h. The NCPSP elements affected by the change should be updated and the changes documented. Some of the elements that normally need to be updated are PSI, SOPs, Maintenance and Inspection procedures, and training.
- i. Employees involved in operating or maintaining a process, along with contract personnel whose job tasks will be affected by the change, should be informed of, and trained in the change before startup of the process or affected portion of the process. A pre-startup safety review should be performed to ensure that all aspects of the change have been adequately addressed and properly implemented.

03.02 The licensee must have in place a mechanism for ensuring that recommendations from NCPSP inspection elements (HIA, II, and A&I programs pertaining to MOC) are incorporated into the MOC program. As a minimum, the following should be addressed in updating the licensee's MOC 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. Findings, from II or A&I programs, that highlight deficiencies in the MOC 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 II and A&I elements.

88063-04 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.

88063-05 REFERENCES

NRC Inspection Manual, *Inspection Procedure 88020, Operations Review*, 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 11, pp. 113 - 122.

OSHA, *Process Safety Management of Highly Hazardous Chemicals*, 29 CFR 1910.119 (1).

Chemical Manufacturers Association, *Responsible Care®*, *Process Safety Code of Management Practices*, Washington, 1990.

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