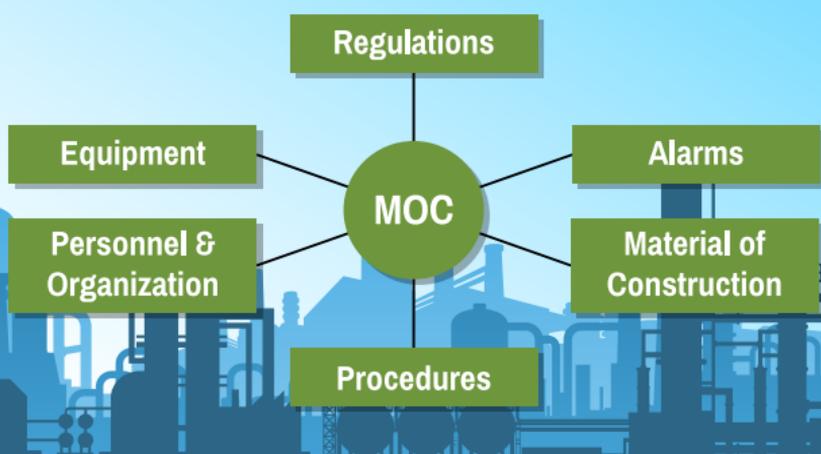




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Driving Operational Excellence<sup>™</sup>



# Management of Change (MOC) Field Guide

Facility/Equipment  
Technology/Chemicals

## Introduction

In the USA, Management of Change (MOC) is required by the following regulatory agencies and/or drivers for “covered processes” containing highly hazardous chemicals:

1. Occupational Health & Safety Administration (OSHA) Process Safety Management (PSM)
2. Environmental Protection Agency (EPA) Risk Management Program (RMP)

These government agencies require MOC due to a number of related industry accidents where improper changes were made that resulted in releases of toxic chemicals, fires or explosions. A change to a chemical process may appear to make sense but in fact be a hazard. For example, a nitrogen purge was removed from a wastewater tank (real industry accident) because the staff didn’t believe it was needed. At a later time the tank filled with flammable vapors during abnormal operations and exploded. MOC procedures would have required review/approval by different areas of expertise (i.e. operations, maintenance, electrical and instrumentation) prior to removing this nitrogen purge. MOC is designed to review, analyze and approve process changes (including changes to personnel) such that any hazards introduced by the change are identified and controlled.

There are roughly three change categories:

1. Facility/Equipment
  - a. Facility – changes to buildings or process equipment location.
  - b. Equipment – new or modified piping/equipment/instrumentation, new or repaired materials of construction.
2. Technology/Chemicals
  - a. Modify operating conditions outside safe operating envelope, interlock set-point or logic change, PLC/DCS changes.
  - b. Changes to chemicals used in the process, e.g. changing from commercial grade  $H_2SO_4$  to spent  $H_2SO_4$  or introduction of new chemicals.

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### 3. Organizational/Personnel

- a. Organizational – modify existing organizational structure that affects process safety including reporting relationships, management reassignments and staffing levels.
- b. Personnel – assignment of responsibilities requiring new process safety skills and competencies or the movement of a qualified person out of a process safety position.

Note: This Field Guide covers Facility/Equipment and Technology/Chemicals change, only.

A “change” per MOC requirements is something new:

- Different Valve Type
- Procedural Change
- Additional Operator Duties
- Different Pipe Spec Application

MOC does not apply to a Replacement-in-Kind (RIK) where equipment is removed and then replaced by a substitute that meets the original engineering or manufacturer’s specification.

MOC generally includes a form that facilitates the process (see Table 1). Whenever the change is significant enough to require a Process Safety Information (PSI) (e.g., P&ID, procedures) update then usually a Pre-Startup Safety Review (PSSR) is also required. MOC works hand-in-glove with a Pre-Startup Safety Review (PSSR) to assure that once the change has been finalized in the field that all the potential pitfalls of the modification or new construction are reviewed prior to startup (e.g., bolts tightened, safety systems operational, etc.).

A system must be in place to conduct a risk assessment on any changes that have a significant impact on personnel, production and environment. The objective of a risk assessment is to identify and alleviate any potential hazards to personnel, production and environment.