

Management of Change Procedure

January 2023

1.0 Purpose

This document summarizes the method IPS★ITCS uses to comply with the requirements relating to the Management of Change (MOC) Element of the Process Safety Management (PSM) Program.

2.0 Scope

The intent of this element is to manage changes to process chemicals, technology, equipment, procedures; and changes to facilities or organizational changes that affect a covered process. The MOC program shall assure that the following considerations are addressed prior to any change; technical basis for the proposed change, impact of change on health, safety & the environment, modifications to operating procedures, notification and training employees affected, necessary time for the change, and authorization requirements for the proposed change. Emergency actions to imminent health, safety or environmental issues are exempt from this procedure

3.0 Guidelines

Individuals requesting a change to an area within a PSM covered process prepares and submits the required information as outlined in the MOC Procedure (PSM-SOP-UN-003) to the Process Safety Program Manager (PSPM). The PSPM screens the request documentation to verify that it is covered by MOC, confirms appropriate “Tier” selection, assigns the MOC number and initiates the review process.

The MOC review and approval personnel will be selected based on their knowledge, experience and responsibilities associated with the covered process area. The reviewer is responsible to examine the proposed modifications and assess the impact from an operational, health, safety, environmental, ancillary equipment, personnel, training, procedural and process safety perspective. Since this cannot effectively be accomplished by a single reviewer, a review team will be established leveraging the appropriate knowledge and experience to complete a thorough assessment.

The PSPM will work with the individual(s) requesting the change to address issues raised by the review team, assigning appropriate Action Items associated with the MOC, updating Process Safety Information, and determining if a Pre-Startup Safety Review (PSSR – see PSM Element #05) is required with the change. Certain actions may be required to be completed prior to restarting equipment or the process impacted by the change. As part of the PSSR, the team will assess if the associated actions have been addressed and the equipment can be restarted.

The PSPM will maintain the appropriate documentation associated with the MOC collected by the various reviewers or supporting personnel (e.g., 3rd party contractors, etc.). Typical areas that may be affected by the MOC program and require updating may include Process Safety Information (PSM Element #02), Operating Procedures (PSM Element #07), Mechanical Integrity (PSM Element #11), Process Hazard Analysis (PSM Element #03), Employee Participation (PSM Element #06) and Training (PSM Element #09).

The PSPM will track completion of all assigned Action Items and individual's assigned responsibility for the items will provide appropriate closure documentation to the PSPM. Once all actions have been completed, the MOC will be marked as Closed.

The Operations/Facility Manager is responsible for the MOC program within their respective area(s) and assuring changes are appropriately evaluated prior implementation.

4.0 Definitions

The following definitions provide guidance regarding common issues surrounding the MOC Element. Please note, this information is not intended to be a full exhaustive list.

Change – any planned temporary or permanent change to an existing procedure, process, or facility (whether hardware or software) which is not considered an “In-Kind Replacement”

Covered Process - any process where a highly hazardous chemical / biological agent or extremely hazardous substance deemed by IPS★ITCS is used, handled, or stored. This also includes critical process operations identified by the Company that would benefit from PSM program implementation.

Emergency Actions – actions taken to address equipment or process issues immediately to mitigate an imminent failure that could lead to a health, safety or environmental event. Emergency actions may be taken by various individuals including but not limited to employees, building/operations personnel, and first responders.

In-Kind Replacement - any process or equipment change performed in accordance with established design specification; if it requires an update to the Process Safety Information, it cannot be defined as an In-Kind Replacement:

- (a) Hardware/Software: a replacement component which, in the professional judgment of the relevant engineer, is identical or equivalent specification to that which has been removed
- (b) Procedure Change: any change, which in the professional judgment of the respective Operational Department Manager and the Operator, is equivalent to what is being modified

Permanent Change – any change which is to remain in effect for an extended and undefined period of time.

Pre-Startup Safety Review (PSSR) – a technical review and inspection of equipment modification prior to startup to ensure that the modification has been installed in accordance with the approved design standards, that procedures are in place and adequate, and that training of affected personnel has been completed.

Temporary Change – a change that is not permanent which lasts for a period of time not to exceed twelve (12) months. If the duration of the temporary change is identified for 12-months, at a minimum, the MOC must be reviewed at the 6-month mark

1.0 Purpose

This document is intended to guide employees of IPS★ITCS in the safe management of changes associated with the use of certain highly hazardous chemicals/biological agents or processes defined by the Company. A complete list of the Process Safety Management (PSM) Covered Processes can be located on the HSEQT webpage. This procedure will assist employees in identifying, controlling, and approving changes prior implementation to mitigate deviations from design specifications and managing operational risks.

2.0 Scope

The Management of Change (MOC) requirements apply to all covered processes identified by IPS★ITCS. A change is broadly defined and includes proposed modifications to process chemicals, technology, equipment, procedures; and changes to facilities or organizational changes that affect the covered process area. This procedure outlines the steps to assure the following considerations are addressed prior to implementing any change; technical basis for the proposed change, impact of change on health and safety, the environment, modifications to operating procedures, notification and training employees affected, necessary time period for the change, and authorization requirements for the proposed change. Emergency responses to imminent health, safety or environmental problems are exempt from this procedure.

3.0 Responsibility

The following list of employees has specific responsibilities assigned to them in accordance with the requirements of the MOC Program. Specific Budget Executives and Budget Administrators may assign these responsibilities to a department or individual other than the one identified in this procedure as appropriate.

Budget Executives and Budget Administrators:

1. Primary responsibility to maintain a safe work environment within their jurisdiction, by monitoring and exercising control over their assigned areas.

2. Assign a representative from each academic and administrative unit to ensure compliance with this procedure.
3. Ensure MOC responsibilities are carried out in the academic departments or administrative units for which they are responsible.
4. Monitor implementation of the MOC program.

Engineering:

1. Ensuring employees within their area(s) of responsibility understand and follow the MOC requirements outlined in this procedure.
2. Assign MOC review and approval authority as appropriate for employees within their area(s).

Design & Construction:

1. Ensuring employees within their area(s) of responsibility understand and follow the MOC requirements outlined in this procedure
2. Assign MOC review and approval authority as appropriate for employees within their area(s).

Operations Personnel:

1. Identify changes within their respective area(s) that are covered by the MOC program and initiate the MOC review process.
2. Collect appropriate background data associated with proposed changes necessary to evaluate the Process Safety risks.
3. Assist with oversight of approved changes and addressing actions as assigned.

Supervisor:

1. Identify changes within their respective area(s) that are covered by the MOC program and initiate the MOC review process.
2. Collect appropriate background data associated with proposed changes necessary to evaluate the Process Safety risks.
3. Take prompt corrective action when unsafe process safety conditions or practices are observed or reported.
4. Assist with oversight of approved changes and addressing actions as assigned.

Operations Manager:

1. Identify changes within their respective area(s) that are covered by the MOC program and initiate the MOC review process.
2. Ensuring facility employees within their area(s) of responsibility follow the requirements of the MOC program.
3. Assist with oversight of approved changes and addressing actions as assigned.
4. Revise appropriate operations or facility procedures and/or programs based on changes to the covered process area.
5. Responsible for informing Contractors working on or around a covered process about the requirements of the MOC program.
6. Communicated MOC program metrics to affected employees within their area(s) of responsibility.

HSEQT Manager:

1. Coordinate implementation of the MOC program within the work unit.
2. Ensure required training is provided to employees within the work unit.
3. Reporting Process Safety issues to appropriate line management and/or Process Safety Program Manager that may help eliminate or mitigate the consequences of a catastrophic release in a covered process area.

Process Safety Program Manager – HSEQT Department:

1. Overseeing all aspects of the Company's MOC program
2. Coordinating, implementing and documenting training programs related to the Company's MOC program.
3. Assuring the appropriate MOC documentation is maintained on each change associated with the covered processes.
4. Periodically reviewing the MOC program, consultation with program stakeholders and updating the MOC process as appropriate.
5. Tracking and reporting metrics established for MOC program to affected groups and senior leadership as appropriate.
6. Coordinate auditing of MOC program compliance.

Employees:

1. Adhering to the requirements of the MOC program
2. Reporting Process Safety issues to appropriate line management and/or Process Safety Program Manager that may help eliminate or mitigate the consequences of a catastrophic release in a covered process area.

4.0 Definitions

Change – any planned temporary or permanent change to an existing procedure, process or facility (whether hardware or software) which is not considered an “In-Kind Replacement”.

Emergency Response – actions taken to immediately mitigate imminent health, safety or environmental events. Emergency actions may be taken by various individuals including but not limited to employees, building/operations personnel, and first responders.

Covered Process - any process where a highly hazardous chemical or highly hazardous biological agent deemed by IPS★ITCS is used, handled, or stored. This also includes critical process operations identified by the Company that would benefit from PSM program implementation.

In-Kind Replacement - any process or equipment change performed in accordance with established design specification; if it requires an update to the Process Safety Information, it cannot be defined as an In-Kind Replacement:

- (a) Hardware/Software: a replacement component which, in the professional judgment of the relevant engineer, is identical or equivalent specification to that which has been removed
- (b) Procedure Change: any change, which in the professional judgment of the respective Operational Department Manager and the Operator, is equivalent to what is being modified

Permanent Change – any change which is to remain in effect for an extended and undefined period of time.

Pre-Startup Safety Review (PSSR) – a technical review and inspection of equipment modification prior to startup to ensure that the modification has been installed in accordance with the approved design standards, that procedures are in place and adequate, and that training of affected personnel has been completed.

Process hazards - these are fire, explosion, or the health or environmental effects resulting from the loss of containment of substances which present hazards by virtue of:

- (a) The inherent properties of the materials used,
- (b) Their potential reactions,
- (c) The process variables, or
- (d) The specific facility equipment employed

Risk - combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill-health (or harm to the environment) that can be caused by the event or exposures.

Temporary Change – a change that is not permanent, which lasts for a period of time not to exceed twelve (12) months.

What-If Hazard Analysis - a risk assessment methodology that utilizes a structured brainstorming approach of determining what things can go wrong by asking What If questions and judging the likelihood and consequences of those situations occurring.

5.0 Procedure

Follow the steps below to initiate the MOC review and approval process.

1. Individual requesting a change (originator) to an area within a defined Company PSM covered process completes the ***HSE.FOR.PSM MOC Form.2022*** with all available information by following the steps outlined in ***HSE.FOR.PSM MOC Form Completion Instructions.2022***
2. To ensure the reviewers ability to effectively assess the proposed modifications sufficient information must be available when the Form is being completed and distributed for review.

3. For the purpose of the status of each change, it will be determined to be considered permanent or temporary. If it is considered temporary it must have a pre-defined and limited time that cannot exceed 12-months. If the duration of the temporary change is identified for 12-months, at a minimum, the MOC must be reviewed at the 6-month mark.
4. Once this time period has expired, the change must be returned to the original design or pre-change conditions or the MOC re-approval process initiated.
5. Originator submits the PSM MOC Form along with necessary supporting background information (e.g., diagrams, P&ID's, photo's, etc.) regarding the proposed change to the Process Safety Program Manager (PSPM). The PSPM screens the request documentation to verify:
 - 3.1 Change is covered by the MOC program
 - 3.2 Appropriate "Tier" selection
 - 3.3 Determines if a Pre-Startup Safety is required
 - 3.4 Assigns the MOC number
 - 3.5 Documents the request within the MOC Log
 - 3.6 Initiates the review process
6. The PSPM will distribute the PSM MOC Form to the appropriate reviewers electronically, outlining the timeline for approval. Originator should factor in a standard review and approval turn-around to be two (2) weeks unless noted as a "Rush". A two (2) tiered review approach has been developed based on the complexity of the proposed change.
 - 4.1 Tier 1 Change – a minor change to the covered process area including but not limited to operating procedures, temporary shutdown of ancillary production equipment, adding process instrumentation (e.g., thermocouples, pressure gauges, etc.) and adding an additional control to an existing distributed control system.

The following individuals are responsible to review and approve these types of changes:

- Operations Manager
- Safety Supervisor
- Operator, Covered Process Area
- HSEQT Department

- 4.2 Tier 2 Change - a major change that has a significant impact on process conditions or system parameters including but not limited to installation of new equipment, changes to design parameters (e.g., chemical inventory

levels, temperature, pressure, flow, etc.), decommissioning equipment, and deviation from standard operating safeguards.

In addition to the personnel identified in a Tier 1 approval, the following individuals are also responsible to review and approve these types of changes:

- Supervisor
- Safety Officer
- Operations Personnel

7. Each proposed change must be evaluated on a case-by-case basis and by a team of employees familiar with the covered process. The specific type of evaluation technique utilized to review a proposed change is dependent upon how complex, extensive, and well understood the change is within the covered process. For complex equipment/process changes a "What-If" Hazard Analysis may be warranted. For other process changes, an electronic review of the MOC Form, an informal site HSEQT review, or a brief meeting may be appropriate to evaluate and approve a change.
8. The MOC approval employees will review the electronic copy of the PSM MOC Form and communicate any questions, clarifications, or concerns to the MOC originator. If there are substantial issues identified by the reviewer to the proposed change, notification to the originator and PSM should be made formally in writing, detailing the technical basis for the MOC rejection. If the technical basis for the rejection cannot be reconciled by the MOC originator and the individual rejecting the change, the MOC originator will schedule a meeting with the entire review team to review the technical basis for not authorizing the change and to define an appropriate path forward. If the proposed MOC is acceptable, the MOC review team individuals will sign and date the original PSM MOC Form when presented.
9. During the review process any MOC approver can request additional actions associated with the proposed change to assist in risk mitigation or maintaining appropriate safeguards currently associated with the covered process.
10. If a reviewer deems their approval contingent upon some specific action, clarification, or modification, it will be noted accordingly on the PSM MOC Form. It is recommended that the specifics relating to the contingency is reviewed with the MOC Originator to assess overall impact to the change or the potential for an alternate approach.
11. The originator can only implement the proposed change after the appropriate reviewers have documented their approval through a signature on the PSM MOC Form. If at any time during implementation there is a deviation to original proposed modifications, the PSM MOC Form must be updated, and the approval process re-initiated before proceeding.

12. Once the MOC has been approved, originator will communicate the changes to other individuals, departments, or operating units that may be affected by the change or while the changes are being implemented. The type of communication method will be determined by the originator but can include posting the MOC Form in a commonly used area for employee notices, electronic distribution, or holding a brief meeting.
13. If a PSSR is required, prior to re-starting equipment the Originator schedules a PSSR with the appropriate individuals. The requirements outlined with the PSSR program will be followed when conducting the equipment assessment.
14. The PSPM will track completion of all assigned actions associated with an MOC and upon completion, Close the MOC. Closure of an MOC will be communicated to the individuals who reviewed and approved of the change. In addition, the PSPM will maintain the appropriate documentation associated with the MOC collected by the various reviewers or supporting personnel (e.g., 3rd party contractors, etc.).

6.0 Attachments

- 6.1 HSE.FOR.PSM MOC Form.2022
- 6.2 HSE.FOR.PSM MOC Form Completion Instructions.2022
- 6.3 HSE.FOR.Examples of Changes.2022
- 6.4 HSE.FOR.MOC Process Flow Block Diagram.2022

Revision History

Rev	Rev Date	Rev By	Approved By	Description
1.0	1.3.2022	Shayne Torrans	Shayne Torrans	Initial Procedure Document
1.1	11.23.2022	Shayne Torrans	Shayne Torrans	Format Revision

Approvals:

Procedure Owner

Print Name

Date

Signature

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By	Employee:	_____	Date:	_____
	Trainer:	_____	Date:	_____
	Assessor:	_____	Date:	_____
	Regional Manager:	_____	Date:	_____

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Risk Assessment

Risk Assessment // insert name here

Step No: Logical sequence	Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps. Each step should be logical and accomplish a major task.	Potential Safety & Environmental Hazards/Impacts at the site of the Job Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.	Risk Rating Refer to the risk matrix or HSEQT.PRO. Risk Mgt	Recommended Corrective Action or Procedure <i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i> Document who is responsible for implementing the controls to manage each hazard identified.	Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt
1.					
2.					
3.					
4.					
5.					

Audit

Process: insert// Procedure: Insert //			Date:	Audited by:
			Location of Audit:	Area Mgr/Supervisor:
Item	Question	Evidence Sited	Comments	Conformance Score 0,3,5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
AUDITOR'S SIGNATURE: SAFETY REP'S SIGNATURE:		CONFORMANCE SCORE: / 25 CONFORMANCE %:		0 – Non-Conformance 3 – Continuous Improvement Opportunity 5 – Total Conformance