

OPERATIONS SAFETY MANAGEMENT PROGRAM PLAN
MANAGEMENT OF CHANGE PLAN
&
PRE-SAFETY STARTUP REVIEW



1099 18th Street, Suite 700

Denver, Colorado 80202

Clover 2-29HZ
Well Pad and Production Facility

Township 2 North, Range 67 West, 6th P.M.
NW/4 NE/4 Section 29

Weld County, Colorado

July 2023

- KMOG ensures that changes proposed for new or existing processes are thoroughly reviewed prior to implementation to minimize the occurrence of unplanned events. This procedure also provides a mechanism for documenting changes and tracking all follow-up activities resulting from changes. Adherence to this procedure enables KMOG to meet the Pre-Startup Safety Review (PSSR) requirements.
- Management of change (MOC) documents for KMOG operations are managed utilizing a digital database. This tool is used to track changes, house documentation, notify required personnel, and ensure that each MOC meets the standards set out in internal HSE MOC Procedure and HSE PSSR Procedure documents.
- KMOG utilizes a detailed questionnaire that allows staff to determine if the change requires a MOC and if that MOC document is needed to communicate proposed changes to the necessary personnel. The document details any changes in technology, equipment, procedures or facilities that affect process. An example MOC applicability questionnaire is provided in Appendix A. The MOC process documents why the change is necessary. The document also addresses potential impacts to public health, safety, welfare and the environment. The approval level required is on a sliding scale based on the risk assessment associated with the change (MOC Class 1-4), shown in the table below. An example MOC Classification is provided in Appendix B. KMOG has three types of changes which are identified in the change document, temporary (<90 days), permanent and emergency.

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MOC Class	Required Approvers
Class 1 or 2	MOC Coordinator Operations Team Lead
Class 3 or 4	MOC Coordinator Leader Surface Supervisor Surface

PRE-SAFETY STARTUP REVIEW

- A Pre-Safety Startup Review (PSSR) is intended to ensure that new or modified facilities or equipment have been thoroughly and satisfactorily checked for safety, compliance, and operability prior to facility Startup. A PSSR is a standard action item for most MOCs. As a result, a PSSR form must be completed for all MOCs that require Startup. Onsite PSSR should take place with all signing individuals after the change has taken place. PSSR should not be completed if portions of the change are not completed or if all Authorized for Startup / Safety Critical Tasks have not yet taken place.
- Alternate checklists may be utilized to assist with ensuring that the entire scope of a Change has been verified safe, compliance, and operational, if Startup is not required.
- An example of a PSSR checklist is provided in Appendix C.

Documentation

- KMOG's corporate retention policy dictates that records associated with MOC are saved for the life of the process plus 5 years.
- If the Colorado Energy & Carbon Management Commission (ECMC) requests records, KMOG is able to provide documents within 5-7 business days.
- Records associated with MOC/PSSR are not updated after they are completed unless an audit finds a deficiency.

Appendix A: MOC Applicability Questionnaire

MOC Applicability Questionnaire (Note: An MOC is required if the response to any question is "YES")		
MOC#: 1234		
Title : Example		
Is this a MOC?	1. Is it a new facility or modification to an existing facility such as the addition of process or treatment materials, piping, instrumentation, safety systems, or electrical equipment?	Yes
	2. Will the equipment, material, or components being replaced or repaired deviate from the existing design specifications?	No
	3. Does the change alter the content to a written operating procedure or emergency response plan? (Does not apply to format or lay-out changes)	No
	4. Is the change an adjustment to a process set point outside the established operational limits or is it a change in an alarm (mandatory action point) or shutdown (never exceed critical limit)?	No
	5. Does the change alter the production / injection flow rate or change in the pressure from or to wells that is outside established operating limits?	No
	6. Does the change remove or alter an existing ESD, fire, combustible gas, toxic gas, or other safety system?	No
	7. Is this a change to the organization that directly affects the process or operational safety (e.g. supervisory roles, shift rotations, reduced staffing)?	No
	8. Is the change a decrease in the frequency of inspection/testing/maintenance of process and safety equipment at a facility, well, or pipeline?	No
	9. Does the change remove / bypass an existing trip or alarm system that requires an additional trip or alarm system?	No
	10. Does the change alter the technical*, safety, or security aspects of a facility, well, or pipeline in manner not covered by questions above? *Examples of changes that alter the technical aspects are: • Change in a facility throughput or design capacity • Addition of insulation for heat conservation that is not part of the design specification	No
This change requires an MOC		Result of Analysis

Appendix B: MOC Class

MOC Class		
MOC #: 1234		
Title : Example		
Change Complexity	1) Can equipment or components within the Change scope take the process outside of the safe operating range?	No
	2) Does the Change affect the functionality, inspection & testing (i.e. less frequent) or removal/temporary bypass of a Consequence Level 3/4/5 Critical Mitigation Element (CME), safety device or a safety-critical control system?	No
	3) Does the Change construct a new facility, add major equipment to an existing facility, or reorder /alter processing sequences?	Yes
	4) Does the Change increase the material throughput or design capacity for a facility by greater than 10%?	No
	5) Does the Change require additional personnel interface for operations?	No
	6) Does the Change require instructor-led training for affected personnel? (i.e. class room or hands-on training)	No
	7) Does the Change require substantive modifications to established operational procedures or practices?	No
Hazard Potential	8) Are there potential scenarios associated with the Change that could result in a Permanent Incapacitating Injury (PII) consequence without accounting for safeguards?	No
	9) Are there potential scenarios associated with the Change that could result in an elevated environmental cleanup consequence without accounting for safeguards (e.g. dikes, berms)?	No
	10) Are there potential scenarios associated with the Change that could result in a medical treatment requiring emergency room or shorter-term hospitalization consequence to a member of the public without accounting for safeguards?	No
	11) Are there potential scenarios associated with the Change that could result in a significant combined property damage and loss of revenue consequence without accounting for safeguards?	No
MOC Class 1		Result of Analysis

Appendix C: Example PSSR

Pre-Startup Safety Review (PSSR) Applicable for Class 1 MOCs		Rev.: 1 Revision Date: 3.1.2020
FACILITY:		
MOC NUMBER:		
MOC TITLE:		
DOCUMENTATION MUST BE AVAILABLE UPON REQUEST FOR ALL ITEMS MARKED WITH *.		
OPERATIONS REPRESENTATIVE:		
Name:	Title:	Date:
TECHNICALLY KNOWLEDGEABLE REPRESENTATIVE:		
Name:	Title:	Date:
PSSR CHECKLIST: (Ensure all items are inspected and checked for accuracy. All lines must be marked.)		
ENGINEERING	REQUIRED PRIOR TO STARTUP?	COMMENTS
Has eMOC been Reviewed and Approved?	YES	Yes No N/A
Redlined (or completed) copies of FTI scope changes available for use?*	YES	Yes No N/A
Have all flanges, fittings, pipe and other components been reviewed to ensure proper ASME/ANSI pressure rating, wall thickness and metallurgy?	YES	Yes No N/A
Are relief device setpoints correct, devices properly supported, outlet directed to a safe location, and inlet and outlet valves locked open.	YES	Yes No N/A
Have Arc Flash Study and Area Classifications been updated if required?	YES	Yes No N/A
Have all PHR Recommendations been reviewed and addressed?*	YES	Yes No N/A
Have applicable permits/ authorizations been obtained, if required?*	YES	Yes No N/A
CONSTRUCTION	REQUIRED PRIOR TO STARTUP?	COMMENTS
Have all measurement devices been installed and certified (if applicable) with proper spacing (orifice, turbine, Coriolis)?	YES	Yes No N/A
Has the construction & equipment installation been completed in accordance with design as specified by the MOC and supporting documentation such as drawings, sketches, electrical classification, etc.?	YES	Yes No N/A
Have proper materials of construction been used and documented?		Yes No N/A
If required, has piping and other equipment been leak and hydro tested?*	YES	Yes No N/A
Process is pre-commissioned properly (i.e. purged, pressure tested and other pre-commissioning procedures complete)?	YES	Yes No N/A
If required, are grounding cables installed on all equipment, tanks, vessels, and piping?	YES	Yes No N/A
Is pipe protection (heat trace, insulation, etc.) adequate per P&IDs?		Yes No N/A
Appropriate mechanical integrity and fit for purpose checks have been performed (i.e. PSV Tests)?*	YES	Yes No N/A
Isolation blinds and other isolation devices have been removed?	YES	Yes No N/A
Have system alarms, shutdowns, protective devices, interlocks and permissives been calibrated and function checked for proper setpoints/actions?*	YES	Yes No N/A
OPERATIONS	REQUIRED PRIOR TO STARTUP?	COMMENTS
Impacted personnel have been properly trained regarding the scope of change?	YES	Yes No N/A
Are all Lock Open or Lock Closed valves locked in the proper position in accordance with the P&IDs?	YES	Yes No N/A
Have existing operating and maintenance procedures been reviewed and revised as necessary, due to scope of change?		Yes No N/A
HSE	REQUIRED PRIOR TO STARTUP?	COMMENTS
Appropriate hazard/safety signs have been posted (i.e. H2S, confined space, ARC Flash labels, etc.)?		Yes No N/A
Have SDSs for new chemical(s) introduced to the site been added to the field office files?	YES	Yes No N/A
Utility, firefighting, and personnel safety equipment is functional?		Yes No N/A
Has windsock been installed and visible from all areas of facility?	YES	Yes No N/A
Is area clear of construction debris?		Yes No N/A

	Pre-Startup Safety Review (PSSR)		Rev.: 1
	Applicable for Class 1 MOCs		Revision Date: 3.1.2020
PSSR PARTICIPANTS			
Name:	Title:	Date:	
AFTER ACTION ITEMS:			
<i>(Must be Non-Safety Critical Items)</i>			
Action Item(s):	Person Responsible:	Targeted Completion Date:	Actual Completion Date:
FACILITY STARTUP APPROVAL:			
Facility Supervisor Signature:			Date: