

HSMS Management of Change Standard

SUMMARY

Any change to system, process or people could introduce risk and have unintended consequences.

Management of Change (MOC) is a process that systematically identifies, evaluates, and manages changes to facilities, equipment, operations, procedures, and the organization in order to prevent incidents by ensuring that unacceptable risks are not introduced into the business.

The Health & Safety Management System (HSMS) MOC Standard sets the minimum requirements for MOC in Pacific Gas and Electric Company (PG&E).

This Standard applies to all PG&E locations, premises, facilities, and work activities.

Line of Business (LOB) MOC procedure(s) must meet the requirements of this standard.

TARGET AUDIENCE

All PG&E senior and executive leadership, line of business (LOB) leaders and PG&E personnel, collectively described as Pacific Gas and Electric, Co. ("PG&E").

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Requirements

1 Purpose

The purpose of the MOC process is to manage hazards and risks that arise from changes to facilities, equipment, operations, procedures, and the organization. The MOC process supports personnel to manage changes such that:

1. Proposed changes are screened and prioritized.
2. The hazards and risks of the change are understood and mitigated.
3. An appropriate level of risk assessment is completed.
4. The change is authorized by appropriate authorities and/or appointed approving authority.
5. The change is designed to the appropriate standards.
6. Changes are communicated, and training, where applicable, is provided to those impacted by the change.

The Standard applies to:

1. Equipment, including safety and emergency equipment
2. Hardware and software, measurement, control, and data acquisition systems that control and monitor plant operations including process alarms.
3. Building, facility, or infrastructure (permanent and temporary), including location, design, and layout
4. Operating and maintenance procedures, including changes to IT or other systems that control plant operations.
5. Exceptions to approved process, procedures, standards, or specifications.
6. Organizational changes

The following are out of scope:

1. Replacement in kind, (RIK), also known as like-for-like
2. Changes that are addressed by other existing processes, procedures, codes, or regulations, provided that the change is risk-assessed
3. Changes to process variables within a well-defined operating envelope (e.g. process controller set points)

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4. Financial and Information Technology (IT) systems that do not control and/or monitor plant/facility operations
5. Other administrative and commercial procedures

The above criteria should be used to screen proposed changes prior to applying the MOC process.

2 Types of MOC

This Standard applies to permanent, temporary, emergency, and organizational changes. LOB must document and define the following change types:

2.1 Permanent Change

1. A permanent change is a modification that alters the original design to assets, facilities, operations, technology, equipment, procedures, organization, and safety critical workforce and does not meet the definition of replacement-in-kind (RIK).
2. A permanent change is expected to remain in effect and not revert to its original state or initial condition.

2.2 Temporary Change

- Temporary change is a change implemented on a short-term or trial basis, for a predetermined period which does not exceed one year, after which the previous configuration will be restored, or another permanent configuration implemented.

2.3 Emergency Change

- An Emergency Change may be necessary under exceptional circumstances when there is: (1) an immediate danger to life or health; (2) a condition that will or may result in severe impact to the environment; or (3) a condition that will or may result in asset damage.
- An Emergency Change is required to avoid or control critical unsafe conditions, workforce injury, environmental incidents, equipment damage, reputational impact, security incident or financial loss. Economic reasons may not be the sole justification for an Emergency Change.

2.4 Organizational Change

- A change that affects organizational structure, reporting relationship within the structure, key leadership positions and/or safety-critical positions.

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- This type of change does not generally apply to administrative personnel or groups that have no direct impact on operations or maintenance safety functions, although caution for all position changes is advised.

3 Replacement in Kind

- 3.1 The MOC process is not used for replacement-in-kind (RIK) activities. RIK means a technically “like for like” replacement where the replacement is in full conformance with approved specifications and will have no impact on the system.
- 3.2 LOBs must have defined and documented criteria for RIK.

4 MOC Process

- 4.1 The MOC process consists of the phases shown in Figure 1 below. LOBs must incorporate the phases into their procedures:
1. Initiation - Upon identification of a need for change, the proposed change is screened to determine if the MOC process is required. This ensures that the proposed change has been scrutinized with sufficient rigor and approved prior to entering the MOC process.
 2. Evaluation - Detailed review is conducted to assess the unintended consequences from the change and any activities required to carry out the change.
 3. Approval - Approver reviews the MOC evaluation package and approves or rejects the change.
 4. Training and Notification - Appropriate stakeholders are made aware, competency assessment and training is conducted where applicable.
 5. Implementation - Implementation consistent with the approved design and communication with all appropriate parties on the scope and complexity of the approved MOC.
 6. Closeout & Documentation - All information needed to achieve safe, sustainable operation is in place and the required communication, training and documentation are complete.
 7. Learning Capture - Learning occurs throughout the change and is applied to an individual change as well as the MOC process.

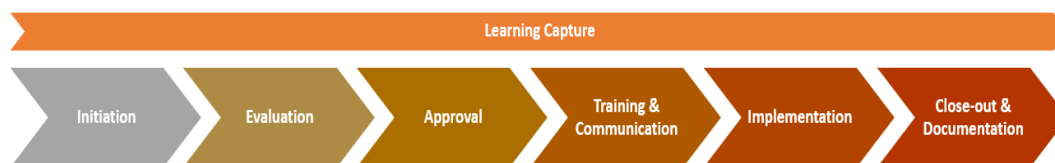


Figure 1: Phases of the MOC Process

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4.2 LOB must establish MOC procedures that incorporate:

1. Clear roles and responsibilities in screening, evaluation, approval, and Implementation of the Change request.
2. Categories of change definitions to assist in evaluating the need for initiating the process.
3. Screening and prioritization to assure the proposed change has been examined with sufficient rigor.
4. Evaluation to enable adequate risk assessment and mitigation of hazards. The evaluation process must be based on functional requirements and commensurate with the level of risk and change complexity.
5. Defined review and approval requirements for the proposed change prior to implementation.
6. Defined and documented process for communication, engagement, and training where applicable.
7. Defined MOC documentation and close-out process to ensure all information needed to achieve safe, sustainable operations is in place.

5 Competencies and Training

- 5.1 LOB must develop a 2-tier MOC process training with consideration for its target audience, frequency, and method of delivery. Personnel involved in MOC process implementation must be competent to execute their roles.
- 5.2 Training must follow PG&E Technical Training and Training Governance Standard ([Utility Standard: HR-7100S](#)).
 1. Tier 1: Understand Learning level must cover the general understanding and requirements of the MOC process. This is required for everyone in the LOB.
 2. Tier 2: Apply Learning level must be required for individuals who will be involved in the execution of MOC process throughout its lifecycle.
- 5.3 LOBs must document that personnel assigned to MOC activities are knowledgeable in both the MOC process and the areas affected by the change under consideration.

6 Roles & Responsibilities

- 6.1 Roles & Responsibilities
 1. PG&E Workforce

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All members of PG&E workforce are responsible for recognizing change. Implementation of a change requires action by multiple individuals and departments. Specific roles and responsibilities will differ depending on location and complexity of the change.

2. Executive MOC Sponsor

Sets the expectations to effectively facilitate the governance of this MOC Standard. Advocates for MOC to ensure that the implementation activities required by the standard are prioritized and receive appropriate resources. The Executive Sponsor ensures that MOC effectiveness and efficiency are measured and is accountable for progress in a continual improvement plan.

3. Enterprise MOC Program Manager

Administers the MOC standard and enabling technology. The MOC Program Manager provides enterprise subject matter expertise and coordinates/supports MOC measurement and verification. The Program Manager develops and implements the continual improvement plan.

4. LOB Specific Roles and Responsibilities

- a. Effectively implement the MOC process and ensure resources are available to effectively facilitate MOC process implementation.
- b. Ensure that the following roles and responsibilities can be identified in MOC procedures:
 - (1) Change Initiator: Individual identifying the need for a change. The initiator will define the scope of the proposed change and submit a request for screening.
 - (2) MOC Owner: Manages the change through all phases from initial acceptance to final close-out. The MOC Owner holds the responsibility for ensuring that the change is completed in accordance with this standard and the associated MOC procedure(s).
 - (3) MOC Evaluator: Provide input related to their area of expertise for the proposed change. Knows the work planned, extent of the change, recognizes risks associated with the change and identifies controls/mitigation to address the risks identified.
 - (4) MOC Approver: Know the work proposed and the hazards involved. Provides change approval/rejection based on change criteria and the controls/mitigation proposed to address the risks identified.
 - (5) Implementer: Responsible for implementation of an approved change.

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- (6) Change Trainer: Conduct competency assessment for each change and develop and deliver appropriate training for the change where applicable.
 - (7) MOC Recipients: Those individuals involved in the MOC process for a specific request and those affected by the change if approved and implemented.
- c. While an individual can serve more than one role in the MOC process, segregation of duties is highly recommended. LOB should consider segregation of duties for evaluation, authorization and implementation of change in connection with high risk activities, processes and/or operations.

END of Requirements

DEFINITIONS

Asset: Item, thing or entity that has potential or actual value to an organization. Physical assets usually refer to equipment, inventory and properties owned by the organization. Physical assets are the opposite of intangible assets, which are non-physical assets such as leases, brands, digital assets, use rights, licenses, intellectual property rights, reputation, or agreements.

Emergency Changes: A change that occurs in an emergency when there is an immediate threat to the safety of personnel, public, environment, or assets. The MOC process applies after the emergency change is controlled.

Hazard: A real or potential condition that could lead to an unplanned event or series of events (i.e. mishap) resulting in death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Health & Safety Management System (HSMS): A framework for managing health and safety risks and opportunities. The aim and intended outcomes of the system are to prevent work-related injury and ill health to workers and to provide safe and healthy workplaces; consequently, it is critically important for the organization to eliminate hazards and minimize health & safety risks by taking effective preventive and protective measures.

Management of Change (MOC): Process that systematically identify, evaluate and manage changes to facilities, equipment, operations, procedures and the organization in order to prevent incidents by ensuring that unacceptable risks are not introduced into the business.

Permanent Change: A modification that is intended to remain unchanged for an indefinite period.

Proposed Change: Any change that is being evaluated prior to being formally approved and implemented.

Replacement-in-Kind (RIK): An item (equipment, chemical, procedure, etc.) that meets the design specification of the item it is replacing. This can be an identical replacement, or any other alternative

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specifically provided for in the design specification, as long as the alternative does not in any way adversely affect the use of the item or associated items.

Risk: The potential for the occurrence of an event that would be desirable to avoid, often expressed in terms of a combination of various outcomes of an adverse event, and their associated probabilities. Different stakeholders may have varied perspectives on risk.

Risk Assessment: The systemic evaluation of an issue to determine its probability of occurrence and the severity of the consequences of its occurrence.

Safety-Critical position: Position where competence deficiency may cause serious health and safety risk to personnel, significant damage to the environment, company assets, compliance, or reputation when performing work within their normal area of responsibility.

Temporary Change: A change that is intended to exist for a short, predetermined, finite period which does not exceed a year (i.e., not permanent, non-permanent, short-term, interim).

Workforce: Refers to PG&E employees and non-employee workforce.

IMPLEMENTATION RESPONSIBILITIES

Each Line of Business is responsible for implementing the MOC Standard within their organization. Directors, managers, and supervisors are responsible for communicating the Standard to all employees and ensuring that their employees understand and properly implement the requirements of this Standard.

Each LOB will conduct an assessment in 2021 of their current state relative to the requirements of this standard and identify and execute the actions required to close gaps and achieve compliance by 2022. Annual self-assessment will be conducted to monitor conformance with the requirements.

GOVERNING DOCUMENT

[SAFE-01 HSMS Safety Policy](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

Records and Information Management: PG&E records are company assets that must be managed with integrity to ensure authenticity and reliability. Each Line of Business (LOB) must manage Records and Information in accordance with the Enterprise Records and Information (ERIM) Policy, Standards and Enterprise Records Retention Schedule (ERRS). Each Line of Business (LOB) is also responsible for ensuring records are complete, accurate, verifiable and can be retrieved upon request. Refer to [GOV-7101S](#), “[Enterprise Records and Information Management Standard](#)” for further records management guidance or contact ERIM at Enterprise_RIM@pge.com ”

“MetricStream ID# 108031” - Enterprise Safety Management System (ESMS) Implementation and Maintenance

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DOCUMENT RECISION

NA

DOCUMENT APPROVER

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REFERENCE DOCUMENTS

Supplemental References:

[HR-7100S, Technical Training and Training Governance Standard](#)

APPENDICES

Appendix A, Implementing Standards and Procedures

ATTACHMENTS

NA

REVISION NOTES

Where?	What Changed?
Section 1	Added out-of-scope changes
Section 4.1.1	Added explanation for screening
Roles & Responsibilities, 4.c	Changed “required” to “highly recommended”

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SAFE-4300P-01, Management of Change Procedure *<under development>*