

2023 NGA Spring Operations Conference

Management of Change Technical Guideline

Mark Weesner, P.E.
Blacksmith Group



Tactical Guides

Published and on NGAPSMS Resource Center

- Mains and Services Construction
- Pressure Regulation and Control
- Gas Control
- Damage Prevention
- Emergency Preparedness and Response
- Engineering Design and Integrity Management

Recently Completed:

- Distribution System Operations and Maintenance

Member participation from NGA and SGA

Technical Guidelines

- Management of Change
- Operations and Maintenance
 - ❖ *Incorporated learnings from Safety Culture Assessment*
- Transmission Delineation – White Paper

Member participation from NGA and SGA

Objectives of Management of Change Technical Guideline

Operationalize MOC

Gain buy-in throughout the organization - operations, engineering, construction, and projects in evaluating changes

Keep the process simple

Scalable – L, M and S

Importance of communication

Remove obstacles

Emphasize the importance of “why”



Integration of Learnings from Major Industry Incidents, the NTSB and Pipeline Safety Legislation

NTSB placed a renewed focus on MOC

PIPES Act of 2020 – Section 204

- a detailed procedure for the management of the change process

Are there changes to the circumstances related to planned work?

Is there nearby work at a regulator station that may not have been foreseen in the work package development?

MOC Considerations



1. reason for change,
2. authority for approving changes,
3. analysis of implications,
4. acquisition of required work permits,
5. documentation of change process,
6. communication of change to affected parts of the organization,
7. time limitations, and
8. qualification and training of personnel affected by the change (including contractors).

Types of Change



1. Technology
2. Equipment
3. Procedural, and
4. Organizational

Do We Need MOC for Every Change?

No, Not for Like for Like, Replacement in Kind

Valves – Replacement of existing valves including block valves, regulator and relief valves, and flow control valves with valves of the same design capabilities. This includes pressure rating, material of construction, nominal size and joining type.

Pipe – Replacement of pipe must have a matching nominal size, within the tolerances of the manufacturing specifications. The manufacturer may differ.

Flanges and Other Components – Replacement of flanges and other components such as fittings, must have matching nominal size, within the tolerances of the manufacturing specification. The manufacturer may differ.

Types of Change

Assets Including Facilities:

- Construction of new facilities or equipment including pipelines, measurement and regulator stations, compressor stations, storage equipment and instrumentation and control equipment.
- Modifications and additions of existing facilities.
- Replacement of equipment that is not a replacement in kind.
- Modifications of control or other systems which cause changes to pressure relief requirements, safety systems or alarms.
- Bypass connections around equipment of facilities normally in service.
- Changes in proximity of equipment, including thermal and vibration.

Types of Change (Continued)

Technical (Including Safety Systems):

- Increasing of throughput or capacity rate
- Introduction of new or different products such as chemical injection or changes in gas quality.
- Changes to critical testing and inspection equipment
- Changes outside of established parameters for pressure or temperature.
- Changes in electrical, control, interlocks, or instrumentation outside of established parameters.
- Changes in software that impact asset operation, safety limits, operating parameters, and calibration

“We have a process for managing procedure changes!”

Do we need to apply a formal MOC process for procedural changes?

An operator can continue to use an established process, but you need to make sure the process evaluates the impact of changes (aka, takes into account the 8 considerations).

Other Change Related Considerations

- Regulatory Changes
- Emergency Changes
- Temporary vs Permanent Changes

Management of Change (MOC)

What is Management of Change (MOC)?

MOC is a formal process that helps capture changes to gas system assets, procedures, personnel, or site conditions, thereby ensuring continued system safety and reliability by evaluating and mitigating the risks associated with these changes. Operational failures could result from unanalyzed changes to technology, equipment, procedures, and organizational responsibilities. Such failures can lead to catastrophic events such as unplanned energy releases, endangering human lives and the environment. MOCs can address permanent or temporary changes.

The process shall incorporate planning for the effects of the change for each of these situations.

MOC Process consideration (as per API RP 1173)

- Reason for change
- Authority for approving changes
- Analysis of implications (considering safety, operation, and reliability impacts)
- Acquisition of required work permits
- Documentation of change process
- Communication of change to affected parts of the organization
- Time limitations
- Qualification and training of personnel affected by the change (including contractors)



MOC Examples

- Significant modifications of existing facilities as defined by an organization
- Replacement of equipment that is not replacement in kind that impacts safety or capacity
- Modifications of control or other systems that impact pressure relief requirements and safety systems
- Bypasses around facilities normally in service
- Increase or decrease of throughput or capacity
- Introduction of new or different chemical injection product (e.g., change in mercaptan or delivery system)
- Changes outside of established parameters for pressure or temperature
- Changes in control or instrumentation outside of established parameters
- Changes in regulatory requirements, reference codes and standards or legal interpretations
- Changes that result in unanalyzed safety conditions
- Changes to key personnel during a project (e.g., Supervisor, Inspector, Foreman, Field Engineer)



Questions and Discussion

