Impact of Cloud Technology with Reducing Risk in Process Safety Management

White Paper

Introduction

Management of Change (MOC) is a critical Process Safety Management (PSM) element of the United States Occupational Safety and Health Administration (OSHA) 1910.110 standard. Operating companies are faced with challenges in implementing robust processes that ensure all process changes are defined, tracked, and implemented effectively to meet process safety objectives.

Many operating companies have been implementing their MOC processes utilizing classical paper-based systems or some sort of electronic tools. However, process safety audits and, on some occasions, incident investigations have revealed ineffective MOC process implementation that resulted in skipping or extending MOC workflow steps, failure to capture complete change impact on process safety, delayed approvals. These things can create gaps in process safety information (PSI) that deteriorated the effectiveness of other key PSM elements such as process hazard analysis (PHA) and pre-startup safety review (PSSR).

Industry Challenge of Managing Change

Paper-based MOC systems are currently a very common tool the industry utilizes to identify, analyze, approve, and track change implementation. However, as indicated above, such tools carry the risk of ineffective execution of change management. A paper MOC may become lost on an approver's desk which slows down the MOC from proceeding or being closed out in a timely manner. It is easy to miss or skip critical steps in the workflow with a paper-based system. It can be found that a MOC item was implemented in the field without all the checklists, action items, PHA, PSSR, and approvals completed.

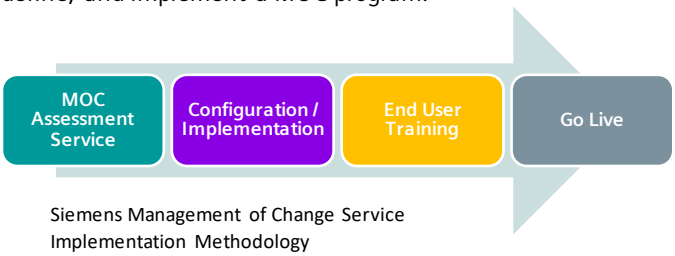
Keeping records of changes is difficult with a paper-based MOC system. The MOC must be filed in hard copy or scanned and saved electronically, which creates the risk for files to go missing. Also, measuring and tracking MOCs is a manual task that makes auditing individual MOCs, and the MOC process, difficult.

Often, small scale changes are thought to be replacement-in-kind but are changes that affect PSI. Over time these small changes can add up to a point where information is out of date and incorrect.

With the advancement of process management tools and the criticality of MOC to process safety and economics, an alternative to paper-based management is becoming mission-critical to help prevent incidents. It is imperative to choose an electronic MOC system that is user-friendly, meets the organization's safety and operation objectives, and robust so that the MOC workflows are properly followed without the possibility to skip steps. There is also clear tracking of MOC record status, ownership, and history.

Siemens Solutions for Effective MOC

As we have learned, due to regulatory requirements, operating companies are mandated to maintain an efficient and effective MOC process. To address these challenges of designing and implementing a robust MOC program, organizations rely on subject matter experts. An effective MOC process involves efficient and accurate workflows with steps to complete the regulatory requirements to successfully implement a change. Siemens Process Safety business understands these issues and the impact they have on day-to-day operations. Siemens subject matter experts recommend following a methodology to analyze, assess, define, and implement a MOC program.



Siemens Management of Change Service Implementation Methodology

MOC Assessment Services

Effective MOC programs have objectives to reduce costs, increase efficiency, comply with industry regulations, and facilitate in running safe operations. Unmanaged change is inefficient and risky, whereby undetected changes can result in industrial incidents. To mitigate this, a well-designed MOC process should be developed by subject matter experts (SME).

As part of assessment services, the SME should assess the operating company's current MOC processes during a Discovery Phase Analysis. SMEs are recommended to work with the MOC process owner to streamline the workflows. If there is no process already in place, a strategic approach with detailed analysis along with the MOC stakeholders should be performed to develop workflows specific to the site.

After the Discovery Phase Analysis, the SME translates the findings from the assessment into the electronic management of change program.

PS Change Manager® (PSCM™)

PS Change Manager is an electronic MOC system offering change management services and enables companies to improve efficiency, increase control, and help reduce errors by implementing a cohesive and centralized enterprise change control program. Additionally, offering flexibility to manage a variety of changes using one centralized relational database.

Some of the salient features of PSCM include efficient data storage capabilities with the ability to let users search the MOCs. Closed MOCs can now be archived in the database and can be accessed at any time for auditing purposes. Compared to paper-based systems, PSCM can significantly reduce the loss of data with automated workflow management enabling users to quickly configure the workflows to their specific site. There are many variations of these workflows which can be assigned across the corporate or site level. A few basic points that are taken into consideration before designing the workflows in PSCM are: Are the steps the same across all the facilities in the plant? Which steps in the workflows are mandatory that should not be avoided by any of the stakeholders? Which of the relevant employees need to be notified of the intended change? When should a user be notified of the change or actions that he or she needs to take for the MOC? Does your MOC process integrate with work order systems to provide transparency over change execution? These and several other questions give insight to Siemens subject matter experts to help them configure the most efficient workflows.

PS Change Manager is an effective platform for managing changes because it provides:

- A method to configure efficient workflows that constitute the safety of plant operations.
- A method to notify approvers that their signoff is required.
- A method to automatically notify all relevant employees of the change.
- A method to effectively perform MOC audits.
- A reporting tool to provide users with information regarding the status of the MOCs which enables them to take any required actions.
- A method to automatically transfer tasks from one personnel to another in the event of absence.
- A method to associate MOC with the work order number from asset lifecycle and maintenance management systems.

Conclusion

Electronic MOC programs, like PSCM, can help ensure plant safety and compliance. With increased benefits, companies are shifting their MOC work process from paper-based to an electronic system. Electronic MOC systems offer industry-recognized features that combat the common issues of controlling change.

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