

A REVIEW OF MANAGING PROCESS AND SYSTEM CHANGES IN PROCESS PLANTS USING OSHA GUIDELINES

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ABSTRACT

With the rapid growth of the **Process Industry**, the challenges faced by the Industry are many incidents continue to occur in various chemical industries that use highly hazardous chemicals which may be toxic, reactive or flammable or explosive, or may also exhibit a combination of these properties. Management of Change includes all the modifications to equipment, procedures, raw materials, and process conditions apart from "replacement in a similar way." These changes should be properly managed by distinguishing and reviewing them before implementing them. For instance, the operating procedures contain the operating parameters (pressure limits, temperature ranges, flow rates, etc.) and also the importance of operating within these limits. Established parameters, any operation outside of those parameters needs review and approval by a written management of change procedure. Management of change also covers changes in process technology and changes to equipment and instrumentation.

Changes in process technology may result from changes in production rates, raw materials, experimentation, equipment unavailability, new equipment, new product development, change in catalysts, and changes in operating conditions to improve yield or quality. Equipment changes can be in materials of construction, equipment specifications, piping pre-arrangements, experimental equipment, computer program revisions, and alarms and interlocks. Employers should establish means and methods to discover each technical and mechanical changes. This work is aimed at review of "Management of Change" using OSHA standards. The Checklist Analysis was used and development of the Checklist was done based on the needs and requirements of the Industry which was being assessed; Inputs were also received during the development of the Checklist from the Plant Officials and through Site Visits to Various Processing Units in the Process Plants. The standard procedure manuals helped in giving a complete idea of how the process of MOC took place and what

were to be covered in the development of the Checklist and it was in the form of Yes/No for each aspect of the PSM element . Besides Yes/No , a separate column was provided for Remarks ;

The Remarks section gives some necessary information about the aspect that was being assessed. After review by the use of Checklists , there were few areas of the system that needed proper improvement and these are minor aspects of a Major , Constantly Developing & Secure Management System which would supplement the already existing Rules , Procedures , Policies to get even better and updated. The System which apparently is fail-proof is the system that prominently addresses major issues while it functions properly across various spheres without any possible glitches .

KEYWORDS–CFR (Code of Federal Regulations), OSHA (Occupational Safety and Health Administration), MOC (Management of Change), Process Plants

INTRODUCTION - The failure of the proper implementation of the Management of Change was one of the critical reasons that contributed to the Flixborough Disaster in 1974. Amongst the various challenges in Oil and Gas Sectors, one of them is to effectively manage process safety in the Organization.

Unexpected releases of toxic, reactive, or flammable liquids and gases in processes involving highly hazardous chemicals have been reported for many years. Incidents continue to occur in various chemical industries that use highly hazardous chemicals which may be toxic, reactive or flammable or explosive, or may exhibit a combination of these properties. Irrespective of the Industry that uses these highly hazardous chemicals, there is a potential for an accidental release any time they are not properly controlled. This in turn creates the possibility of a Disaster..

OBJECTIVE OF THE ASSESSMENT

- Understanding the complete process of working of the Management of Change in the System that is implemented in the Process Plants
- Review of the MOC using the Standards provided by Occupational Safety and Health Administration (OSHA) by using Checklist Analysis Technique
- Providing areas that need improvement in the Existing System according to the above mentioned standards.

METHODOLOGY

- The Checklist Analysis Methodology was used and a new comprehensive checklist was developed for the Hot Work Permit
- Development of the Checklist was done based on the needs and requirements of the Industry which was being assessed.
- The Checklist was in the form of Yes/No for each aspect of the Process Safety Management Element. Besides Yes/No, a separate column was provided for Remarks; The Remarks section gives us some necessary information about the aspect that was being assessed.
- Post the Assessment with the help of Checklists, Areas that need Improvement were suggested for the various elements.

RESULTS.

The following results were found out that impacted the system and hence needed proper system review :

- ✓ Better coordination among various departments while initiating the Change Management Process
- ✓ Proper internal validation of respective Dept. before calling for a Management of Change.
- ✓ Developing a assured time-frame for implementing the Changes that will come into effect.

CONCLUSION

Every Oil and Gas Organization makes a conscious effort to ensure a impressive safety performance track record. The Checklist Analysis method was used in finding out the various areas of improvements required in the Hot Work Permit and corresponding recommendations were made according to OSHA. Management Of Change is a comprehensive process and it requires the concerted efforts of the various departments of the Organization to be well coordinated and thus its relevance in the Industry depends on the level of Cooperation and Commitment the Management is ready to give in order for the change to be really effective.

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