

The Application of Process Safety Management (PSM) in a Steel Plant Involves Developing Concepts, Evaluating Risks, and Analyzing Hazards

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Abstract: *To achieve success in any industry, it is crucial to identify hazards, assess their risks, and reduce them to a tolerable level. Due to the nature of operation, complexity of systems, procedures, and methods, activities performed in plants always involve a certain amount of hazards. Hazard analysis is carried for identification of undesirable events that can lead to a hazard, the analysis of hazard mechanism by which this undesirable event could occur and usually the estimation of extent, magnitude and likelihood of harmful effects. It is widely accepted within industry in general that the various techniques of risk evaluation contribute greatly toward improvements in the safety of complex operations and equipment. Hazard analysis as in Process Safety Management (PSM) system involves identification of undesirable events that leads to a hazard, the analysis of hazard mechanism by which this undesirable event could occur and usually determining the extent, magnitude, and probability of negative outcomes.*

Identification and analysis of hazards, the event sequences that lead to hazards, and the risk of hazardous events are the objectives of this work. There are a variety of techniques, from simple qualitative methods to advanced quantitative methods that can aid in identifying and analyzing hazards. The use of multiple hazard analysis techniques is recommended because each has its own purpose, strengths, and weaknesses. As the part of the project was provided knowledge about, Process Safety Management (PSM) carried out for a Steel plant placed in India base Industries The project here presents the overview of future work to be done on analysis of different activities which will be divided into a risk level of high, medium and low depending upon their consequences and likelihood.

The high-risk activities will be marked in red and are unacceptable and must be reduced. The overall analysis will be inspected and used for the necessary adjustments.

Keywords: Steel Plant, Hazards, Risk, Harmful effects, Process Safety Management, Hazard Identification, Risk Assessment, and Matrix Methodology, OSHA 18001 etc