Risk Management at the Source

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Introduction

MetaPower is a consulting firm that specializes in Work Processes, Information Technology and Organizational Culture. We have been working for many years with hazardous industries and have experience with several significant evolutions in those industries. The current US trend towards using risk as the management focus is another evolution. This trend is being reflected in the US as the industry considers moving to a Safety Case regulatory regime. I would like to spend a little time sharing some of our thoughts and experiences with this evolution to risk management.

Risk Management is based on identifying the following for each facility:

- An acceptable level of risk
- The hazards that exist
- The scenarios that produce worse case consequences from those hazards
- The probability of the worst case scenarios
- The mitigations for each hazard needed to maintain the acceptable risk level

For a “Safety Case” approach to regulation, this information is documented in a “safety case report” and submitted to the regulator, who then passes judgment on its adequacy to maintain the plant as “safe”. When it is deemed adequate, permission to operate is granted. He then uses auditing and other techniques to monitor the facility operation to ensure that the mitigations maintain the acceptable risk level.

The Risk Management approach requires techniques to determine and quantify risk. For much of the industry the use of Quantitative Risk Analysis (QRA) to evaluate the safety of occupied structures has provide these techniques.

The “Safety Case” documentation appears to be a similar approach to that used for Nuclear Power Plants in the US. In that industry, A Preliminary Safety Analysis Report is developed and submitted to document the facility’s engineering, construction and operating plans. The regulator uses this to justify issuing a Construction Permit. The Safety Analysis is updated to reflect the actual facility and a Final Safety Analysis Report issued. Following the incident at Three Mile Island, the use of Probability Risk Assessment became part of the regulatory information. This document contains the Technical Specification that articulate the requirements and limits for plant operation. When the facility is deemed safe, an operating license is issued.