Do We Really Know How To Manage Risk?
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Abstract

Process Safety approaches developed and implemented over the past 20 – 30 years have, few would argue, enabled us to improve the design basis for our facilities. The use of a risk based approach is commonplace and indeed a requirement of many regulatory bodies around the world. Despite this, our industry continues to experience catastrophic accidents which, when the consequences are dire, receive a lot of media outrage usually followed by multiple investigations and calls for legislative change and / or criminal proceedings. So in most parts of the world where Oil, Gas and Petrochemical operations occur we have a societal intolerance of such events, generally demanding legislation and many would say a strong intent from the industry to operate safely. Yet we still see major incidents occurring at a steady rate each year so the question has to be asked whether we in the industry really understand what it means to manage risk.

This paper will examine traditional approaches to risk management and suggest that while they may be appropriate for design basis they are not so useful to support Operations Management where decisions on risk continuously take place each day and at all levels of the organization. The scenarios used in design are simple and static but the calculating of risk is rigorous and complex generating results which seem credible and complete. The real world of plant operations, however, is neither simple nor static. There are multitudes of potential initiating or escalating events occurring simultaneously, deviations to our risk control systems, changing equipment status, hazards introduced through maintenance and repair work on live plant and human and environmental factors. On top of this we have a wealth of data which could help to manage this seemingly chaotic world but that data is trapped in silos within our organizations making it very difficult to utilize in supporting real time decisions.

What is needed to support Operations is a different approach to risk which is more pragmatic: simple in concept and able to be informed by real time events. The paper will outline an approach which has been used for some years in some parts of the offshore industry where ageing assets and integrity issues compound the risk. What is new is the emergence of Operations Excellence software platforms which can now gather and process data in near real time providing frontline and leadership easier tools to identify, predict and manage risk and activity on a day to day basis.
The promise of big data in process safety could provide an early warning system that looks at potential signals and trends in facility operations data to make major accident hazard risk exposure visible, prominent and available in real-time. With this information, everyone could proactively make better operational decisions to prevent major accidents. Big data promises to help deliver what we all want; an improvement of industrial process safety and the achievement of process safety excellence that keeps people safe and the plant running efficiently.