Sound hazard identification methods have always been foundational for a functional process safety program. With the publishing of the Center for Chemical Process Safety (CCPS) book “Risk-Based Process Safety Management”, companies are reworking process safety management systems to prioritize available resources toward higher hazards and risks. This approach is reinforced by the current economy and regulatory enforcement environment. Companies are integrating risk screening criteria into more of their environmental, health and safety work flow processes, and using it as a way of communicating priority throughout the organization.

In the US, risk ranking in hazard analyses has been predominantly qualitative in nature. But with the emphasis now on compliance with ISA84 and determination of safety integrity level (SIL) gaps using methods such as layer of protection analysis (LOPA) or fault tree analysis, companies are achieving a higher degree of risk quantification. A sustainable process safety management system is founded on integrating the results of the process hazard analyses (PHA) and SIL assessments into the design process and prevention program elements, i.e. management of change, pre-startup safety reviews, operating procedures, training, mechanical integrity program, contractors, incident investigation, and emergency response.

Over the last decade, hazard identification techniques and risk ranking have become embedded in capital planning processes, security vulnerability assessments, organizational change management methods, facility siting assessments, ISO 14001 risk assessments, and business continuity planning. Many companies are executing these programs linearly applying multiple forms of risk criteria. Companies still appear to be missing the opportunity to leverage the content of the PSM program, and more specifically the process PHAs, Layers of Protection Analyses (LOPAs), and facility siting studies, across the business model when making risk-based decisions.

This paper will convey the benefits of applying consistent risk screening criteria and drawing more value from the investments made in facility siting, PHAs, and LOPAs when making risk-based decisions across the business model. The preparer will illustrate this concept with an example starting with a PHA that is enhanced by the results of the facility siting study and LOPA, then demonstrating how to leverage the results of the study into other business processes so that risk is assessed consistently across the organization.