



Linking Incident Investigation to Risk Assessment

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ABSTRACT

Incident investigation processes are well established and use a variety of tools to progress down through immediate causes to identify more basic management system deficiencies. Most modern safety management systems are now risk-based, but incident investigation tools have not adapted as quickly to this new risk-based structure. This paper describes a novel, straight forward and structured approach (B-SCAT) that adapts a traditional root cause analysis technique to understand the role of barriers in incidents. Bow ties are a powerful risk tool that define the full set of barriers that either prevent a serious event from occurring or mitigate its possible outcomes. Every incident must involve some barriers failing. The B-SCAT approach utilizes bow-tie technology to identify not only safety management system deficiencies, but also all barrier deficiencies and their causes. This provides a direct linkage to both the safety management system and the risk assessment and thus provides a powerful feedback loop on the barriers identified in the risk assessment. The method presented is designed for simplicity and application by Supervisor grade staff, enabling the potential for every incident to be assessed for barrier and safety management system root causes.