Risk Assessments for Brownfield Modifications to Promote Inherently Safe Processes

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Abstract

Brownfield projects are undertaken when there is a need identified to improve process safety, production, efficiency and lifespan of the existing facilities, to address regulatory compliance issues, and sometimes to update technology. Brownfield means modifications, extensions, repair, upgrade, replacement, addition etc on existing live offshore production facilities and equipment which may involve "hot work". Brownfield engineering comes into picture by taking advantage of those changes and creates opportunities for improvement. Since Brownfield projects are schedule-driven, proper planning of design updates, procurement and full/partial production shutdowns are the major tasks involved to meet operator requirements. For a successful execution of a brownfield project, process safety plays a vital role in the identification and prevention of abnormal conditions from developing into situations of hazard and accident.

Challenge lies in identification of current status of the platform and assessment of developed changes into the existing conditions. This paper presents the contribution of risk assessment for brownfield modifications and future operations to prioritize "Inherently safe design", with some examples from concrete cases.