Safety Control in Process Operations – Petroleum Refineries & Gas Processing

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Abstract

An inherently safer design approach for Process Safety attempts to remove the potential for hazards to arise. It does not rely on control measures, systems or human intervention for incident prevention. Petroleum Refining, Gas Processing & Petrochemical manufacturing use distinctive processes and subjected to high potential multiple hazards and such facility cannot be designed purely on the basis of Inherent design. The Process Safety strategy here, therefore involves combination of Inherent, Passive, Procedural & Active controls categories for design & operation of such facility. The ‘safety control in process operation’, the important hazard control & risk reduction strategy, falls under the Active control category.

Present paper discusses ‘Safety Control in Process Operations’ with special focus in process safety for incident control & prevention in Petroleum Refineries & Gas Processing facilities and the discussions touches the Basic Process Control, vis-à-vis Safety Instrumented System (SIS), Layers of Protection, Initiating Events - referring Incident cases, examples of SIS to prevent & bring the operation to a safe state, the Safety Integrated levels (SILs) & its Reliably to ensure the protection.