Management of Change of Chemical Process Control Systems

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ABSTRACT

Management of Change (MOC) has been recommended to be an important part of chemical process safety since the British Inquiry Board’s investigation report of the 1974 Flixborough UK incident. The USA Occupational Safety and Health Administration (OSHA) regulation formalized MOC as one of the 14 elements of its process safety management regulation in 1992.

However, most facilities focused their MOC program on equipment changes, particularly changes that would change the P&IDs or equipment specifications. Procedural changes, organizational changes and computer control system changes are not universally considered within the scope of the MOC program.

Even though formal MOC is also a part of the ISO 9000 and ISO 14000 global management standards, the need for controlling changes to plant computer software is not generally acknowledged.

Several recent incidents, in which a degraded control system has been identified as one of the contributing factors, most notably as alarm floods or bypassed safeguards, have put the spot light on the need to maintain the control system effectiveness.

The gaining recognition of the functional safety instrumented system standards, ISA 84.01 and ISO 61511, with MOC as a part of its safety life cycle concept, has helped. The Abnormal Situation Management consortium, the work of the British Health and Safety Executive on Alarm Management and the recommendation of SCADA system assessment by the USA Office Pipeline Safety are among the positive indicators that regulators and safety professionals are attempting to add software changes to the very important MOC program.