2018 CCPS Proposed Project

Proposal No.: 1801

Title: Process Safety Case for Cyber Security

Proposal: Prepare a concept book that describes the case for the application of cyber security principals for process safety. Chemical manufacturing relies on a number of Safety, Controls, Alarms and Interlocks (SCAI) to manage process hazards. A cyber-attack can compromise one or more of these protection layers causing an incident while simultaneously defeating protective and mitigating measures.

Benefits: Cyber-attacks are a potential source of common cause failure. The ways and means of attacks are numerous. Industry is struggling to understand what standards apply and how to implement them. The work product of this project could provide much needed guidance.

Team Composition:

Industry representation should include a blend of information technology and operating technology personnel. Consider Department of Homeland Security, NIST, etc. in development or peer review.

Product: Concept Book to outline case for collaboration, reaching across organization, asset protection and personnel/environmental protection, case is built around protecting the SCAI.

Recommended Development Approach:

Prepare an outline of contents. If internal team does not have sufficient expertise to develop full contents, contract the draft and have the project team finalize.

Audience: Any industry utilizing Safety, Controls, Alarms and Interlocks (SCAI) to manage process hazards.

Time: 12-18 months

Cost Recovery Potential:

Book sales

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Potential Reference Materials:

- IEC 62443 suite of standard and technical reports
- NIST Cybersecurity Framework
- IEC 61508, *Functional safety of electrical/electronic/programmable electronic safety-related systems*
- IEC 61511, *Functional safety – Safety instrumented systems for the process industry sector*
- CFATS section 8
- ISA TR 84.00.09-2016, *Cybersecurity Related to the Functional Safety Lifecycle*, 2nd Edition (draft)
- API 780, *Security Risk Assessment Methodology for the Petroleum and Petrochemical Industries*
- Possibly CCPS guidelines safe automation book
- API 1164 Pipeline SCADA Security