Remote Monitoring and Control for Optimization of Remediation Systems

Jennifer Lawrence (ExxonMobil, Houston, TX, USA)
Leslie Steele (lsteele@kleinfelder.com) (Kleinfelder, Baltimore, MD, USA)

Background/Objectives. Use of telemetry, supervisory control and data acquisition (SCADA) systems and other industrial controls provide many benefits for the operation of optimized remediation systems. These computer- and network-based controls can improve system runtime through remote access for monitoring and control, as well as enhancing system optimization through real-time data analytics, all while reducing site visits by system operators. Industrial controls are a key best management tool for green and sustainable remediation system operation because they allow for reductions in site visits to achieve operational objectives and can also reduce operational life cycles through enhanced optimization capabilities.

Approach/Activities. ExxonMobil Environmental & Property Solutions (E&PS) inventoried the various types of industrial controls in use on remediation systems and developed a process for applying Industry (e.g., NIST) controls to affected existing systems and integrating into future designs. This process provided for compliance with industry practices for industrial controls, in a manner that is fit for risk associated with remediation systems.

Results/Lessons Learned. Implementation involved multiple training sessions and one-on-one assessments of each operating remediation system to evaluate compliance with the new controls requirements and potential upgrades. Design support for new systems is also provided. While there has been a learning curve for implementation across the global remediation system portfolio, the benefits of using secure and reliable industrial controls are clear. Specific project examples will be presented which demonstrate reductions in various metrics, including field mobilizations, fuel consumption, emissions, as well as system downtime.