

Save Time and Money by Designing Effective Interface with Vendor-provided control systems

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FORMAT

30 minute presentation

KEYWORDS

Vendor-provided control system, Plant SCADA system, Integration, coordination, design specifications, schedule, budget, communication

ABSTRACT

A coordinated design effort is necessary to successfully integrate, in a timely manner, vendor-provided control systems in a plant-wide SCADA system. Progress in field startup operations could be hampered due to issues arising from: mismatched communication protocols between the plant SCADA network and vendor provided controls network, the vendor's understanding of the desired process control, monitoring and control signal availability from the vendor-provided control system, data mapping and tagging schemes between the two systems, permissive signals needed to execute proper sequence of operation and fail-safe requirements, and alarms and fault display requirements. Resolving these issues in the field could prove costly in terms of construction service expenses, startup delays and potential plant downtime.

Providing the desired process control when integrating with vendor-provided control systems requires coordination at various design levels. The design intent and methodology should be clearly defined in the contract documents such that the plant SCADA system integrator and the vendor system supplier have enough information to plan ahead and work together throughout the project. This paper will present best practice methods during design to minimize coordination issues thus preventing construction cost surges, startup delays and potential plant downtime. Case studies will be presented to illustrate: design guidelines that begin with the understanding of the desired process control, evaluating hardwired vs. software interface, SCADA components review, coordination with different engineering disciplines, defining construction submittal exchanges, coordination meeting requirements during construction, and factory/field testing expectations. The presentation concludes with lessons learned in reference to case studies and recommendations to providing comprehensive coordinated design.

About the Authors:



Amar Hegde, PE is an Automation Engineer for CDM Smith involved in design and construction coordination of water/wastewater automation projects. He has 6 years of experience combining automation design and application engineering. Prior to CDM Smith, Amar worked in the building energy management facilities where he performed system integration of heating and cooling control systems. Amar is a committee member of ISA

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Larry Reynolds, PE is a licensed professional engineer who has worked in the water and wastewater industry for 30 years. He has performed software development, systems integration, design and construction services. He currently is a Project Manager providing design and construction services for the municipal water/wastewater sector at CDM Smith.