REQUEST FOR PROPOSAL (RFP)

Stein, Doyle and Prince

PROJECT OVERVIEW

Name: Tech Shirleybury Automation Retrofit
Type: Automation Retrofit
Location: South Shirleybury, NE (Refinery Zone)
Industry: Manufacturing
Value: $2,487,888
Complexity: 2/5
Date: April 09, 2025
Disciplines: Process Engineering, Industrial Automation
Regulations: ISO 9001

SCOPE OF WORK

Scope of Work: Automation Retrofit Project ? Refinery Zone

Project Goal: To upgrade the existing control system for a specific unit (e.g., a distillation column) within a refinery zone, improving efficiency, safety, and maintainability. This project is categorized as a complexity level 2/5.

Discipline: Process Engineering
1. Process Optimization Study: Conduct a process simulation study (using Aspen Plus or similar software) of the existing unit operation to identify bottlenecks and opportunities for improved efficiency through automation. The study should deliver a detailed report including P&IDs showing proposed modifications and quantifiable improvements in throughput, energy consumption, or product quality. Results must be validated against operating data.
2. Updated P&IDs and Instrument Specifications: Develop updated process and instrumentation diagrams (P&IDs) reflecting the automated system integration. This includes specifying all new instruments (e.g., flow meters, level transmitters, pressure sensors), their required accuracy (e.g., ±0.5%), and communication protocols (e.g., HART, Profibus). These specifications will adhere to ISA standards and include data sheets for each instrument.
3. HAZOP Study for Automated System: Conduct a Hazard and Operability (HAZOP) study on the redesigned process incorporating the new automation system, identifying potential hazards and recommending mitigations. The HAZOP report should document all identified hazards, recommended safeguards (e.g., emergency shutdown systems, interlocks), and associated risk assessments, in accordance with industry best practices.

Discipline: Industrial Automation
1. PLC/SCADA System Design: Design and specify a Programmable Logic Controller (PLC) and Supervisory Control and Data Acquisition (SCADA) system to automate the unit operation. The design should include the selection of appropriate PLC hardware (e.g., Siemens TIA Portal, Rockwell Automation), communication network architecture (e.g., Ethernet/IP, Modbus TCP), and SCADA software for operator interface and data monitoring. System documentation including network diagrams, I/O lists, and PLC logic diagrams will be delivered.
2. Control Logic Programming: Develop and test the PLC control logic according to the process specifications and safety requirements. This involves programming the PLC to manage all automated functions, including setpoint adjustments, alarm handling, and safety interlocks. Rigorous testing will be performed in a simulated environment before deployment, and factory acceptance testing (FAT) will be documented.
3. Human Machine Interface (HMI) Development: Design and implement a user-friendly HMI using the chosen SCADA software, allowing operators to monitor and control the process parameters effectively. The HMI should provide clear visual representation of process data, alarm management capabilities, and trend analysis tools. Compliance with relevant ergonomic standards for HMI design will be ensured.
Cross-Disciplinary Tasks
1. Integration Testing: Conduct a thorough integrated test of the process and automation systems to ensure seamless interaction between the two. This involves testing the PLC programs and the SCADA system in a simulated or real-world environment to verify the functionality and safety of the automated system. Results of the integrated tests will be documented in a comprehensive test report.
2. Safety Instrumented System (SIS) Integration (if applicable): If required, integrate the new automation system with existing or new Safety Instrumented Systems (SIS) according to IEC 61511 standards. This includes verifying the correct functioning of safety interlocks and emergency shutdown systems to ensure process safety. Documentation will include safety requirements specification, functional safety assessment (FSA), and proof testing results.
Complexity Impact Note: The complexity level is 2/5 due to the relatively straightforward nature of the upgrade, involving a single unit and established automation technologies.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Tech Shirleybury Automation Retrofit

Project: Tech Shirleybury Automation Retrofit ? Refinery Zone, South Shirleybury, NE.

Industry: Manufacturing (Refinery)

Date: April 09, 2025

Due Date: May 14, 2025

Project Goal: Upgrade the existing control system for a single unit (distillation column - details upon request) in the refinery, improving efficiency, safety, and maintainability. Complexity: 2/5.

Scope of Work: The project encompasses process engineering and industrial automation tasks (detailed scope attached). Key deliverables include:

* Process optimization study (Aspen Plus or equivalent).
* Updated P&IDs & instrument specifications (ISA standards).
* HAZOP study.
* PLC/SCADA system design and specification (Siemens TIA Portal or Rockwell Automation preferred).
* Control logic programming & FAT.
* HMI development (ergonomic standards compliance).
* Integrated system testing.
* SIS integration (if applicable, IEC 61511 compliant).

Qualifications: Minimum 3 years' experience in manufacturing automation projects within regulated environments; proven regulatory compliance record.

Proposal Requirements:

1. Technical Design (1-2 pages) outlining proposed solution.

2. Detailed cost breakdown.

Evaluation Criteria: Technical Approach (50%), Cost (30%), Experience/Qualifications (20%).

Contract Type: Fixed Price

Timeline:

*** RFQ Release: April 09, 2025**

*** Questions Due: April 26, 2025**

*** Proposals Due: May 14, 2025**

*** Project Start: May 23, 2025**

*** Project Duration: 6 months**

Submission: Submit proposals electronically to procurement@manufacturing.com. A detailed scope of work is available upon request.

CONTACT

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TIMELINE

Include key dates such as submission deadlines, inquiry deadlines, and project start dates.