

REQUEST FOR PROPOSAL (RFP)

Murphy Group

PROJECT OVERVIEW

Name: Indust Sarahmouth Automation Retrofit

Type: Automation Retrofit

Location: New Sarahmouth, ME (Refinery Zone)

Industry: Manufacturing

Value: \$9,062,961

Complexity: 3/5

Date: April 09, 2025

Disciplines: Electrical Engineering, Industrial Automation, Mechanical Engineering

Regulations: ASME Standards

SCOPE OF WORK

Scope of Work: Generic Automation Retrofit in a Refinery Zone

Project Goal: Retrofit existing, legacy control systems within a designated refinery zone to improve efficiency, safety, and maintainability, utilizing modern programmable logic controllers (PLCs) and human-machine interfaces (HMIs).

1. Electrical Engineering:

* **Task 1.1: Electrical System Assessment and Upgrade:** Conduct a comprehensive assessment of the existing electrical infrastructure within the retrofit zone, including power distribution, grounding, and lighting. This will involve detailed schematics, load calculations (per IEEE standards), and identification of upgrade needs to meet NEC requirements for the new automation system's power requirements. Deliverables include an updated electrical one-line diagram and a detailed materials list for upgrades.

* **Task 1.2: Hazardous Area Classification & Equipment Selection:** Perform a hazardous area classification survey of the retrofit zone, complying with IEC 60079 standards. Select and specify intrinsically safe/explosion-proof electrical equipment (e.g., junction boxes, cables, sensors, actuators) suitable for the classified areas (Zone 1/2). Deliverables include a hazardous area classification report and a detailed bill of materials for the compliant equipment.

* **Task 1.3: Installation and Commissioning of New Electrical Infrastructure:** Install and commission the newly designed and specified electrical infrastructure, including wiring, conduits, and junction boxes. This task requires adhering to NFPA 70E standards for arc flash mitigation and testing procedures per IEC standards. Deliverables include as-built drawings and test reports.

2. Industrial Automation:

* **Task 2.1: PLC System Design and Programming:** Design a new PLC-based control system (Siemens S7 or equivalent) for the designated equipment, including input/output (I/O) configuration, communication protocols (e.g., Profibus, Ethernet/IP), and safety interlocks. Develop and thoroughly test the PLC program, ensuring all safety requirements are met. Deliverables include PLC program code, I/O mapping, and system architecture diagrams.

* **Task 2.2: HMI Development and Integration:** Design and develop an intuitive HMI (using WinCC or equivalent) for monitoring and controlling the process. The HMI should provide real-time data visualization, alarm management, and historical trending capabilities. Integrate the HMI with the PLC system, ensuring seamless communication and data exchange. Deliverables include the HMI software, operator training materials, and interface documentation.

3. Mechanical Engineering:

* **Task 3.1: Mechanical System Assessment and Modifications:** Assess the existing mechanical equipment in the retrofit zone, identifying any required modifications for successful integration with the new automation system. This might include mounting new sensors, actuators, or support structures. Deliverables include a detailed assessment report and fabrication drawings for any required modifications.

* **Task 3.2: Sensor and Actuator Mounting and Integration:** Design and fabricate (or procure) mounting brackets and structures to securely and safely install the new sensors and actuators (specified by the electrical and automation teams) onto existing equipment. This task includes proper grounding and cable routing considering ASME standards where applicable. Deliverables include installation drawings and a parts list for the mounting hardware.

Cross-Disciplinary Tasks:

* **Task 4.1: Joint System Integration and Testing:** All three disciplines (Electrical, Automation, Mechanical) will collaborate on the final system integration, ensuring seamless communication and functionality between all components. This involves rigorous testing of the entire system to validate performance and safety. Deliverables include a comprehensive system integration test report.

* **Task 4.2: Safety and Risk Assessment:** Conduct a thorough safety and risk assessment throughout the project lifecycle, addressing potential hazards associated with the retrofit process and the operation of the new system. This requires joint participation of all disciplines to identify, mitigate, and document risks. Deliverables include a comprehensive safety and risk assessment report and safety procedures documentation.

Complexity Impact Note: The complexity level (3/5) reflects the need for a moderate degree of design and integration effort.

REQUEST FOR QUOTATION

Request for Quotation: Indust Sarahmouth Automation Retrofit

Project Title: Indust Sarahmouth Automation Retrofit

Project Location: Refinery Zone, New Sarahmouth, ME

Industry: Manufacturing

Complexity: 3/5

Project Goal: Retrofit legacy control systems in a designated refinery zone to improve efficiency, safety, and maintainability using modern PLCs and HMIs. Scope includes electrical infrastructure upgrades, hazardous area classification and equipment selection, PLC/HMI design and implementation, and mechanical system modifications. Refer to attached detailed Scope of Work (SOW) for comprehensive task breakdown.

Scope of Work: Generic Automation Retrofit in a Refinery Zone (Detailed SOW attached)

Qualifications: Minimum 3 years' experience in manufacturing automation retrofits, proven compliance with NEC, NFPA 70E, IEC 60079, and ASME standards (where applicable).

Proposal Requirements:

- 1. **Company Qualifications and Relevant Experience.**
 - 2. **Technical Design:** 1-2 page summary of proposed solution, including system architecture diagrams and key technology choices (PLC/HMI brands).
 - 3. **Detailed Cost Breakdown:** Itemized cost estimate for all tasks, materials, labor, and overhead.
- Evaluation Criteria: Technical Approach (50%), Cost (30%), Experience/Qualifications (20%).

Timeline:

- * RFQ Release: April 9, 2025
- * Questions Due: April 25, 2025
- * Proposals Due: April 30, 2025
- * Project Start: June 2, 2025
- * Project Duration: 7 Months

Contract Type: Time & Materials

Submission: Submit proposals electronically to procurement@manufacturing.com

Contact: [Your Name/Contact Information - Optional]

CONTACT

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TIMELINE

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