REQUEST FOR PROPOSAL (RFP)

Gonzalez, Kemp and Shepherd

PROJECT OVERVIEW

Name: Forge Kimberlyberg Automation Retrofit
Type: Automation Retrofit
Location: Kimberlyberg, NE (Factory Complex)
Industry: Manufacturing
Value: $1,454,327
Complexity: 1/5
Date: April 09, 2025
Disciplines: Mechanical Engineering, Process Engineering
Regulations: ASME Standards, OSHA Regulations

SCOPE OF WORK

Scope of Work: Generic Automation Retrofit Project

Project Goal: Upgrade existing manual processes in a factory complex to improve efficiency and reduce operational costs. This project focuses on a low-complexity automation retrofit, focusing on straightforward replacements and integrations.

1. Mechanical Engineering:

*** Task 1: Replace outdated pneumatic actuators with electric actuators on 5 conveyor belt systems. Each actuator will be replaced with a 24VDC, 100Nm electric actuator (specify model number in final design documentation) compliant with IEC 60947-5-1. The project will include the creation of detailed mechanical drawings for the modifications and the sourcing and installation of all necessary components.**

*** Task 2: Design and fabricate new safety guarding for three robotic welding stations. This will involve the design and fabrication of modular safety guarding made from powder-coated steel (minimum 2mm thickness), to meet OSHA safety standards 1910.212. Design documentation, including assembly drawings and a Bill of Materials (BOM), will be created and provided to the construction team.**

*** Task 3: Upgrade existing lubrication systems for 20 critical machine components. This involves replacing existing grease fittings with centralized automated lubrication systems. The upgrade will specify the use of NLGI #2 grease and require documentation of the lubrication schedule and component-specific maintenance procedures.**

2. Process Engineering:

*** Task 1: Implement a new PLC-based control system for a packaging line. This will involve the programming of a Siemens TIA Portal-based PLC to manage the speed and sequencing of three conveyor belts, a labeling machine, and a palletizer. The system will also incorporate basic HMI (Human Machine Interface) functionality for operator interaction. Functional test and system documentation, including ladder logic diagrams and operation manuals, will be delivered.**

*** Task 2: Develop a new process control strategy for a batch mixing process using existing instrumentation. The updated strategy will improve mixing uniformity and reduce cycle times by 15%. This will involve using existing temperature and pressure sensors and existing PID controllers within the current DCS (Distributed Control System) to achieve the new set points and control logic. The new process will be fully documented and validated, including a detailed process flowchart.**

*** Task 3: Optimize the existing material handling system for raw material delivery to two production lines. This involves re-configuring the existing conveyor system to improve the flow of materials and reduce bottlenecks. The optimization will be documented with updated process flow diagrams and implementation plans for any required mechanical adjustments.**

Cross-Disciplinary Tasks:

*** Task 1: Develop a comprehensive risk assessment encompassing both mechanical and process safety aspects, addressing potential hazards associated with the automated systems. This will involve the collaboration between Mechanical and Process Engineers to identify and mitigate risks according to OSHA regulations and relevant ASME standards. A comprehensive risk assessment report with mitigation strategies will be provided.**

*** Task 2: Conduct a thorough factory acceptance test (FAT) and site acceptance test (SAT) for all new automated systems before the final handover. This will involve the coordinated effort of both engineering disciplines to verify that all systems meet the specified performance requirements and safety standards. Test protocols, results, and reports must be compiled for each stage.**

Complexity Impact: The project is rated as Level 1 complexity due to its limited scope and straightforward nature.

REQUEST FOR QUOTATION

Request for Quotation: Forge Kimberlyberg Automation Retrofit

Project Name: Forge Kimberlyberg Automation Retrofit

Location: Kimberlyberg, NE

Industry: Manufacturing

Date: April 9, 2025

1. Project Overview:

This project involves a low-complexity automation retrofit to upgrade existing manual processes in a factory complex, improving efficiency and reducing operational costs. The work encompasses mechanical and process engineering tasks detailed below.

2. Scope of Work:

The project includes, but is not limited to:

* Mechanical Engineering:
* Replacement of 5 conveyor belt pneumatic actuators with 24VDC, 100Nm electric actuators (compliant with IEC 60947-5-1).
* Design and fabrication of safety guarding for 3 robotic welding stations (meeting OSHA 1910.212).
* Upgrade of existing lubrication systems for 20 critical machine components using centralized automated lubrication systems (NLGI #2 grease).
* Process Engineering:
* Implementation of a Siemens TIA Portal-based PLC control system for a packaging line (including HMI).
* Development of a new process control strategy for a batch mixing process (using existing instrumentation and DCS).
* Optimization of the existing material handling system for raw material delivery to two production lines.
* Cross-Disciplinary:
* Comprehensive risk assessment (OSHA and ASME compliant).
* Factory Acceptance Test (FAT) and Site Acceptance Test (SAT).

3. Requirements:

*** Qualifications: Minimum 3 years of experience in manufacturing automation, demonstrated regulatory compliance (OSHA, ASME).**

*** Proposal: Include detailed technical designs (1-2 pages), a comprehensive cost breakdown, and a project schedule.**

4. Evaluation Criteria:

* Technical Approach (50%)
* Cost (30%)
* Experience & Qualifications (20%)

5. Project Timeline:

*** RFQ Release: April 9, 2025**

*** Questions Due: April 20, 2025**

*** Proposals Due: April 30, 2025**

*** Project Start: May 5, 2025**

*** Project Duration: 10 months**

6. Contract Type: Fixed Price

7. Contact:

Submit proposals electronically to: procurement@manufacturing.com

CONTACT

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TIMELINE

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