

REQUEST FOR PROPOSAL (RFP)

Wilson-Butler

PROJECT OVERVIEW

Name: Indust Robert Automation Retrofit
Type: Automation Retrofit
Location: North Robert, KY (Factory Complex)
Industry: Manufacturing
Value: \$10,444,229
Complexity: 3/5
Date: April 09, 2025
Disciplines: Process Engineering, Mechanical Engineering
Regulations: ISO 9001, ASME Standards

SCOPE OF WORK

Scope of Work: Generic Automation Retrofit Project

Project Goal: To upgrade existing manufacturing processes within a factory complex by implementing automated systems, improving efficiency, and enhancing safety, adhering to ISO 9001 quality management systems and relevant ASME standards.

Project Complexity: 3/5

I. Process Engineering:

- Process Mapping and Optimization:** Develop a detailed process flow diagram (PFD) for the selected production line (Line A, approximately 50 meters long), identifying bottlenecks and areas for automation. This will include detailed timing analysis of current operations and propose optimized process sequences to minimize cycle times and improve throughput, using Lean Manufacturing principles. Deliverables include the PFD, a revised process flow chart, and a quantified improvement report demonstrating potential efficiency gains.
- Automation System Design (Control System):** Design a Programmable Logic Controller (PLC)-based automation system for the palletizing and packaging section of Line A. This system will integrate with existing sensor technology (photoelectric sensors and proximity switches) to control robotic arm operations and conveyor belt movement. The design will adhere to IEC 61131-3 programming standards and incorporate safety interlocks to prevent operational hazards. Deliverables include PLC program code, electrical schematics, and a functional specification document.
- Data Acquisition and Monitoring System:** Design a SCADA (Supervisory Control and Data Acquisition) system to monitor key process parameters (temperature, pressure, flow rates) from three critical machines on Line A. Data will be logged and presented via a user-friendly HMI (Human Machine Interface) which will allow for remote monitoring and alarm management. The system must interface with existing plant infrastructure and comply with relevant industry data communication protocols (e.g., Modbus TCP). Deliverables will be a fully functional SCADA system, including server setup, client software, and user training documentation.

II. Mechanical Engineering:

- Robot Integration and Fixture Design:** Design and fabricate custom fixtures for a 6-axis industrial robot (payload: 100kg, reach: 1.5m) to be integrated into the palletizing area of Line A. The fixtures will securely hold workpieces during the palletizing process. All designs will adhere to relevant safety standards (e.g., ANSI/RIA R15.06) and utilize high-strength steel (ASTM A36) for construction. Deliverables include detailed CAD models, fabrication drawings, and a risk assessment report.
- Conveyor System Modification:** Modify the existing conveyor system (approximately 30 meters long) on Line A to accommodate the automated palletizing system. This includes redesigning conveyor sections (adjusting height and incline) to integrate with the robot and palletizing fixtures. The material handling system will utilize standard conveyor components (rollers, belts, frames) and conform to relevant safety standards (e.g., OSHA guidelines for conveyor systems). Deliverables include updated conveyor system drawings and a bill of materials.

III. Cross-Disciplinary Tasks:

- System Integration and Testing:** Both Process and Mechanical Engineering teams will collaboratively integrate the automated system components, including the PLC, robot, conveyor, and SCADA system. This will involve extensive testing and debugging to ensure seamless operation and compliance with safety protocols. A detailed test plan with documented procedures and results will be created.
- Safety and Risk Assessment Review:** A joint Process and Mechanical Engineering review will be conducted to identify and mitigate any safety risks associated with the retrofitted automation. This will include reviewing the safety features incorporated in the design and developing a comprehensive safety plan with detailed procedures and emergency response protocols.

Complexity Impact Note: The complexity level of 3/5 reflects the need for significant system integration and modifications to existing equipment, but the project does not involve highly specialized or novel technologies.

REQUEST FOR QUOTATION

Request for Quotation: Indust Robert Automation Retrofit

Project Name: Indust Robert Automation Retrofit

Location: Factory Complex, North Robert, KY

Industry: Manufacturing

Date: April 09, 2025

1. Introduction:

This RFQ solicits proposals for an automation retrofit project (complexity 3/5) at our North Robert, KY facility. The goal is to upgrade Line A (approximately 50 meters) improving efficiency, safety, and adhering to ISO 9001 and relevant ASME standards. The project involves process optimization, PLC-based automation, SCADA system implementation, robot integration, conveyor modification, and comprehensive system testing. A detailed scope of work is attached.

2. Scope of Work: (Summary) See attached detailed Scope of Work document outlining Process Engineering (Process Mapping, Automation System Design, Data Acquisition), Mechanical Engineering (Robot Integration, Conveyor Modification), and Cross-Disciplinary tasks (System Integration, Safety Assessment).

3. Qualifications:

- * Minimum 3 years' experience in manufacturing automation projects.
- * Proven track record of regulatory compliance (ISO 9001, relevant safety standards).
- * Demonstrated expertise in PLC programming (IEC 61131-3), SCADA systems, and industrial robotics.

4. Proposal Requirements:

Proposals should include:

- * A detailed technical design (1-2 pages max) addressing all aspects of the Scope of Work.
- * A comprehensive cost breakdown.

5. Evaluation Criteria:

Proposals will be evaluated based on:

- * Technical approach (50%)
- * Cost (30%)
- * Experience and qualifications (20%)

6. Timeline:

- * RFQ Release: April 09, 2025
- * Questions Due: May 02, 2025
- * Proposals Due: May 07, 2025
- * Project Start: May 27, 2025
- * Project Duration: 6 months

7. Contract Type: Time & Materials

8. Contact:

Submit proposals electronically to procurement@manufacturing.com

Attachment: Detailed Scope of Work

CONTACT

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TIMELINE

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