

# REQUEST FOR PROPOSAL (RFP)

House-Stewart

## PROJECT OVERVIEW

Name: Tech Monicaburgh Facility Upgrade  
Type: Facility Upgrade  
Location: Monicaburgh, FM (Refinery Zone)  
Industry: Manufacturing  
Value: \$18,526,552  
Complexity: 3/5  
Date: April 09, 2025  
Disciplines: Electrical Engineering, Mechanical Engineering, Process Engineering  
Regulations: OSHA Regulations, ASME Standards

## SCOPE OF WORK

### Scope of Work: Automated Packaging Line Upgrade

**Project Goal:** Upgrade an existing industrial packaging line to increase throughput by 25% and improve product quality control, while adhering to all relevant safety and industry standards.

**Disciplines:** Electrical Engineering, Mechanical Engineering, Process Engineering

#### 1. Electrical Engineering:

\* **Task 1: Motor Control System Upgrade:** Replace existing motor controllers for conveyor belts and packaging machinery with modern variable frequency drives (VFDs). The VFDs will be selected based on the specific motor horsepower ratings (ranging from 5 HP to 20 HP) and must meet NEMA Type 12 enclosure standards for protection against dust and moisture. Deliverables include a detailed electrical schematic, bill of materials (BOM), and programming code for the VFDs.

\* **Task 2: PLC Programming and HMI Integration:** Program a new PLC (Programmable Logic Controller) system to control the entire packaging line, including sensors, actuators, and the upgraded motor control systems. The HMI (Human-Machine Interface) should provide real-time monitoring and control of the line parameters, including speed, pressure, and temperature, and incorporate fault diagnosis and alarm functionalities. Deliverables will be the PLC program, HMI configuration files, and operational manuals.

#### 2. Mechanical Engineering:

\* **Task 1: Conveyor System Optimization:** Redesign and implement a new section of the conveyor system (approximately 15 meters long) to improve product flow and reduce bottlenecks. The new section will utilize a modular belt conveyor system with 100 mm wide belt, constructed from stainless steel (AISI 304) to meet sanitary requirements. Deliverables include detailed CAD drawings (SolidWorks preferred) and a stress analysis report for the new conveyor section.

\* **Task 2: Safety Guard Redesign:** Upgrade existing safety guarding around the machinery to comply with current OSHA standards and reduce potential pinch points. The new guards will be constructed from anodized aluminum and incorporate interlocked safety switches to prevent operation while open. All designs will include detailed drawings and a safety risk assessment report.

#### 3. Process Engineering:

\* **Task 1: Improved Product Quality Control:** Implement a new in-line inspection system to detect and reject defective products. The system will include a high-resolution camera system with image processing software to identify defects such as missing components or damaged packaging. The system will be integrated into the PLC system to automatically reject defective products and log the results for analysis. Deliverables include system specifications, integration procedures and a performance verification report.

\* **Task 2: Optimize Packaging Process Parameters:** Conduct a thorough process analysis to determine the optimal parameters for the packaging process, including conveyor speed, sealing pressure, and temperature. This will involve experimental testing to establish optimal operating conditions and optimize the overall efficiency and throughput. Deliverables will be an analysis report outlining optimal parameters and justification for proposed changes.

#### Cross-Disciplinary Tasks:

\* **Task 1: System Integration:** All three disciplines will collaborate to ensure seamless integration of the electrical, mechanical, and process improvements. This will involve regular meetings, shared design reviews, and coordinated testing phases to ensure compatibility and functionality of the upgraded line. Regular documentation of design decisions and integration progress should be maintained.

\* **Task 2: Safety and Compliance Review:** A final cross-disciplinary review will be conducted to ensure compliance with all relevant safety regulations (OSHA) and standards (ASME where applicable). This will involve reviewing all design documents, testing procedures, and operational manuals to confirm that all potential hazards have been addressed and that the system operates within regulatory compliance.

**Complexity Impact:** The project's complexity is assessed as a 3/5 due to the need for integration across multiple disciplines, significant system upgrades, and the implementation of new process control elements.

REQUEST FOR QUOTATION

Request for Quotation: Tech Monicaburgh Facility Upgrade

Project: Tech Monicaburgh Facility Upgrade (Automated Packaging Line Upgrade)

Location: Refinery Zone, Monicaburgh, FM

Industry: Manufacturing

Complexity: 3/5

1. Scope of Work: Upgrade existing industrial packaging line to increase throughput by 25% and improve product quality control, adhering to all relevant safety and industry standards (OSHA, ASME). This includes electrical, mechanical, and process engineering upgrades detailed below:

- \* Electrical Engineering: Motor control system upgrade (VFDs, NEMA Type 12), PLC programming & HMI integration.
- \* Mechanical Engineering: Conveyor system optimization (15m, 100mm belt, AISI 304), safety guard redesign to meet OSHA standards.
- \* Process Engineering: In-line inspection system implementation, optimization of packaging process parameters.
- \* Cross-Disciplinary: System integration, safety & compliance review.

2. Qualifications: Minimum 3 years' experience in manufacturing; proven track record of regulatory compliance (OSHA, ASME).

3. Proposal Requirements:

- \* Technical design (1-2 pages), including detailed approach for each discipline.
  - \* Comprehensive cost breakdown.
4. Evaluation Criteria: Technical Approach (50%), Cost (30%), Experience (20%).

5. Timeline:

- \* RFQ Release: April 09, 2025
- \* Questions Due: April 25, 2025
- \* Proposals Due: May 13, 2025
- \* Project Start: May 01, 2025
- \* Project Duration: 18 months

6. Contract Type: Time & Materials

7. Contact: Submit proposals electronically to [procurement@manufacturing.com](mailto:procurement@manufacturing.com)

CONTACT

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TIMELINE

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