

# REQUEST FOR PROPOSAL (RFP)

Green, Copeland and Mccarty

## PROJECT OVERVIEW

Name: Tech Kellyton Emergency Response

Type: Emergency Response

Location: Kellyton, MA (Refinery Zone)

Industry: Manufacturing

Value: \$4,611,123

Complexity: 2/5

Date: April 09, 2025

Disciplines: Electrical Engineering, Process Engineering

Regulations: ISO 9001

## SCOPE OF WORK

### Scope of Work: Industrial Manufacturing Project - Z Facility Upgrade

**Project Goal:** Upgrade the Z facility's existing production line to improve efficiency and reduce downtime by implementing a new automated component insertion system.

**Disciplines:** Electrical Engineering, Process Engineering

#### Complexity: 2/5

##### I. Electrical Engineering:

1. Power System Upgrade: Design and implement a 480V, 3-phase power distribution system for the new automated insertion equipment, including a new 100A main breaker panel and appropriate conduit routing within a 15m x 10m area. This will involve selecting appropriate cable types (e.g., THHN/THWN-2) based on NEC standards and creating detailed electrical drawings with component specifications. The deliverables will include complete as-built drawings and a commissioning checklist.

2. PLC Programming & HMI Design: Develop a Programmable Logic Controller (PLC) program (using Siemens TIA Portal or equivalent) to control the automated insertion system, incorporating safety interlocks and emergency stop functions. Simultaneously, design a user-friendly Human-Machine Interface (HMI) using a Siemens KTP700 or equivalent, displaying real-time operational data and allowing for parameter adjustments. The PLC program will adhere to IEC 61131-3 standards and be thoroughly documented.

##### II. Process Engineering:

1. Material Handling System Design: Design and specify a conveyor system (roller or belt type) to transport components from the existing storage area to the new automated insertion station, covering a distance of 20 meters and handling a maximum throughput of 50 components per minute. This should include detailed CAD drawings specifying materials (e.g., stainless steel for food contact surfaces if applicable), dimensions, and motor specifications. The design should ensure smooth and reliable component transfer.

2. Automated Insertion Station Design: Design the physical layout of the automated insertion station including the robotic arm (specifications to be defined based on component type and size), fixture design for precise component placement, and integration with the conveyor system. This will involve creating detailed 3D CAD models (SolidWorks or equivalent) and ensuring compliance with relevant safety standards (e.g., ANSI/RIA R15.06 for industrial robots). The design must optimize cycle time and minimize potential failure points.

##### III. Cross-Disciplinary Tasks:

1. System Integration: Both electrical and process engineering teams will collaborate to ensure seamless integration of the automated insertion station with the existing production line, addressing potential compatibility issues between the PLC system and existing equipment. This will include defining clear communication protocols and testing for proper functionality.

2. Safety Risk Assessment (SRA): A joint SRA will be conducted to identify and mitigate potential hazards associated with the new automated system. This will involve a review of the designs and processes from both disciplines, leading to the creation of a formal SRA report detailing risk mitigation strategies, following the requirements of relevant safety standards (e.g., OSHA).

**Complexity Impact Note:** The complexity is rated as 2/5 due to the relatively straightforward nature of the upgrades, though successful integration of the new system requires careful coordination between disciplines.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Tech Kellyton Emergency Response

Project Name: Tech Kellyton Emergency Response (Z Facility Upgrade)

Issued: April 9, 2025                      Due: April 29, 2025

Project Location: Kellyton Refinery Zone, Kellyton, MA

Industry: Manufacturing

Project Goal: Upgrade the Z facility's production line to improve efficiency and reduce downtime by implementing a new automated component insertion system. This project involves electrical and process engineering disciplines. (Complexity: 2/5)

Scope of Work: (Detailed scope outlined in attached document ? see Appendix A) Briefly, this includes:

- \* Electrical Engineering: Power system upgrade (480V, 3-phase), PLC programming (Siemens TIA Portal or equivalent), HMI design (Siemens KTP700 or equivalent).
- \* Process Engineering: Material handling system design (20m conveyor), automated insertion station design (including robotic arm integration), 3D CAD modeling.
- \* Cross-Disciplinary: System integration, Safety Risk Assessment (SRA).

Proposal Requirements:

1. **Qualifications:** Demonstrated experience (3+ years) in industrial manufacturing projects, including proven regulatory compliance (OSHA, NEC, ANSI/RIA R15.06 etc.).
2. **Technical Design:** Concise (1-2 page) summary of proposed solutions for each scope item, addressing design choices and rationale.
3. **Cost Breakdown:** Detailed cost estimate, including all labor, materials, and equipment.

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

Timeline:

- \* RFQ Release: April 9, 2025
- \* Questions Due: April 16, 2025
- \* Proposals Due: April 29, 2025
- \* Project Start: May 31, 2025
- \* Project Duration: 11 months

Contract Type: Fixed Price

Submit Proposals To: procurement@manufacturing.com

Appendix A: Detailed Scope of Work (attached separately)

CONTACT

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TIMELINE

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