REQUEST FOR PROPOSAL (RFP)

Martin-Hernandez

PROJECT OVERVIEW

Name: React Jacob Modernization
Type: Modernization
Location: South Jacob, CO (Factory Complex)
Industry: Chemical Processing
Value: $18,313,350
Complexity: 3/5
Date: April 09, 2025
Disciplines: Mechanical Engineering, Environmental Engineering, Piping & Pipeline
Regulations: ISO 14001, NFPA Codes

SCOPE OF WORK

Scope of Work: Chemical Processing Plant Modernization

Project Goal: Modernize existing chemical processing equipment and infrastructure to improve efficiency, safety, and environmental compliance within the factory complex. This project focuses on specific areas requiring upgrade and replacement, not a complete overhaul.

Disciplines: Mechanical Engineering, Environmental Engineering, Piping & Pipeline.

Regulations: ISO 14001 (Environmental Management System), relevant NFPA Codes (e.g., NFPA 30, Flammable and Combustible Liquids).
Mechanical Engineering:
1. Reactor Vessel Upgrade: Replace the existing 5m diameter x 10m high stainless steel (316L) reactor vessel with a new 6m diameter x 12m high reactor vessel constructed from Hastelloy C-276 to handle more corrosive chemicals. This will involve detailed design, including Finite Element Analysis (FEA) to ensure structural integrity under operating pressures of 150 bar and temperatures up to 250°C. Deliverables include detailed engineering drawings, material specifications, and a process hazard analysis (PHA).
2. Pump System Optimization: Upgrade the existing centrifugal pump system handling the process stream to increase throughput by 20%. This includes selection and sizing of high-efficiency pumps, including energy efficiency calculations, to meet increased flow rate and head requirements. Deliverables include pump specifications, piping and instrumentation diagrams (P&IDs), and a detailed cost analysis for improved pump efficiency.
3. Safety System Enhancements: Implement a new advanced process control (APC) system with improved safety features, including pressure relief valves, emergency shutdown (ESD) systems, and improved process monitoring capabilities. This system will be designed to meet the requirements of the relevant NFPA codes and ensure operator safety. Deliverables include software design specifications, system integration plans, and operator training manuals.
Environmental Engineering:
1. Wastewater Treatment Optimization: Redesign the existing wastewater treatment system to improve efficiency and reduce discharge of pollutants, aiming for a 15% reduction in total suspended solids (TSS) and chemical oxygen demand (COD). This involves analyzing existing treatment processes, specifying new treatment units (e.g., advanced oxidation process), and developing a detailed operating procedure compliant with ISO 14001 standards. Deliverables include a detailed process design, environmental impact assessment, and discharge permit application.
2. Emissions Monitoring Upgrade: Install a new continuous emissions monitoring system (CEMS) to monitor and record emissions of key pollutants (e.g., NOx, SOx, VOCs) from the process stacks. The system will meet all relevant regulatory requirements and provide real-time data for improved environmental performance. Deliverables include CEMS specifications, installation plans, calibration procedures, and data logging protocols.

Piping & Pipeline:
1. Process Line Rerouting: Reroute a 6-inch diameter schedule 80 carbon steel process line transporting a highly flammable chemical, relocating it 5 meters away from the existing electrical conduit to improve safety. This will include detailed piping isometric drawings, bill of materials, and stress analysis to ensure structural integrity under operating pressures and temperatures. Compliance with relevant ASME B31.3 standards is required.
2. Material Upgrade in existing pipeline: Replace 200 meters of existing 4-inch diameter schedule 40 carbon steel pipeline handling corrosive chemicals with a corrosion-resistant material (e.g., 316L stainless steel or equivalent). This includes detailed design of the replacement section, including welding specifications, non-destructive testing (NDT) procedures, and pressure testing to ensure integrity.
Cross-Disciplinary Tasks:

1. HAZOP Study: Conduct a comprehensive Hazard and Operability (HAZOP) study involving all disciplines to identify and mitigate potential hazards associated with the modernization project. This will involve a multi-disciplinary team reviewing the process flow diagrams (PFDs) and P&IDs to identify potential hazards and develop mitigation strategies. Deliverables include a HAZOP report detailing identified hazards, recommended mitigation measures, and action items.
2. Integrated Safety and Environmental Management Plan: Develop an integrated safety and environmental management plan that outlines procedures and protocols for safe and environmentally sound execution of the project. The plan will detail safety protocols, environmental monitoring measures, waste management strategies, and emergency response procedures. The plan needs to integrate the requirements of all disciplines and adhere to both NFPA codes and ISO 14001.
Complexity Impact Note: The complexity level (3/5) is justified by the combination of equipment upgrades, system optimization, and regulatory compliance requirements.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): React Jacob Modernization

Project Name: React Jacob Modernization

Project Location: South Jacob, CO

Industry: Chemical Processing

Date: April 09, 2025

1. Project Overview:

This RFQ seeks proposals for the modernization of chemical processing equipment and infrastructure at our South Jacob, CO facility. The project focuses on improving efficiency, safety, and environmental compliance, encompassing mechanical, environmental, and piping/pipeline engineering disciplines. Specific scope details are outlined below. The project complexity is rated 3/5.

2. Scope of Work: (Detailed in attached Appendix A)

This project involves upgrades to a reactor vessel, pump system, safety systems, wastewater treatment, emissions monitoring, process piping, and associated documentation and compliance efforts. Key deliverables include detailed engineering drawings, specifications, HAZOP study, safety and environmental management plan, and compliance with ISO 14001 and relevant NFPA codes (e.g., NFPA 30).

3. Qualifications:

Bidders must demonstrate a minimum of 3 years? experience in chemical processing plant modernization, with proven success in regulatory compliance (ISO 14001, NFPA codes). References are required.

4. Proposal Requirements:

Proposals should include:

* A detailed technical design (1-2 pages maximum) outlining the proposed approach to each scope item.
* 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: April 20, 2025**
* **Proposals Due: May 11, 2025**
* Project Start Date: May 01, 2025
* Project Duration: 14 months

7. Contract Type: Time & Materials

8. Submission:

Submit proposals electronically to: procurement@chemicalprocessing.com

Appendix A: Detailed Scope of Work (See attached document)

Contact: procurement@chemicalprocessing.com

CONTACT

Bobby Hall, Project Director
Phone: 7084870188
Email: bobby@martin-hernandez.com

TIMELINE

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