REQUEST FOR PROPOSAL (RFP)

Duran, Cunningham and Ramirez

PROJECT OVERVIEW

Name: Chem Susanborough Modernization
Type: Modernization
Location: Susanborough, CA (Refinery Zone)
Industry: Chemical Processing
Value: $8,819,075
Complexity: 3/5
Date: April 09, 2025
Disciplines: Process Engineering, Mechanical Engineering
Regulations: ISO 14001, EPA Requirements

SCOPE OF WORK

Scope of Work: Chemical Processing Unit Modernization - Refinery Zone

Project Goal: Modernize an existing chemical processing unit within a refinery zone to improve efficiency, safety, and environmental performance. This project focuses on specific process and mechanical upgrades, excluding major process changes or unit expansion.

Regulations: Compliance with ISO 14001 environmental management system and relevant EPA regulations is mandatory.

Complexity: 3/5
I. Process Engineering:
1. Heat Exchanger Optimization: Analyze the existing heat exchanger network (HEN) for inefficiencies using pinch analysis techniques. Develop a detailed engineering package, including P&IDs and specifications, for replacing two existing shell and tube heat exchangers (dimensions: 2m x 4m each) with more efficient plate-and-frame exchangers, specifying materials compliant with NACE MR0175 for corrosion resistance. Deliverables include process simulations, updated P&IDs, equipment specifications, and cost estimates.
2. Control System Upgrade: Design and specify a modern distributed control system (DCS) upgrade for the unit, incorporating advanced process control (APC) strategies to improve process stability and yield. This includes migrating to a platform with enhanced cybersecurity features (e.g., ISA/IEC 62443 compliance) and providing detailed system architecture diagrams, equipment lists, and programming specifications for the DCS upgrade. The system must be designed to interface seamlessly with existing refinery control infrastructure.
3. Wastewater Treatment Process Enhancement: Evaluate the existing wastewater treatment system and identify opportunities for optimization to meet stricter discharge limits. Prepare a detailed engineering design for upgrading the treatment system by incorporating a new activated sludge process unit with a capacity of 500 m^3/day, specifying equipment (clarifiers, aeration tanks) and control systems. Deliverables include updated PFDs, P&IDs, equipment specifications, and discharge permit application support.
II. Mechanical Engineering:
1. Pump Replacement and Piping Modifications: Design and specify the replacement of three existing centrifugal pumps (flow rate: 100 m^3/hr, head: 50 m each) with high-efficiency pumps, including detailed 3D models and piping isometrics for the new pump installation. Specify materials to meet ASME B31.3 standards and ensure compatibility with the process fluids, including corrosion allowance and appropriate flange ratings. Deliverables include 3D models, piping isometrics, pump specifications, and bill of materials.
2. Structural Steel Reinforcement: Assess the existing structural steel supporting the process equipment for compliance with updated loading requirements. Design and specify the reinforcement of existing support structures using structural steel beams (minimum yield strength 350 MPa) to meet the new seismic and wind load standards (150 mph wind speed), providing detailed calculations, shop drawings, and material specifications. Welding procedures shall meet AWS D1.1.
III. Cross-Disciplinary Tasks:

1. HAZOP Study: Conduct a formal Hazard and Operability (HAZOP) study covering all aspects of the modernization project, jointly executed by process and mechanical engineers. The study will identify and mitigate potential hazards related to the proposed design changes, including those associated with the new equipment and process control systems. Deliverables include a comprehensive HAZOP report and corresponding risk mitigation plan.
2. Integration and Commissioning Plan: Develop a comprehensive commissioning and start-up plan including detailed procedures for integrating the new equipment and control systems with the existing unit. This plan should account for process engineering needs (e.g., specific start-up sequences) and mechanical engineering requirements (e.g., equipment alignment and testing). Deliverables include the integrated commissioning and start-up plan, with pre-commissioning and post-commissioning checklists.
Complexity Impact Note: The project's complexity is moderate (3/5) due to the significant upgrades involved requiring detailed engineering and integration across disciplines.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Chem Susanborough Modernization

Project Name: Chem Susanborough Modernization

Location: Susanborough, CA Refinery Zone

Industry: Chemical Processing

Date Issued: April 09, 2025

Response Due: May 07, 2025

Project Goal: Modernize an existing chemical processing unit to improve efficiency, safety, and environmental performance. This project encompasses process and mechanical upgrades, excluding major process changes or unit expansion. Compliance with ISO 14001 and relevant EPA regulations is mandatory.

Scope of Work (Detailed description attached): The attached document details the scope, including process engineering (heat exchanger optimization, DCS upgrade, wastewater treatment enhancement), mechanical engineering (pump replacement, piping modifications, structural steel reinforcement), and cross-disciplinary tasks (HAZOP study, integration & commissioning plan). Complexity: 3/5.

Qualifications: Minimum 3 years' experience in chemical processing projects, proven track record of regulatory compliance (ISO 14001, EPA).

Proposal Requirements:

1. Technical Proposal (1-2 pages): Summarize your proposed approach, highlighting key technical solutions and addressing the specific requirements outlined in the detailed scope of work.

2. Cost Breakdown: Provide a detailed cost breakdown based on a Time & Materials contract.

Evaluation Criteria:

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

Timeline:

* **RFQ Release: April 09, 2025**
* **Questions Due: April 29, 2025**
* **Proposals Due: May 07, 2025**
* Project Start Date: May 12, 2025
* Project Duration: 6 months

Contact: procurement@chemicalprocessing.com

(Detailed Scope of Work attached)

CONTACT

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TIMELINE

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