REQUEST FOR PROPOSAL (RFP)

Leon-Johnson

PROJECT OVERVIEW

Name: Synth Josephport Capacity Enhancement
Type: Capacity Enhancement
Location: Josephport, NM (Factory Complex)
Industry: Chemical Processing
Value: $17,312,741
Complexity: 3/5
Date: April 09, 2025
Disciplines: Process Engineering, Mechanical Engineering
Regulations: EPA Requirements, NFPA Codes

SCOPE OF WORK

Scope of Work: Chemical Processing Capacity Enhancement Project

Project Goal: Increase production capacity of the existing chemical processing facility by 20% while maintaining regulatory compliance and operational safety.

1. Process Engineering

*** Task 1: Reactor Optimization: Develop and implement process modifications to increase the throughput of the existing 5m diameter x 10m high continuous stirred tank reactor (CSTR) by 15%. This includes detailed process simulations using Aspen Plus software to optimize reaction conditions (temperature, pressure, residence time), incorporating the results into updated Process Flow Diagrams (PFDs) and Piping & Instrumentation Diagrams (P&IDs). Deliverables include revised PFDs, P&IDs, and a comprehensive process simulation report.**

*** Task 2: Heat Exchanger Upgrade: Design and specify a new shell and tube heat exchanger (3m x 2m, 316L stainless steel) to handle the increased heat duty from the reactor optimization. The design should adhere to TEMA standards and include detailed calculations demonstrating compliance with ASME Section VIII, Division 1 pressure vessel code. Deliverables include detailed equipment specifications, heat transfer calculations, and vendor drawings.**

*** Task 3: Waste Stream Management Assessment: Conduct a detailed assessment of existing waste streams to identify potential bottlenecks and opportunities for improvement in waste treatment and disposal practices to comply with EPA regulations for discharge limits. This involves a review of existing permits, mass balance calculations, and identification of potential upgrades or modifications to existing waste treatment units. Deliverables include a report outlining recommendations and supporting calculations.**

2. Mechanical Engineering

*** Task 1: Pump Selection and Installation: Specify and procure two new centrifugal pumps (capacity 500 m^3/hr, head 100m, 316 stainless steel) to handle the increased flow rates resulting from the process modifications. This includes detailed pump curve analysis, vibration analysis, and design of associated piping and supports. Deliverables include pump specifications, 3D CAD models of pump installations, and installation procedures.**

*** Task 2: Structural Support Reinforcement: Assess the structural integrity of the existing platform supporting the reactor and heat exchangers, ensuring capacity for the increased load due to the new equipment. If necessary, design and specify reinforcement using structural steel (A36 steel) to meet a safety factor of 2, conforming to relevant ANSI/AISC standards. Deliverables include structural analysis reports and detailed shop drawings.**

3. Cross-Disciplinary Tasks

*** Task 1: HAZOP Study: Conduct a Hazard and Operability study (HAZOP) for all process and equipment modifications to identify and mitigate potential safety hazards. This requires close collaboration between process and mechanical engineers, resulting in a HAZOP report and implementation plan.**

*** Task 2: P&ID Review and Integration: Conduct a joint review of the updated P&IDs to ensure compatibility between process and mechanical designs, addressing any conflicts or inconsistencies. This requires close collaboration throughout the design process, ensuring a unified and functional design package. Deliverables include a unified, reviewed P&ID set and associated documentation of modifications.**

Complexity Impact: The project complexity is appropriate for a level 3 rating due to the moderate number of modifications and the requirement for integration between process and mechanical systems.

REQUEST FOR QUOTATION

Request for Quotation: Synth Josephport Capacity Enhancement

1. Project Overview:

Synth Josephport, located in Josephport, NM, seeks a qualified engineering firm to execute a capacity enhancement project. This project aims to increase the chemical processing facility's production capacity by 20% while maintaining regulatory compliance and operational safety (Complexity: 3/5). The scope includes process and mechanical engineering modifications, HAZOP study, and detailed documentation. See attached detailed Scope of Work for full specifications.

2. Scope of Work (Summary):

The project encompasses process optimization (reactor, heat exchanger, waste stream management), mechanical upgrades (pump installation, structural reinforcement), and cross-disciplinary tasks (HAZOP study, P&ID review). Specific tasks are detailed in the attached Scope of Work.

3. Qualifications:

Proposers must demonstrate at least 3 years of experience in chemical processing projects, a proven track record of regulatory compliance (EPA, ASME), and proficiency in Aspen Plus software.

4. Proposal Requirements:

Proposals must include:

* Technical Designs: A concise (1-2 page) summary of the proposed technical approach addressing all scope items.

*** Cost Breakdown: A detailed cost breakdown outlining all labor, materials, and other expenses on a time & materials basis.**

5. Evaluation Criteria:

Proposals will be evaluated based on: Technical Approach (50%), Cost (30%), and Experience (20%).

6. Timeline:

*** RFQ Release: April 9, 2025**

*** Questions Due: April 17, 2025**

*** Proposals Due: May 10, 2025**

*** Project Start: May 19, 2025**

* Project Duration: 7 months

7. Contact:

Submit proposals electronically to procurement@chemicalprocessing.com.

Attachments: Detailed Scope of Work.

CONTACT

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TIMELINE

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