REQUEST FOR PROPOSAL (RFP)

Hansen-Mathis

PROJECT OVERVIEW

Name: Synth Elizabethshire Capacity Enhancement
Type: Capacity Enhancement
Location: Elizabethshire, MH (Refinery Zone)
Industry: Chemical Processing
Value: $8,181,330
Complexity: 2/5
Date: April 09, 2025
Disciplines: Piping & Pipeline, Mechanical Engineering, Environmental Engineering
Regulations: NFPA Codes

SCOPE OF WORK

Scope of Work: Refinery Zone Capacity Enhancement Project

Project Goal: Enhance the processing capacity of a specific chemical unit within an existing refinery zone by optimizing existing infrastructure and incorporating minor process improvements. Complexity Level: 2/5
1. Piping & Pipeline Engineering

*** Task 1.1: Existing Line Modification: Modify an existing 6-inch diameter carbon steel process line (Schedule 80) transporting a hydrocarbon mixture (specify exact chemical) to incorporate a new 4-inch diameter branch line for diverting a portion of the flow to the enhanced processing unit. This involves detailed piping isometric drawings, bill of materials specifying ASTM A106 Grade B pipe, and stress analysis compliant with ASME B31.3.**

*** Task 1.2: New Transfer Line Installation: Design and specify a new 8-inch diameter stainless steel (316L) pipeline, approximately 50 meters in length, to transfer a specific chemical (specify chemical and its properties relevant to material selection) from the enhanced processing unit to an existing storage tank. This includes route optimization, hydraulic calculations, and preparation of fabrication and installation drawings adhering to ASME B31.1 standards.**
2. Mechanical Engineering

*** Task 2.1: Pump Upgrade: Upgrade an existing centrifugal pump handling a specific chemical (specify chemical and its properties, e.g., viscosity, corrosiveness) within the process unit to increase flow rate by 15%. This includes pump curve analysis, selection of a suitable replacement pump (including vendor documentation and specifications), and development of detailed installation drawings for the new pump ensuring alignment and vibration mitigation strategies are addressed.**

*** Task 2.2: Heat Exchanger Modification: Modify an existing shell and tube heat exchanger (specify dimensions, type, material) used in the process unit to improve heat transfer efficiency by 10%. This entails thermal hydraulic analysis and the design of new baffles or tubes, with detailed drawings and specifications for fabrication and welding complying with ASME Section VIII, Division 1.**
3. Environmental Engineering

*** Task 3.1: Flare System Assessment: Perform an assessment of the existing flare system to ensure its capacity to handle the increased process output, specifically focusing on potential increases in emissions of specific compounds (list compounds). The assessment will result in a report including recommendations for any necessary upgrades or modifications adhering to relevant NFPA and EPA regulations, including updated flare stack sizing calculations.**

*** Task 3.2: Wastewater Treatment Optimization: Analyze the existing wastewater treatment system to identify potential bottlenecks arising from the capacity increase. Develop recommendations for minor modifications or operational adjustments to maintain regulatory compliance (e.g., permit limits for BOD, COD, TSS) and prepare a report detailing the proposed solutions, including estimated costs and timelines.**
Cross-Disciplinary Tasks:

*** Task 4.1: HAZOP Study: Conduct a Hazard and Operability (HAZOP) study focusing on the modified process line, the new transfer line, and the upgraded pump. The study, to be collaboratively completed by Piping, Mechanical, and Environmental Engineering, will identify potential hazards and develop mitigation strategies, culminating in a HAZOP report including detailed action items with assigned responsibilities and deadlines.**

*** Task 4.2: Detailed Engineering Package Integration: The Piping, Mechanical, and Environmental engineering teams will collaborate to integrate their respective deliverables into a unified detailed engineering package for construction. This will ensure that all modifications and upgrades are compatible and compliant, with a shared model and documentation for construction, commissioning, and start-up.**
Complexity Impact Note: The project's relatively low complexity (2/5) reflects the nature of the upgrades ? mostly modifications and minor additions to existing infrastructure rather than completely new designs.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Synth Elizabethshire Capacity Enhancement
1. Project Overview:
The Synth Elizabethshire Capacity Enhancement project aims to increase the processing capacity of a chemical unit at our Elizabethshire, MH refinery zone. This involves modifying existing infrastructure and incorporating minor process improvements. Complexity: 2/5.

2. Scope of Work: Detailed scope is attached as Appendix A. Key elements include: piping modifications (including new 4" and 8" lines), pump upgrades, heat exchanger modifications, flare system assessment, wastewater treatment optimization, and a HAZOP study.

3. Qualifications:
* Minimum 3 years? experience in chemical processing refinery environments.
* Proven track record of regulatory compliance (NFPA, EPA, ASME).
* Expertise in piping, mechanical, and environmental engineering relevant to refinery operations.
4. Proposal Requirements:
Submit a comprehensive proposal including:
* Technical Design: Concise (1-2 pages) outlining your approach to each task, highlighting key engineering decisions.

*** Cost Breakdown: Detailed cost estimate broken down by task and including all applicable materials, labor, and overhead.**
5. Evaluation Criteria:
Proposals will be evaluated based on:
* Technical Approach (50%)
* Cost (30%)
* Relevant Experience (20%)

6. Timeline:

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

*** Questions Due: April 29, 2025**

*** Proposals Due: May 18, 2025**

*** Project Start: June 8, 2025**

*** Project Duration: 11 months**

*** Contract Type: Fixed Price**

7. Contact:
Submit proposals electronically to procurement@chemicalprocessing.com.

Appendix A: Detailed Scope of Work (Attached Separately) *(This would include the detailed Scope of Work from the prompt)*

CONTACT

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TIMELINE

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