REQUEST FOR PROPOSAL (RFP)

Cain Inc

PROJECT OVERVIEW

Name: Synth Karenmouth Modernization
Type: Modernization
Location: Karenmouth, FL (Refinery Zone)
Industry: Chemical Processing
Value: $2,439,551
Complexity: 2/5
Date: April 09, 2025
Disciplines: Piping & Pipeline, Mechanical Engineering, Environmental Engineering
Regulations: EPA Requirements, NFPA Codes

SCOPE OF WORK

Scope of Work: Chemical Processing Modernization Project ? Refinery Zone

Project Goal: Modernize a section of the refinery's chemical processing area to improve efficiency, safety, and environmental compliance. This involves upgrades to existing piping, mechanical equipment, and improved waste handling systems.
1. Piping & Pipeline Engineering

*** Task 1: Replacement of Existing Process Piping. Replace 500 meters of existing Schedule 80, 4-inch carbon steel process piping transporting sulfuric acid with new Schedule 40, 6-inch stainless steel 316L piping. This includes detailed piping and instrumentation diagrams (P&IDs), isometrics, bill of materials (BOM), and adherence to ASME B31.3 standards. Hydrostatic testing procedures will be documented.**

*** Task 2: Installation of a New Chemical Transfer Line. Design and install a 20-meter-long, 2-inch diameter, PVC transfer line for transferring a non-hazardous, low-pressure cleaning solvent. The design must include detailed specifications for all fittings, valves (ball valves preferred), and supports, with compliance to relevant NFPA codes regarding chemical transfer. Deliverables include detailed shop drawings and a complete as-built drawing set.**
2. Mechanical Engineering

*** Task 1: Upgrade of Existing Centrifugal Pump. Upgrade the existing centrifugal pump (capacity: 500 GPM, head: 150 ft) handling a process stream to a higher efficiency model (minimum 85% efficiency) to reduce energy consumption. This involves specifying a new pump based on performance curves, conducting a vibration analysis of the new pump installation, and providing detailed specifications for pump mounting and alignment. The deliverable is a complete pump specification sheet and installation drawings.**

*** Task 2: Installation of a New Heat Exchanger. Design and install a new shell and tube heat exchanger (surface area: 100 sq ft) for cooling a process stream using cooling water. The design must include material selection based on chemical compatibility (material selection will consider chemical stream composition and temperature), detailed calculations to determine heat transfer efficiency, and adherence to TEMA standards. The deliverable includes detailed design calculations, heat exchanger specifications, and installation drawings.**
3. Environmental Engineering

*** Task 1: Upgrade of Wastewater Treatment System. Upgrade the existing wastewater treatment system to improve efficiency and reduce pollutant discharge according to EPA regulations. This includes reviewing existing discharge permits, evaluating treatment system performance, specifying appropriate pre-treatment system components, and optimizing the system's efficiency. The deliverable is a system upgrade proposal including cost estimates and updated process flow diagrams.**

*** Task 2: Development of a Spill Prevention Control and Countermeasure (SPCC) Plan. Develop and implement an SPCC Plan compliant with EPA regulations for the entire modernized zone, focusing on containment, response, and cleanup procedures for potential chemical spills. This includes mapping potential spill areas, specifying containment materials, and outlining emergency response procedures. The deliverable is an approved SPCC Plan document submitted to relevant regulatory authorities.**
Cross-Disciplinary Tasks:

*** Task 1: HAZOP Study: Conduct a Hazard and Operability (HAZOP) study involving all three disciplines to identify and mitigate potential hazards associated with the upgraded process systems. This will include reviewing P&IDs, equipment specifications, and process procedures to identify potential hazards and develop mitigation strategies, documented in a formal HAZOP report.**

*** Task 2: Integrated Design Review: Hold a joint design review session involving Piping, Mechanical and Environmental Engineers to ensure the integrated design considers all aspects of safety, efficiency, and environmental compliance. The goal is to ensure seamless integration between the upgraded systems. Minutes of the meeting and any resulting design changes will be documented.**
Complexity Impact Note: The project's complexity is manageable due to the clearly defined scope and relatively straightforward upgrades.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Synth Karenmouth Modernization

Project: Synth Karenmouth Modernization ? Chemical Processing Refinery Zone Modernization

Location: Karenmouth, FL

Date Issued: April 9, 2025

Response Due: May 9, 2025
Project Start Date: May 27, 2025

Project Duration: 5 months

Contract Type: Fixed Price

Contact: procurement@chemicalprocessing.com
1. Project Overview:
This RFQ seeks proposals for the modernization of a section of the Karenmouth Refinery's chemical processing area. The project encompasses upgrades to piping, mechanical equipment, and wastewater treatment, focusing on improved efficiency, safety, and environmental compliance. Detailed scope of work is attached. (See attached document detailing Scope of Work as described in the prompt).
2. Required Qualifications:
* Minimum 3 years of experience in chemical processing plant modernization projects.
* Proven track record of regulatory compliance (EPA, ASME, NFPA, TEMA).
* Demonstrated expertise in piping, mechanical, and environmental engineering within the chemical processing industry.
3. Proposal Requirements:
Proposals must include:
* Technical Design: A concise (1-2 page) summary of your proposed design approach, addressing all aspects of the scope of work, including detailed technical specifications, drawings where applicable, and justification for material selection.

*** Cost Breakdown: A comprehensive and itemized cost breakdown for all aspects of the project, including labor, materials, equipment, and permitting.**
* Project Schedule: A proposed project schedule outlining key milestones and deliverables.
4. Evaluation Criteria:
Proposals will be evaluated based on the following criteria:
* Technical Approach (50%)
* Cost (30%)
* Relevant Experience (20%)

5. Timeline:

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

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

*** Proposals Due: May 9, 2025**

*** Project Start: May 27, 2025**

Complexity Rating: 2/5

Note: A detailed scope of work is provided separately. All proposals must demonstrate a clear understanding of the project requirements and relevant regulations.

CONTACT

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TIMELINE

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