REQUEST FOR PROPOSAL (RFP)

Thomas, Cross and Jackson

PROJECT OVERVIEW

Name: Synth Kimfurt Capacity Enhancement
Type: Capacity Enhancement
Location: Kimfurt, MO (Refinery Zone)
Industry: Chemical Processing
Value: $1,643,918
Complexity: 2/5
Date: April 09, 2025
Disciplines: Environmental Engineering, Mechanical Engineering, Piping & Pipeline
Regulations: EPA Requirements

SCOPE OF WORK

Scope of Work: Refinery Zone Chemical Processing Capacity Enhancement

Project Goal: Increase processing capacity of existing chemical processing unit within the refinery zone by 15%, while maintaining regulatory compliance and operational safety.

1. Environmental Engineering

*** Task 1: Wastewater Treatment Upgrade: Design and implement modifications to the existing wastewater treatment system to handle the increased effluent volume resulting from the capacity enhancement. This includes evaluating current treatment capacity, proposing upgrades to meet EPA discharge limits (e.g., BOD, COD, TSS), and producing detailed engineering drawings and specifications for all proposed modifications. The design must adhere to all relevant EPA regulations and local permitting requirements.**

*** Task 2: Air Emission Monitoring and Control Enhancement: Conduct a comprehensive air emission inventory of the existing processing unit and identify potential increases in emissions due to the capacity upgrade. Develop and implement a plan to mitigate any potential exceedances of applicable EPA emission limits, including selection and specification of appropriate control technologies (e.g., scrubbers, thermal oxidizers) and instrumentation for continuous monitoring. Deliverables include an updated air emission permit application and a comprehensive monitoring plan.**

2. Mechanical Engineering

*** Task 1: Heat Exchanger Upgrade: Design and specify the replacement of two existing heat exchangers (dimensions: 2m x 1m x 0.5m each) within the chemical processing unit with higher capacity units to accommodate the increased throughput. The new exchangers will be constructed from 316L stainless steel to resist corrosion and meet ASME Section VIII, Division 1 standards. Deliverables include detailed equipment specifications, purchase requisitions, and installation drawings.**

*** Task 2: Pump Capacity Increase: Assess the existing pump system capacity and identify pumps requiring upgrades to handle the increased flow rate. Design and specify the replacement or addition of pumps to accommodate the increased flow rate, ensuring sufficient NPSH and maintaining consistent pressure throughout the process. The selected pumps must meet API 610 standards and be compatible with the processed chemicals. Deliverables include pump specifications, hydraulic calculations, and piping isometrics.**

3. Piping & Pipeline

*** Task 1: Process Piping Rerouting: Design and implement the rerouting of approximately 50 meters of existing 6-inch diameter process piping (Schedule 80 carbon steel) to accommodate the installation of the new heat exchangers. The rerouting will adhere to ASME B31.3 standards for process piping. Deliverables include detailed piping and instrumentation diagrams (P&IDs), isometrics, material take-offs, and support calculations.**

*** Task 2: Instrumentation and Control Piping Installation: Design and install new instrumentation and control piping (stainless steel, schedule 40) for the upgraded heat exchangers and pumps. This includes the installation of temperature sensors, pressure transmitters, and flow meters, as well as appropriate instrumentation tubing and fittings. All installations must meet relevant industry standards (ISA, etc.) and be traceable via documented as-built drawings.**

Cross-Disciplinary Tasks:

*** Task 1: HAZOP Study: Conduct a Hazard and Operability (HAZOP) study to identify potential hazards and operability issues associated with the capacity enhancement project across all disciplines. This will involve participation from environmental, mechanical, and piping engineers to ensure a comprehensive risk assessment and the development of mitigation strategies. The deliverables will include a HAZOP report with identified hazards, recommended mitigations, and action items.**

*** Task 2: Integrated Commissioning Plan: Develop a comprehensive commissioning plan that integrates the activities of all three disciplines to ensure a smooth and efficient start-up of the upgraded processing unit. This plan will include detailed schedules, checklists, and procedures for testing and commissioning each aspect of the system, taking into account the environmental and safety considerations.**

Complexity Impact Note: The project complexity is considered moderate (2/5), primarily due to the manageable scale of modifications and the absence of novel technologies.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Synth Kimfurt Capacity Enhancement

Project: Synth Kimfurt Capacity Enhancement Project ? Refinery Zone, Kimfurt, MO

Issued by: Chemical Processing Company

Date: April 09, 2025

1. Project Overview: This RFQ seeks proposals for a capacity enhancement project at our Kimfurt refinery. The goal is to increase the processing capacity of an existing chemical processing unit by 15% while maintaining regulatory compliance and operational safety. The project scope involves environmental, mechanical, and piping modifications (detailed below). Project complexity is rated 2/5.

2. Scope of Work: The project encompasses:

* Environmental Engineering: Wastewater treatment upgrade to meet EPA discharge limits (BOD, COD, TSS); air emission monitoring and control enhancement, including permit application updates.
* Mechanical Engineering: Replacement of two heat exchangers (2m x 1m x 0.5m each) with higher capacity 316L stainless steel units (ASME Section VIII, Division 1); pump capacity increase to meet increased flow rate (API 610 compliant).
* Piping & Pipeline: Rerouting of ~50 meters of 6-inch Schedule 80 carbon steel process piping (ASME B31.3); installation of new instrumentation and control piping (stainless steel, Schedule 40) for upgraded equipment.
* Cross-Disciplinary Tasks: HAZOP study; Integrated Commissioning Plan.

3. Qualifications: Bidders must demonstrate 3+ years of experience in chemical processing projects, including a proven track record of regulatory compliance (EPA).

4. Proposal Requirements: Proposals should include:

* A concise technical design (1-2 pages) addressing the scope of work.
* A detailed cost breakdown.

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

6. Schedule:

*** RFQ Release: April 09, 2025**

*** Questions Due: April 21, 2025**

*** Proposals Due: May 02, 2025**

*** Project Start: June 07, 2025**

*** Project Duration: 11 months**

7. Contract Type: Fixed Price

8. Submit Proposals To: procurement@chemicalprocessing.com

CONTACT

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TIMELINE

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