

REQUEST FOR PROPOSAL (RFP)

Ball-Johnson

PROJECT OVERVIEW

Name: Synth Sandyton Modernization

Type: Modernization

Location: Sandyton, DE (Refinery Zone)

Industry: Chemical Processing

Value: \$9,240,620

Complexity: 2/5

Date: April 09, 2025

Disciplines: Piping & Pipeline, Process Engineering, Environmental Engineering

Regulations: ISO 14001

SCOPE OF WORK

Scope of Work: Refinery Zone Chemical Processing Modernization

Project Goal: Modernize a section of the refinery's chemical processing area to improve efficiency, safety, and environmental performance. This involves upgrading existing equipment and pipelines while adhering to relevant safety and environmental regulations.

Discipline: Piping & Pipeline

- Pipeline Rerouting & Upgrade:** Relocate an existing 500-meter section of 6-inch diameter carbon steel process piping carrying ethylene glycol (EG) from Unit A to Unit B. The new route will utilize schedule 80 pipe conforming to ASME B31.3 and incorporate a new isolation valve with a capacity of 1500 psi. Deliverables include isometric drawings, material take-off, and hydraulic calculations demonstrating acceptable pressure drop.
- Installation of New Pressure Relief Valves (PRVs):** Install three new 2-inch PRVs on the existing propylene feed line (DN50, Sch 40 carbon steel) to enhance process safety and comply with API 521. The PRVs will be selected based on process conditions and will require sizing calculations and PSV discharge piping design. Deliverables include P&ID updates, valve specifications, and safety documentation.
- Corrosion Mitigation Study and Implementation:** Conduct a corrosion risk assessment of the existing 100m section of the existing 4-inch stainless steel acid transfer line using NACE SP0177 standard. Based on the assessment, implement a mitigation strategy such as implementing cathodic protection or applying a suitable coating system. Deliverables include a detailed corrosion report, proposed mitigation plan, and updated piping specifications.

Discipline: Process Engineering

- Optimization of Existing Reaction Vessel:** Optimize the operational parameters (temperature, pressure, residence time) of an existing 5m³ jacketed reactor currently used in the alkylation process, targeting a 15% increase in yield using process simulation software (Aspen Plus). Deliverables include a process simulation report, updated process flow diagram (PFD), and detailed operating instructions.
- Design & Specification of a New Heat Exchanger:** Design and specify a new shell and tube heat exchanger (1000 kW capacity) for cooling the effluent stream from the new reaction vessel using appropriate materials for chemical compatibility (e.g., 316L stainless steel) and adhering to TEMA standards. Deliverables include heat and mass balance calculations, equipment specifications, and vendor drawings.

Discipline: Environmental Engineering

- Wastewater Treatment Upgrade:** Assess the existing wastewater treatment system for compliance with ISO 14001 guidelines and local environmental regulations. Identify improvements needed to reduce effluent concentrations of specific chemical pollutants (e.g., reducing total suspended solids by 10%). Deliverables include an environmental impact assessment, detailed upgrade recommendations, and permit application support documentation.

Cross-Disciplinary Tasks:

1. HAZOP Study: Conduct a Hazard and Operability (HAZOP) study across all upgraded systems, involving representatives from Piping & Pipeline, Process Engineering, and Environmental Engineering to identify and mitigate potential hazards. This study will review the safety aspects of the entire upgraded processing section and create a detailed risk register.

2. Integrated Commissioning Plan: Develop and implement a comprehensive commissioning plan covering all aspects of the project, including pre-commissioning inspections, start-up procedures, performance testing, and handover to operations. This plan will necessitate close collaboration across all three disciplines and must ensure seamless integration of new and upgraded equipment.

Complexity Impact Note: The project complexity is appropriately rated at a 2/5 due to the largely incremental nature of the upgrades.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Synth Sandyton Modernization

Project: Synth Sandyton Modernization ? Refinery Zone Chemical Processing Upgrade

Location: Sandyton, DE

Industry: Chemical Processing

Issued: April 9, 2025

Due: April 30, 2025

Project Goal: Modernize a section of the Sandyton refinery's chemical processing area to improve efficiency, safety, and environmental performance. This involves upgrading existing equipment and pipelines, adhering to all relevant safety and environmental regulations (e.g., ASME B31.3, API 521, NACE SP0177, ISO 14001).

Scope of Work: Detailed scope outlined in the attached Appendix. Key elements include: pipeline rerouting and upgrades, installation of new pressure relief valves, corrosion mitigation, reaction vessel optimization, design of a new heat exchanger, wastewater treatment upgrade, HAZOP study, and integrated commissioning. (See Appendix for full details).

Qualifications: Minimum 3 years' experience in chemical processing; proven track record of regulatory compliance.

Proposal Requirements:

1. Technical Design: Concise 1-2 page technical approach outlining your proposed solutions, including methodology and key personnel.

2. Cost Breakdown: Detailed and itemized cost estimate.

Evaluation Criteria: Technical Approach (50%), Cost (30%), Relevant Experience (20%).

Timeline:

- * **RFQ Release:** April 9, 2025
- * **Questions Due:** April 22, 2025
- * **Proposals Due:** April 30, 2025
- * **Project Start:** June 3, 2025
- * **Project Duration:** 5 months

Contract Type: Fixed Price

Submission: Electronic submissions to procurement@chemicalprocessing.com

Appendix: (Attached ? Detailed Scope of Work as described in the prompt)

Contact: [Add Contact Name and Phone Number Here]

CONTACT

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TIMELINE

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