

# REQUEST FOR PROPOSAL (RFP)

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## PROJECT OVERVIEW

Name: Refine Christopherside Safety Compliance

Type: Safety Compliance

Location: Christopherside, AR (Industrial Park)

Industry: Oil & Gas

Value: \$8,864,914

Complexity: 2/5

Date: April 09, 2025

Disciplines: Process Engineering, Instrumentation & Controls

Regulations: EPA Requirements, OSHA Regulations

## SCOPE OF WORK

### Scope of Work: Oil & Gas Facility ? Process Optimization Project

**Project Goal:** Optimize the existing crude oil pre-treatment process to improve efficiency and reduce flaring, while maintaining compliance with EPA and OSHA regulations.

#### 1. Process Engineering

\* **Task 1: Crude Oil Preheat Optimization:** Develop a process flow diagram (PFD) and piping and instrumentation diagram (P&ID) for integrating a new 500kW electric preheat system to the existing crude feed line. This system will improve crude viscosity, reducing energy consumption in the downstream distillation column. Deliverables include revised PFD and P&ID compliant with ISA standards, heat and mass balance calculations, and a detailed equipment specification for the preheater (including material selection: 316L stainless steel, temperature rating: 350°C).

\* **Task 2: Flare Minimization Study:** Conduct a process simulation study using Aspen Plus to evaluate the impact of the preheat system on flare gas production. This study will assess the reduction in volatile organic compound (VOC) emissions and recommend adjustments to the existing control logic to minimize flaring. Deliverables include a detailed simulation report, including sensitivity analysis, and recommendations for process modifications with updated flare header sizing calculations and material selection (Carbon Steel API 5L Grade B).

\* **Task 3: Wastewater Treatment Enhancement:** Design a small-scale, 500 bbl/day activated sludge wastewater treatment unit for the processing plant's oily wastewater stream. This will include sizing and specifying all equipment (clarifier, aeration basin, etc.) and developing a detailed P&ID for the new unit, meeting EPA discharge permit requirements and selecting appropriate materials to withstand corrosive wastewater. Deliverables include a complete design package with equipment specifications, P&ID, and a detailed operational strategy.

#### 2. Instrumentation & Controls

\* **Task 1: Advanced Process Control (APC) Implementation:** Design and implement a new APC system for the crude distillation column, utilizing a distributed control system (DCS) platform (e.g., Emerson DeltaV or Rockwell Automation PlantPAx). The system will include advanced control algorithms for optimizing column operation and minimizing energy consumption. This will involve detailed loop drawings, instrument specifications (including HART communication protocols), and testing procedures compliant with ISA-84 standards.

\* **Task 2: Safety Instrumented System (SIS) Enhancement:** Upgrade the existing SIS for the preheat system and the new wastewater treatment unit, ensuring compliance with IEC 61511 standards. This involves hazard and operability (HAZOP) studies and specifying safety instrumented functions (SIFs), including the selection of appropriate safety relays and pressure/temperature sensors with SIL 2 rating and detailed logic diagrams. Deliverables include a safety requirement specification (SRS) document, functional safety assessment (FSA), and detailed SIS architecture diagrams.

#### Cross-Disciplinary Tasks

\* **Task 1: Interface Definition Document (IDD):** Process and Instrumentation & Controls engineers will jointly develop a comprehensive IDD outlining the integration points between the process modifications (Task 1 and 2 of Process Engineering) and the new control system and SIS (Task 1 and 2 of Instrumentation & Controls). This ensures seamless operation and data exchange between the process equipment and control system.

\* **Task 2: Pre-commissioning and Commissioning Plan:** Both disciplines will collaborate on the development of a detailed pre-commissioning and commissioning plan, including testing procedures, safety protocols, and handover documentation. This will ensure safe and efficient start-up of the modified process and control systems and meet OSHA requirements for process safety.

**Complexity Impact Note:** The project's complexity is rated as 2/5 due to the incremental nature of the modifications and the existing infrastructure's relatively good condition.

REQUEST FOR QUOTATION

Request for Quotation: Refine Christopherside Safety Compliance

Project: Optimization of Crude Oil Pre-treatment Process at Christopherside Industrial Park, AR.

Issued: April 9, 2025

Due: May 14, 2025

Client: [Client Name]

Email: [procurement@oil&gas.com](mailto:procurement@oil&gas.com)

Project Description: This project aims to optimize the existing crude oil pre-treatment process to improve efficiency, reduce flaring, and ensure compliance with EPA and OSHA regulations. The scope encompasses process engineering modifications (preheat system, flare minimization, wastewater treatment enhancement) and instrumentation & controls upgrades (APC implementation, SIS enhancement). See attached detailed Scope of Work for specifics. (Complexity: 2/5)

Scope of Work Summary: The project involves designing and implementing a 500kW electric preheat system, conducting a flare minimization study, designing a 500 bbl/day wastewater treatment unit, implementing an advanced process control system, and upgrading the existing safety instrumented system. Detailed deliverables are specified in the attached Scope of Work.

Qualifications:

- \* Minimum 3 years of experience in the Oil & Gas industry.
- \* Proven track record of successful regulatory compliance projects (EPA, OSHA).

Proposal Requirements:

1. Company qualifications and relevant experience.
2. Technical design proposal (1-2 pages maximum) addressing all aspects of the Scope of Work.
3. Detailed cost breakdown.

Evaluation Criteria:

- \* Technical Approach (50%)
- \* Cost (30%)
- \* Experience/Qualifications (20%)

Timeline:

- \* RFQ Release: April 9, 2025
- \* Questions Due: April 26, 2025
- \* Proposals Due: May 14, 2025
- \* Project Start: June 6, 2025
- \* Project Duration: 5 months

Contract Type: Fixed Price

Attachment: Detailed Scope of Work

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TIMELINE

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