

Section 1: Information to Bidders

A. Introduction

Sui Southern Gas Company Limited (SSGC) is a Public Listed Large-Scale Company (LSC) and is Pakistan's leading integrated gas Company. The company is engaged in the business of transmission and distribution of natural gas besides installation of high-pressure transmission and low-pressure distribution systems.

SSGC owns and operates a full-scale vertically integrated facility for the manufacturing of natural gas meters for residential application. SSGC's 'Meter Manufacturing Plant' produces two models of natural gas meters i.e. G-1.6 and G-4 with a cumulative annual production capacity exceeding 1 million units.

B. Background

Following the successful execution of the Pilot Project for Automation & Control of 50 Town Border Stations (TBSs) in the Karachi region, the project has completely revolutionized operations by integrating advanced technology, yielding benefits in gas load management, real-time pressure regulation and 24/7 round the clock operational control.

Building on this success, an expansion project Phase-02 for the Automation and Control Project is in process that includes 47 additional TBSs and 16 high-volume Sales Metering Stations (SMSs) across Sindh and Baluchistan. This expansion incorporates enhanced technological features, more resilient infrastructure and stringent cybersecurity compliance (IEC-62443 SL3) to ensure optimized, robust, sustained and secure operations.

Furthermore, Automation and Control System (phase -02) will facilitate real-time pressures regulation, shut-off, improve load management. Radio Frequency - RF communication, Centralized Control Room (CCR) and implementation of OT program IEC 62443 Security Level 3 compliance, will adhere to ISO 9001 and ISA/ IEC 62443 standards. Design and engineering considerations shall ensure maintenance ease, operational reliability and enhanced cybersecurity in alignment with SSGC's strategic goals for secure and efficient gas supplies

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Section 2: Scope of Work

The purpose of this Scope of Work (SOW) is to outline the responsibilities and deliverables of the HAZOP Chairperson for the Automation and Control System Project for minimum (02) two days session. This role is essential for systematically identifying, assessing, and mitigating potential hazards throughout the project's lifecycle. The HAZOP Chairperson will lead a structured study aimed at enhancing the safety, reliability, and regulatory compliance of the automation and control systems. This work is crucial for safeguarding operational integrity and minimizing risks associated with system deployment. The scope includes, but is not limited to the following:

A. Preparation Phase

- i. Review project documentation, including system design specifications, operational procedures, and relevant safety standards.
- ii. Develop a detailed agenda and scope for the HAZOP study session, ensuring alignment with project objectives.
- iii. Assemble a multidisciplinary team of stakeholders, including engineering, operations, and safety personnel, to participate in the HAZOP sessions.
- iv. Conduct pre-study meetings to align the team on objectives, scope boundaries (e.g., focusing on system integration, failover mechanisms, and human factors), and compliance requirements with standards and best industry practices.
- v. Review of P&IDs, PFDs, and Control Logic/Cause & Effect Diagrams.
- vi. Review Process-side HAZOP (Pressure, Temperature, Gas Flow Rate, Regulations and Shutdown at Town Border Stations (TBSs) and Sales Metering Stations SMSs).
- vii. Review Automation side (Signal failure, communication with flow computers and EVCs, Power loss, Cyber-security nodes, and Valve fail-safe positions).

B. HAZOP Study Execution

- i. To identify potential hazards and deviations following the best HAZOP practices considering business objective and operation of SMS/TBSs.
- ii. Utilize established HAZOP methodologies and tools to analyze risks associated with identified hazards effectively.

C. Risk Assessment Recommendation Phase

- i. Evaluate the severity and likelihood of identified risks, categorizing them according to risk management priorities.
- ii. Propose suitable risk mitigation strategies, including engineering controls, administrative measures, and procedural changes.
- iii. Document discussions, findings, and recommendations in a structured manner during the HAZOP sessions.

- iv. Verify that recommendations align with project goals, regulatory standards and best practices for industrial automation projects, cost benefit and risk management, including scalability for future expansions like additional TBSs or SMSs.

D. Reporting

- i. Develop a comprehensive HAZOP report that includes an overview of the study, identified hazards, risk assessments, and recommended actions and appendices with supporting data (e.g., simulation models etc.,)
- ii. Ensure the report is clear, organized, and accessible to all stakeholders, providing actionable insights for implementation.
- iii. Provide briefings to project teams on HAZOP outcomes
- iv. A comprehensive HAZOP Report with a Risk Matrix and Action Items (Draft within 07 days).

E. Follow-Up

- i. Assist in the implementation of recommended actions, where applicable, to mitigate identified risks.
- ii. Remain available for consultation and support as the project progresses, addressing any emerging safety concerns related to the automation and control system.

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Section 3: Qualification/ Eligibility Criteria

Firm Eligibility

- Valid National Taxation Number (NTN) from the Federal Board of Revenue (FBR).
- Valid Sindh Tax Number (STN) from the Sindh Revenue Board (SRB).
- The firm should possess a minimum of 03 years of experience in Process Hazard Analysis.
- Documented project history with at least 03 completed HAZOP/ PHA studies in the Oil & Gas, Energy, or Process Sector

Chairman HAZOP Eligibility

- A Bachelor's degree in Engineering, with a minimum of 03 completed projects serving as Chairman for HAZOP/PHA studies.
- 01-02 years of relevant experience in Automation, Electronics, or Instrumentation will be preferred but not mandatory as a HAZOP/PHA Chairman role

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Bill of Quantities

Please note:

Bidders shall carefully read and fully understand Scope of Work. The item descriptions in this BOQ are brief headings only, and the quoted rates shall be deemed to include all essential scope of work, as described in Scope of Work, even if not explicitly mentioned in the BOQ item description.

Item No.	Description	Unit of Measurement	Unit Rate	Amount (PKR)
A	HAZOP Session Facilitation- Leading the 02-day session in Karachi as Chairman/Facilitator. To conduct a HAZOP study for Automation & Control System Project. The Chairperson will be responsible for identifying hazards and mitigating risks associated with operations. Upon completion, a detailed report summarizing the findings and recommendations will be submitted within 07 days.	01 Job		
Total Amount (Excluded Tax)				

Notes:

- i) The quoted unit rate is a lump-sum fee for the complete two-day HAZOP session, including all preparatory work and review of documentation.
- ii) Rates shall be inclusive of all professional fees, secretarial/scribe support, reporting costs, travel, logistics etc., excluding the applicable Taxes

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