

Job Description – Process Engineer

1.0 Purpose:

Job Descriptions are part of Company Quality Policies and Procedures.

This standard defines the tasks and responsibilities of the Process Engineer for the Business Unit. The standard is valid for all employees associated with this role.

2.0 General:

Prepare process design and experience to support Proposals and Projects for the Business Unit.

3.0 Tasks and Responsibilities:

The Process Engineer shall be responsible for, but not limited to, the following:

- Provide information throughout the various proposal, engineering and construction phases to the proposal and project teams with regard to all aspects of Process Engineering.
- Provide expertise in the areas of Linde Process Plants' technology
- Perform a thorough review of customer's inquiry and/or Request for Process Design information
- Perform process simulations and develop Process Flow Diagrams (PFD's) and Heat and Material Balances
- Perform an Exergy analysis of the process design and compare it to previous Linde or published designs to determine if the process design is competitive
- Perform Capital, Utility, and Product Value Estimates and then prepare a Project Evaluation to allow determination of the viability of the project.
- Develop sizing information for Process Equipment (compressors, pumps, heat exchangers, distillation columns, separators, reactors, etc.) and provide information in the form of equipment data sheets
- Prepare material selection designation (diagram) for plant requirements
- Develop innovative ideas and alternatives to be cost competitive with Proposals
- Provided technical expertise to the project execution team
- Assist in developing plant control philosophy
- Calculate plant recoveries and utility requirements. Recommend Guarantee Levels
- Support the Account Manager (when requested) in discussion of technical details with the Business Development team and/or client
- In cooperation with the Plant Engineer, develop:
 - Line Sizes and Definition of Line Sizes
 - Hydraulic Calculations:

- Check the critical line routing
- Necessary calculations for thermosiphon reboilers
- Necessary calculations for pump NPSH requirements.
- Battery Limit Lists including the line lists, equipment list, and initial instrument list.
- Logic diagrams and cause & effect charts for the facility.
- Design and sizing of safety relief valves.
- Flare system analysis and final reporting including the sizing of the relief valve inlet and outlet line sizing.
- Definition of mechanical design conditions for equipment and piping components.
- Operating Manual and Pre-Commissioning and Commissioning Plans
- Periodically participate in HAZOP studies
- Assist in Plant start-up and performance testing, as required

4.0 Education and Experience Required:

- B.S. in Chemical Engineering, minimum
- Five (5) years industry experience preferred
- Experience in process simulation required
- Experience in project engineering or operations is desirable

5.0 Skills Required:

- Strong working knowledge of Process simulators, UniSim, HYSYS, VMGsim, etc.
- Intermediate to advanced level skills with Microsoft Office software and Windows Operating system. EXCEL skills required.
- Able to work with minimal supervision.
- Able to prioritize workload and meet deadlines.
- Detail orientated.
- Effective analytical and problems solving skills.
- Creative and innovative.
- Ability to communicate effectively process concepts to both in-house clients and Linde Process Plants clients.

6.0 Travel Percentage:

- Periodic – 20% at peak times.

7.0 Physical Requirements:

- While performing the duties of this job, the employee is regularly required to talk or hear. The employee frequently is required to sit. The employee is occasionally required to stand; walk; use hands to finger, handle or feel; reach with hands and arms; climb or balance; and stoop, kneel, crouch, or crawl. The employee must frequently lift and/or move up to 20 pounds and occasionally lift and or move up to 75 pounds. Specific vision abilities required by this job include close vision, color vision, and ability to adjust focus. The employee must frequently climb to heights of 200 feet.

8.0 Reports To:

- Director – Process and Plant Engineering

9.0 FLSA Status:

- Exempt

8.0 Direct Reports:

- None

9.0 Salary Grade:

- Range based on experience and skill level: 09–11

10.0 Approval:

- Manager: _____ Date: _____
- Employee: _____ Date: _____