



## **Job Description: Process Engineer and/or Manager**

The role of Process Engineer and/or Manager within TRI will be dynamic and include both office and field responsibilities. This comprises process engineering, process modeling, commercial/pilot plant support and project management functions.

### **PROCESS ENGINEERING**

Undertake process engineering functions associated with the pilot plant, bench scale unit, engineering studies and commercial plants:

- Prepare flow sheets
- Preparation of mass and energy balances
- Prepare P&ID's
- Prepare process datasheets
- Prepare process descriptions
- Prepare control functional descriptions
- Prepare operating manuals
- Participate in Hazop reviews
- Participate in troubleshooting and pre- and post-trial equipment inspections
- Participate in developing standard operating procedures and QA/QC
- Be an active member of the TRI commissioning and start-up team for new facilities
- Support selection, procurement and testing of catalysts, sorbents and membranes
- Participate in and contribute to TRI's technology improvement, process intensification and innovation

### **PROCESS MODELING**

Responsibility will include the following:

- Continue the optimization of the TRI ASPEN Model – this includes continual improvement of the modules for each unit operation for the pilot and commercial plant models. Work with the TRI engineers, external consultants and ASPEN Engineers to improve and validate these modules with operating data generated from bench scale units and pilot and commercial plants.
- Generate fully integrated ASPEN models with formatted output for commercial applications, including higher level models to support business development.
- Lead the inhouse setup of CFPD (computational particle fluid dynamic) model with TRI engineers using the Barracuda software. This will include setting up the hardware and software in conjunction with Barracuda, transferring the current TRI models from Barracuda to the in-house system, running and analyzing the models, working with Barracuda to validate the models with new operating data from pilot and commercial plants. Generate new CFPD models to test and continuously improve the TRI Core technology.



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- Generate Excel based models to support other TRI departments

#### COMMERCIAL/PILOT PLANT SUPPORT

Support commercial, pilot plant and bench scale unit efforts through on-site supervision of activities which include the following:

- Process/Equipment design and documentation
- Pre and Post Trial Equipment Inspections
- Operator training and supervision
- Trial planning, reporting and supervision
- Data reduction and M&E balance analysis, reporting and interpretation
- Be an onsite representative of TRI and interface with clients
- Other on-site requirements, such as trouble shooting and expediting

#### PROJECT MANAGEMENT

Manage R&D projects:

- Develop budgets and schedules
- Manage resources, monitor performance and schedule, control costs and generate reports

Proficiency in company software such as 2D/3D AutoCAD Inventor, MS Project, Barracuda, JMP data analysis, Aspen Plus process simulation, Stage Gate process and MS Office is desired to support ongoing efforts.

#### QUALIFICATIONS

Minimum qualifications include a Bachelor's degree in Chemical engineering, 7 plus years of relevant industry experience in process engineering and modeling, a working knowledge of ASPEN simulation and Microsoft Office software. An advanced degree is preferred. The applicant must be either a US citizen or a permanent resident and have excellent problem solving and modeling skills and oral and written communication skills.