|  |  |  |
| --- | --- | --- |
| **Certifications and Skills** |  | **Qualifications**   * **Masters in Technology [M.Tech.Eng: Chemical Engineering]**   University of Johannesburg – South Africa.   * **Masters in Business Administration [MBA]**   Potchefstroom University – South Africa. (renamed North-West University)   * **Master of Science [Fire and Explosion Engineering]**   Leeds University, Leeds City, England - United Kingdom   * **Master of Science [Energy]**   Heriot-Watt University, Edinburgh City, Scotland - United Kingdom   * **Bachelor of Science (Hons) (Technology Management)**   Pretoria University – South Africa.   * **Bachelor of Science (Hons) (Water Engineering)**   Pretoria University – South Africa. Incomplete, one course outstanding.  **Research Conducted or Active Contributions**   * Blast wave effects on vertical barriers and the protected targets behind it (development of a blast load modelling tool). ***MSc (Fire&Explosion Eng) thesis.*** * Fischer-Tropsch wax distillation using a single column unit (diameter=4.5m, 75m tall and 7 side draw-off streams) was designed and constructed. ***M.Tech (Chem Eng) thesis****.* ***Design were awarded an international process patent .*** * Fischer-Tropsch ultra-fine catalyst removal from a catalyst-wax fluidized reactor development (80 000barrels per day). ***International Patent filled and approved.***   **Additional Skills and Short Courses Completed**   * **Hysys & Aspenplus, Promax, Flarenet, Hysys dynamics, AFT Fathom, Pro-II**   Rigorous process engineering simulations experience in the above specialized packages.   * **CFast, PHAST, FDS, Pathfinder and FLACS 3D CFD modelling**,   Modelling experience using the following steady (PHAST) state and 3D FLACS CFD consequence modelling tools in fire and explosion engineering for consequence analyses.   * **Fire & Explosion Protection Engineering**   + Ability to develop fire protection deliverables such a fire protection philosophies, strategies and firefighting equipment datasheets,   + Conducting fire assessment studies, fire protection methods and fire detection methods,   + Design of fire suppression and alarm systems,   + Develop, review and update fire prevention and protection standards and procedures,   + Performing hydraulic analyses and consequence modelling (fire and explosion),   + Preparing of firefighting equipment datasheets.   + Performed structural fire engineering calculations and consequence modelling.   **Joint Process Patent Holder of:**  Referenced: Registered at the United States Patent and Trademark Office (USPTO).   * **Removal of ultra-fine particles from a Fischer-Tropsch stream**   **Patent number:** 8344199, June 2013   * **Process for distilling Fischer-Tropsch derived paraffinic hydrocarbons**   **Patent number:** 6855248, 5 February 2005  **-------------------------------------------------------------------** |

**Projects Roles and Responsibilities & Career Highlights:**

**January 2014 –present: Woodplc. - Production Services Network (PSN), Sakhalinsk, Russia**

**Client: Sakhalin Energy Investment Company (SEIC)**

**Appointed Position: Department Head as Lead Process Design Engineer**

**Acting Positions: Engineering Manager (Delegation of authority in absence of appointed manager)**

* Functional manager to 9 process engineers and CAD / Smartplant designers (4 expats and 6 Russian nationals) in the capacity of Lead Process Design Engineer
* Functional manager to 48 engineers of various disciplines in delivery engineering work to 3 offshore oil and gas producing platforms, an onshore processing facility and a 90000 tons per day LNG facility in the capacity of Engineering Manager (acting).
* Responsible for coaching, teaching, mentoring and supervision of process team.
* Initiates process engineering section of the scope of work and services and man hour estimates.
* Responsible for developing and implementing process engineering administrative and technical practices, specifications, and procedures.
* Develops and maintains the process engineering work plan. Establish project need dates for assignment of all personnel resources.
* Attends kick-off, project staff, client, construction, flow diagram reviews or other meetings as required.
* Maintains contact with client and other discipline engineering leads to assure accurate, timely communications and flow of information is taking place.
* Discuss deviations in job scope, estimates changes, and reviews PCN’s for approval and submission to project management.
* Responsible for all quality control with-in the process engineering discipline.
* Conducting performance assessments and personnel key performance indicator objectives in line with business strategy and objectives. Assess individual performances and making recommendations on individual promotions as part of team member’s career development.
* Monitors the issuing of Process Engineering specific documents and drawings and final approval sign-off on all deliverables to the client assets (3-Offshore production and drilling platforms, 1 Onshore gas treating and condensate stabilizer and a 90000 t/day PMR LNG Facility).
* Review of resume and conducts recruitment interviews.
* Checking and approval of all department issued deliverables and approval of calculations performed.
* Technical and engineering services to 3 offshore production platforms, an offshore gas and liquid hydrocarbon processing facility and a 90 000 tons per day LNG processing facility (Shell’s PMR LNG technology).
* Major Projects I was directly involved in, but not limited to:
  + Revamping of an offshore facility’s complete drilling deck with new and modern facilities (US $ 1 billion revamp)
  + Pneumatic conveying of cementing systems and air distribution. Drilling mud distribution and drill cuttings treatment system
  + Produce water treatment and well reinjection projects (40 000 bpd reinjection rate).
  + Installation of flowlines (oil, gas producing and reinjection (cuttings, water)) to date approximately 25 across the 3 operating production platforms.
  + Completed a FEED study for supply gas pressure maintenance to enhance LNG production.
  + Upgrading the pneumatic conveying of the drilling dry cement systems
  + Conduct and oversee the feasibility study for optimizing the sand and water monitoring system, without the use of test separator system.
  + Complete the hydraulics for mud seawater cooling heat exchanger and pumping system
  + Conducting an ethane evaporation minimization study on Two 14.5 m diameter cold storage tanks recommending insulation vs refrigeration system
  + Supervise the design of 10 gas and 8 oil production flow lines and 8 dry gas and produce water injection systems.
  + Set-up and run lectures (Saturdays) for an in-house process engineering and design course over a period of 8 months to teach Russian nationals process unit and system designs through actual calculations and general design procedures (25 people in attendance).
  + Fire resistance vs failure time studies on pipeline systems and pressure vessel system exposed to pool and jet flames scenarios.

|  |
| --- |
|  |

**Jan 2005 – July 2013 WorleyParsons Kazakhstan (Atyrau Office)**

**Position: Principal and acting Chief Process Engineer**

|  |
| --- |
| **A) Chief Process Design Engineer (acting: Aug 2012- Dec 2013) – WorleyParsons Kazakhstan, Atyrau, Kazakhstan**   * Functional manager for 29 process engineers and CAD/ Smartplan Designers * Responsible for coaching, teaching, mentoring and supervision of Process Team. * Develops Process Engineering specific plans for project execution. * Responsible for developing and implementing Process Engineering administrative and technical practices, specifications, and procedures. * Review and assists in the compiling of Project CTR’s. Review estimate with Engineering Management for approval and submission to Project Management. * Develops and maintains the Process Engineering Work Plan. Establish Project need dates for   assignment of all personnel.   * Maintains contact with Client and other discipline Engineering Leads to assure accurate, timely communications and flow of information is taking place. * Responsible for the Process Engineering section of the Project Procedure Manual & Project Execution Plan. * Discuss deviations in job scope, estimates changes, and reviews PVN’s for approval and submission to Project Management. Participate in schedule recovery strategies * Monitors and reports on project specific process engineering schedule, change orders and progress to Project Management. * Responsible for all quality control with-in the discipline. * Initiates and assure completion of the Process Engineering Section of the project completion report. |

**2012 to Dec 2013 Sulphur remelting, pastillisation and distribution system design**

|  |  |
| --- | --- |
| |  | | --- | |  | |

**Position: Lead Process Engineering Functions – WorleyParsons**

**Kazakhstan, Atyrau, Kazakhstan**

|  |
| --- |
| Lead a team responsible for completing the Detailed Design Package for a 4500 tons/day sulphur remelting, pastillizer and rail loading onshore facility - Capex $ 1 Billion (yr2012)   * Developed complete design of the remelting of sulphur for bulk liquid distribution and rework using sulphur degassing. * Completed system impact studies to evaluate the redistribution of vent and recycle gas on the existing Claus Units and effect on overall sulphur production using ProMax simulation package. * Developed process PFDs and P&IDs, tie-in system into existing facility |
|  |

**2009 to 2012 Karabatan Offshore Experimental Program (AgipKCO)**

**Kasaghan**

**Position: Lead Process Engineer**

Lead a team responsible for completing the FEED package for a 450 000 BOPD and associated offshore facility:

* Review all aspects of the offshore facility and process design to ensure safe operation and meeting design intent.
* Review the design of a finger-type slug catcher and completing hydraulic design calculations, surge analysis evaluation calculations, etc
* Developed process PFDs and P&IDs, for a complete Offshore processing Island in the Caspian Sea connected to 15 offshore wells.
* Developed UFD’s, P&IDs and tie-in P&IDs
* Actively participate in design reviews and HAZOPs as well as SIL reviews
* Writing engineering reports

**2007 to 2008 Process Design of Amine Scrubber Column as part of the**

**Gas Utilization Project (Chevron Tengiz) GUP project**

Responsible for completing the FEED and Detail engineering packages development which includes and not limited to:

* **Taking personally responsibility** for all aspects of the FEED development including (system development, calculations and equipment design (using standard simulation packages like Hysys, HTRI, etc).
* Developing simulations using Hysys Amine Package and ProMax (complete amine scrubber column design) and generating system heat and mass balances.
* Design of all associated equipment, complete system hydraulic design calculations, columns internal evaluation calculations, etc
* Developed process PFDs and P&IDs, tie-in system into existing facility
* Developed UFD’s, P&IDs, tie-in P&IDs
* Actively participate in design reviews and HAZOPs as well as SIL reviews
* Writing engineering reports
* Evaluate the recovered Sour Gas Amine Treatment design and optimize it to lead to a $ 23 Million US dollar capital cost saving on the project.

**iv) Project: Concept development for a Multi-Well gathering system for produce and re-injection wells (ChevronTengiz).**

* Completed the concept and feasibility development for 57 produce well development and 3 gas re-injection system.
* Developing simulations using Hysys for hydraulic analysis of transfer systems and development of P&IDs and process system PFDs.
* Design of all associated equipment and system safety systems.

**Jan 2003 – Dec 2004: PetroSA, Mossel Bay - South Africa**

**PetroSA (Pty) Ltd, a South African Government owned refinery producing high grade fuels from natural gas (Slurry phase Gas-to-Liquid Fischer-Tropsch Processes [high and low temperature Fischer-Tropsch technology]).**

**Position: Lead Process Engineer and Engineering Manager.**

My involvement during this period was to develop the conceptual package for a 1.97 Billion-Euro project:

* I am a joined patent holder for the filtration technology developed and used in the fluidized bed Fischer-Tropsch reactor.
* Developed an integration strategy between this new and integrated offshore and onshore GTL operating plant to ensure proper design intend and safety.
* Responsible for the development of the GTL complex SOW and BOD both for technical and commercial bid phases.
* The job scope included sulphur removal ZnO beds, pre-reformer, auto-thermal steam reforming at steam/ carbon ratio of 0.75 and waste heat cooling trains, etc.), 4 fired heaters, 2 hydrogenation trains, 2 sulphur

removal trains, 2 pre-reformers, 2 auto-thermal steam reformer trains, 2 waste heat boilers, 2 steam strippers, 4 centrifugal compressors, 2 separate condenser trains, 8 heat exchangers, 6 pumps, DCS system, new steel structure & several new pipe racks, 20km of utility piping.

* Work closely with the main contractor’s process engineering team (Lurgi AG, Statoil, and BHP Billiton) in the development of a FEED package for a green fields Gas-to-Liquid plant.
* Extensive participation together with project team and external contractor in business risk, PFD, and operation reviews & HAZOP studies.

**ii) Process Technology Manager**

* Functionally responsible for 23 Process Engineers and my duties include:
* Functional management of the Process Department
* Control department budget in excess of ±US$ 2.8 million (in year 2004).
* Supervise and direct Process Engineers (Guide and mentor process engineers)
* Technically support, develop and training of Process Engineers
* Ensure process engineers comply with stakeholders (production)/ project requirements
* Ensure that process engineers are conversant with and comply with corporate QA procedures
* Co-ordinate work between process department and production department
* Liaise with clients for projects and proposals
* Liaise with licensors for technology owners.
* Ensure process quality and schedule delivery.
* Conversant and competent in simulation packages (AFT Fathom, Aspen Plus, etc)
* Process Lead for the development of process concept for a $4 Billion Gas-to-Liquid complex in Algeria.

**October 2001 – January 2003 (1½ years)**

**Position: Senior Process Engineer (Process optimisation, Technology and design department)**

* During my work period I work on several technical plant optimization projects and providing technical support to the manufacturing division, which included:
* Conducting technical evaluations, design reviews and test runs for the PetroSA’s offshore facility.
* Design reviews on the refinery fire water/foam grid (onshore). Which include a system of 40 storage tanks (fixed and floating roofs) and 80 mixing station facilities? As well as seven high-pressure storage bullets and spheres. Using SABS 089:1-1999 and NFPA standards.
* Re-rating of nine de-super heaters for reformer steam generation systems (120 Bar application).
* Developing hydraulic models of the refinery site’s utility systems using know hydraulic packages.
* Trouble shooting on refinery process units (reformers, Synthol reactors, distillation towers, etc).
* Optimization of current process units to increase product yields (using simulation models such as aspen, etc)

**SASOL CHEMICAL and SYNTHETIC FUELS**

**&**

**SASOL TECHNOLOGY (Pty) Ltd,**

**Sasolburg - South Africa**

**Jan 1993 – Dec 2000**

1. **PROJECT: Sasolburg Gas Conversion Project**

**– Installation of Autothermal Reformers for Synthesis Gas Production (Haldor-Topsoe ATR Technology)**

**End of Job Cost = US$ 1 Billion – yr 2002**

**Position: Senior & later Lead Process Engineer (Utility and Offsite Designs)**

My involvement during this period was:

* Developed an integration strategy between this new and existing operating plant to ensure smooth process equipment changeover to minimize potential safety and business risks.
* The job scope included sulphur removal ZnO beds, pre-reformer, auto-thermal steam reforming at steam/ carbon ratio of 0.6 and waste heat cooling trains, etc.) , 4 fired heaters, 2 hydrogenation trains, 2 sulphur removal trains, 2 pre-reformers, 2 auto-thermal steam reformer trains, 2 waste heat boilers, 2 steam strippers, 4 centrifugal compressors, 2 separate condenser trains, 8 heat exchangers, 6 pumps, DCS system, new steel structure & several new pipe racks, 20km of utility piping.
* Working closely with the main contractor’s process engineering team.
* Evaluation of contractors’ bid documentation in order to appoint Technology provider (Haldor-Topsoe ATR selected).
* Extensive participation together with project team and external contractor in business risk, PFD, and operation reviews & HAZOP studies.

**ii) Dept: Sasol Chemical Industries (Pty) Ltd: Fischer-Tropsch Technical Development Division,**

1. **PROJECT: The Single Distillation Unit (SDU) for High Molecular Fischer-Tropsch Wax Fractionation**

**End of Job Cost = US$ 20million – yr 2000**

**Position: Process & Commissioning Engineer**

**4 years – I have been involved from concept development through to beneficial operation**.

* I am a joined process patent holder for the process developed.

Activities and duties during this period include:

* Laboratory and commercial scale evaluation of technologies that could enhance the value and yield of the existing products. Final product characterization and generate of ASTM 2887 simulated distillation curves.
* I was responsible for all outside battery limit (OSBL) utility system designs and integration strategies for interface between the existing operating plant and this new Single Distillation Unit (SDU) process unit.
* I, together with a senior engineer carried out the concept development, front-end loading and value engineering and designs for the proposed single distillation system.
* Responsible for actual R&D work on pilot scale columns at Sastech R&D, Natref R&D.
* Responsible for all aspects of the OBL basic engineering designs (Drawing of plot plans, process flow diagrams, mechanical flow diagrams, pipe isometrics, doing conceptual designs, basic and detail designs of chemical process units and doing project management –utilities and process systems) and assistance from discipline engineers (other than process) from Sasol Technology (Sastech). These include UFD’s, MFD’s, P&ID’s, Isometric drawings for equipment sizing, Plot layout and integration strategies into an operating plant)
* Extensive participation together with project team and external contractor (Sulzer Chemtech - Switzerland) in business risk, PFD, MFD, plant construction and operation reviews & HAZOP studies.
* Process Engineer for the duration of the SDU project (4yrs).
* Overseeing scheduling of tie-ins and punching of equipment and piping with punch team.
* Commissioning of the plant together with commissioning team comprising two other senior process engineers, instrumentation engineers and operating personnel.
* Designing and preparing of a complete basic engineering package of a cooling tower to be used for the SDU plant. The scope of work includes a 6\*6m two celled cooling tower and 2\*53KW pumps plus piping.