

Telephone: +447946859588	Nationality: British
Email: roderick.fraser@processmonkey.co.uk	Driving Licence: Full, clean
Web: www.processmonkey.co.uk	
Key Skills Process design, documentation and P&ID development Process control, instrumentation, testing and commissioning Equipment design, specification and selection Plant, process and environmental safety, including; HAZOP, SIL, ALARP, BPM, BPEO, and Safety Case Project management, leadership of multidisciplinary teams and supervision of contractors Technical communication, documentation and presentation.	
Affiliations and Education Chartered Member of the Institute of Chemical Engineers, CEng MIChemE 2008 BEng (Hon's) Chemical Engineering from The University of Strathclyde 1997 - 2001	
Career History Process Monkey Limited, Director, 2006 - present <i>Consultant Process Engineer, Abbott Risk Consulting, 2008 - present</i> <i>Process Design Engineer, Magnox Electric, Hunterston A, 2006 - 2008</i> Sinclair Knight Merz (Europe) Limited, Process Design Engineer, 2003 - 2006 Serco Assurance Limited, Process Safety Consultant, 2001 - 2003	
Selected Project Experience <p>Total Exploration and Production UK (2010). Laggan Tormore development project. Technical Safety Engineer. The Laggan and Tormore gas fields, located to the West of Shetland, were to be developed by routing the subsea production to a gas and condensate processing plant on the Shetland Islands, adjacent to the Sullom Voe Oil Terminal. The design of the Shetland Gas Plant was developed from early 2009 and at the time of joining the project several globally significant contracting companies were in competition for the multi-million dollar contract to design, construct and commission the facility. Was responsible for interfacing between the TEPUK project team and the contractors' safety engineers, offering guidance, advice and extensive review comments on all aspects of the contractors' design development and safety studies.</p> <p>Total Exploration and Production Nederland (2010). L4B booster compressor project. Process safety engineer. As they are located in a mature gas production region, the TEPNL facilities are nearing the end of their lifetime and a conceptual study was launched to assess the suitability of installing additional gas compression facilities on the remote unmanned satellite platforms. L4B was chosen as a representative candidate platform.</p> <p>Responsible for the delivery of various compressor selection studies, which included an assessment on integration into the facility maintenance and safety philosophies.</p> <p>Total Exploration and Production Nederland (2010). K6CC booster compressor project. Process safety engineer. In order to prolong the useful life of the K6 field in the Dutch sector of the North Sea, TEPNL were exploring the possibility of locating a new booster compressor on the K6CC facility.</p> <p>First involved in the project towards the end of the concept phase and responsible for writing the key project documentation; the Safety Concept, the Operating Philosophy, and the Statement of Requirements.</p> <p>Impacts to the current facility safety documentation were assessed and additional study work launched to take full account of the additional hazards posed by the new equipment, including; noise and vibration assessment, fire and explosion modelling and impact assessment, dropped object risk assessment, layout engineering, expansion of the facility active fire fighting systems, and eventual modification of the facility Safety Case (TEPNL Safety and Health Document) and detailed risk analyses.</p> <p>In the coming phases of the project, will also be responsible for the successful integration of the booster compressor into the native process systems, and will manage a significant work package relating to the flow assurance in an effort to extend production life so far as is possible.</p>	

Total Exploration and Production Nederland (2009 - 2010). K4Z development. Process engineer. The TEPNL blocks of the North Sea contain an array of existing gas production and treatment facilities, and only a handful of more marginal development opportunities. One such area became known as the K4Z development.

Acted as technical study leader for the K4Z development, offering guidance and commissioning studies from third party engineering contractors to determine which of the pre-identified options were viable, through to providing budget cost estimates to enable informed decisions during the project sanction process.

Personal involvement spanned the following activities;

- Developing preliminary production profiles with geosciences to take account of the existing compressor capacity in the TEPNL facilities.
- Preliminary line sizing for inter-field pipelines to the various tie-back locations.
- Managing the delivery of flow assurance studies.
- Developing a comprehensive scope of work for all brown-field modifications.
- Developing the process and safety documentation required for all potential brown-field modifications, including preliminary Safety Concept, preliminary Operating Philosophy and all equipment sizing calculations.
- Managing the delivery of fully costed engineering scope for potential further development.

Total Exploration and Production Nederland (2008 - 2010). K5CU development. Process safety engineer. Following initial involvement during the pre-project phase, became responsible for all aspects relating to process and safety during the delivery of the engineering package for a new gas platform to be installed in the Dutch sector of the North Sea. Also contributed a significant number of strategically important project documents.

- Author of the two major strategic project documents; the Operating Philosophy and the Safety Concept.
- Managed the delivery of all project safety documentation and the project Safety Case (Project Safety & Health Document).
- Managed the delivery of all relevant process documentation; P&IDs, calculations, process models, flow assurance, vent & blowdown studies etc
- Personally contributed a number of key process and safety documents / calculations / decisions during the development phases.
- Process and Safety engineer during Total Group technical reviews – responsible for the successful resolution of all discipline specific comments and concerns.

Total Exploration and Production France (2008). Anguille Gap Analysis. Safety engineer. Total Gabon was implementing a project to relocate a variety of unit operations from old offshore wellhead and process platforms to a single onshore process facility in West Africa. To enable effective and safe delivery of the project strategy, equipment design deficiencies with respect to the Total corporate safety engineering standards were identified, and as part of a team, the potential consequences of all 'gaps' preliminarily assessed.

Total Exploration and Production Nederland (2008). L7CC Consequence Assessments. Safety engineer. Update of several consequence assessments for reissue of platform health & safety documentation.

Magnox Electric. Modular Active Effluent Treatment Plant (2006 - 2008). Process commissioning engineer. A new £8M liquid effluent treatment plant for the Hunterston A site was essential to satisfy more stringent environmental requirements. The plant was designed and built by the lead contractor, Costain Oil, Gas & Process, throughout 2004 - 2007; plant testing and commissioning was conducted in 2006 - 2008.

- Commissioning manager. Responsible for managing workload, training plant operations personnel, providing a suite of plant operating instructions, documenting commissioning progress and providing comprehensive commissioning reports, initiating and documenting remedial works to the emergency shut-down systems, formal communications with senior management and interfacing projects, directing sub-contracted specialists, optimising software control systems and closing out all snags and deficiencies identified following lead contractor handover.

- Developed a sampling and analysis plan to prove the efficacy of the plant when subjected to the active effluent in order to prove to the regulator that the plant met the BPM criteria for the abatement of the harmful components of the waste stream. Also provided a significant amount of guidance and advice in order to ensure that the site could meet the regulator's expectations.
- Lead process engineer during an extensive 10 week factory test at works, where the plant was assembled to prove the functionality of some key process equipment. Responsible for a rigorous process testing regime and provided client acceptance on satisfactory completion of same.
- Technical lead of a process HAZOP to adequately identify and resolve operability difficulties experienced throughout the factory test. Authorisation of the schedule of recommendations and actions sent to the lead contractors and their sub-contractors.

Magnox Electric. CCP decommissioning projects (2007 - 2008). Process engineer. The remnant sludge in the base of the CCP is to be recovered and transported to the Sludge Retention Tanks (SRTs) at Hunterston A. Contributed a significant input to the optioneering process in the role of Magnox Electric technical lead, and offered a wide range of advice and guidance to Aker Kvaerner, the lead contractors, throughout the early stages of the design process. Also provided Costain with guidance and leadership in the design phase of the pond wall preparation project.

Magnox Electric. Skip Disposal Project (2004 - 2007). Process safety engineer. Around 200 contaminated 'skips' were to be retrieved from the CCP, decontaminated in an acid bath, and packaged for disposal. The contaminated acid was to be transferred to a dedicated 200 m³ storage facility.

- First involved in 2004 - 2005 with the production of the enabling documentation for the project. Studies completed included; Preliminary Safety Report, 1st issue of the project Best Practicable Means argument, 1st Issue of the project 'ALARP' justification.
- Performed the role of independent HAZOP secretary throughout the design phases and, in conjunction with the client and subcontractors, assisted in the development of a time in motion study of the skip retrieval, decontamination and packaging process.
- In the role of lead process engineer, returned to the project throughout 2006 - 2007. At this time, and in light of some major commissioning difficulties, a significant number of design and operational changes were required of the recently installed acid systems, as well as the existing decontamination facility. Responsible for the design, documentation, implementation and commissioning of all hardware and software modifications, and led a small team in the upgrading of all plant documentation throughout 2007.

Dundee Energy Recycling Limited (DERL). Waste to Energy Plant Commissioning (2005). Process engineer. A waste to energy plant in Baldovie, Dundee, designed and built by Kvaerner, and operated by DERL, was in the final stages of a very difficult and acrimonious 5 year commissioning in which the plant had failed to meet its design specification. The plant processed and incinerated domestic refuse to raise steam in a fluidised bed boiler, as well as being a regulated disposal route for combustible medical waste.

- Acting on behalf of the Owner and their banks, and working on a strict shift pattern, played an active role for the duration of a 4 week reliability run;
 - interviewing the operators and designers
 - examining design and test documentation, and making operational recommendations.

Scottish Power. Daldowie Sludge Drying Plant Improvement Notice (2005). Process engineer. The Sludge Drying Plant, owned and operated by a subsidiary of Scottish Power, dehydrated sewerage sludge and pelletised the product such that it could be used to co-fire Scottish Power's Longannett power station, making it eligible for Renewables Obligation Certificates (ROCs). For the two years the plant had been in commissioning and operation, numerous odour complaints were submitted to SEPA by the local population resulting in an improvement notice from the regulator. VOC abatement equipment was retrofitted to the original plant in the summer of 2005.

- Acting on behalf of the Owner, played an active role for the duration of the commissioning and testing of the abatement equipment, which involved intimate familiarisation with the process, the test structure and procedures, and the operating philosophy for the entire plant.
- Examined and reviewed the independent testing and analysis plan, providing formal site witness for the duration of the test, which lasted for approximately 12 weeks.

Scottish Power. Longannet Feedwater System Analysis (2005). Process engineer. The water supply to Longannet power station had undergone a recent upgrade with one large buffer tank replaced by two smaller tanks. Following the modification, the water supply to the system was irregular and did not meet the design specification. An hydraulic model of the system was constructed and a large number of pressure balancing and pressure drop calculations were performed. Following the analysis, a brief report was written to give a thorough description of the situation, and a number of recommendations regarding system instrumentation and design were presented to the client for implementation.

Corrour Trust. Hydro Plant Feasibility Study (2005). Process engineer. The Corrour Trust is an organisation charged with the management of a very large hunting estate in the Highlands of Scotland. The Trust was eager to produce as much energy as possible from the natural resources available on the Estate land, and had decided that a small scale Hydro-power scheme would be ideally suited to this aim.

- In conjunction with the senior engineer, preliminarily sited the inlet weir and conducted studies into three different pentstock runs, to three locations of power house, including an indicative power output and cost for each option. This involved accumulating rainfall and river flowrate data and designing the pentstock options with a view towards system pressure drop. A short report was produced for the Trust in order that they could decide on which option to carry forward.

British Nuclear Group. Wet Wastes Project (2005). Process engineer. Seconded into the project team to perform front-end process design for the CCP wet waste retrieval systems. The project involved P & ID development, control system design, plant layout, the production of supporting calculations, and the authoring of safety, environmental and design documentation.

- This innovative project centred around the sizing and specification of an ejector, which was to be utilised in the extraction of ion exchange resin from a facility retrofitted to the original CCP in the early eighties. All the mass and energy balances were carried out and, with input from vendors, the equipment, control and ancillary systems specified.
- A full suite of plant and process documentation was produced, incorporating the operation of the waste conditioning and encapsulation facility.
- In the second phase of the project, the environmental documentation was authored and a detailed process specification for inclusion in the tender invitation pack was produced.

Scottish Power. Hagshawhill Windfarm Operation and Maintenance (2004). Assisted the small team of windfarm operators in a full campaign of six monthly maintenance on a 26 Bonus 600kW turbine windfarm on Hagshawhill, which involved performing all the routine checks as to the mechanical integrity of the windfarm and the control and shut-down systems.

UKAEA. Alkali Metal Residue Removal project (2003 - 2004). Process engineer in a multidisciplinary design team engaged to provide technical support in the decommissioning of the inventory of contaminated sodium and potassium on the Dounreay site.

- Hot WVN (2004). Engineering development and research into an innovative project to greatly accelerate the project programme. Fulfilled the role of lead engineer for the project and was responsible for all aspects of the design and documentation, including P&ID, plant description, control philosophy, instrument, equipment, valve and piping schedules, and start-up and shut-down procedures.
- Plant investigation and documentation (2004). An experimental facility, which assists the on-site operations, was in need of substantial re-documentation. A full suite of plant documentation was produced and a number of plant design modifications were recommended and implemented.
- Liquid and gaseous effluent systems (2003 - 2004). Lead engineer for the plant and process design of liquid and gaseous effluent produced during the sodium - water reaction. In support of the design tasks, a significant amount of research and design for dynamic reaction systems was undertaken, together with the design and specification of the hydrogen-rich off-gas discharge and pressure relief systems.
- A review of the design was carried out in light of the recently introduced ATEX standards for equipment sited in explosive or potentially explosive areas. This review resulted in several modifications to the layout and specification of process equipment and control interfaces.

Engineering Services Inc. (North Carolina, USA). Plant Control and Testing (2003). Process engineer. Relocated for the six month duration of the contract and as part of a multidisciplinary team developed the process control system for a batch organic resin oxidation reaction in conjunction with the progression of the plant P&IDs through the detailed design phase. As lead process engineer, all of the plant testing and commissioning documentation was authored, and the process equipment trials managed at works. A significant amount of plant documentation was produced, including the operation and maintenance manual for the system.

Activities and interests

Music

While I have always enjoyed listening to music and going to see my favourite bands in the flesh, it is only relatively recently that I have learned to play the guitar. Since taking up the instrument I have been a member of several bands over the last few years and have written a large number of songs.

Sport

Many of my main interests fall under this category as I spend the vast majority of my free time watching, competing in or organising sporting events. I play golf to a high standard and have represented previous clubs on numerous occasions. I enjoy the competitive aspect of the game, but gain most enjoyment from a relaxing round with friends or family. I am also very keen on football and like to play with friends and colleagues whenever I can.

Mountain sports

Since my mid 20s I have become very active in all aspects of mountain sports. It began with skiing, which I have mainly pursued in North America, and later rock climbing in Scotland. More recently I've visited the French Alps for my first taste of Alpine climbing, ice climbing and ski touring.

Travel

I have been lucky enough to have spent a great deal of time in Continental Europe and North America, and have enjoyed many months living and working abroad over the last fifteen years or so. Having had limited opportunity to travel extensively for pleasure, primarily owing to employment considerations, it is definitely an activity I wish to pursue in the future, and I would be very enthusiastic about travelling in a professional capacity.