

SUMMARY

I am a chartered mechanical engineer with twenty four years of experience in the petrochemical construction industry, managing the design and fabrication of equipment, modules and site facilities. This has involved working in design offices, fabrication yards and construction sites as both an equipment and a project engineer.

My experience, which spans all project phases from front end engineering design through to construction, includes six liquid natural gas plants, four topsides, two oil refineries, one oil pipeline, a gas treatment plant, gas compression stations and a gas to liquids facility, for clients including Shell, Exxon, Chevron, BP, Statoil (Equinor), Nexen, Reliance, BG Tunisia, Hunt Oil, Sonatrach, Kuwait National Petroleum Company, Black Sea Oil and Gas (BSOG) & Advanced Biofuels solutions.

My engineering and management responsibilities have included:

- writing specifications, datasheets, requisitions for specialist equipment and systems.
- completing technical evaluations on supplier and sub-contractor bids,
- producing and reviewing drawings and fabrication procedures,
- attending design review, hazop and model review meetings.
- expediting equipment suppliers and subcontractors to maintain schedule.
- coordinating the inspection and performance testing of equipment.
- resolving technical issues on fabrication yards and construction sites.
- supporting commissioning teams during system start up and hand over.
- managing multi-discipline design teams and site construction contractors.
- implementing tie-ins and brownfield modifications to existing facilities.
- evaluating plant condition and proposing modifications for life extension.
- chairing meetings with clients / contractors to resolve engineering and contractual issues.
- finalising certification, operating manuals and all tasks required to close out a project.

In addition, I consult on proto-type equipment and test rig design for energy storage projects including high temperature molten salts for concentrated solar power and high pressure isochoric and isobaric systems.

EXPERIENCE

2021 - Present Lead Mechanical Engineer – Petrofac UK

- ▶ Early work & FEED for ABSL Protos Project 'Waste to low carbon fuels' - UK

I liaised with the client to create functional specifications and technical requisitions for the key items of equipment, the 'Gasifier' and 'Plasma Converter package'. Identified potential suppliers and completed bid evaluations. Also prepared the mechanical basis of design and all specifications for other equipment items, in preparation for manning up a mechanical team.

2019 - 2021 Interface Manager for Design Subcontract – Genesis Oil and Gas Ltd.

- ▶ Detailed Design for BSOG Onshore Gas Treatment Plant – Romania

My position was the client representative within a Romanian design subcontractor, called CP92, whose scope includes all civil, structural, piping, equipment, electrical, instrument, telecoms and onshore pipeline engineering for a gas treatment plant on the Black Sea coast. My role involves liaising with the subcontractor management and discipline engineers to

ensure the development of all design deliverables, defining priorities and maintaining schedule. I also managed the technical interfaces with the client design & construction teams.

2019 Package Equipment Engineer – Petrofac UK

- ▶ FEED for Sonatrach CIS & CINA project – Algeria

I was contracted to write fifty two detailed scopes of work for brownfield modifications to existing gas compression trains within Algeria, in order to extend the lifespan of the facility. This included the replacement of lube oil & seal oil systems for gas compressors, modifications to gas turbine auxiliary systems, revamping air coolers, replacing an oil regeneration area, new instrument air facilities and new horizontal flare tips. The role involved co-ordinating with discipline engineers, equipment suppliers and the clients operations and maintenance teams to agree solutions that met the project requirements. All deliverables were used for bidding the construction phase of the project.

2018 - 2019 Package Equipment Engineer – Exheat, UK

I managed the mechanical design and fabrication of skid mounted electric heaters and chemical injection packages. This involved finalising the mechanical design, purchasing materials, liaising with the fabrication shops, identifying the critical path and coordinating all activities required to complete and deliver the equipment.

2016 - 2018 Package Equipment Engineer – Wood Group / AMEC FW, Netherlands

- ▶ PMC for Kuwait National Petroleum Company - Al Zour Refinery, Kuwait.

I worked as a project management consultant based in Holland, a role which involved monitoring the engineering contractors design, attending staged review meetings and liaising with client personnel to manage contractor deviations from the project scope. I was responsible for the technical integrity for the sulphur facilities including: Claus furnace and incinerators, liquid sulphur tanks, sulphur granulation and solid sulphur handling equipment such as conveyors, storage domes and stacking / reclaiming towers. In addition I handled hydrogen and nitrogen pressure swing absorption packages and a flare gas recovery liquid ring compressor.

2015 - 2016 Package Equipment Engineer – Petrofac, UK

- ▶ EPC for BG Tunisia Projects

I worked as client representative in a supplier's fabrication yard, tasked with accelerating the schedule for a 'surface jet pump' package, in order to meet the shutdown window for a Tunisian rig. My role was to provide fast resolution of technical issues and expedite construction activities. The equipment was delivered in time and currently out performs design parameters.

2014 - 2015 Package Equipment Engineer - WorleyParsons, UK

- ▶ FEED for BP Rumaila Project - Iraq

My function was to evaluate four companies for an EPC contract to supply and install eight 'produced water treatment' packages including chemical dosing systems, air compressors, electrical substations and instrument control rooms. My role included making presentations to

Iraqi operators, to demonstrate the technical advantages of each solution. I also completed specifications, requisition and bid evaluation for a 'TEG dehydration' package.

2013 - 2014 Package Equipment Engineer – AMEC, UK

- ▶ EPC for GDF Suez Cygnus Project – North Sea

I took over the co-ordination of a 60 tonne 'MEG regeneration' package, that was behind schedule and mired in issues. The job entailed providing rapid resolution of design problems, rebuilding the working relationship with the supplier, testing all the equipment, plus expediting and inspecting the fabrication of the module in Ravenna, Italy. The package, which was installed on a production platform, was delivered within the required construction window.

2011 – 2013 Package Equipment Engineer – CB&I, UK

- ▶ EPC for Nexen's Golden Eagle Project – North Sea

My role involved providing technical support directly to a construction manager, for a 310 tonne 'sulphate removal' module built in Norway. My responsibilities included co-ordinating multi-discipline review of all supplier drawings and construction procedures, liaising with the supplier's management and designers, testing all equipment and inspecting the module. The module was installed on a North Sea production platform within its construction schedule.

2009 - 2011 Package Equipment Engineer – KBR, UK

- ▶ EPC for Chevron's Gorgon LNG Project - Australia

I was responsible for package managing the design and fabrication of two 400 tonne fired heater modules in Thailand. Activities included review of all supplier detailed drawings and documentation, resolution of all technical problems and inspection of the modules. I also completed comprehensive technical bid evaluations and purchase orders for a very large 'multi stage ground flare' and a large 'totally enclosed boil off gas flare'.

2007 - 2009 Package Equipment Engineer – CB&I, UK

- ▶ EPC for Nexen's Buzzard Enhancement Project – North Sea

I completed drawing reviews, final inspections and project close-out for a 'hypochlorite generator' and a 'sea water filter' package, which were installed on to a North Sea platform.

- ▶ EPC for Hunt Oil's Peru LNG Plant

I completed technical evaluations, purchase order requisitions, supplier documentation review and inspections for a 'cryogenic nitrogen plant' built in France, and a large 'reverse osmosis water treatment plant' built in Italy. Both now installed and operating within Peru.

2006 - 2007 Package Equipment Engineer – Bechtel, UK

- ▶ EPC for Reliance's Jamnagar Refinery Expansion - India

I created specifications, requisitions and completed bid evaluations for an 'elevated flare package', 'flare gas recovery package', 'wet air oxidation caustic treatment package', 'cryogenic nitrogen plant', 'LPG chiller package', 'cooling tower side stream filters' and some sluice gates, before handing the work to a Mumbai based design office.

1997 - 2005 Package Equipment / Project Engineer – MW Kellogg, UK, USA & Nigeria

- ▶ Study for Statoil's Norwegian Gas Plant Expansion

My package engineer role required development of requisitions and completion of bid evaluations for a 'demineralisation & condensate treatment package', raw water sand filters, fuel gas skid, and 'selective catalytic reactor for flue gases' for a cost estimate.

- ▶ FEED for Shell's Qatar Gas to Liquids Plant

My package engineer role involved creating data sheets, specifications and prequalification questionnaires for a large slug catcher, 'methanol injection package', 'UV water treatment package' & a 'bio treater / clarifier' during the front end design phase of this project.

- ▶ EPC for Shell's Nigeria LNG Plus Project

A project engineering role for a multi-disciplinary revamp / tie-in programme. This role involved coordinating engineers with in London, Paris and Milan design centres during the design phase of the project and managing a seven strong multidisciplinary site team in Nigeria during construction phase. My responsibilities included directing subcontractors in developing work procedures for each activity, liaising with client operations teams to agree work scopes, obtaining permits to work and supporting the site construction team. Activities included:-

- 150 Piping tie-ins including all required civil and structural modifications
- 'Cryogenic nitrogen plant' revamp
- Installation of new LNG loading arms and other jetty head modifications
- Control room, substation and instrument room expansions including switchgear modifications, installation new instrument cabinets, telecoms system expansions and new cable trenches.

The work was undertaken to integrate two new LNG trains to the existing facilities. All activities were completed prior to respective systems start up dates.

I also completed technical evaluations and produced purchase requisitions for large 'vertical acid gas incinerators', 'amine filtration packages', gantry cranes and silencers for the new LNG trains. This included completing onsite studies of existing facilities in Malaysia (incinerator) and Germany (amine filtration) in order to make design recommendations for both systems.

- ▶ EPC for Exxon/Mobile's Chad Development Project

My package engineer role in KBR Houston office developing specifications, technical evaluations, purchase requisitions and completing design verification for a 'pressure swing adsorption nitrogen package', various water treatment packages, 'oily water separators' and gear pumps. I also facilitated the development of a supplier's 'microwave emulsions treatment system', from prototype equipment into a skid mounted package that met the required industrial standards.

- ▶ EPC for Shell's Nigeria LNG Base and Expansion Projects

My graduate experience included both working within a design office and on the construction site, and involved the design verification for a new 'amine filtration package', 'cooling water filters' and 'chemical injection packages', while simultaneously revamping existing facilities in Nigeria in order to optimise performance. I was also responsible for the administration of all

client construction queries on site, liaising with the respective discipline engineers to develop solutions.

EDUCATION

BSc (Hons) Engineering at Durham University, 1994

A Levels in Physics, Chemistry, Spanish, Mathematics and Further Mathematics

REGISTRATIONS/AFFILIATIONS

CEng – Member of the Institute of Mechanical Engineers

CONTACT DETAILS

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