

TERENCE P KELLY, MIET

Tel: +44 1642 714435
Mob: +44 7484 111431
Email: terry56@gmail.com
Email: tekconsult@yahoo.com

SUMMARY

Forty + years' experience in the Oil and gas industry, primarily Commissioning and Completions. This includes both Offshore and Onshore, including work in Design office and Fabrication yards. Experience covers North Sea, USA, Canada, Africa and Asia

Worked on FPSO, TLP, Drilling Rigs, Pipe laying Vessel and Fixed Platforms. Also Onshore facilities including the KIO plant in Kazakhstan and Kearl Sands in the Canadian Athabasca Tar Sands.

Over 20 Years in managerial positions.

Member of the Institute of Engineering and Technology No 513312

Experience with the following MC data bases: WinPCS, KEPCS, Omega, DSMEPCS, Aid, MCCs, Procsys.
Experience with Gas Turbines including RB 211, LM 2500. Ruston. Solar.
Compressors, including Pignone, Dresser, Siemens, Elliott, MAN, and Borsig

DETAILED PROFESSIONAL EXPERIENCE

March 2014 to present

Self Employed Consultant

January to April 2020. Technical Consultant/Expert Witness in respect to a dispute between FPSO operator and Shipyard, advising on MC, Pre-Commissioning and Commissioning. It involved firstly advising on the flows between MC to Pre Comm and then Commissioning producing explanatory documents and flow charts for the benefit of the legal team. Progressed to reviewing and commenting on the procedures of both parties, analysing the MC/Commissioning planning along with the methods of recording progress, how the schedule followed the plan, comment on perceived deficiencies. Reviewing the work force manning levels specifically on claimed 'Carry Over' work. Assessing the veracity of carry over work. Reviewing the level of interaction and levels of cooperation between both parties in respect to hand over of project. This included all Documents including completed ITRs, MC Database records, outstanding Punch List items. Outstanding materials and spares.

July 2017- April 2019. Lead Technical Expert/ Expert Witness for the EPC contractor in relation to an operator's counterclaim for the cost of correcting and completing the design, construction and commissioning of the first semi-submersible floating oil production system to be constructed in South East Asia, the largest of its kind ever to have been constructed on-shore. Analysing and reporting in an unbiased manner in respect to project documentation, procedures and working practices.

As lead consultant responsible for a team of discipline specialists covering Control Systems. Water Systems, Preservation, Metallurgy, Electrical, EX inspections, Power Generation, High Pressure Compression, both powered by Gas Turbines. I worked mainly from my home office in the UK.

Consulted on a regular basis with the Opponents Lead Technical Experts who were based in Melbourne Australia this was primarily via VideoCon, but occasionally face to face in Singapore. We discussed issues and established points of agreement/disagreement, In respect to contentious issues we would revert to our discipline specialists for further review and comment.

The opinions were reviewed, and an extensive report titled the "Kelly Hazlett" was produced which was presented to the tribunal and referred to extensively throughout the proceedings.

Attended a Three week arbitration in Malaysia operating under the KLRCA/AIAC Rules. During this time besides assisting the legal team I was cross examined for several days, this involved being cross examined individually and supporting team members whilst they give evidence. It also included a period of 'Hot Tubbing' here along with the operators lead experts we were jointly cross examined by the Tribunal.

My total involvement on this project was for eighteen months the counterclaim was for US\$ 573 million, at the time of writing still under review of the Arbitration

I was given training in arbitration procedure, over a two-day period by 'Bond Solon'. Held several meetings in London with the QC and with lawyers in Singapore and Kuala Lumpur.

May-June 2017. Independent Consultant on the Audit in Singapore of an FPSO project. This was to assess the remaining incomplete work that possibly could impact sailaway and to recommend any identified remedial processes if required. Our report was submitted to the client, and our assessment turned out to be completely accurate.

Advising possible investors on the technical aspects of Offshore projects.

Advising an engineering company on the development of a Mechanical Completions data base, along with manhour and costing estimates for upcoming prospective projects

May 2013 to March 2014

**GDF Suez
Cygnus Project
London and Sites
Lead Commissioning Engineer**

Located in the design office with visits to construction sites. Planning and setting up systems and procedures. Overseeing the development of subsystems and the population of the completions database. Developing the Commissioning procedure format, reviewing and approving completed procedures. Recruited the senior team for commissioning. Set up site offices and recruited the site team.

June 2012 to December 2012

**BW Offshore.
Pappa Terra FPSO Project
Dalian, China
MC Manager**

Engaged on short term contract to troubleshoot the deficient MC system on a large FPSO project. Selected and recruited a team of multi discipline specialists, we then broke down and rebuilt the handover system this required analysing system boundaries and the information entered within the completions data base 'Proarc', then set about establishing new system boundaries and taking complete control of the 'Proarc' database the data was revaluated, verified and inputted, then issued to site in commissioning priority order. Analysed defined and controlled the work allocation which had been disjointed and ambiguous, these were defined into sub categories:- Shipyard scope, BW scope, Power Generation scope, and topside scope. Prior this there was no clear guidance with different contractors unaware of boundaries of responsibility with them scoping and indeed purchasing equipment for the same tasks. On contract completion the scope was clearly defined, workable and precise. system boundaries using latest drawings were issued and the completions database was up to date with verified data

September 2010 to December 2011 **BP PVSM FPSO Project**
Singapore
Commissioning Superintendent

Major FPSO project for BP Angola, initially I was a member of a small BP assurance team with responsibilities as the client MC Co-ordinator to ensure correct procedures are adhered to, that priority systems are being worked, that the PTools data base was updated correctly using the latest dates, monitoring and advising on progress.

To assist the EPIC contractor BP took over direct responsibility for commissioning my role then became Commissioning Lead overseeing a multi discipline workforce, whilst incorporating most of the contractor's team we needed to supplement our own team bringing in Engineers and technicians from around the world. The project and specifically Commissioning was fraught with difficulties, due to very poor substandard and incomplete construction work, poor or little preservation, extremely bad inspection all carried out during construction. BP took charge of the whole project with the FPSO in a position to leave the Singapore yard end of 2011

September 2008 to August 2010 **Imperial Oil**
(ExxonMobil)
Kearl Sands Project
Area Commissioning Manager

The Kearl sands project is a major development for the Athabasca oil sands. The facility will include Mines, utilities, process and oil export. There is also a facility for a permanent residence. It includes all roads and infrastructure. Based in the project office in Calgary Alberta Canada. During the FEED stage involved in formulating the process logic, establishing systems and sub systems and developing project procedures and specifications. On completion of feed progressed into detailed design. Reviewing design documentation, advising on vendor selections, developing handover and commissioning procedures, assisting on the development of the completions data base (WinPCS)

The project is divided into different defined 'Sub projects' or Silos as they are know, each Silo has its own management and engineering teams and contractors. I have been designated as lead Engineer for the Extraction, Hydrotransport and Tailings silos. Each of my silos has its own dedicated commissioning team reporting to me. We are developing the completions and commissioning logic for each silo which involves interface with the different and diverse contractors and designers. In the case of Extraction the engineering is being carried out in Texas. Hydro transport and Tailings 'In house' in Calgary

August 2007 to September 2008 **Maersk Contractors**
Vincent FPSO Project
Lead Commissioning Engineer

Initially seconded to the Module fabrication yard in Thailand, duties included the following:

- * Review and comment on the design and configuration of mechanical systems.
- * Review system limits
- * Review MC data base (PROCoSYS in Thailand WinPCS in Singapore)
- * Develop the MC procedures
- * Comment the design of mechanical systems with respect to operability and maintainability.
- * Review comments from the Certifying Authority on design of the mechanical systems and assist in resolving issues.
- * Participate in HAZID's

Report to the Engineering Manager on any critical issues identified and make proposals for remedial action.

Monitor progress and completions; ensure that documentation was correctly compiled.

At all times the monitoring of safe working practices was priority.
Involved in the presentation of safety awards, actively encourage safe working practice.

The Lead engineer liaises closely with the Engineering and Operations Managers
On completion of activities in Thailand, relocated to the integration site in Singapore in December 2007

The contract in Singapore was that the Shipyard commissioned the Hull systems and the client commissions the topsides

My duties included:

- Monitoring and advising the contractor on Hull MC and commissioning activities.
- Selecting and supervising a team of ex pat technicians for topsides commissioning.
- Generated commissioning procedures,
- Defining system limits.
- Producing lube oil schedule and procuring oils
- Managing the Inputting data into MC data base (WinPCS) and reconciling the information between the different contractor systems.
- Verifying the data installed by others.
- Dynamically test topsides equipment.
- Monitor the safe working practices of both client and contractor personnel
- Manager the MC to handover to commissioning
- Supervise the dynamic commissioning on all topside equipment. On completion of the Singapore scope, moved to anchor with the FPSO completing dynamic commissioning, then sailed with the vessel to location in North Western Australia

February 2005 to July 2007

**BP
Greater Plutonio Project (FPSO)
Lead Commissioning Engineer**

The Greater Plutonio is an FPSO development destined for Angola. The design was in KBR office Leatherhead. UK construction took place at the HHI facility. Ulsan South Korea. Commissioning Ulsan-Offshore Angola.

I was Located initially in the Design office in Leatherhead. Writing commissioning specifications. Formulating system limits, attending FATs. Reviewing design documents. Writing Commissioning procedures (TCPs). Interviewing, selecting and then arranging work scope for the team. In October 2005 relocated to HHI facility, Ulsan, South Korea. Responsible for commissioning of all equipment. Including Rolls Royce RB 211 gas turbines (4 units) and Dresser Rand Gas Compressors (5 units) along with the associated pumps Sulzer Water Injection. All units were run prior sail away . Team also responsible for operating equipment up to handover to operations. The FPSO left Korea with equipment commissioned ahead of schedule, in fact offshore scope was brought forward and completed in the yard, this included running the LP,MP and HP Gas Compressors. Part of the sail out team firstly from Korea to Singapore, then rejoined in Cape Town for final tow to Angola, remained on board until the vessel was made storm safe then commenced offshore rota . My team consisted of Ex Pat and Korea personnel

January 2004 January 2005

**DSME. Opko Korea
Exxon Kizomba B Project
Lead Commissioning Engineer.**

Employed as a consultant by the Korean contractor to organise, plan and supervise the Multi Discipline MC and commissioning team, also to plan and interface with the Marine installation contractor for ballasting and installation.

Kizomba "B" is Deep water TLP and a carbon copy of Kizomba "A" detailed below.
Kizomba B left Korea December 2004. 97% complete.

April 2002 to December 2003

**ABB Lummus Global
Kizomba A Project
Lead Commissioning Engineer**

Commenced employed on the project with ABBLG Deepwater Systems in the design office in Houston Texas, The "Kizomba" A TLP is a Tension Leg platform destined for deep water offshore Angola. My duties in Houston involved setting up the systems and procedures for implementation at the various project sites. Meetings with client and vendor representatives establishing protocols. Commenting on design issues, writing commissioning procedures.

June 2002 Relocated to DSME shipyard located in Opko, Koji Island. Korea the duties included the planning and the subsequent commissioning of the "Kizomba" TLP Hull, utilising Korean Technicians, along with the continuation of writing Commissioning Procedures including the Ballast procedure.

On completion of the Hull in Korea in January 2002, it was towed to Holland for integration of the topsides. Relocated to Holland to join the Commissioning team for topsides, however with additional responsibility for all ballast control operations, this included ballasting the hull whilst topside modules were installed. Prior tow out of platform to Angola, I was a member of the two man ballast team for inclination tests.

September 2003 relocated to offshore Angola for platform installation this involved a one off trip with the agreement to work to "Handover" in the event we were offshore a little over six weeks. Initially my duty was as part of the four man Ballast team during the final positioning and fixing of the platform. On completion of the positioning of the TLP, reverted to completion of outstanding work scope up to Handover to client

November 2000 to March 2002

**Karachaganak Integrated Organisation
Kazakhstan.
Senior Commissioning Engineer**

Employed initially in the Design office in London with responsibility for the reviewing and purchase of commissioning spares, the co-ordination of FATs (Factory Acceptance Tests).

Writing commissioning procedures and establishing system limits.

Involved in the production of the Invitation to tender document and the subsequent review of candidates for the provision of the Completions Data Base and development of the project MC procedures

Mobilised to site in June 2001 continuing with responsibility for commissioning spares and consumables and the writing of detailed commissioning and MC procedures.

The Karachaganak Project is located in the republic of Kazakhstan and when developed will be a fully integrated Oil and Gas processing facility, one of the largest in the world. Due to the remoteness of the project all of the infrastructures need to be put into place, this includes everything from a camp for accommodation of the workforce along with all the services i.e. sewerage, potable water treatment, GE Gas turbine power station 200 MW, 100MW Steam Turbine unit and Solar Gas Turbine emergency power, 2000Km of pipelines pumping stations.

May 2000 to November 2000

**Odebrecht Oil and Gas
Package Engineer**

Involved in the Engineering and package procurement of four accommodation platforms for installation in the Gulf of Mexico, responsible for packaged equipment on the platforms. The duties included, liaison with joint venture partners in the USA and Mexico, approval of drawings, specifications and engineering documents, preparation of technical bid evaluation reports and purchase requisitions, review and approval of supplier documentation. Creating MRB and IOM manuals

June 1998 to April 2000

**Esso Norge
Lead Commissioning/MC Manager
Jotun FPSO Project**

Commenced employment on the Jotun "A" Wellhead platform to oversee and expedite the timely and correct handover of systems, my duties included the day to day monitoring on Esso's behalf of progress, quality and safety. Attended meetings with Sub-contractors operating as Interface co-ordinator. the contract had been awarded by Esso to Heerema Tonsberg, who in turn awarded the EPIC to Bentec Norge and they in turn awarded the build contract to Kvaerner Teesside, the complexity of the contract made the interface role doubly important.

On completion transferred to the Jotun "B" a new build FPSO project, located in Stavanger Norway. Duties required the setting up and management of a MC monitoring system for the Esso site team. Also involved in the day-to-day management of the site completions team (Including the Fabricators personnel) On Mechanical Completion transferred into Commissioning Department as Commissioning Co-ordinator, reporting directly to the Esso corporate Commissioning Manager. Seconded offshore as Lead Engineer up to the achievement of first oil. Then relocated to the fabricators office to close out the Project, duties include arranging final clearance of punch list items, implementation of guarantee work and final documentation. The Jotun was one of the first projects to supply power via umbilical, that is to say power was generated by GE LM 2500 Gas Turbines 2 x 45 MW on the FPSO and then transmitted to the Wellhead platform via cable running through the "Turret" and the sea bed.

Jotun has proved to be amongst the more successful FPSO projects and is in full production.

July 1997 to June 1998

**Harland and Wolff Ltd.
Commissioning Manager**

Bideford Dolphin STV Project.

Located in Belfast, the project involves the complete upgrade of an "Aker" Semi` Sub, into an STV Drilling Rig. To Allow operation in Hostile waters. The Topsides are all new installations and Features a "Ram Rig" unit for drilling the first of its type to be installed.

My duties include the Management of a team of Engineers and Technicians. It was required to create a Commissioning infrastructure from scratch, including

- Mechanical Completion/ Commissioning Data Base. ITR Systems (Inspection Test Records)
- Hand Over procedure. System Limits. Produced Commissioning Procedures.
- Established the Commissioning Plan. Generated the Vendor Call Out Schedule,
- Established the full Commissioning Protocol. Operated as Vendor co-ordinator for all Vendors.
- Management of commissioning spares, Management of Preservation, Pre Commission and Commission all systems.

Harland and Wolff in the past has primarily focused on shipbuilding, they now intend to break into the Offshore industry, therefore the systems that I have set up for Commissioning the "Bideford" have now been adopted as the corporate procedures.

My Duties expanded to manage the Commissioning of the latest H&W offshore project the "Borgland Dolphin" upgrade.

July 1994 to July 1997

**Heerema.
Commissioning Manager**

F. P. S. O. "Glas Dowr"

Initially seconded to design office in Holland (ABBLG).

Duties included representing Heerema interest, (Heerema are prime contractor on a "Epic" contract) Assisting in vendor approval, project philosophy, design review. My duties also included formulating the commissioning plan and establishing the overall procedure. This entailed everything from I TR selection to hand over procedure. Subsequent establishing the philosophy commenced work on system limits and system/equipment commissioning procedures. Since August 1996 relocated back in the fabrication yard supervising the installation of equipment whilst still involved in developing the commissioning scope. Also required to troubleshoot with vendors on any late deliveries, design faults, also Heerema's representative on FATs. Oversaw on Heerema's behalf Pre Commissioning and Commissioning. The project was completed in the onshore phase and subsequently produced first oil on schedule.

Liverpool Bay Project

Employed in Heerema fabrication yard on the B.H.P. Liverpool Bay Project (Douglas Deck). This was a 10,000 tonne integrated deck ~ responsibilities on the project included: planning and preparing for equipment receipt and installation, on installation the lining and levelling, bringing equipment up to hand over status, developed and supervised preservation procedures, co-ordinated and supervised vendors. Equipment worked on included:

Gas Turbine generators, manufactured by Pignone with two 45 MW GE LM 2500 Gas Turbines. Off gas compressors,(Pignone), Export compressors, (Pignone.) Stripping gas compressors, (MA.N,) various pumps and skids vessels, tanks etc. subsequent yard work seconded offshore for hook up. During my employment with Heerema, I was also involved in the study for completion of the pipe lay vessel "Solitaire". This involved visits to client office in Holland and to the ship in Singapore.

March 1992- April 1994

**British Gas North Morecambe
Project
Senior Commissioning Engineer**

Initially located in the Design Office in London reviewing project documentation i.e. specifications, drawings data sheets etc, Established ITR system ,indexes, defined system limits, vetted and approved Commissioning Procedures.

Attended Vendor premises for F.A.Ts (Factory Acceptance Tests).

Created the system for monitoring and ordering Commissioning spares.

October 1992 Relocated to Fabrication yard at Lowestoft. Overseeing the onshore Construction and Commissioning activities.

August 1993 - offshore with platform responsible for all mechanical hook-up and commissioning activities, also supervised piping and hydrotest scope. On commissioning completion and platform hand over (ahead of programme) returned to project office for contract close out.

December 1990 - March 1992

**Derian Limited.
Managing Director**

Derian was involved in project management support services, including design facilities and the supply of technical manpower. Derian was also listed as consultants under the Department of Trade & Industry Quality initiative Scheme, for setting up and implementing B55750 and ISO 9000. The company had a turnover of 3 million pounds and my responsibilities were the day to day management of the company, reporting to Company Chairman.

June 1986- June 1990

**Teesworld Group
Managing Director**

Group Companies included Teesworld Industrial Consultants Limited, with recruitment, procurement and consultancy divisions, Teesworld Financial Services Limited and Teesworld Trading. Since the formation of the company, built the recruitment client bank.

Teesworld also operated a procurement division, on clients' behalf Teesworld procured and exported various items of equipment including gear boxes, generators, valves, fire fighting equipment and pipes to Japan, safety lamps and compressors to Saudi Arabia, generators to Dubai,

Teesworld has also undertaken consultancy work for several multi national companies

August 1983- June 1986

**Brown & Root UK
Mechanical Engineer**

Morecambe Bay Project, Phase I Stage 1. Offshore Facilities, Hook-up and Commissioning, Hydrocarbons (G. B) Limited Responsible for the mechanical construction and onshore commissioning initially of the DP01 platform at UIE. Glasgow. In November 1985 assigned offshore on the Central Complex. Responsible for all mechanical commissioning work on accommodation platform, central process platform and DP01 platform. My duties included supervision of vendor engineers and contract personnel, preparation of job cards, organising production to achieve project milestones. The commissioning and subsequent operation of all mechanical plant until handing over to Client's Operation Group. From January 1986 I was also responsible for all mechanical hook-up work Equipment commissioned included: Ruston Gas Turbines, waste heat recovery units, MEG and TEG systems, compressors, fire pumps, platform cranes, lifting beams and hoists, pumps, vessels and tanks and lifeboats.

Seconded by Hydrocarbons (G.B.) Limited, Morecambe Bay Project Operating Group. Responsible for the liaison with contract engineering staff in the commissioning, QA/AC, Construction and Design sections on behalf of the client. To alleviate any anomalies arising from conflict between drawings, standard specifications and sound engineering practices. Provide the onshore design team with technical feedback To vet for acceptability stems/equipment offered for handover. provide and supervise procedures adopted for hydrostatic/dynamic tests and trials. Liaise with QA/QC departments to ensure client's standards are met. Confer with vendor engineering specialists with regard to outlining workscopes and clarifying commissioning procedures. To discuss and assist D.O.E and Certifying Representative (Lloyds, Det Norske Veritas) with fluid transition through certificates of fitness to operations. To compile and scrutinise documentation, as builds and certification submitted for suitability and content, to compile and issue priorities for Punch lists and rectification work

To provide operations Department with running trials familiarisation and training on all mechanical plant and equipment on an offshore production Platform.

Initially joined the project in 1983 being employed in the London office, proceeding through module construction in yards at Dundee, Newcastle and Teesside, consequently to travel offshore to construction hook-up.

1980-1983	Shell UK, Fulmar Project Commissioning Engineer
1976-1980	Shell UK Brent Field Senior Commissioning Technician
1974-1976	William Press Limited Philips Petroleum
1973-1974	Richard and Westgarth Ltd Mechanical Engineer
1966-1970	Blue Star Line Marine Engineer
1962 - 1966	Tees& Hartlepool Port Authority Apprentice Marine Engineer