

Educational and Professional Qualifications

BE (mechanical engineering), University College Dublin, 1990.
MEngSc (mechanical engineering), University College Dublin, 1994.
PhD (mechanical engineering), National University of Ireland, Galway, 1997.
CEng, MIMechE, Chartered Engineer and Member of the Institution of Mechanical Engineers, 2006.

Experience Summary

Chartered mechanical engineer with 20+ years' experience in the subsea oil & gas industry, working for engineering design consultancies, offshore installation contractors, and oil & gas companies. Work experience includes designing subsea pipelines and risers, working offshore as a project engineer on subsea construction and intervention projects, and acting as company representative directing contractor companies. Awarded PhD in mechanical engineering by NUI Galway (1997) for research on finite element analysis of composite materials. In 2016 founded own company Qwilka to develop data software and provide consultancy services.

Qwilka Limited, founder and CEO, 2015 to present

Founded a start-up company, Qwilka Limited, to develop data management and analytics software for subsea pipeline data, with the goals of applying modern computer technology to pipeline design and integrity management, and enabling pipeline operators to become more cost efficient without increasing risk. Highlights:

- Subsea engineering consultancy work for various clients, including oil&gas operator companies.
- Data platform development in collaboration with Waterford Institute of Technology (2016-2019).
- Software development and data analytics in Javascript and Python.
- Enterprise Ireland New Frontiers entrepreneurship course at WIT (2017).
- Society for Underwater Technology (SUT) online course in offshore renewable energy (2022).

Pipeline Engineer, BP Norway Subsea Operations team, May 2014 to June 2015

Assisted with the handover from the Skarv Development Project to the BP Operations team, and provided technical support on pipeline integrity management, survey, inspections and interventions for BP Norway.

Subsea Flowline Engineer, BP Skarv Development Project, 2008 to May 2014

Joined the BP Skarv Development Project in Oslo at the start of 2008 to work as a subsea flowline design engineer with the role of assisting the Project with technical advice on pipelines design. In 2009 was given responsibility for overseeing the subsea flowlines design worksopes carried out by Reinertsen in Trondheim. In 2010 was also given responsibility for the design work on the Skarv gas export pipeline. Also in 2010, acted as offshore technical representative on the flowlines pipelay vessel and on the subsea construction vessel that installed spoolpieces on the gas export pipeline. Highlights on Skarv include:

- Completing the designs of the Skarv subsea flowlines and gas export pipeline.
- Reducing the rockdump requirement for the production flowlines by 35%.
- Offshore as technical representative on pipeline reel-lay and spoolpiece installations.
- Delivering the integrity management system for the Skarv pipelines.
- Assisting offshore installation, pre-commissioning and commissioning activities.

Offshore Project Engineer, Sonsub Aberdeen, February 2006 - May 2007

Seconded from J P Kenny into Sonsub in Aberdeen in 2006 as an offshore project engineer on the Talisman Tweedsmuir project. Initial responsibility was to install two subsea manifolds. Prepared installation procedures, coordinated the delivery of equipment, mobilised installation vessel, and went offshore as project engineer to install the manifolds. Later assisted with the installation of spoolpieces from a diver support vessel. Highlights:

- Offshore as project engineer for installation of subsea manifolds and spoolpieces.
- Coordinated delivery of equipment and mobilisation of subsea construction vessels.

Subsea Engineer, Asset Management Group, J P Kenny Aberdeen, 2004 - 2007

Moved to the Asset Management Group of J P Kenny at the start of 2004, in order to gain experience working offshore. Coordinated the fabrication of spoolpieces, and worked offshore as technical representative on various diving support vessels for BP and Nexen. Operations included subsea manifold and wellhead interventions, and spoolpiece installations. Was seconded into Subsea 7 and Sonsub to work offshore as project engineer assisting in the installation of flexible jumpers, suction anchors, spoolpieces and manifolds. Highlights:

- Working offshore as a project engineer on subsea construction vessels.
- Produced DFI, Asset Information and Preparedness documents for various BP subsea assets.

Pipeline engineer, J P Kenny, Aberdeen 1999 - 2004

Was responsible for the design and analysis of subsea pipeline and riser systems; including pipe wall thickness and pressure containment assessments, pipeline stability and free-span assessments, upheaval buckling and lateral buckling analyses, trawl board impact studies, spoolpiece analysis, and pipe-in-pipe design work. Highlights:

- Finite element analysis of pipeline walking and upheaval buckling for Amerada Hess (1999, Scott).
- Pipe-in-pipe pipeline system detailed design for Shell/EMC (2001, Penguin).
- BP Rhum Field Development, FEED study for pipe-in-pipe pipeline and flowlines (2002).

Riser design engineer, MCS Galway and Oslo, 1997 - 1998

Joined MCS in Galway in March 1997, and moved to Oslo to work in the new MCS Norway office from September 1997 until December 1998. Was responsible for the design of flexible riser systems, steel catenary risers, and drilling risers. Also responsible for implementing the company ISO 9001 Quality Management System in the Oslo office, and successfully obtained accreditation.

PhD researcher, Composites Research Unit, NUI Galway, 1993 - 1997

Conducted research on finite element analysis of composite materials sheet forming, as part of a PhD degree programme. Work included studying composites manufacturing processes, developing finite element analysis software in FORTRAN-77 and Fortran-90, and carrying out materials testing on composites. Also spent some time at a fabrication facility developing a novel manufacturing process for composite materials.

Recent Publications and Presentations

- Digital Decommissioning of Pipelines, presented online at SUT seminar, Nov 2020.
- Trees for Structure and Support in Python, presented at Python Limerick conference, Feb 2020.
- Realising the Full Value of Subsea Data, presented at SUT seminar, Aberdeen, Oct 2019.
- PFLACS: Faster Loadcases and Parameter Studies, presented at Python Ireland conference, Oct 2019.