

PETER A HEFFER BSc(Hons) MSc MIEE CEng

PROFILE



Over 35 years in the Oil/Gas/Petrochemicals industry; working as Controls and Instrumentation Engineer. Now providing Functional Safety Consultancy services in compliance with IEC 61508/61511

- Chartered Engineer.
- Certified Functional Safety Expert (CFSE) - No. 090603 002
- TÜV Functional Safety Engineer (TÜV FSEng) - ID No: 4834/12
- Corporate Member of Institution of Electrical Engineers
- Affiliate, Institution of Chemical Engineers
- Member of the ISA

QUALIFICATIONS

- MSc – Computing for Commerce and Industry
- BSc (Hons) - Electrical and Electronic Engineering

ADDITIONAL TRAINING/SKILLS

- IChemE HAZOP Leadership and Management and
- IChemE LOPA for Safety Instrumented Systems
- Certified user of ACM's SilCore software
- Licensed user of ABB software TRAC
- User of exida's exSILentia software (versions 2.0 and 3.0)
- Shell M269 IPF Facilitators course utilising SIFpro
- BP Approved HAZOP & LOPA Chairman

CAREER HISTORY

Independent Functional Safety Consultant:

2007 to present

- Led HAZOP /SIL for, ABS, Fluor JV, KNPC/KIPIC Al Zour Refinery, Sour Water (SW) Stripper, Acid Gas Flare and Sulphur Pelletiser Units, . Plus vendor packages: SW Offgas compressor, N2 PSA/De-Oxo/TSA, H2 six bed PSA, H2 12 bed PSA, H2 recip Compressor, Tail Gas Compressor, Acid Gas Flare, Ground Flare, Flare Gas RU, Temp Control Unit, Air Compressors, Sulphur Conveyors/dust suppression, Waste Water Treatment (PT/BT/ST), Methanol Storage
- Ongoing Functional Safety support for Gate Terminal, Maasvlakte in Rotterdam LNG facility, including preparation of a Gap Assessment, Functional Safety Management. Procedure and Functional Safety Operations and Maintenance Guide.
- Led HAZOP/LOPA, Greens Power, Nalco Champion, Furness controls upgrade. Plus Functional Safety project lifecycle assistance – SRS, Functional Safety Plan, Verification and FSAs
- Led LOPA, Petrofac, BP, Sullom Voe Gas Sweetening, Process & Utility DCNs
- Led HAZOP/LOPA, DNVGL/ABS, SCOP Karbala Refinery, 6wks, VGO KHT, fire water, power generation, raw and waste water, drinking water, spent caustic
- Led HAZOP/SIL for Mott McDonald, South Hook CHP, SCV LNG Heat Pipe FEED.
- Led HAZOP/SIL for Gate Terminal, Fluor S.A., LBBR project, LNG Ship Loading
- Led HAZOP review for CB&I, National Grid, LNG Road Tanker Loading
- Led Topsides Risk Graph and LOPA for Petrofac, Apache Forties A, Aviat Field Development
- Led HAZID and HAZOP, National Grid, LNG ship to ship loading whist plant in cooldown mode
- Led HAZOP, DNV, KBR, Pacific Northwest LNG (Petronas) Feed, Utilities and Fractionation
- Led SIL LOPA, ABS, TAKREER, Carbon Black and Delayed Coker Package Units
- Led SIL LOPA and performed SIL Verification for Humbly Grove Energy, Oil Plant
- Led SIL LOPA, DNV for Sumitomo Chemical/Saudi ARAMCO. Rabigh II, Metathesis, TPO, MTBE, LDPE/EVA processes.
- Led Topsides Risk Graph and LOPA for Petrofac, Apache Forties C, NGL Compressor
- Led LOPA, Petrofac, Centrica, Kittiwake Offshore Platform
- Led Topsides HAZOP, SIL Risk Graph and SIL LOPA Classifications, Petrofac, Petro SA, Ikhwezi Project, F-O tieback to F-A Platform
- Performed SIL Verification, Petrofac, Ithaca FPF1 floating production vessel
- Led Topsides Risk Graph and LOPA for Petrofac, Ithaca FPF1 floating production vessel
- Led HAZOP and LOPA for ex-MoD Storage Depot, Loch Ewe, Storage Tank Facility
- Led HAZOP for Birwelco, Eastham Refinery Bitumen pumping study
- Led HIPPS LOPA for Petrofac, Ithaca FPF1 floating production vessel
- Led HAZOP and LOPA for Birwelco, Eastham Refinery, Gas distribution and retrofit modifications from oil to gas burners on their crude and vacuum furnaces
- Led HAZOP and LOPA for MoD Storage Depot, Thankses, NATO Diesel Storage Tanks
- Led HAZOP, Oil and Pipelines Agency, Thetford PSD, Relief Valve modifications.
- Performed Functional Safety Audit, Lloyds Register, BP Norge SKARV SIL PLC, SSIV and ESD.
- Performed SIL Verification, BPA, Bacton and North Walsham condensate storage/pumping/rail loading facilities
- Led HAZOP, Oikos jet fuel pumping station and pipeline

- Ongoing Functional Safety support for Humbly Grove Energy (Petronas) for their Gas Storage facility; including preparation of SRS, SIL Classification Procedures, Operations and Maintenance Procedures. LOPA and SIL Verification. Functional Safety Assessments. 2010 to 2014
- Ongoing Functional Safety support for National Grid Isle of Grain LNG facility, including preparation of Safety Requirements Specification (SRS), SIL Classification - LOPA, SIL Verification, IEC 61511 gap analysis) Functional Safety Site Specification. 2010 to 2015.
- Prepared to Fault Tree Analysis, Core Oil and Gas, TAQA, North Cormorant Well Manifold Isolation Analysis (comparing SIL assessment with equipment installed)
- Performed SIL Verification using exSILentia. Lloyds Register for TAKREER. Ruwais Refinery Expansion Project, EPC7 Marine Terminal, Abu Dhabi
- Led LOPA SIL Classification. Lloyds Register for TAKREER. Ruwais Refinery Expansion Project, EPC7 Marine Terminal and Jetty, Abu Dhabi
- Led LOPA SIL Classification, British Pipelines Association (BPA) , OIKOS Pump station
- Performed SIL Verification using exSILentia. Lloyds Register for TAKREER. Ruwais Refinery Expansion Project, EPC4 Tankage, Abu Dhabi
- Led LOPA SIL Classification. Lloyds Register for TAKREER. Ruwais Refinery Expansion Project, EPC4 Tankage, Abu Dhabi
- Performed SIL Verification. DNV for Kuwait Oil Company. BS132, BS131+ GC15, 23, 25 (upgrades), Gas Compression, North Kuwait
- Wrote Safety Requirements Specification (SRS). DNV for Kuwait Oil Company. BS132, BS131+ GC15, 23, 25 (upgrades), Gas Compression, North Kuwait
- Led LOPA and Risk Graph SIL classification. DNV for Kuwait Oil Company. BS132 Gas Compression, North Kuwait
- Led HAZOP and LOPA. EDF Energy. Biomass semi-direct injection, Cottam Power Station.
- Fault tree analysis and independent SIL verification assessment for deepwater well intervention package. Client confidential
- Led SIL Risk Graph Classification, Scottish and Southern Energy. Medway Power Station. Database then migrated to exSILentia 3.0 with verification for all SIF.
- Led LOPA SIL Classification, BP/Centrica OCTIP Pipeline Interface
- Led LOPA SIL Classification, BP Cleeton Injection Pump modifications
- Performed FMEDA and independent SIL assessment, Scottish and Southern Energy, Atwick 2 Wellhead Control Panel
- Led LOPA SIL Classification, BP Chirag, Topsides Facilities
- Led HAZOP and LOPA, BP Magnus Cold Start Modifications
- Led LOPA SIL Classification, BP Chirag, Drilling Facility
- LOPA advisor during BP Chirag Drilling HAZOP
- Independent Verification Body for ICSS (SIS/FGS), Lloyds Register, Agip's Kashagan Project (>100,000 I/O). Duration 3 years.
- Led SIL LOPA Classification, BP OCTIP Offshore
- Led SIL LOPA Classification, BP Southern North Sea (four weeks)
- Led Risk Assessment, Tullow Oil, Drill Stem Test, Ghana
- . Led HAZOP, Tullow Oil, Drill Stem Test, Ghana
- Presented training courses:
 - CFSE, and IEC61508 for exida
 - HAZOP and Instrumentation for IDC Technologies

- 2002 to
2007 **PETRONAS CARIGALI (Malaysia)**
In-house Consultant – Functional Safety, Instrumentation and Controls
Responsible for staff development, technical assistance to all brown and green field projects, assessing new technologies, HAZOP and SIL assessment.
Some of the HAZOPs attended as Client Representative:
- Ruby B – Oil and Gas platform
 - Bargarding – Oil and Gas facility with satellites and processing
 - MLTTB - Oil and Gas facility with satellites and processing
 - Baram South – three platforms with tie-ins to existing hub
 - Miri Crude Oil Terminal – pipeline tie-ins. Also Baronia B – production platform
 - Turkmenistan - Gas production platforms. Also onshore gas processing facility
 - Putri – oil production platform and J4 – gas production platform
 - Baram new compressor upgrades. Also Kinarut gas production platform
 - ANCSI C & D oil production platforms and hub tie-ins
 - Gas receiving terminal new flare
- Some of the SIL classifications attended as Client Rep (using Shell IPF method):
- Ethylene and Polyethylene complex – 1056 I/O
 - Ruby B
 - Bergarding
 - MLTTB
 - Baram South
 - Turkmenistan
 - ANCSI C & D
 - J4
 - Gas receiving terminal new flare
- 1992 to
2002 **AIR PRODUCTS**
Lead Instrument Engineer
Responsible in-house design engineering instrumentation and systems, including HAZOP, P&ID development. Plus construction and start-up assistance.
Pernis Holland – H₂/CO production facility; Petronas Malaysia – Ammonia Syngas facility; Rozenburg III Holland – Air Separation Plant; Fajr Iran - Air Separation Plant; Litvinov Czech Republic – Plant Refurbishment; FAB 14 Ireland - Air Separation Plant + FAB 18 Israel - Air Separation Plant
- 1991 –
1992 **WIMPEY CONSTRUCTION**
Principal Instrument Engineer Centralised Control Room Project – Shell Haven Refinery
- 1989 –
1991 **MW KELLOGG**
Project Instrument Engineer Shell Polypropylene PPLS – Carrington
- 1982 to
1989 **DAVY MCKEE**
Senior Instrument Engineer
Esso Fawley Refinery - Residfiner Project, Norske Hydro Fertiliser Plant – Immingham and Tate and Lyle Silvertown Sugar Refinery
- 1976 to
1982 **Instrument Designer for DAVY MCKEE, MATTHEW HALL, BECHTEL, JOHN BROWN, SORCO Norway, GLOBAL Eng Brunei, BRITISH GAS, AMOT CONTROLS**