CASE STUDY

SOUTHERN HUB AREA RATIONALISATION PROJECT

FEED Safety Studies

ODE and DORIS Engineering delivered the SHARP Brownfield and Greenfield FEED for Perenco. Collectively these scopes involved optimisation and rationalisation of the Leman 49/27A, Leman 49/27B and Indefatigable 49/23A installations to extend the operational life of these 40-year-old assets for a further 20 years. ODE's Technical Safety department supported the delivery of both designs.

Project Name
Southern Hub Area Rationalisation Project (SHARP) Brownfield

Client
Perenco UK

Location
Southern North Sea

Date
2018 - 2019

The Greenfield FEED involved the introduction of a modified jack-up rig at the existing Leman 49/27B platform complex to provide separation, compression and export facilities and to centralise production from the Inde 49/23A and Leman 49/27A platforms, for further conversion to NUIs (the brownfield FEED scope). ODE Technical Safety was responsible for managing the delivery of all the necessary Safety deliverables associated with the FEED Scope including an ALARP demonstration document. (QRA and Explosion work scopes were outsourced for consistency with existing PERENCO UK assets). Technical Safety deliverables developed included:

- Rig Conversion Design Notification (to Client for further HSE submission)
- Environmental Impact Assessment
- Calculation notes: Layout/ Consequence only separation distance calculations, Process vent dispersions, Firewater & Foam demand
- Fire Risk Analysis using PHAST 8. 11. This risk-based review of jet fire, pool fires and flash fires provide the basis for passive fire protection considerations (as detailed in the PFP Schedule)
- PFP Schedule
- Dropped Object Study (Subsea and Topsides)
- Safety Layouts – F&G Detectors, Hazardous Areas, Escape Route and Safety Equipment
- EERA
- Helideck Upgrade Review
- Safety Critical Elements List
- F&G Logic Diagrams
- RAM Analysis
- ALARP Demonstration Report

Hazard Identification Studies, i.e. HAZID/ ENVID, HAZOP, SIL and LOPA studies, were also conducted and resulted in the raising of SAMS (ODE's Safety Action Management System) Action Items. A total of 130 actions were identified from these studies and other FEED design recommendations. All Greenfield Actions were successfully resolved.

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