

ILI project management

Background

We undertook the technical management and campaign design of baseline in-line inspections of two deepwater high pressure flowline loops from an FPSO in Angola.

The campaign included inspections of clad pipe sections and flexible risers, and was the first time either pipeline had been pigged during operation. A Jee engineer was placed in the client office for the duration of the project to manage the campaign from initial conceptual design to the offshore pigging execution on-board the FPSO.

Project engineering

We carried out a full pipeline geometry review from pig launcher to receiver, specifying the tooling requirements for pipeline cleaning, gauging and inspection. We then managed the procurement and qualification of tooling by:

- ✦ Identifying vendors and tools for each application (suitable for operation in the high pressure environment encountered during pig runs)
- ✦ Preparing and tracking costs and schedules
- ✦ Completing technical reviews of all vendor quotations
- ✦ Designing the pre-ILI cleaning strategy
- ✦ Liaising with pig vendors throughout the design, manufacture and testing of different pigs
- ✦ Completing independent pig design assurance checks
- ✦ Witnessing the loop testing and analysing the data generated

We also:

- ✦ Managed the project progression through the client's approval stage gates
- ✦ Reviewed campaign compliance with company and industry standards
- ✦ Worked with client teams to scope out, review and HAZOP new pigging procedures
- ✦ Led an offshore site survey
- ✦ Worked with offshore management to ensure topside readiness for pigging

We prepared the offshore documentation for the campaigns, including stuck pig guidance and procedural bridging documents, to ensure the offshore activities could be executed as safely and efficiently as possible.



NDT tool being removed from pig receiver



Pigging execution

A Jee project engineer worked offshore alongside the client's team for the duration of the ILI campaigns, overseeing the pig vendor activities, independently reviewing their recommendations and managing the interface between the pigging team and the offshore management team. This ensured the offshore management team could maintain focus on operating a live facility, whilst still producing from another field.

Each offshore campaign was completed on or ahead of schedule, minimising the production losses associated with shutting down each pipeline for a pigging campaign. Our active role in managing the offshore execution was a critical factor in achieving the schedule and reducing the shut-down time from the original estimate of 21 days to 12 days, saving the client approximately \$100 million in otherwise lost production.

A detailed lessons learned register was compiled and issued into the client's cross-region lessons database. We reviewed the reports provided by the calliper and ILI vendors and provided a close-out report to the client summarising all onshore and offshore activities during the project and key data recovered by the inspection.