

Case study: Gulf of Mexico, United States

Remote operations approach validated for liner hanger installation, key to reducing rig staff, HSE risks

With an eye to streamlining efficiencies and reducing health, safety and environmental (HSE) exposures, an operator collaborated with Baker Hughes to reduce the number of people on offshore rigs. Building on its Remote Operations Services that uses proprietary systems and technology to execute safe and secure remote operations, Baker Hughes cross-trained field personnel to ensure they were capable of performing multiple tasks at the well site.

When the COVID-19 pandemic struck in 2020—bringing with it the necessity to quarantine workers who tested positive for the virus and complicating the logistics of offshore work—the operator worked with Baker Hughes to accelerate its drive to reduce the staff on the rigs.

As part of this effort, the operator and Baker Hughes developed a field trial to determine if a liner hanger deployment could be installed remotely. For liner hanger installations, typically Baker Hughes supplies one to two specially trained field personnel to the rig during the installation process. For this field trial, Baker Hughes sent one specialist to support with the goal of determining if this function could be handled by a remote onshore team and a single, cross-trained completions generalist at the rig site.

This trial would involve all aspects, including setting the hanger, deploying

the running tool, setting the packer, and monitoring the cement job. Video feeds, monitoring software, and other means of two-way communication were installed throughout the rig and would be used by the remote team to manage the installation.

The bottomhole assembly (BHA) consisted of an **INLine™ liner hanger system** with a 20-ft extension and a **HRD-E™ liner setting tool** to provide the torque transition from the drillstring to the liner. The operator's rig crew tripped the BHA into the wellbore and, working under the supervision of the remote team, completed a successful liner hanger operation. The Baker Hughes rigsite man was in direct communication with the remote team, offering feedback as needed for the duration of the job.

The operator and Baker Hughes conducted an after-action review of the field trial that confirmed the remote installation process delivered the same predictable performance Baker Hughes provides during conventional fully manned liner hanger operations. The review also confirmed the potential for significant cost, risk, and carbon dioxide (CO₂) reductions by using this approach on future remote operations.

Based on this field trial, the operator decided to phase-in additional remote liner hanger installations with the ultimate goal of fully remote operations on all rigsites.

Challenges

- Reduce personnel on rig during liner hanger operations
- Lower the operation's carbon footprint
- Mitigate potential HSE risks

Results

- Installed complete liner hanger system with minimum personnel on the rig
- Maintained constant communications throughout the entire process
- Developed best practices for future remote operations
- Experienced no HSE issues or nonproductive time (NPT)