



# Torus safety valve enabled rigless ESP installation, reduced OPEX by 80%

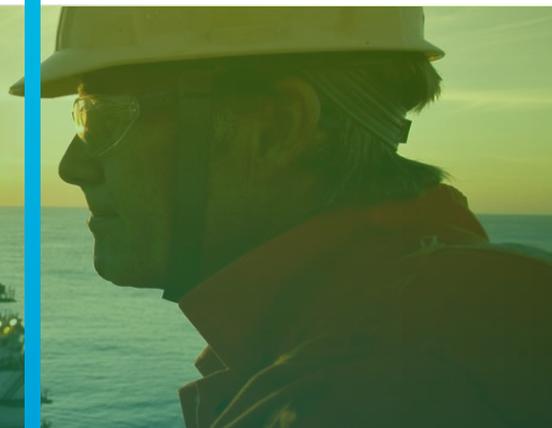
A customer with an offshore field in southeast Asia experienced an electrical submersible pumping (ESP) system failure in one of its wells, resulting in thousands of dollars of lost production each day. Wanting to get the well back online as quickly as possible, the customer explored different through-tubing recompletion options, but they all came with a costly caveat: the customer would need to mobilize a workover rig to perform the work.

In most areas, and in the case of this customer's well, maintaining a fully functional, API 14A-qualified safety valve is a legal requirement. However, traditional safety valves with flapper closure mechanisms fundamentally cannot maintain a permanent conduit for a through-tubing ESP's power cable. This would typically result in the customer having to set a safety valve deep below the ESP, which can only be done using a rig. With day rates in excess of \$250,000 USD and availability issues that often delay projects, mobilizing a rig is a costly and time consuming consequence of this scenario.

To help this customer keep costs low while quickly bringing the well back online, Baker Hughes, a GE company (BHGE) recommended running the ESP with its new **Torus™ insert safety valve**. By using a patented sliding sleeve design to control flow instead of a flapper mechanism, the Torus valve maintains functionality—during installation and production—while providing a permanent conduit through its center. The Torus valve is also qualified to API 14A to ensure reliable sealing and full compliance with regulatory and safety requirements.

The Torus valve assembly and ESP were mated at surface and deployed on tubing, enabling a totally rigless operation. Independent movement of the ESP and cable allowed the rig crew to quickly and easily land the Torus valve and to continue running the ESP. After the installation was complete the well was successfully brought back online and economic production was restored.

In addition to cutting out rig-related HSE risks, the Torus valve reduced OPEX by



## Challenges

- Enabled rigless deployment of an ESP with a qualified safety valve
- Cut job time in half and reduced costs by 80%
- Eliminated rig-related logistics, HSE risks, and delays
- Permitted installation of the valve above the ESP, eliminating the need for a deep-set valve below the ESP
- Allowed the well to be rejuvenated and brought back online faster
- Simplified operations

## Results

- 10-year-old, inactive well with a non-functioning ESP
- Cost-prohibitive recompletion options due to rig requirement
- Long rig waiting times

80% compared with the average OPEX on conventional, rig-based workovers. Pleased with the results on this job, the customer plans to deploy Torus valves in other through-tubing ESP recompletions to reduce OPEX while extending the life of its existing assets.



In addition to eliminating workover rig requirements, the Torus valve also enabled easier tool handling and significantly streamlined installation.

[bhge.com](http://bhge.com)

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