Wellbore Service Tools

Temporary Well Abandonment System Stays Intact for Nine Years, Despite Hurricane

Location: Gulf of Mexico

Overview

Hurricane season in the Gulf of Mexico adds a layer of complexity and planning to an already rigorous industry. In addition to daily drilling and personnel operations, rig operators must also prepare the logistics of performing an emergency evacuation. Storm evacuation planning includes personnel lodging, helicopter contracts, equipment, and estimated evacuation times. While evacuating personnel is the priority, the risk of equipment damage is also a huge concern of the industry. Leaving drill pipe in the derrick during a storm can potentially cause damage to the structure and other rig equipment.

According to the Department of Energy, oil and gas refineries in the paths of Hurricanes Katrina and Rita accounted for about 29% of U.S. refining capacity. These refineries were shut down in the wake of the hurricanes, along with the destruction of 115 platforms, damage to 52 others rigs, and damage to 535 pipeline segments in the Gulf of Mexico alone. The long-term impact of these storms was devastating as well. Nine months after the storms passed, 22% of federal oil production and 13% of gas production remained shut in, resulting in the loss of 150 million barrels of oil and 730 billion ft³ of gas from domestic supplies.

Just eight days after Halliburton installed a temporary well abandonment system on an operator’s jack-up rig, the rig was found beached in West Cameron. Without these special tools, the workstring that was secured inside the well would have been left standing in the derrick and likely would have blown away with the rig.
**Solving the Challenge**

Halliburton proposed running a subsurface control valve I (SSC-I) along with a RTTS® packer to seal the well being drilled. This combination, commonly referred to as a storm packer, allows the workstring to remain in the hole while evacuating the well. Having this ability allows the rig to save precious time and money in the case of a storm evacuation, because the downhole equipment is protected in the well and the hazard of drill pipe sitting in a derrick during a storm is avoided.

Halliburton suggested this course of action during the devastation of Hurricane Katrina, less than a month before Hurricane Rita entered the Gulf of Mexico.

In September 2005, the RTTS packer/SSC-I valve combination was installed at 492 feet with over 7,000 feet of drill pipe hanging below it. The tools remained intact inside the well for over nine years, despite the rig being blown off and destroyed by Hurricane Rita. The system was successfully retrieved in February 2015 without any problems. Upon inspection, the system was found to be in excellent condition.

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<th>CHALLENGE</th>
<th>SOLUTION</th>
<th>RESULT</th>
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<td>Temporary plug and abandon of an offshore well in case damage occurs to rig during oncoming hurricane</td>
<td>Halliburton SSC-I valve and RTTS® packer were run and set to control the well</td>
<td>Rig was knocked off location but well was controlled until tools were retrieved nine years later</td>
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