

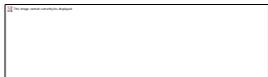
Real-Time Monitoring Capability

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- Real Time BOP Health Monitoring
- Remote BOP Pressure Testing
- BP's Houston Monitoring Center (HMC)



Real Time BOP Health Monitoring

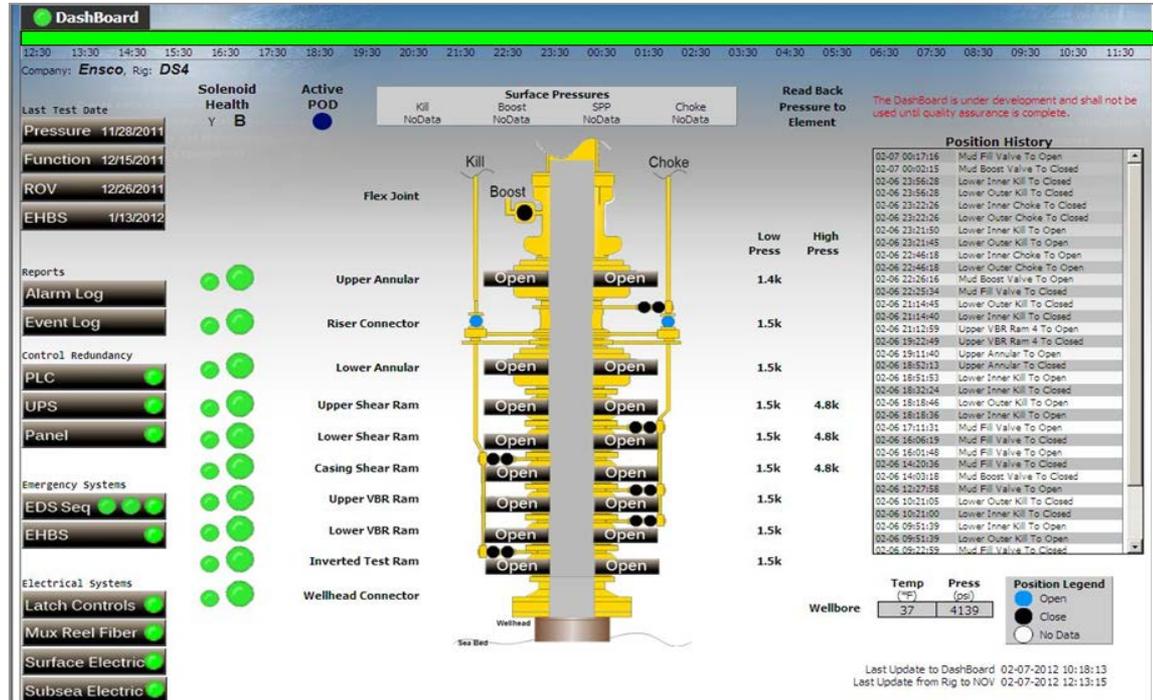


Aim

- Simplifies and broadens the reach of BOP diagnostics to aid operational decisions.

Key Features

- Presents 'Traffic light' status on the availability of key functions:
 - Subsea BOP elements
 - Surface systems (UPS, PLC)
 - Emergency systems
- Displays BOP elements health history
- Displays valves position history



Current Status

- Piloting on the DS-4 in Brazil (w/ NOV & Enasco)
- BP's first installation in GoM in late 2012
- Working with other OEMs

Remote BOP Pressure Testing



Aim

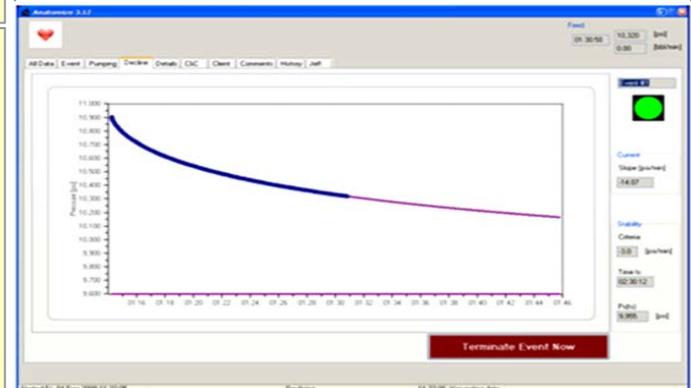
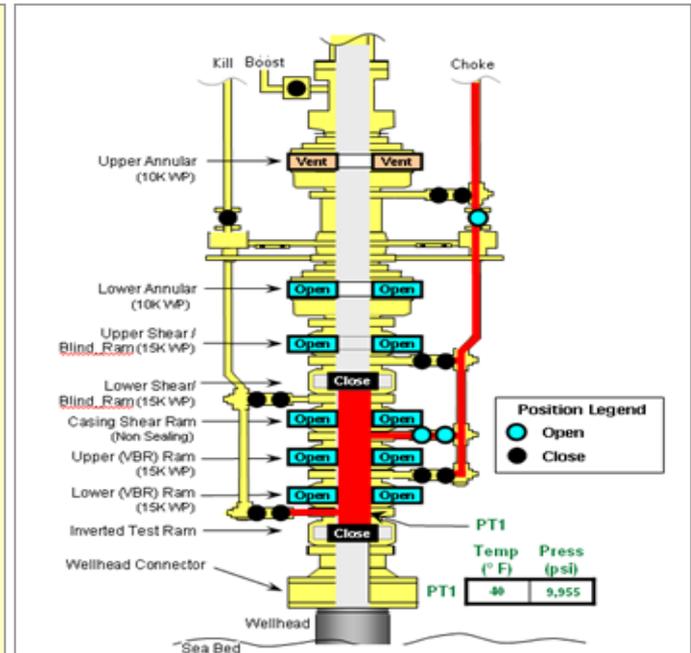
- Provides an independent means of witnessing the BOP pressure tests from onshore.

Key Features

- Digitally interprets the pressure test using data at the BOP cavity
- Senses positions of BOP elements and confirms the actual pressure path
- Minimizes human factors in conducting and interpreting test

Current Status

- Demonstrated early version on West Sirius (April)
- Pilot final system using BOP data on DS4 in 2012
- Extend the capability to casing pressure testing in 2013



BP Houston Monitoring Center (HMC)



Aim

- Enables 24/7 monitoring of well parameters from onshore.

Key Features

- Staffs 30 specialists supporting eight rigs
- Provides constant communication with offshore rig teams
- Monitors real-time data including pits, flow rates, pressures, mud weight
- Utilizes standardized processes, procedures, and protocols



Current Status

- HMC went online in July 2011
- Extend capability to monitor other safety critical activities like pressure testing





- **Real Time BOP Monitoring** simplifies and broadens the reach of BOP health diagnostics to aid operational decisions.
- **Remote BOP Pressure Testing** provides an independent means of witnessing the BOP pressure tests from onshore.
- **BP's Houston Monitoring Center (HMC)** enables 24/7 monitoring of well parameters from onshore.

