

Off Depth Perforation Avoided After Hunting ControlFire System Blocked Over-Voltage

Marcellus Shale - September 2014

Key Results

- Protection against RF, stray voltage and direct voltage
- Increase reliability and efficiency over mechanical switch systems
- Skip-over capabilities provide valuable time savings during miss-runs
- Real-time shot verification with voltage/current plot
- Switch operational confirmation on surface and downhole
- Shoot up to 50 guns per run

Customer Problem

During a stage frac operation, a service company was perforating with six guns and a plug on the wireline. The toolstring was successfully pumped downhole and then retrieved to the perforation interval. The engineer selectively fired the first gun, when a lightning strike was observed. Hunting's ControlFire® switches for selective perforating were in place when the high voltage was detected and blocked.

The transient over-voltage from the nearby lightning strike prompted an error message on the perforating unit indicating: "Shooting PS exceeded 500V and was disconnected from W/L". After the strike, the engineer confirmed the downhole switches were still operational then proceeded to fire the guns and successfully finish the stage without further incident.

Hunting Solution

The ControlFire system involves communication between the Perforating Command and Control Panel (PCCP) on surface and downhole ControlFire switches. When the system senses an overvoltage (>500V), the PCCP is designed to electrically disconnect from the wireline to protect the switches from damage. In this case, the over-voltage was detected and caused the shooting panel to shut down communication to the wireline, avoiding an unintentional detonation.

Results

The implementation of Hunting's Titan ControlFire System saved the operator from a possible off depth perforation. If the over-voltage, induced from the lightning strike were able to bypass the switches, all six of the guns in the toolstring may have fired. The ControlFire system adds an extra level of safety, protecting the perforating gun from unintentional initiation by extraneous electricity.

*In accordance with RP-67, explosive operations should never be performed during or on the onset of electrical storm activity.

Contact your Hunting representative for additional information.

About Hunting's Titan Division

For successful cased hole logging and perforating services, tool reliability, availability, and time line of delivery are essential. Hunting supplies customers worldwide with the right tools to get the job done. Our product lines include state of the art, high quality wireline and tubing conveyed perforating (TCP) gun systems, hardware and accessories, shaped charges, and electronic logging tools.