EStB – Wireline Pressure Control Systems

Wireline Pressure Control System

A flange connects to the top of the tree which acts as an adaptor for the rest of the wireline pressure control equipment. Above the flange is either a single or multi ram hydraulic or manually operated wireline BOP that seals around wireline to gain well control. Above the BOP is the tool trap, which prevents the loss of a wireline tool in the event the wire breaks.

The lubricator riser is located between the tool trap and the crossover adapter for the grease injection control head. The lubricator riser allows the operator to raise the wireline tools above the wellhead valve before and after wireline operations allowing for the closing of the wellhead valve.

The crossover adaptor sits on top of the riser and provides a connection to the riser for the grease injection control head above it. At the top of the wireline pressure equipment is the stuffing box designed to seal around stationary or moving solid wireline. The stuffing box incorporates a blowout plug to automatically shut in the well pressure if the wire breaks.

Parts and Components (Barrier Elements), *i.e., Description of pressure containing parts and components that serve as part of a barrier envelope when required.*

Body - Provides structural support for the associated components and sealing elements (e.g., valves, rams, etc.)

Sealing Ram(s) – Components intended to close on the wellbore or wire to isolate fluid (e.g., wireline BOP.)

Valves – Components intended to close to isolate fluids.

Spools – Pipe with end connectors (e.g., flanges) and potentially side outlets used to connect between barrier elements (e.g., spacer or adapter spools).

Seals – Components used to close off or secure against fluid (e.g., elastomeric, metal-to-metal, gaskets).

Pressure Control Head – Uppermost components used to close off or secure against fluid (e.g., stuffing box, control head, and grease injection head).

Scope

The scope of this document covers the wireline pressure control system used in any activity that involves lowering a tool into a wellbore using a wire, electric line, or braided cable to ascertain subsurface petrophysical and/or geophysical data or provide well construction services. The wireline unit is defined from the wireline BOPs that connect to the tree or drilling

BOPs to the pressure control head at the top of the unit. Pressure control employed during wireline operations is intended to contain pressure originating from the wellbore.

Assumptions

- The equipment is field proven.
- The equipment is,
  - manufactured according to specification
  - installed as per Original Equipment Manufacturer (OEM) guidelines
  - maintained as required
  - functioning properly
  - verified as needed
- Throughout the equipment's lifecycle, the equipment is utilized within its prescribed applicable performance envelope (e.g., pressure, longevity, environment) and is being operated as designed.

Parts and Components (Mitigators), *i.e., Description of fluid wet components or components used to directly prevent escalation of event required for system to work as a mitigator. These are components that apply mitigation directly to the hazard. This should not include control systems.*

Non-Sealing Ram(s) - Components intended to close on the wellbore or wireline that perform functions other than sealing (e.g., shear or cut).

Performance Requirements for Public Comments

Barriers	
Part/Component	**Performance Requirement**
Body	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).
Sealing Rams	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).
Valves	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).
Spools	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).
Seals	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).
Pressure Control Head	1) Wireline units shall have the ability to seal in the direction of flow and exhibit no leakage when closed. Wireline units shall control pressure and well fluid under all anticipated conditions. Wireline units shall maintain pressure and fluid in both static and dynamic scenarios. 2) Wireline units shall have the ability to remain sealed during the loss of operating power (i.e., the unit will stay closed if power is lost until acted upon by the equipment operator).

Mitigators	
Part/Component	**Performance Requirement**
Non-Sealing Ram(s)	Components intended to close on the wellbore or wireline that perform functions other than sealing (e.g., shear or cut).