Subsea Intervention Workover Control Systems

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Contents

Subsea Intervention Workover Control Systems

1 Scope

This document provides the requirements for the design, manufacture, and testing of intervention workover control system (IWOCS) equipment. Blowout prevention (BOP) control systems are outside the scope of this Recommended Practice and typically are not connected to the IWOCS.

Some requirements in this document are specific to the execution of end user–defined safety functions. It is the end users' responsibility to define the safety functions (i.e. timed sequence of events to operate a safety class device) as an input to this document. This document defines "safety class control functions" used to operate safety class devices. Annex A provides guidance on the determination of safety class control functions based on the end user–provided safety functions.

This document identifies the IWOCS equipment typically used in a thru-blowout preventer intervention riser system (TBIRS) and an open-water intervention riser system (OWIRS); see API 17G for more details on these systems and associated components. The IWOCS equipment described in this document may be used for other system types. Table 1 lists equipment typically controlled by an IWOCS. Refer to Figure 1 and Figure 2 for example IWOCS block diagrams for both system types.

Table 1—Equipment Typically Controlled by Intervention System Type

TBIRS	OWIRS
Surface tree	Surface tree
Lubricator valve	Lubricator valve
Retainer valve	Retainer valve
Subsea test tree assembly (SSTTA)	Emergency disconnect package
Tubing hanger running tool	Well Control Package
Tubing hanger or tree re-entry spool	Tree running tool
Downhole monitoring and flow control functions	Subsea tree
SCSSV and associated downhole functions	Downhole monitoring and flow control functions
External IWOCS for tree control	SCSSV

IWOCS equipment may be configured in one of the control system architectures listed below. It is not the intent of this document to mandate the type of control system architecture used for a given application.

— Direct hydraulic control system (see 3.1.2 for definition);

— Discrete hydraulic control system (see 3.1.3 for definition);

— Electro-hydraulic (EH) control system (see 3.1.4 for definition);

— Multiplex (MUX) control system (see 3.1.7 for definition).