API C2 / SC 17

SUBCOMMITTEE ON SUBSEA PRODUCTION SYSTEMS

API 17G4 Riserless Subsea Well Intervention Systems

REVISION TASK GROUP STATUS

5TH JANUARY 2016
1. **STATUS**

Some progress has been made since the last update. We have a meeting scheduled in January and are looking for more review and input from members. The document requires more diverse input. We have focused on sections 3 and 4 for this revision. Based on input from BSEE and operators we will focus on the pressure control head for the next revision.

2. **MEMBERSHIP**

The following table identifies current task group members:

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3. **UPDATED TARGET DATES FOR DELIVERABLES**

The current version of the document is attached below. Generally the document needs more external review. We will schedule a telecom meeting for January during which we will do a high level review and assessment and look for more help with detailed review. The document is aligned with the main 17G document such that we refer to the main document where possible and put the riserless exceptions in the 17G4 document.
4. MAJOR ISSUES

No major issues

5. ANTICIPATED NEW WORK ITEMS

Nothing specific but need review and input from more companies/individuals.

6. PLANS FOR FUTURE MEETINGS

There is a telecom meeting scheduled for January 2016.

7. RESOURCE NEEDS

None at this time.

8. ADDITIONAL INFORMATION

We continue to work closely with the 17G2 group to ensure there is no overlap and also the main 17G document to avoid duplication.
Recommended Practice for Riserless Subsea Well Intervention Systems

ANSI/API RECOMMENDED PRACTICE 17G4
FIRST EDITION, January 2016 Draft
1 SCOPE

1.1 Introduction
API 17G4 is a supplementary document to API Spec 17G. 17G4 will describe equipment, practices, and systems used for open water riserless well interventions on subsea wells. Open water riserless well intervention systems do not contain a riser throughout the water column or have a means to facilitate drilling. Riserless well intervention systems are designed for allowing a means of introducing tools in and out of a well while containing wellbore pressure at the wellhead or tree. The RSWIS system must be capable of circulating seawater or wellbore fluid out of the subsea system prior to recovering the tool string to surface or deploying the tool string into the well. If an open water riserless well intervention system is to be used for subsea pumping well intervention then it must meet the requirements of 17G2 accordingly. The whole of the system needs to meet all the requirements of API 17G as modified or amended by this document.

This document is not intended to replace sound engineering judgment. It is necessary that users of API 17G4 be aware that additional or different requirements can better suit the demands of a particular service environment, the regulations of a jurisdictional authority or other scenarios not specifically addressed.

1.2 Purpose
API 17G4 is intended to supplement API Spec 17G with regard to open water riserless subsea well interventions. The document’s purpose is to illustrate recommendations for the design, build, and operation of open water riserless subsea well intervention systems. Most equipment used for riserless well intervention are covered by standards widely used by the industry and as such are to be governed by those standards. If not specifically referenced in this supplement, then the expectation is that the main API 17G document prevails.

1.3 Specific Equipment Covered in 17G4
Specific equipment covered by API 17G4 for Riserless subsea well intervention operations is listed as follows:

a) Riserless Well Control Package (RWCP)
b) Lubricator Assembly
c) Pressure Control Head and Dynamic Seal
d) Disconnect Systems
e) Control Systems
f) Injection/Circulation System
g) Connectors
1.4 Specific Equipment Not Covered in 17G4 that is Applicable to Open Water Riserless Well Intervention

Associated Equipment not covered by API 17G4 for Open Water Riserless well intervention is listed below:
   a) Internal and external tree caps
   b) Tree Running Tools
   c) Cross-Overs and/or Adapters from the Subsea Tree to an Open Water Riserless Well Control Package
   d) Subsea Umbilicals
   e) Remotely Operated Vehicle Interfaces on Subsea Systems
   f) Winching, Spooling, Tensioners, or other Deployment Equipment
   g) Down line/ Fluid Conduit Deployment and Recovery System
   h) Tree Running Tool/XT Connector
   i) Subsea Pumps
   j) Subsea Processing Packages

2 NORMATIVE REFERENCES

The following referenced documents are supplemental to the documents sited in API 17G. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

3 TERMS, DEFINITIONS, ABBREVIATED TERMS, SYMBOLS AND NOMENCLATURE

It is recommended that the user refer to API Spec 17G for subsea well intervention terms and definitions not referenced here.

3.1 Terms and Definitions

3.1.1 Contingent Safe State:
The riserless well control package has the required barriers to the environment activated and holding such that with all other equipment disconnected, the remaining RWCP components and barrier devices can secure the well and allow for future well recovery.
3.1.2 Emergency Disconnect Package (EDP): Subsea equipment package that provides a disconnection and typically isolation device(s) to prevent hydrocarbons from being released to the sea in the case of surface vessel drift-off / drive off or other emergency that could move the surface vessel away from the well location.

3.1.3 Emergency Quick Disconnect (EQD) Automatic activation of an emergency shutdown (ESD) followed by an automatic disconnect of downlines.

3.1.4 Emergency Shut Down (ESD) Controlled sequence of events that ensures that the well is secured against accidental release of hydrocarbons into the environment, i.e., closing of barrier elements.

3.1.5 Intervention and workover control system Controls and monitors intervention, retrieval, access, and deployment of subsea well control equipment without or with a lubricator.

3.1.6 Lubricator Tubular member(s) attached to the top of the RWCP subsea that facilitate housing of a tool string and equalizing pressure across the lowest barrier, prior to entering the well. The lubricator is pressure containing and is usually equipped with a re-entry spool for tool string recovery and change out.

3.1.7 Pressure Control Head (PCH) Equipment used as a means to prevent egress of well fluids to the environment or ingress of seawater to the lubricator while also allowing conveyance of tools in and out of the well. A pressure control head normally consists of at least two dynamic sealing barriers and is located at the top of the lubricator.

3.1.8 Rated Working Pressure (RWP) Maximum internal pressure that the equipment is designed to contain and/or control. NOTE: RWP is not to be confused with test pressure. It is also not to be confused with riser and landing string design pressure. RWP is usually associated with well control equipment and does not consider external hydrostatic pressure as part of its pressure rating.

3.1.9 Re-entry spool Uppermost part of a subsea tree to which a subsea well intervention system is attached to gain vertical well access, or a point on a riserless well control package to which a workover riser based intervention system can attach to gain vertical well access.

3.1.10 Riserless Well Control Package (RWCP): Subsea equipment package that connects to the top of the subsea tree or wellhead and contains at least two independent and testable barriers. The RWCP normally facilitates a flowline below the testable barriers for pumping into the well, pressure testing and flushing the RWCP before removal. This flowline should also have at least two independent and testable barriers.
3.1.11 Well Intervention:
The entry of tools from the well intervention package into the wellbore.

3.2 Abbreviated Terms
EDP- Emergency disconnect package
EQD – Emergency quick disconnect
ESD – Emergency shut down
PCH- Pressure control head
RES- Re-entry spool
RSWIS- Riserless subsea well intervention system
RWCP – Riserless well control package
RWP-Rated working pressure

3.3 Symbols

3.4 Nomenclature

4 SYSTEM REQUIREMENTS

4.1 Purpose
System requirements shall be in accordance with Clause 4.

The modes of operation covered within the scope of this clause for regarding system requirements associated with intervention operations shall be:

a) Riserless wireline intervention mode;
b) Riserless coiled tubing intervention mode;

The scope of equipment included (but not limited to) in the system requirements for the riserless wireline intervention mode is shown in Figure XXX

The scope of equipment included (but not limited to) the system requirements for the riserless coiled tubing intervention mode is shown in figure XXX

The system and contingency states must maintain containment at all times. A riserless subsea well intervention system comprises the following:

- Riserless Well Control Package (RWCP)
- Lubricator Assembly
- Pressure Control Head
- Emergency Disconnect Package (EDP)
- Vessel Support Equipment for Intervention Operations
The system may also contain a contingency riser Re-entry spool.

A typical arrangement of a subsea riserless well interventions system is illustrated in Figure 1.

![Figure 1: General Layout for RWIS system](image)

**4.2 Responsibilities**
As per 17G for end user / manufacturer / and service provider

**4.3 System Engineering (as per 17G)**

**4.4 System Definition (as per 17G)**

**4.5 System Design (as per 17G)**
The RSWIS’s control systems, equipment, valves and connections shall be designed and qualified for the intended subsea application, and in accordance with applicable standards. The system must be designed to handle contingencies and maintain containment at all times.
4.6 Risk Assessment (as per 17G)

4.7 System Review (as per 17G)

4.8 System Functional Requirements
An open-water riserless subsea well intervention system shall fulfill the following requirements, as appropriate:
- Allow wellbore servicing with wireline and/or coiled tubing;
- Provide a means of well access for tools via the individual bores of a subsea tree or tubing head;
- Provide a means to circulate or displace fluids;
- Provide the means for connecting components of the riserless system together in a safe and efficient manner;
- Allow for running conveyance and intervention tooling through open sea;
- Provide a means for connecting control lines to the riserless equipment.

4.9 Design Principles (as per 17G)

4.10 Operational Principles (as per 17G)

4.11 Safety Principles (as per 17G)

4.12 Safety Strategy (as per 17G)

4.13 Barrier Requirements
At least two independent and testable barriers between the reservoir and the environment should be available in order to prevent unintentional flow from the well.

The primary and secondary barrier elements should be contained within the well control package (WCP).

The lubricator shall be equipped with an environmental barrier to prevent ingress or egress of fluids during wireline (slickline, braided line, electric line, coiled tubing) operations.

4.14 Regulations, Codes, and Standards
The system shall comply with the applicable regulatory requirements for the regions in which the system will be operated. The user/operator shall specify the regulatory jurisdictions in which the system is intended to operate.

The RSWIS equipment included in the scope of the API 17G4 shall be designed, manufactured, and tested in accordance with the applicable references, codes, and standards specified in API 17G.

Components and systems included in a subsea well intervention system, which have not been designed, manufactured, and qualified in accordance with API 17G, shall be identified. Components, which are outside the scope of API 17G4, and have an influence on the design, manufacture, test and operation of the riserless intervention system, shall be accounted for to ensure overall system safety. In particular, equipment supplied in accordance with component standards (e.g. API 6A (ISO 10423), API 16A (ISO 13533), API 16D, API 17D (ISO 13628-4),
API 17E (ISO 13628-5), ISO 13628-1, ISO 13628-6, API 17D ANNEX C (ISO 13628-8), ASME B 31.3, and ASME VIII are designed and qualified for designated sizes and rated working pressures only (i.e. pressure based design). For subsea riserless intervention system applications, it is normal industry practice to ensure that the load combinations determined in API 17G (i.e. normal, extreme and accidental loading conditions) do not exceed the rated capacity (i.e. normal capacity) of pressure based designed equipment.

**NOTE:** The sections and annexes in Table 4-1 are references to sections and annexes in API 17G.

### Table 4-1: Equipment References, Codes, and Standards

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4.15 Operational Requirements

Riserless subsea well intervention systems are classified as temporary systems and normally have a defined operating envelope relative to metocean and surface conditions. In situations where operating conditions are expected to exceed the allowable values, barriers shall be set and the riserless subsea well intervention system shall either be disconnected from surface lines or retrieved.
Refer to API 17G Table 4-3 for lowering probability of drive/off drift/off occurrence. Refer to API 17G Table 4-4 for managing consequences.

4.16 Requirements for personnel qualifications (as per 17G)

4.17 Quality system and quality control (as per 17G)

4.18 Documentation, records, and traceability (as per 17G)

4.19 Verification and validation (as per 17G)

5 FUNCTIONAL REQUIREMENTS

5.1 Purpose

Section 5 specifies the functional requirements for the individual types of equipment included in a riserless subsea well intervention system (RSWIS). Each equipment type is defined in terms of its function and system interfaces.

5.2 Drift requirements (as per 17G)

5.3 Common Requirements

As per API 17G as well as the following:
Requirements that are common to all equipment in the subsea riserless well intervention system are as follows:

a) The SRWIS shall be maintainable. All parts of the system intended for maintenance shall be capable of being safely dismantled. Trapped volumes with potential pressure shall be safely evacuated;

b) The SRWIS must be compatible with all chemicals and hydrocarbons that may be encountered;
c) The SRWIS shall conform to a dual barrier philosophy;

d) All equipment that can be subject to net differential pressure (i.e., from hydrostatic head or internal pressure greater than ambient) shall be designed to withstand these pressures;

e) The system must allow for safe release of pressure and flushing of complete system;

f) The design of guidance systems shall address seal makeup tolerance, angle of re-entry and release, damage to control interfaces and seal surfaces, shall be addressed, wherever appropriate;

g) Consideration shall be given to safe operation and lifting / handling of the equipment;

h) The SRWIS is to be designed to maximize maintainability, health and safety of the operator, crew and environment;

5.4  Riserless Well Control Package (RWCP)

A RWCP may typically include the following components:

a) Upper barrier valve/ram;

b) Lower barrier valve/ram;

c) Lubricator/re-entry hub connector;

d) Injection/circulation system; (for flushing and pressure relief);

e) Alternate lubricator testing device;

f) Emergency Disconnect System (EDS);

g) Subsea control system;

h) Re-Entry Spool (RES) for workover riser;

i) Tree running tool (TRT);

j) Connector adapter;

k) ROV/Diver interfaces;

The RWCP may be configured as a single unit or as a sectioned unit and may be equipped with an upper re-entry spool interface with connector.

The RWCP shall provide all mechanical support and be able to withstand the combined effects of down lines, tensioning, and bending, as well as internal and external pressure.

All valves in the flow path shall have position indicators observable by ROV/diver/surface personnel.

5.4.1 Upper Barrier Valve/Ram

The upper test valve/ram serves as a barrier and testing element, and may be used for system pressure testing.
5.4.2 Lower Barrier Valve/Ram
The lower test valve/ram serves as a barrier and testing element, and may be used for system pressure testing.

5.4.3 Lubricator/Re-entry Hub Connector
A disconnect point with a re-entry hub shall be located above the test valve to allow for retrieval/repair of the Lubricator and/or pressure control head. The re-entry connector shall be designed to take all expected loads from the lubricator and/or pressure control head and allow for separate retrieval of that section.

5.4.4 Wireline/Coiled Tubing Shearing Rams/Valves
The shear seal ram shall be able to cut all relevant wire and or coiled tubing sizes, if required, and seal in the closed position. This valve shall be able to hold pressure from below up to the rated working pressure (RWP). A shear seal ram not meeting the requirements for coiled tubing operations will limit the possibility to perform remedial operations utilizing coiled tubing with a high pressure riser system. A shear seal ram for coiled tubing operations is therefore the recommended option if the ability to connect a riser is required. Design and performance shall be in accordance with API 16A (ISO 13533).

5.5 Lubricator Assembly
The lubricator is situated above the RWCP. The primary function of the lubricator is to allow entry of the tool string into the well and its return while under well pressure. The lubricator may consist of stress joint and/or lubricator pipe sections. The lubricator sections shall be designed to take operational loads without lateral support. The design shall ensure failure above the well containment barriers in the case of excessive bending moments. The upper lubricator section consists of the following:

- Pressure control head
- Tool catcher (or tool trap in lower section)
- Upper lubricator section connector (optional)
- A circulation system to flush the lubricator, or fluids and hydrocarbons, prior to disconnect and after reconnection.

The lower lubricator section consists of the following:

- Lubricator tube
- Injection circulation system
- Tool trap (or tool catcher in upper section)
- Lower lubricator section connector
- A circulation system to flush the lubricator, of fluids and hydrocarbons, prior to disconnect and after reconnection

The design of the lubricator shall allow for disconnection of the lubricator and or pressure control head for retrieval to surface for maintenance or tool string change-out with required well
barrier elements in place and controlling the well. Disconnection and retrieval of the lubricator and/or pressure control head shall be designed to prevent escape of well fluid.

5.5.1 Tool Trap/Tool Catcher
The lubricator shall include an arrangement to prevent the tool from being accidentally dropped into the well or onto the top of a well barrier, in case the wire parts or is pulled out of the rope-socket.

The tool-catcher shall be located below the pressure control head.
Alternatively a tool-trap can substitute for a tool-catcher. The tool-trap shall be situated at the bottom of the lubricator.

5.5.2 Upper Lubricator Section Connector
The upper lubricator section connector shall ensure efficient subsea mating of the two lubricator sections and shall have the same functional requirements as per API 17D.

The connector shall be designed for multiple make/break instances without the need to change the seal. Guide wire guide arms may be used for lateral control of the connector during running/mating.

5.5.3 Lubricator Tube
The lubricator may be divided into sections of suitable lengths with connections that are gas tight and have seals as per API 17D (ISO 13628-7).

Depending on the design of the wellhead, XT and WCP, it may be necessary to design the lubricator tube to be a safety joint/weak link, to ensure acceptable consequences of accidental events, e.g. loss of position. For accidental load conditions, controlled yielding/bending of the lubricator tube is acceptable, as long as well control is maintained.

The lubricator tube shall be designed to prevent collapse caused by hydrostatic pressure at depth.

5.5.4 Lower Lubricator Section Connector
The lower lubricator section connector shall ensure efficient subsea mating of the Lower lubricator section and the Well control package. It shall be possible to disconnect the lower lubricator section connector without any umbilical connected to the RLWI system. It is recommended that the lower lubricator section connector have a secondary lock/unlock mechanism as a contingency. Guide wire guide arms may be used for lateral control of the connector during running/mating.

5.6 Pressure Control Head (PCH)
The pressure control head provides a means for allowing the wireline/ coiled tubing to move into or out of the well while preventing an egress of well fluids to the environment or ingress of seawater to the lubricator.

A “dynamic seal” is required to isolate the wellbore from the environment whilst allowing conveyance of wireline or coiled tubing to the wellbore.

All pressure control heads shall have the required barriers for both normal and emergency operations.
5.7 Emergency Disconnect System (EDS)
The intent of the EDS is to provide for a rapid system disconnection of guide wires, deployment wires, umbilicals, jumpers and injection / circulation lines and to prevent release to the environment and/or transmission of unacceptable loads to the RWCP.

The emergency disconnect system (EDS) shall allow for a rapid disconnect of subsea fluid conduits, and umbilicals in the event of a loss of vessel station-keeping or unexpected environmental conditions.

The EDS shall be configured such that the initiation of an emergency disconnect will result in the WCP having the required number of barriers sealing the well bore. If accumulators are used, there shall be a method to monitor and charge the accumulators. The EDS shall be remotely operated at surface and have a mechanical override. Following an emergency release of lines, with vessel back on location, it shall be possible to re-run and connect guide wires, deployment wires, umbilicals, jumpers and injection/circulation lines subsea by use of an ROV.

In order to prevent forces on the subsea infrastructure in a drift off / drive off situation, the guide wires, injection/circulation lines and umbilical disconnects shall be designed and operated in a way to mitigate the risk of collision with the RWCP and subsea infrastructure.

5.8 System Re-Entry Spool
The Re-entry spool is a subsea mate-able connection capable of accommodating a riser from surface. The RES should be located above two well barriers on the RWCP.

For a riser contingency based system, all flanged connections, below the RES, in the vertical part of the RWCP shall be in accordance with API 17D (ISO 13628-4)/ API6AF and where applicable, have the capacity of a 13 5/8” API 10m flange per 17G.

The RWCP barriers and auxiliary circulation valves will cycle to the closed position upon disconnect.

5.9 Subsea Control System

5.9.1 General
The subsea control system should perform in a manner, which is efficient, safe and protects the environment.

The RLWI system may contain a hydraulic interface to control the subsea tree and down hole safety valve functions.

5.9.2 Primary and Back-up Control Systems for Normal and EQD Operations
The following types of control systems are suitable for normal operations:

- IWOCs systems as per Annex M of API 17G
- ROV mechanical driven system
- ROV hydraulic driven system
- Acoustic controlled subsea hydraulic system
- Tree production control system
• Proximity based mechanical / Hydraulic System.
• Combination of the above

The following types of control systems are suitable for EQD operations:
  • TBD

5.9.3 Acoustic Control Systems
See API G2
TO BE REVIEWED

5.10 Injection/Circulation System

There shall be an injection/circulation system with the function to inject fluid mixtures into the wellbore/RWCP. The system shall have a pressure rating equal to or greater than the subsea well intervention system.

It shall be possible to displace seawater with hydrate inhibiting fluid prior to allowing well pressure to enter the lubricator and to circulate out, or bleed off hydrocarbons from the RSWIS prior to disconnect. This shall be obtained by flushing the lubricator tube and RWCP. It shall be possible to bleed pressure from the lubricator through all circulation ports in case of hydrates blocking an outlet from the lubricator.

The Injection/Circulation system lines shall have two isolation valves in series between the WCP main bore and the Injection/Circulation line connection point.

The isolation valves shall be hydraulic operated, “fail safe close” and have a bidirectional sealing design. The isolation valves nearest to the RWCP production bore or XT annulus bore shall be integrated or bolted directly to the RWCP block. It shall be possible to connect and disconnect the Injection/Circulation line by use of an ROV. In addition, an emergency disconnect device that is independent of the ROV shall be included.

5.10.1 Pumping Equipment

5.10.1.1 Subsea Pumping Equipment
Subsea pumping equipment shall conform to the common requirements of API 17G2

5.10.2 Intervention Fluid Storage (as per 17G2)

5.10.2.1 Surface Fluid Storage
Functional requirements for surface fluid storage are covered under other applicable API and ASME specifications and guidelines.
5.10.2.2 Subsea Fluid Storage (as per 17G2)

5.10.3 Subsea Fluid Conduits (as per 17G2)

5.11 Down line/Conduit Deployment and Recovery System (as per 17G2)

5.12 Connectors
Connectors shall be in accordance with API 17G 5.21.1, 5.21.2 and 6.6 connector design requirements.

5.13 Flying Leads (as per 17G2)

5.14 Jumpers (as per 17G2)
6 DESIGN REQUIREMENTS

Is contingency for Riserless Wireline system a High Pressure Riser System incorporating part of the OWWL WCP??

Yes

Design WCP package that will be used in common with the HP riser system as per API 17G Clause 5

No

Is X-mas tree capacity sufficient to:
1) sustain likely worst case sustained load effects to occur during the intended intervention;
2) maintain acceptable safety for personnel and environment;
3) have capacity margin against deterioration for the intended intervention.

Yes

OWWL system should/shall have “weak point” above X-mas tree top connection. Weak point assessment as per API 17G WD6 (static analysis), verification (if a connector) as per API 17G Annex I without fatigue testing.
Design of equipment as per API 17G Clause 6 static design only.

No

Unknown

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7 MATERIALS AND FABRICATIONS REQUIREMENTS (AS PER 17G)
NEEDS REVIEW

8 TESTING (AS PER 17G)
NEEDS REVIEW

9 MARKING, PRESERVATION, STORAGE & SHIPPING (AS PER 17G)
NEEDS REVIEW

10 INSPECTION, MAINTENANCE, REASSESSMENT & MONITORING (AS PER 17G)
NEEDS REVIEW

11 DOCUMENTATION (AS PER 17G)
NEEDS REVIEW
ANNEX B – OPERATIONAL MODES AND GLOBAL RISER ANALYSIS
AS PER API 17G WITH REGARDS TO RISER CONTINGENCY UPPER RE-ENTRY SPOOL
ANNEX C – DETERMINATION OF CYCLIC CAPACITIES
AS PER API 17G WITH REGARDS TO RISER CONTINGENCY UPPER RE-ENTRY SPOOL
ANNEX D – STATIC CAPACITIES BY ANALYSIS (AS PER 17G)
NEEDS REVIEW
ANNEX E – EXAMPLE CALCULATIONS (AS PER 17G)
NEEDS REVIEW
ANNEX F – (INFORMATIVE) PURCHASING GUIDELINES (AS PER 17G)
ANNEX G – (INFORMATIVE)
REMOVED FROM 17G
ANNEX H – SEALS (AS PER 17G)
NEEDS REVIEW
ANNEX I – VALIDATION OF CONNECTORS
AS PER API 17G WITH REGARDS TO RISER CONTINGENCY UPPER RE-ENTRY SPOOL
ANNEX J – OPERATIONAL BARRIERS AND OPERATIONAL TESTING REQUIREMENTS (AS PER 17G)

NEEDS REVIEW

ANNEX K – VERIFICATION & VALIDATION TESTING OF SUBSEA TEST TREE ASSEMBLIES AND ASSOCIATED ACCESSORIES (AS PER 17G)

NEEDS REVIEW

ANNEX L – VERIFICATION AND VALIDATION OF WELL CONTROL DEVICES FOR OPEN WATER INTERVENTION SYSTEMS (AS PER 17G)

NEEDS REVIEW

ANNEX M – INTERVENTION WORK OVER CONTROL SYSTEM (AS PER 17G)

The requirements outlined in API 17G Annex M for Open-Water Intervention Workover Control Systems shall be applicable for Riserless Intervention Workover Control Systems. Requirements stated for risers and their associated equipment (e.g. clamps and monitoring systems) however, are not applicable.