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GP 78-14

Subsea Isolations

Group Practice

Foreword

This is the first issue of Engineering Technical Practice (ETP) GP 78-14.

This Group Practice (GP) is not a stand alone document but is part of a larger suite of ETPs that define BP integrity, reliability, quality management, design and testing philosophy for subsea projects.

This GP shall be used in accordance with other series 78 (subsea) ETPs that provide further detail necessary to undertake and execute subsea projects.

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1. Scope

1.1. General

- a. This document provides guidance on subsea isolation philosophy for new build design and defines the minimum levels of acceptable barriers necessary for safety, process and environmental requirements.
- b. In addition, the document provides guidance on safe isolation of existing infrastructure where the available options for isolation may not fully comply with the standards defined here.
- c. The following areas are covered:
 1. Guidance on isolation specifically for design and operation of subsea systems.
 2. Diver and ROV intervention.
 3. Standards for design of new systems.
 4. Project responsibilities for new systems.
 5. Limitations of existing systems
 6. Responsibilities for implementing operational isolations

1.2. System Boundaries

- a. The boundaries for this document extend from subsea tree to installation/host.
- b. The topside boundary is the most appropriate point at which isolation can be ensured for the subsea system.

This may extend beyond the conventional definitions of the subsea system.
- c. The subsea boundary is provided by the first (upstream) operable and testable barrier on the tree (typically Master valve).
- d. The following systems are included:

1.2.2. Liquid Systems

- a. Hydrocarbon Production Systems

This includes all subsea production trees, jumpers, manifolds, pipelines and risers in all depth ranges.

The boundaries are subsea tree to Installation/host or, in the case of export pipelines, Installation to Installation.

- b. Water Injection Systems

This includes all subsea water injection trees, jumpers, manifolds, pipelines and risers in all depth ranges.

The contents of a Produced Water Re-Injection (PWRI) system may require application of isolation standards associated with a Hydrocarbon Process system.

The boundaries are installation HP water injection pump to subsea tree.

1.2.3. Gas Systems

- a. Gas Production Systems

This includes all subsea production trees, jumpers, manifolds, pipelines and risers in all depth ranges.



The boundaries are subsea tree to installation or in the case of export pipelines installation to Installation.

b. Gas Injection Systems

This includes subsea wells, manifolds, pipelines and umbilicals, where the flow path is through the umbilical, in all depth ranges.

The boundaries are Installation to subsea tree.

1.2.4. Chemical Injection Systems

This includes subsea wells, jumpers, manifolds and umbilicals, in all depth ranges.

The boundaries are installation chemical injection pump to subsea tree.

1.2.5. Control Systems

a. Hydraulic Systems

This includes hydraulic control systems in all depth ranges.

The boundaries are installation HPU to subsea tree.

b. Electrical Systems

This includes both power and signal circuits in all depth ranges.

The boundaries are installation EPU to subsea tree.

c. Optical Systems

The boundaries are installation optical modem to subsea tree.

2. References

The following references are for information only, having relevance to the subject of this ETP:-

GP 35-20 'Guidance on Practice for Isolation of Equipment for Maintenance'. This covers platform based activities including spading and electrical isolation and testing.

GP 10-36 'Guidance on Practice for Breaking Containment'. This covers well barrier requirements for completion, workover and rig independent well operations.

3. Terms and Definitions

For the purpose of this document the following terms and definitions apply:

Barrier

An object that prevents flow from its source

Deep water

Accessible only by ROV

Shallow water

Accessible by both diver and ROV

ROV hotstab arrangement

Hotstab with associated isolating needle valve.

