

DEP SPECIFICATION

DEEPWATER SUBSEA MANIFOLD SYSTEM (AMENDMENTS/SUPPLEMENTS TO ISO/DIS 13628-15 2009 AND API RP 17P 2009)

DEP 37.81.40.38-Gen.

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ECCN EAR 99

DESIGN AND ENGINEERING PRACTICE



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All administrative queries should be directed to the DEP Administrator in Shell GSI.

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PART I. INTRODUCTION

1.1 SCOPE

This new DEP specifies the requirements for the design, manufacturing, assembly, testing, and shipment of a deepwater subsea manifold system, and is based on the industry standard document ISO/DIS 13628-15:2009 (currently in draft form) and API RP17P.

NOTE: Upon final adoption of the ISO document, it will also be adopted back as API RP17P.

The intention of this DEP is to complement and align the requirements of the industry standard document ISO/DIS 13628-15:2009 with the Principal's specific global requirements for deepwater subsea manifold systems.

Part III of this DEP contains text that clarifies, amends and supplements the content in the ISO standard. In a number of cases, additional requirements and recommendations are provided pertaining to the various sections/clauses of ISO/DIS 13628-15:2009. For ease of reference, the clause numbering of ISO/DIS 13628-15:2009 has been used throughout Part III of this DEP.

The DEP specifies additional requirements to those listed in the ISO document as well as noting any deviations from and exceptions to the same. Where no comment is made in this document the content of the ISO document is accepted. Any additional features not included in the ISO document that warrant their own section have been added as additional sections in (Part III) of this DEP.

Where the ISO document addresses requirements for equipment that is not a part of a deepwater subsea manifold system, such as pipeline end termination (PLETs), diver assisted systems, or systems using guidelines, those sections are not a part of this DEP and are not applicable to it.

In addition to the standards referenced in the ISO document, there are also references to other project specifications and DEPs listed in (Part IV) of this DEP and in the companion DEP Informative that describe features and requirements that are project specific.

The ISO document used as the basis for this DEP is part of the ISO 13628 series of documents that are listed under the general title "*Petroleum and natural gas industries — Design and operation of subsea production systems*".

For guidance purposes and in order to identify the general requirements and recommendations, refer to the following ISO document or its equivalent API or DEP document:

- ISO 13628-1 (2005) *Part 1: General requirements and recommendations*;
- API RP17A (2005) - *General Requirements and Recommendations (Endorsement of API/ISO 13628-1)*, or;
- DEP 37.80.00.30-Gen (September 2010) - *Design and operation of subsea production systems (based on ISO 13828)*.

This DEP-Gen supercedes the former Deepwater standard of the same number (DEP 37.81.40.38-DWP) dated December 2008; see (1.5) regarding the changes.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by Shell GSI, the distribution of this DEP is confined to Shell companies and, where necessary, to Contractors and Manufacturers/Suppliers nominated by them. Any authorised access to DEPs does not for that reason constitute an authorization to any documents, data or information to which the DEPs may refer.

This DEP is intended for use in offshore oil and gas production facilities. This DEP may also be applied in other similar facilities.

When DEPs are applied, a Management of Change (MOC) process should be implemented; this is of particular importance when existing facilities are to be modified.

If national and/or local regulations exist in which some of the requirements could be more stringent than in this DEP, the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable with regards to the safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this DEP which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned, the objective being to obtain agreement to follow this DEP as closely as possible.

1.3 DEFINITIONS

1.3.1 General definitions

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for it. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

1.3.2 Abbreviations

Term	Definition
FAT	Factory Acceptance Test
MOC	Management of Change
MQC	Multi Quick Connection
PLEM	Pipeline End Manifold
PLET	Pipeline End Termination
ROV	Remote Operated Vehicle
SCM	Subsea Control Module
SIT	System Integration Test

1.4 CROSS-REFERENCES

Where cross-references to other parts of this DEP are made, the referenced section number is shown in brackets (). Other documents referenced by this DEP are listed in (Part IV).

1.5 SUMMARY OF MAIN CHANGES

The basic purpose of this revision was to incorporate the content of the former Deepwater standard (DEP 37.81.40.38-DWP) into a DEP-Gen. that is a direct overlay to the International Standard document ISO/DIS 13628-15.

NOTE When completed and officially published, the ISO document will be adopted back as API RP 17P

1.6 COMMENTS ON THIS DEP

Comments on this DEP may be sent to the Administrator at standards@shell.com, using the DEP Feedback Form. The DEP Feedback Form can be found on the main page of

“DEPs on the Web”, available through the Global Technical Standards web portal <http://www.shell.com/standards> and on the main page of the DEPs DVD-ROM.

1.7 DUAL UNITS

This DEP contains both the International System (SI) units, as well as the corresponding US Customary (USC) units, which are given following the SI units in brackets. When agreed by the Principal, the indicated USC values/units may be used.

PART II GENERAL

Part III of this DEP specifies requirements for the design, manufacturing, assembly, testing, and shipment of a deepwater subsea manifold system in addition to or superseding those detailed in the ISO/DIS 13628-15 2009 document. It is the purpose of this DEP to provide the requirements as additional ones to those identified in the ISO document as well as highlighting any definitive functional, operational, testing and interface requirements.

Part III of this DEP is written as clarifications, amendments and supplements to ISO/DIS 13628-15 2009. Wherever reference is made to ISO/DIS 13628-15, it shall be understood to mean ISO/DIS 13628-15 2009 as amended/supplemented by this DEP.

For ease of reference, the clause numbering of ISO/DIS 13628-15 has been used throughout Part III of this DEP.

Clauses in ISO/DIS 13628-15, which are not mentioned in this DEP, shall remain applicable as written.

PART III DEEPWATER SUBSEA MANIFOLD SYSTEMS (AMENDMENTS/SUPPLEMENTS TO ISO/DIS 13628-15 2009 AND API RP 17P 2009)**1. SCOPE**

The text of ISO document Scope applies, except as modified by the following:

The Manifold systems for deepwater applications within the scope of this DEP are:

- Production
- Gas Injection
- Water Injection
- Gas lift and/or other artificial lift

Equipment components covered within the document include:

- a) Manifold Structure
- b) Manifold pipework, valves, and connection hubs
- c) Manifold control and chemical tubing
- d) Manifold foundation
- e) Installation tools and rigging
- f) Control System Interfaces
- g) Remotely operated vehicles (ROV) Interfaces
- h) Any protection structures associated with the above.

The following equipment is outside of the scope of this DEP and is addressed by other DEPs or design specification documents:

- a) PLETs
- b) Pipeline end manifolds (PLEMs)
- c) Inline sleds
- d) Well and flowline tie-in systems (i.e.. Jumpers, connectors etc)
- e) Chemical, hydraulic, and electrical distribution structures

Although listed as outside the scope of the ISO document, the following equipment is subject to general system level requirements which are included in this DEP, and to specific design requirements included in referenced documents in (Part IV):

- a) Pipeline and manifold valves
- b) Flowline and tie-in connectors
- c) Choke valves
- d) Production control systems
- e) Hydraulic and chemical distribution systems

Any requirements relating to environmental conditions, water depths, pressure/temperature ratings, materials, or other project specific requirements will be provided within the tender documentation package, Basis for Design and project equipment specific documentation packages or data sheets.