

TECHNICAL SPECIFICATION

SUBSEA PRODUCTION SYSTEMS

DEP 37.80.00.30-Gen.

March 1994

DESIGN AND ENGINEERING PRACTICE

USED BY
COMPANIES OF THE ROYAL DUTCH/SHELL GROUP



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PREFACE

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They are based on the experience acquired during their involvement with the design, construction, operation and maintenance of processing units and facilities, and they are supplemented with the experience of Group Operating companies. Where appropriate they are based on, or reference is made to, national and international standards and codes of practice.

The objective is to set the recommended standard for good design and engineering practice applied by Group companies operating an oil refinery, gas handling installation, chemical plant, oil and gas production facility, or any other such facility, and thereby to achieve maximum technical and economic benefit from standardization.

The information set forth in these publications is provided to users for their consideration and decision to implement. This is of particular importance where DEPs may not cover every requirement or diversity of condition at each locality. The system of DEPs is expected to be sufficiently flexible to allow individual operating companies to adapt the information set forth in DEPs to their own environment and requirements.

When Contractors or Manufacturers/Suppliers use DEPs they shall be solely responsible for the quality of work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, the Principal will expect them to follow those design and engineering practices which will achieve the same level of integrity as reflected in the DEPs. If in doubt, the Contractor or Manufacturer/Supplier shall, without detracting from his own responsibility, consult the Principal or its technical advisor.

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- 2) Other parties who are authorized to use DEPs subject to appropriate contractual arrangements.
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All administrative queries should be directed to the DEP Administrator in SIOP.

NOTE: In addition to DEP publications there are Standard Specifications and Draft DEPs for Development (DDD's). DDD's generally introduce new procedures or techniques that will probably need updating as further experience develops during their use. The above requirements for distribution and use of DEPs are also applicable to Standard Specifications and DDD's. Standard Specifications and DDD's will gradually be replaced by DEPs.

TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1	SCOPE.....	4
1.2	DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS	4
1.3	DEFINITIONS.....	4
2.	PHILOSOPHY	5
3.	PROJECT SPECIFIC REQUIREMENTS	6
4.	API STANDARDS APPROVED FOR USE	7
5.	API STANDARDS IN PREPARATION	8
6.	REFERENCES	9

1. INTRODUCTION

1.1 SCOPE

This DEP which is a revision of the DEP of the same number dated June 1992 gives minimum requirements for the design, manufacture, testing, operation and abandonment of subsea production systems. This DEP is based upon the API 17 series.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by SIPM, the distribution of this DEP is confined to companies forming part of the Royal Dutch/Shell Group or managed by a Group company, and to Contractors and Manufacturers/Suppliers nominated by them (i.e. the distribution code is "F" as described in DEP 00.00.05.05-Gen.)

This DEP is intended for use in subsea oil and gas production facilities.

If national and/or local regulations exist in which some of the requirements may 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 as regards 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 with the object of obtaining agreement to follow this DEP as closely as possible.

1.3 DEFINITIONS

The **Contractor** is the party which 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 which manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party which initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. 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.

2. PHILOSOPHY

This DEP references Recommended Practices and Specifications which are approved by SIPM for use in Group operations. It also references forthcoming documents for which SIPM is actively participating in the input and review. It is intended that, upon their publication, either by the American Petroleum Institute, or the superseding version by the International Standard Organisation (ISO) being developed by ISO committee ISO/TC67/SC4/WG6 Petroleum and Natural Gas Industries - Subsea Equipment, these documents will be adopted by a revision to this DEP.

The principle followed by these documents is to define the functional requirements of the equipment, and to specify the means by which compliance with these requirements can be demonstrated.

3. PROJECT SPECIFIC REQUIREMENTS

It is recognised that there will be project specific requirements that cannot be specified in a Group standard. These include:

- Wellstream fluid characteristics
- Equipment and system configuration.

Data on such items shall be added as supplements to the appropriate standard. Other amendments may also be made, but should cross-reference the corresponding paragraph in the appropriate standard.

4. API STANDARDS APPROVED FOR USE

The following documents are approved for use, with no Group amendments:

API RP 17A
API RP 17C
API Spec 17D
API Spec 17E.

NOTE: API RP 17B is also approved for use, but is covered separately by DDD 39.40.20.30-Gen.

5. API STANDARDS IN PREPARATION

The following standards are currently being prepared, with SIPM participation. Once issued by the American Petroleum Institute it is intended that they shall be adopted for Group use. In the meantime the latest drafts can be referred to for guidance:

API Spec 17F
API RP 17G
API Spec 17H
API RP 17I

6. REFERENCES

In this DEP, reference is made to the following publications:

NOTE: Unless specifically designated by date, the latest edition of each publication shall be used, together with any amendments/supplements/revisions thereto.

SHELL STANDARDS

Index to DEP Publications and Standard Specifications DEP 00.00.05.05-Gen.

High pressure metal/polymer flexible pipe for use in oil and gas operations as flowlines and risers. DDD 39.40.20.30-Gen.

AMERICAN STANDARDS

Design and operation of subsea production systems API RP 17A 1st edition, September 1, 1987

Flexible pipe API RP 17B

Through flowline systems API RP 17C
1st edition,
July 1, 1991

Subsea wellhead, mudline and christmas tree equipment API Spec 17D
1st edition,
October 1992

Subsea control umbilicals API Spec 17E
1st edition August
1993

Subsea control systems Draft API Spec 17F

Workover and completion riser systems Draft API RP 17G

Standardisation of ROV intervention on subsea equipment Draft API Spec 17H

Umbilical installation guidelines Draft API RP 17I

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