General Overview of Subsea Production Systems

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Contents

Page

Figures

Tables

Introduction

This document was generated based on information previously published in an informative annex included in API RP 17A and was last substantively updated in 2005 based on input from API Subcommittee 17 (Subsea Production Systems) technical experts. It has been removed from the API 17A annex and has been republished within this technical report. This technical report is intended to act only as a historical reference of information.

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General Overview of Subsea Production Systems

1 Scope

Subsea production systems can range in complexity from a single satellite well with a flowline linked to a fixed platform, to several wells on a template producing and transferring via subsea processing facilities to a fixed or floating facility, or directly to an onshore installation.

The objectives of this document are:

— to describe typical examples of the various subsystems and components that can be combined, in a variety of ways, to form complete subsea production systems;

— to describe the interfaces with typical downhole and topsides equipment that are relevant to subsea production systems;

— to provide some basic design guidance on various aspects of subsea production systems.

2 Normative References

The following referenced documents are helpful for the understanding and application of this document.

API Recommended Practice 17A, *Design and Operation of Subsea Production Systems—General Requirements and Recommendations* (latest edition).

3 Terms, Definitions, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
barrier
Element forming part of a pressure-containing envelope that is designed to prevent unintentional flow of produced/injected fluids, particularly to the external environment.

3.1.2
deep water
Water depth generally ranging from 610 m (2000 ft) to 1830 m (6000 ft).

NOTE Since the physical circumstances of any situation will change as a function of water depth, use of the term “deep water” implies that it may be necessary to consider design and/or technology alternatives.

3.1.3
first-end connection
Connection made at the initiation point of the flowline or umbilical installation process.

3.1.4
flowline
Production/injection line, service line, or pipeline through which fluid flows.

NOTE In this document, the term is used to describe solutions or circumstances of general nature related to a flowline.