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Recommended Practice for Design and Operation of Subsea Production Systems

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NOTE:

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RECOMMENDED PRACTICE FOR DESIGN AND OPERATION OF SUBSEA PRODUCTION SYSTEMS

FOREWORD

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SECTION 1
GENERAL

1.1 Scope. This Recommended Practice provides guidelines for the design, installation, operation, repair and abandonment of subsea production systems. The elements of subsea production systems included (Figure 1.1) are wellheads (both subsea and mudline casing suspension systems) and trees; pipelines and end connections; controls, control lines and control fluids; templates and manifolds; and production risers (both rigid and flexible). Other sections of the Recommended Practice cover operations, quality assurance, materials and corrosion. Specialized equipment such as split trees and trees and manifolds in atmospheric chambers are not specifically discussed because of their limited use. However, the information presented is applicable to those types of equipment. This document includes information on a wide range of equipment and operations to emphasize interrelationships and the need to consider subsea production installations as systems.

In planning a subsea production system, a systems approach should be used which considers installation, operation, maintenance, repair and abandonment requirements. The system may range in complexity from a single satellite well with a flowline to a fixed platform to several wells on a template producing to a floating facility. Produced and injected fluid characteristics, rates and pressures; number of wells; environmental conditions and the ultimate field development scheme must be determined before a detailed design can be undertaken.

The development and application of subsea production technology is accelerating at a rapid pace. In those areas where the committee felt that adequate information was available, specific recommendations are given. In other areas, general statements are used to indicate that consideration should be given to particular points. In many cases (particularly with control systems), there are a number of viable options and operator preference governs the final selection of equipment or an operation. Those involved with subsea production systems are encouraged to utilize all of the new advances available and to suggest revisions or additions to this Recommended Practice. It is intended that the general statements contained herein will be eventually replaced by firm recommendations.

1.2 Applicable Standards. The following standards are referenced in part or in whole in this recommended practice. It is recognized that additional standards, specifications, Guidance Notes and Recommended Practices have been developed by other bodies. Therefore this listing is representative and should not be considered as either all inclusive or exclusive of other standards relating to topics covered in this RP.

American Petroleum Institute

SPEC Q1	Quality Programs
RP 2A	Planning, Designing and Constructing Fixed Offshore Platforms.
BULL 2J	Comparison Of Marine Drilling Riser Analyses.
RP 2K	Care and Use of Marine Drilling Risers.
RP 2Q	Design And Operation of Marine Drilling Riser Systems.
RP 2R	Design, Rating and Testing Of Marine Drilling Riser Couplings.
RP2T	Planning, Designing, and Constructing Tension Leg Platforms.

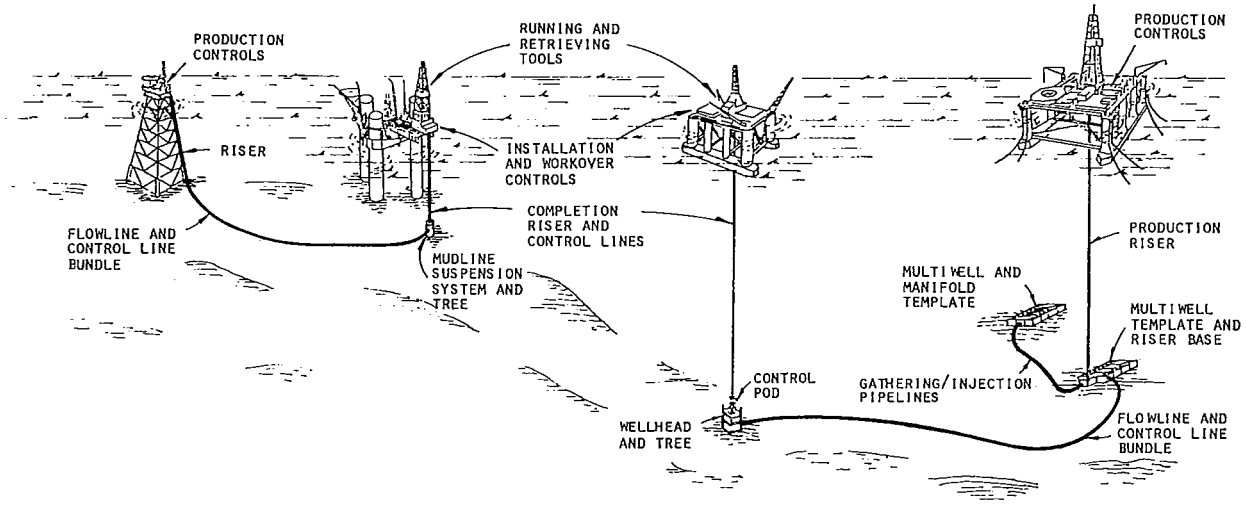

FIG. 1.1
SUBSEA PRODUCTION SYSTEM ELEMENTS