

ICS 75.180.10
CCS E 94



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 21412.1-2010

**Petroleum and natural gas industries -- Design and operation of
subsea production systems -- Part 1: General requirements and
recommendations**

石油天然气工业 水下生产系统的设计与操作 第1部分：一般要求和推荐做法
(English Translation)

Issued on: September 2, 2010

Implemented on: December 1, 2010

Issued by: Standardization Administration of China

Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms, Definitions and Abbreviations
4 System and interface description
5 Design
6 Materials and corrosion protection
7 Manufacturing and testing
8 Operation
9 Documentation
Appendix A (informative) Description of subsea production systems
Appendix B (normative) color and markings
Integrity Test Appendix C (informative) underwater production equipment
Annex D (informative) Typical commissioning program
Annex E (informative) Operations Issue
Annex F (informative) 126 Data Sheet
Annex G (informative) structure, process valves and piping
Appendix H (informative) underwater Oilfield Development Systems Engineering
Annex I (informative) Flow Security Considerations
Appendix J (informative) Principle of 155 barrier
Annex K (normative) winding gear and structural components of atmospheric requirements and recommended practices
References

Foreword

GB/T 21412 "Design and operation of oil and gas industry of subsea production systems"
Part XI currently includes the following.

- Part 1. General requirements and recommended practices
- Part 2. Flexible pipe systems underwater 1)
- Part 3. Through flowline (TFL) systems

- Part 4. underwater wellhead and tree equipment
- Part 5. underwater umbilical
- Part 6. Subsea production control systems
- Part 8. subsea production system Telerobot (ROV) interfaces
- Part 9. Remote power tool (ROT) Maintenance System the following section is in the drafting stage.
- Part 7. workover/completion riser system
- Part 10. Details of the connection of the flexible tube
- Part 11. Flexible pipe systems underwater this part of GB/T 21412 Part 1, this part identical with ISO 13628-1:2005 "Health and underwater oil and gas industry the design and operation of production systems - Part 1. General requirements and recommended practices "(English 2nd Edition).

This section Appendix B, Appendix K are normative appendices, Appendix A, Appendix C, Appendix D, Appendix E, Appendix F, Appendix G, Appendix H, Appendix I, Appendix J informative appendices.

This part is proposed by the China National Petroleum Corporation.

This part of the jurisdiction of the China National Offshore Oil Standardization Technical Committee of Petroleum Engineering Standardization Technical Committee.

This section drafted by. CNOOC Research Center.

Introduction

This section is intended for the oil and gas industry to develop applications in various fields of subsea production systems provide general requirements, recommended practices and the use of means south. In order to meet the special requirements of oil and gas fields, to simplify and improve the decision-making process, the basic requirements set forth in this section provide users with a variety of Choose not to replace personal experience in engineering, while in the case of non-enforcement can be optimized to play an active role in guiding the program.

Oil and Gas Industry Design and operation of subsea production systems Part 1. General requirements and recommended practices

1 Scope

This part of the development of a package of subsea production systems - from design to waste at all stages of the general requirements and recommended practices, as a

programmatic document to guide the development and relate to the various components of the subsystem standard subsea production systems more detailed requirements.

Meanwhile, for daughter Some parts not included in the standard system, such as system design, structure, manifolds, lifting equipment, as well as the color and markings, but also gives a more detailed Requirements.

Subsea production system consists of one or more production of oil and gas subsea wellhead, by relying on a given processing facility (fixed platforms, floating facilities, Underwater) or onshore processing facilities, and various other subsystems, or by water/gas development of subsea wellhead and other components. This section and its sub Scope of the system's standard will be described in Chapter IV.

For those with limited scope of application of special equipment, such as sealed in the dry cabin modular Christmas tree, Christmas trees and manifolds, etc., without making here Devoted, but the relevant provisions of this section also applies to such equipment.

When such conflicting demands associated with the requirements of this part of the supplement or inconsistent, priority is given to the special requirements of complementary parts.

2 Normative references

The following documents contain provisions which, through reference GB/T 21412 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 19190-2003 Petroleum and natural gas industries - Drilling and production equipment (ISO 13535:2000, IDT) Subsea wellhead apparatus. Part 4 Design and operation GB/T 21412.4-2008 oil and gas industry of subsea production systems and christmas tree equipment (ISO 13628-4:1999, IDT) Design and operation GB/T 21412.6-2009 oil and gas industry of subsea production systems - Part 6. Subsea production control System (ISO 13628-6:2000, IDT) ISO 3506-1 Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1. Screw, screw stud ISO 3506-2 corrosion-resistant stainless steel fasteners mechanical properties - Part 2. Nuts ISO 10423 Petroleum and natural gas industries drilling equipment wellhead and Christmas tree ISO 13628-5 design and operation of oil and gas industry of subsea production systems - Part 5. underwater umbilical ISO 13628-7 design and operation of oil and gas industry of subsea production systems - Part 7. Completion/workover riser systems ISO 13628-8 design and operation of oil and gas industry of subsea production systems - Part 8. subsea production system for the remote control Industrial robot (ROV) interfaces ISO 13628-9 design and operation of oil and gas industry of subsea production systems - Part 9. Remote power tool (ROT)

Dimension Repair system APIRP2A Recommended Practice planning, design and construction of fixed offshore platforms deck working stress design 21 edition DNV2.7-1 maritime cargo containers

3 Terms, Definitions and Acronyms

This section uses the following terms, definitions and abbreviations.