ISO 19900:2019 (E)

Petroleum and natural gas industries — General requirements for offshore structures

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Symbols and abbreviated terms

4.1 Symbols
4.2 Abbreviated terms

5 Fundamental requirements

5.1 General
5.2 Structural integrity requirements
5.3 Functional requirements
5.4 Requirements for specific phases of the life of the structure
5.4.1 Planning
5.4.2 Construction and deployment
5.4.3 Structural integrity management
5.4.4 Decommissioning and removal
5.5 Requirements for durability and robustness
5.5.1 Durability, maintenance and inspection
5.5.2 Robustness

6 Basis for design/assessment

6.1 General
6.2 Platform location and orientation
6.3 Physical environmental conditions
6.4 Geotechnical and geophysical conditions
6.4.1 Marine site investigations
6.4.2 Seabed instability
6.4.3 Seabed disturbance
6.5 Specific design/assessment requirements
6.5.1 Topsides structures
6.5.2 Deck elevation
6.5.3 Splash zone
6.5.4 Stationkeeping systems
6.5.5 Conductor and riser systems
6.5.6 Foundations and anchoring
6.5.7 Additional operational requirements

7 Development of design/assessment situations

7.1 Hazards
7.2 Hazardous events
7.3 Exposure levels
7.3.1 General
7.3.2 Exposure level L1
7.3.3 Exposure level L2
7.3.4 Exposure level L3
7.4 Design/assessment situations

7.4.1 General
7.4.2 Operational design/assessment situations
7.4.3 Extreme design/assessment situations
7.4.4 Abnormal design/assessment situations
7.4.5 Accidental design/assessment situations
7.4.6 Short duration design/assessment situations
7.4.7 Serviceability design/assessment situations

8 Limit state verification

8.1 General
8.2 Basic variables and representative values
8.3 Limit states
8.3.1 Categories of limit states
8.3.2 Ultimate limit states
8.3.3 Abnormal/accidental limit states
8.3.4 Serviceability limit states
8.3.5 Fatigue limit states
8.4 Limit state verification procedure

9 Actions

9.1 Classifications of actions
9.2 Permanent actions and their representative values
9.3 Operational actions and their representative values
9.4 Environmental actions and their representative values
9.5 Accidental actions and their representative values
9.6 Repetitive actions

10 Design values and partial factors

10.1 Design values of actions
10.2 Actions acting in combination
10.2.1 Principal and companion actions for the same action type
10.2.2 Principal and accompanying actions for specific design/assessment situations
10.3 Design values of resistance
10.3.1 General
10.3.2 Design values of materials including soils
10.3.3 Design values of geometric variables
10.3.4 Uncertainties in analysis models
10.4 Partial factors for operational and extreme design/assessment situations
10.5 Partial factors for abnormal and accidental design/assessment situations
10.6 Partial factors for serviceability design/assessment situations
10.7 Partial factors for fatigue design/assessment verification
10.8 Probabilistic modelling and analysis

11 Models and analysis

12 Quality management

12.1 General
12.2 Installation inspection
12.3 In-service inspection, maintenance and repair
12.4 Records and documentation of design and construction
12.4.1 General
12.4.2 Calculations
12.4.3 Weight and centre of gravity reports
12.4.4 Drawings and specifications

13 Assessment of existing structures

13.1 General
13.2 Condition assessment
13.2.1 General
13.2.2 Service and operating requirements
13.2.3 Environmental conditions
13.2.4 Testing, inspection, maintenance and repair history
13.3 Action assessment
13.4 Resistance assessment

13.5 Component and system failure consequences
13.6 Mitigation

Annex A (informative) Additional information and guidance

A.1 Scope
A.2 Normative references
A.3 Terms and definitions
A.4 Symbols and abbreviated terms
A.5 Fundamental requirements
A.5.1 General
A.5.2 Structural integrity requirements
A.5.3 Functional requirements
A.5.4 Requirements for specific phases of the life of the structure
A.5.5 Requirements for durability and robustness
A.5.5.1 Durability, maintenance and inspection
A.5.5.2 Robustness
A.6 Basis for design/assessment
A.6.1 General
A.6.2 Platform location and orientation
A.6.3 Physical environmental conditions
A.6.4 Geotechnical and geophysical conditions
A.6.5 Specific design/assessment requirements
A.7 Development of design/assessment situations
A.7.1 Hazards
A.7.2 Hazardous events
A.7.3 Exposure levels
A.7.4 Design/assessment situations
A.8 Limit state verification
A.8.1 General
A.8.2 Basic variables and representative values
A.8.3 Limit states
A.8.4 Limit state verification procedure
A.9 Actions
A.9.1 Classifications of actions
A.9.2 Permanent actions and their representative values
A.9.3 Operational actions and their representative values
A.9.4 Environmental actions and their representative values
A.9.5 Accidental actions and their representative values
A.9.6 Repetitive actions
A.10 Design values and partial factors
A.10.1 Design values of actions
A.10.2 Actions acting in combination
A.10.3 Design values of resistance
A.10.4 Partial factors for operational and extreme design/assessment situations
A.10.5 Partial factors for abnormal and accidental design/assessment situations
A.10.6 Partial factors for serviceability design/assessment situations
A.10.7 Partial factors for fatigue design/assessment verification
A.10.8 Probabilistic modelling and analysis
A.11 Models and analysis
A.12 Quality management
A.13 Assessment of existing structures

Page count: 64