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I.S. EN ISO 20815:2010

# Petroleum, petrochemical and natural gas industries - Production assurance and reliability management (ISO 20815:2008, Corrected version 2009-06-15)

## I.S. EN ISO 20815:2010

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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EUROPEAN STANDARD

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**Petroleum, petrochemical and natural gas industries -  
Production assurance and reliability management (ISO  
20815:2008, Corrected version 2009-06-15)**

Industries du pétrole, de la pétrochimie et du gaz naturel -  
Assurance de la production et management de la fiabilité  
(ISO 20815:2008, Version corrigée 2009-06-15)

Erdöl-, petrochemische und Erdgasindustrie -  
Betrieboptimierung und Zuverlässigkeitsmanagement  
(ISO 20815:2008, korrigierte Fassung 2009-06-15)

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## **Contents**

Page

<b>Foreword.....</b>	<b>3</b>
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## **Foreword**

The text of ISO 20815:2008, Corrected version 2009-06-15 has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 20815:2010 by Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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**Petroleum, petrochemical and natural gas  
industries — Production assurance and  
reliability management**

*Industries du pétrole, de la pétrochimie et du gaz naturel — Assurance  
de la production et management de la fiabilité*



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# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms, definitions and abbreviated terms</b> .....	<b>2</b>
<b>3.1 Terms and definitions</b> .....	<b>2</b>
<b>3.2 Abbreviations</b> .....	<b>7</b>
<b>4 Production assurance and decision support</b> .....	<b>8</b>
<b>4.1 Framework conditions</b> .....	<b>8</b>
<b>4.2 Optimization process</b> .....	<b>9</b>
<b>4.3 Production-assurance programme</b> .....	<b>11</b>
<b>4.4 Alternative standards</b> .....	<b>15</b>
<b>5 Production-assurance processes and activities</b> .....	<b>15</b>
<b>Annex A (informative) Contents of production-assurance programme (PAP)</b> .....	<b>17</b>
<b>Annex B (informative) Core production-assurance processes and activities</b> .....	<b>19</b>
<b>Annex C (informative) Interacting production-assurance processes and activities</b> .....	<b>26</b>
<b>Annex D (informative) Production-performance analyses</b> .....	<b>30</b>
<b>Annex E (informative) Reliability and production-performance data</b> .....	<b>34</b>
<b>Annex F (informative) Performance objectives and requirements</b> .....	<b>36</b>
<b>Annex G (informative) Performance measures for production availability</b> .....	<b>38</b>
<b>Annex H (informative) Catastrophic events</b> .....	<b>47</b>
<b>Annex I (informative) Outline of techniques</b> .....	<b>49</b>
<b>Bibliography</b> .....	<b>64</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20815 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

This corrected version of ISO 20815:2008 incorporates the following corrections:

- 3.1.13 “ $(t + \Delta t)$ ” modified to “ $[t, (t + \Delta t)]$ ”;
- 3.1.46, Equation (1) symbols and definitions modified;
- Clause G.2, Equation (G.2) symbols and definitions modified.

## **Introduction**

The petroleum and natural gas industries involve large capital investment costs as well as operational expenditures. The profitability of these industries is dependent upon the reliability, availability and maintainability of the systems and components that are used. Therefore, for optimal production availability in the oil and gas business, a standardized, integrated reliability approach is required.

The concept of production assurance, introduced in this International Standard, enables a common understanding with respect to use of reliability technology in the various life-cycle phases and covers the activities implemented to achieve and maintain a performance level that is at its optimum in terms of the overall economy and, at the same time, consistent with applicable regulatory and framework conditions.

Annexes A through I are for information only.

**I.S. EN ISO 20815:2010**

# Petroleum, petrochemical and natural gas industries — Production assurance and reliability management

## 1 Scope

This International Standard introduces the concept of production assurance within the systems and operations associated with exploration drilling, exploitation, processing and transport of petroleum, petrochemical and natural gas resources. This International Standard covers upstream (including subsea), midstream and downstream facilities and activities. It focuses on production assurance of oil and gas production, processing and associated activities and covers the analysis of reliability and maintenance of the components.

It provides processes and activities, requirements and guidelines for systematic management, effective planning, execution and use of production assurance and reliability technology. This is to achieve cost-effective solutions over the life cycle of an asset-development project structured around the following main elements:

- production-assurance management for optimum economy of the facility through all of its life-cycle phases, while also considering constraints arising from health, safety, environment, quality and human factors;
- planning, execution and implementation of reliability technology;
- application of reliability and maintenance data;
- reliability-based design and operation improvement.

For standards on equipment reliability and maintenance performance in general, see the IEC 60300-3 series.

This International Standard designates 12 processes, of which seven are defined as core production-assurance processes and addressed in this International Standard. The remaining five processes are denoted as interacting processes and are outside the scope of this International Standard. The interaction of the core production-assurance processes with these interacting processes, however, is within the scope of this International Standard as the information flow to and from these latter processes is required to ensure that production-assurance requirements can be fulfilled.

This International Standard recommends that the listed processes and activities be initiated only if they can be considered to add value.

The only requirements mandated by this International Standard are the establishment and execution of the production-assurance programme (PAP).

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14224:2006, *Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment*

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