

Nafta-, naftakeemia- ja maagaasitööstused. Tootmise tagamine ja töökindluse juhtimine

Petroleum, petrochemical and natural gas industries -
Production assurance and reliability management

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 20815:2010 sisaldab Euroopa standardi EN ISO 20815:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.03.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 03.03.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 20815:2010 consists of the English text of the European standard EN ISO 20815:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 03.03.2010.

The standard is available from Estonian standardisation organisation.

ICS 75.180.01, 75.200

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

English Version

**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)

This European Standard was approved by CEN on 16 February 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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.

This document supersedes EN ISO 20815:2008.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 20815:2008, Corrected version 2009-06-15 has been approved by CEN as a EN ISO 20815:2010 without any modification.

Contents

Page

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

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.

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*