SLOVENSKI STANDARD
SIST EN ISO 20815:2026

01-september-2026

Naftna in plinska industrija, vključno z nizkoogljično energijo - Optimizacija proizvodnje in upravljanje zanesljivosti (ISO 20815:2026)

Oil and gas industries including lower carbon energy - Production assurance and reliability management (ISO 20815:2026)

Öl- und Gasindustrie einschließlich kohlenstoffarmer Energieträger - Betriebsoptimierung und Zuverlässigkeitsmanagement (ISO 20815:2026)

Industries du pétrole, de la pétrochimie et du gaz naturel - Assurance production et gestion de la fiabilité (ISO 20815:2026)

Ta slovenski standard je istoveten z: **EN ISO 20815:2026**

ICS:

03.100.01	Organizacija in vodenje podjetja na splošno	Company organization and management in general
75.020	Pridobivanje in predelava nafte in zemeljskega plina	Extraction and processing of petroleum and natural gas

SIST EN ISO 20815:2026 **en,fr,de**

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Oil and gas industries including lower carbon energy - Production assurance and reliability management (ISO 20815:2026)

Industries du pétrole et du gaz, y compris les énergies à faible teneur en carbone - Assurance production et gestion de la fiabilité (ISO 20815:2026)

Öl- und Gasindustrie einschließlich kohlenstoffarmer Energieträger - Betriebsoptimierung und Zuverlässigkeitsmanagement (ISO 20815:2026)

This European Standard was approved by CEN on 20 May 2026.

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European foreword

This document (EN ISO 20815:2026) has been prepared by Technical Committee ISO/TC 67 "Oil and gas industries including lower carbon energy" in collaboration with Technical Committee CEN/TC 12 “Oil and gas industries including lower carbon energy” the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by December 2026, and conflicting national standards shall be withdrawn at the latest by December 2026.

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Endorsement notice

The text of ISO 20815:2026 has been approved by CEN as EN ISO 20815:2026 without any modification.

International Standard

ISO 20815

Oil and gas industries including lower carbon energy — Production assurance and reliability management

Industries du pétrole et du gaz, y compris les énergies à faible teneur en carbone — Assurance production et gestion de la fiabilité

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Oil and gas industries including lower carbon energy*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Oil and gas industries including lower carbon energy,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 20815:2018), which has been technically revised.

The main changes are as follows:

— Clause 3: several new terms, definitions and abbreviated terms added;

— Clause 4: 4.1 updated, new subclause 4.1.2 added, Figure 5 and Table 2 revised;

— Main clauses and Annex A: text updated to clarify that establishment and use of production assurance programme or reliability management programme both imply conformity to this document;

— Annex B and Annex C: text updated to align with production assurance processes for life cycle phases in the revised Table 2;

— Annex A, Annex E, and Annex G: status changed to normative;

— Annex D: new text and figures added;

— Annex F: Figure F.1 revised, new text added in Clauses F.3 and F.4;

— Annex G: text updated to reflect the relationship between this document and ISO/TS 3250:2021; some text in the second edition (ISO 20815:2018) has been removed since the next edition of ISO/TS 3250 is planned to cover production loss categories for also midstream, downstream and petrochemical;

— Annex I: sequence of clauses changed; text updated in Clauses I.1, I.8 to I.9, I.14, I.16 to I.18.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The oil and gas industries, including petrochemical and lower carbon energy activities, involve large capital expenditure (CAPEX) and operating expenditure (OPEX). The safety and profitability of the associated assets are dependent upon the reliability, availability and maintainability of the systems and components that are used. Therefore, production assurance and reliability management are essential for optimal production availability. This contributes to delivering affordable energy in a sustainable manner.

The concept of production assurance, introduced in this document, enables a common understanding with respect to use of reliability technology in the various life cycle phases. Production assurance covers the activities implemented to achieve and maintain an optimal performance level in terms of the overall economy, which is consistent with applicable regulatory requirements and framework conditions.

Oil and gas industries including lower carbon energy — Production assurance and reliability management

1 Scope

This document specifies requirements and guidance for production assurance and reliability management as applicable to the assets and operations associated with exploration drilling, exploitation, processing and transport of petroleum, petrochemical and natural gas resources. It covers the assets and associated activities for upstream, midstream, downstream and petrochemical business categories. It focuses on the production assurance of oil and gas with respect to production and associated activities and covers the analysis of reliability and maintenance of the equipment. This includes a variety of associated systems and equipment in the oil and gas value chain. Production assurance addresses not only hydrocarbon production, but also associated activities such as drilling, pipeline installation and subsea intervention.

The document also supports production assurance and reliability management for lower carbon energy assets and associated operations, e.g. carbon capture and storage (CCS), hydrogen, ammonia, and wind energy. It describes the processes, activities, requirements and guidelines for systematic management, effective planning, execution and use of production assurance and reliability technology.

This document defines 12 processes, of which seven are denoted as core production assurance processes and addressed in this document. The remaining five processes are denoted as interacting processes and while they are outside the scope of this document, information is provided as to how they relate to production assurance and reliability management. The relationship of the core production assurance processes with these interacting processes, however, is within the scope of this document as the flow of information to and from these latter processes is required to ensure that production assurance requirements are fulfilled.

The document specifies how to establish and execute a production assurance programme (PAP) and a reliability management programme (RMP).

This document lists processes and activities that can be initiated to add value for the stakeholder (e.g. operator), where the selected process can depend on their business strategy and application area.

This document is intended for the following users and associated activities by their personnel:

— Operators: Production assurance and reliability management activities. Related activities include project management and control, technology development, technology qualification, concept and system design, risk management (including HSE), integrity management, and maintenance management.

— Contractors: Activities by the main contractor for engineering, procurement, construction, drilling, installation, operation, maintenance services, etc.

— Vendors: Activities by manufacturer or supplier related to equipment design and quality management, technology development and qualification.

— Authorities: Activities by regulatory bodies to ensure HSE, resource utilization and economic efficiency in operations.

— Consultants: Consultancy services aimed at supporting production assurance and reliability management.

— Universities: Activities associated with educating industry professionals, as well as conducting fundamental or applied research projects, when related to production assurance, reliability management, and technology development. This includes improvement of the methods and frameworks described herein.

— Research institutions: Research activities related to production assurance, reliability management, and technology development. This includes equipment qualification testing and advanced engineering assessments using the methods and frameworks described herein.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 14224:2016, *Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment*

ISO/TS 3250:2021, *Petroleum, petrochemical and natural gas industries — Calculation and reporting production efficiency in the operating phase*

ISO 15663:2021, *Petroleum, petrochemical and natural gas industries — Life cycle costing*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
active repair time
effective time to achieve repair of an *item* (3.1.29)

Note 1 to entry: The expectation of the effective time to repair is called MART (mean active repair time).

Note 2 to entry: ISO 14224 distinguishes between the terms mean active repair time (MART), mean time to repair (MTTR), mean time to restoration (MTTRes), and mean overall repairing time (MRT). See ISO 14224:2016, 3.59, 3,61, 3.63 and 3.64 for further details.

Note 3 to entry: The mean active repair time (MART) is defined as “expected active repair time” in ISO/TR 12489:2013, 3.1.34. See also ISO/TR 12489:2013, Figures 5 and 6.

[SOURCE: ISO 14224:2016, 3.2, modified — Notes 1 to 2 to entry have been added; notes 1 and 2 to entry have been consolidated to become note 3 to entry.]

3.1.2
asset
item (3.1.29), thing or entity that has potential or actual value to an organization

Note 1 to entry: Assets can be physical or non-physical.

Note 2 to entry: A grouping of assets referred to as an "asset system," can also be considered as an asset.

Note 3 to entry: In this document, "asset" only refers to the physical assets, which are tangible assets. An organization can also operate assets that are wholly owned or partly owned through joint ventures or other arrangements. Typically, an asset is a facility or an installation, or a group of facilities. The facility corresponds to an installation category in ISO 14224:2016, Table A.1. These installations can be subdivided into plants or units, *systems* (3.1.75), equipment classes (see ISO 14224:2016, 3.18), subunits, components, etc. as described in ISO 14224:2016, Table 2.

[SOURCE: ISO 55000:2024, 3.1.1, modified — Note 3 to entry has been added.]

3.1.3
availability
ability to be in a state to perform as required under given conditions

Note 1 to entry: For a *binary item* (3.1.6), the measure of the availability is the probability of being in *up state* (3.1.79) (i.e. in a state belonging to the up state class).

Note 2 to entry: Figure 1 shows a system that is available at time t_1 and unavailable at time t_2.

Note 3 to entry: See ISO 14224:2016, Annex C for a more detailed description and interpretation of availability.

Note 4 to entry: *Technical availability* (3.1.76) or *operational availability* (3.1.50) can be used as derived *performance measures* (3.1.51) to reflect estimated availability. Case specific definition of system availability is needed to reflect the *system* (3.1.75) being addressed.

Note 5 to entry: Further terms are given in ISO/TR 12489.

Note 6 to entry: See Figure G.1 for further information.

[SOURCE: IEC 60050-192:2015, 192-01-23, modified — Notes to entry have been replaced by the new notes 1 to 6 to entry.]

3.1.4
average availability
mean availability
$\bar{A}(t_1, t_2)$
average value of the *instantaneous availability* (3.1.26) over a given time interval (t_1, t_2)

Note 1 to entry: The average availability is the ratio between the accumulated time spent in *up state* (3.1.79) and the length of the considered period of observation. For example, Figure 1 shows the average availability of the system over the interval $[0, t_3]$ which is equal to $(\delta_1 + \delta_2 + \delta_3 + \delta_4 + \delta_5 + \delta_6 + \delta_8 + \delta_9)/t_3$, i.e. $1–\delta_7/t_3$ where δ_7/t_3 is the average unavailability of the system. This formula is similar to the formula obtained for *production availability* (3.1.59) calculations when only two levels, 100 % and 0 %, are considered.

Note 2 to entry: The average availability can be interpreted as the long-run proportion of time where the item is able to function. Mathematically speaking, the average availability is the mathematical expectation of the term *availability* (3.1.3), as this term does not have the mathematical property of a normal probability and cannot be handled as such.

[SOURCE: IEC 60050-192:2015, 192-08-05, modified — Note 1 to entry has been replaced by the new notes 1 and 2 to entry.]

3.1.5
barrier
functional grouping of safeguards or controls selected to prevent a *major accident* (3.1.40) or limit the consequences

[SOURCE: ISO 17776:2016, 3.1.1, modified — Notes to entry have been removed.]

3.1.6
binary item
item (3.1.29) with two classes of states

Note 1 to entry: The two classes can be *up state* (3.1.79) and *down state* (3.1.15).

EXAMPLE 1 An item that only has an up state and a down state is a binary item. Components A and B in Figure 1 are binary items.

EXAMPLE 2 A system made up of two redundant binary items, components A and B, has four states: φ_1 (both A and B in up state), φ_2 (A in up state and B in down state), φ_3 (A in down state and B in up state), φ_4 (both A and B in down state). If the system is able to operate as required in states φ_1, φ_2 and φ_3 and not able in state φ_4, it is a binary item with the up state class $\{\varphi_1, \varphi_2, \varphi_3\}$ and the down class $\{\varphi_4\}$. This is illustrated in Figure 1.