



SLOVENSKI STANDARD
oSIST prEN ISO 13702:2014
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Industrija za predelavo nafte in zemeljskega plina - Nadzor in zaježitev požarov in eksplozij na plavajočih proizvodnih objektih - Zahteve in smernice (ISO/DIS 13702:2013)

Petroleum and natural gas industries - Control and mitigation of fires and explosions on offshore production installations - Requirements and guidelines (ISO/DIS 13702:2013)

Erdöl und Erdgasindustrien - Überwachung und Eindämmung von Feuer und Explosionen auf Offshore-Produktionsplattformen - Anforderungen und Richtlinien (ISO/DIS 13702:2013)

Industries du pétrole et du gaz naturel - Contrôle et atténuation des feux et des explosions dans les installations en mer - Exigences et lignes directrices (ISO/DIS 13702:2013)

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75.180.10	Oprema za raziskovanje in odkopavanje	Exploratory and extraction equipment

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Petroleum and natural gas industries — Control and mitigation of fires and explosions on offshore production installations — Requirements and guidelines

Industries du pétrole et du gaz naturel — Contrôle et atténuation des feux et des explosions dans les installations en mer — Exigences et lignes directrices

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ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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ISO/DIS 13702

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 13702 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC , .

OGP Draft 113702 was prepared by the OGP Interim Solution. OGP (International Association of Oil and Gas Producers) and ISO (International Organization for Standardization) have agreed this interim solution that responds to temporary industry uncertainties associated with trade regulations (EU and US) and their applicability to standardisation in the oil and gas sector. The interim solution will allow the continuation of the development of prioritised work items of ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

After publication of OGP Draft 113702, the ISO system will adopt this document to initiate the DIS ballot. For practical reasons, OGP Draft 113702 is cited as ISO 13702 or this International Standard throughout the whole document and all references to ISO/TC 67 and ISO standards are maintained. This prevents that citations and references are converted back and forth each time this document is exchanged between the OGP Interim Solution and the ISO system with the risk of any errors that may occur.

Introduction

The successful development of the arrangements required to promote safety and environmental protection during the recovery of hydrocarbon resources, requires a structured approach to the identification and management of health, safety and environmental hazards applied during the design, construction, operation, inspection, maintenance and decommissioning of a facility.

This International Standard has been prepared primarily to assist in the development of new installations through their lifecycle. For existing installations that predate this International Standard, not all requirements are necessarily appropriate. Retrospective application of this International Standard can be undertaken where it is reasonably practicable to do so. During the planning for a major change to an installation there will be more opportunity to implement the requirements. A careful review of this International Standard will determine those sections which can be utilised in the change.

The technical content of this International Standard is arranged as follows:

- **Objectives** – lists the goals to be achieved by the control and mitigation measures being described.
- **Functional requirements** – represent the minimum criteria to meet the stated objectives. The functional requirements are performance-orientated measures and, as such, are applicable to the variety of offshore installations utilized for the development of hydrocarbon resources throughout the world.
- **Annex A (informative)** – typical fire and explosion hazardous events.
- **Annex B (informative)** – describes recognized practices to be considered in conjunction with statutory requirements, industry standards and individual operator philosophy, to determine that the measures necessary are implemented for the control and mitigation of fires and explosions. The guidelines are limited to principal elements and are intended to provide specific guidance which, due to the wide variety of offshore operating environments, can in some circumstances not be applicable.
- **Annex C (informative)** – typical examples of design requirements for large integrated offshore installations.
- **Bibliography** – lists documents to which informative reference is made in this International Standard.

Petroleum and natural gas industries — Control and mitigation of fires and explosions on offshore production installations — Requirements and guidelines

1 Scope

This International Standard describes the objectives and functional requirements for the control and mitigation of fires and explosions on offshore installations used for the development of hydrocarbon resources.

This International Standard is applicable to:

- fixed offshore structures;
- floating systems for production, storage and offloading;

for the petroleum and natural gas industries.

Mobile offshore units as defined in this International Standard and subsea installations are excluded, although many of the principles contained in this International Standard can be used as guidance.

This International Standard is based on an approach where the selection of control and mitigation measures for fires and explosions is determined by an evaluation of hazards on the offshore installation. The methodologies employed in this assessment and the resultant recommendations will differ depending on the complexity of the production process and facilities, type of facility (i.e. open or enclosed), manning levels, and the environmental conditions associated with the area of operation.

NOTE Statutory requirements, rules and regulations can in addition be applicable for the individual offshore installation concerned.

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/IEC Guide 73, *Risk management — Vocabulary — Guidelines for use in standards*.

ISO 17776, *Petroleum and natural gas industries — Offshore production installations — Guidelines on tools and techniques for hazard identification and risk assessment*.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purpose of this International Standard, the terms and definitions given in ISO/IEC Guide 73 and the following apply.

ISO/DIS 13702**3.1.1****abandonment**

act of personnel onboard leaving an installation in an emergency

3.1.2**accommodation**

place where personnel onboard sleep and spend their off-duty time

Note 1 to entry It can include dining rooms, recreation rooms, lavatories, cabins, offices, sickbay, living quarters, galley, pantries and similar permanently enclosed spaces.

3.1.3**active fire protection**

AFP

equipment, systems and methods which, following initiation, can be used to control, mitigate and extinguish fires

3.1.4**area classification**

division of an installation into hazardous areas and nonhazardous areas and the sub-division of hazardous areas into zones

Note 1 to entry This classification is based on the materials which can be present and the probability of a flammable atmosphere developing. Area classification is primarily used in the selection of electrical equipment to minimize the likelihood of ignition if a release occurs.

3.1.5**cellulosic fire**

CF

fire involving combustible material such as wood, paper, furniture, etc.

3.1.6**class of fire**

type of fire

classification used to facilitate the selection of extinguishers

Note 1 to entry: ISO 3941 describes the classes of fires.

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3.1.7**control**

measure that is modifying risk

Note 1 to entry: Controls include any process, policy, device, practice, or other actions which modify risk.

Note 2 to entry: In the context of this International Standard control measures are those provided to limit the extent and / or duration of a hazardous event to prevent escalation.

Note 3 to entry: Controls do not always exert the intended or assumed modifying effect.

3.1.8**control station**

place on the installation from which personnel can monitor the status of the installation, initiate appropriate shutdown actions and undertake any emergency communication

3.1.9**deluge system**

system to apply fire-water through an array of open spray nozzles by operation of a valve on the inlet to the system

3.1.10**embarkation area**

place from which personnel leave the installation during evacuation

EXAMPLE A helideck and associated waiting area or a lifeboat/liferaft boarding area.

3.1.11**emergency depressurization**

EDP

controlled disposal of pressurized fluids to a flare or vent system when required to avoid or minimize a hazardous situation

3.1.12**emergency response**

action taken by personnel on or off the installation to control or mitigate a hazardous event or initiate and execute abandonment

3.1.13**emergency response team**

group of personnel who have designated duties in an emergency

3.1.14**emergency shutdown**

ESD

control actions undertaken to shut down equipment or processes in response to a hazardous situation

3.1.15**escalation**

spread of impact from fires, explosions, toxic gas releases to equipment or other areas thereby causing an increase in the consequences of a hazardous event

3.1.16**escape**

act of personnel moving away from a hazardous event to a place where its effects are reduced or removed

3.1.17**escape route**

route from an area of an installation leading to a muster area, temporary refuge (TR), embarkation area or means of escape to the sea

3.1.18**essential safety system**

any system which has a major role in the control and mitigation of fires and explosions and in any subsequent EER activities

3.1.19**evacuation**

planned method of leaving the installation in an emergency

3.1.20**evacuation, escape and rescue**

EER

range of possible actions including escape, muster, refuge, evacuation, escape to the sea and rescue/recovery

ISO/DIS 13702**3.1.21****evacuation, escape and rescue strategy****EERS**

results of the process that uses information from an evaluation of events which can require EER to determine the measures required and the role of these measures

3.1.22**evacuation route**

escape route which leads from the temporary refuge (TR) to the place(s) used for primary or secondary evacuation from the installation

3.1.23**Explosion****3.1.23.1****gas explosion**

violent combustion of a flammable gas or mist which generates pressure effects due to confinement of the combustion-induced flow and/or the acceleration of the flame front by obstacles in the flame path

3.1.23.2**physical explosion**

explosion arising from the sudden release of stored energy such as from failure of a pressure vessel

3.1.24**fire and explosion strategy****FES**

results of the process that uses information from the fire and explosion evaluation to determine the measures required to manage these hazardous events and the role of these measures

3.1.25**functional requirements**

minimum criteria which must be satisfied to meet the stated health, safety and environmental objectives

3.1.26**hazard**

source of potential harm

Note 1 to entry: Hazard can be a risk source for potential for human injury, damage to the environment, damage to property, or a combination of these

3.1.27**hazardous area**

three-dimensional space in which a flammable atmosphere can be expected to be present at such frequencies as to require special precautions for the control of potential ignition sources

3.1.28**hazardous event**

incident which occurs when a hazard is realized

EXAMPLES Release of gas, fire, loss of buoyancy.

3.1.29**human factors**

environmental, organisational and job factors which influence behaviour of work in a way that can affect health and safety