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Petroleum and natural gas industries — Guidelines for the marine interfaces of hybrid LNG terminals

Pétrole et industries du gaz naturel — Lignes directrices pour les interfaces de terminaux hybrides de GNL

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

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Introduction

The recent expansion of the LNG industry has led to the development of marine LNG facilities and transfer systems that differ from conventional LNG facility designs. These LNG transfer facilities can require additional or alternative systems and/or operational procedures to enable their safe operation. This Technical Report is intended to provide guidance for aspects of these facilities not covered by current standards and guidelines.

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Petroleum and natural gas industries — Guidelines for the marine interfaces of hybrid LNG terminals

1 Scope

This Technical Report provides guidance for installations, equipment and operation at the ship to terminal and ship to ship interface for hybrid floating and fixed LNG terminals that might not comply with the description of "Conventional LNG Terminal" included in ISO 28460.

This Technical Report is intended to be read in conjunction with ISO 28460 to ensure the safe and efficient LNG transfer operation at these marine facilities.

This Technical Report also addresses high pressure natural gas (HPNG) at the transfer interface at facilities where liquefaction or regasification is undertaken, but does not describe requirements for the process plant generally forming part of the terminal facility.

These guidelines are based around facilities that are currently in operation or under development.

2 Terms, definitions, and abbreviated terms

2.1 Terms and definitions

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

2.1.1
as low as reasonably practicable
ALARP
reducing a risk to a level that represents the point, objectively assessed, at which the time, trouble, difficulty, and cost of further reduction becomes unreasonably disproportionate to the additional risk reduction obtained

2.1.2
conventional onshore LNG terminal
LNG export or receiving terminal that is located on-shore and that has a marine transfer facility for the loading or unloading of LNG carriers in a harbour or other sheltered coastal location

Note 1 to entry: A conventional onshore LNG terminal typically includes marine transfer facility comprising a jetty equipped with loading arms or similar to enable the transfer of LNG between ship and shore.

2.1.3
double bank
to moor two vessels moored alongside each other at a terminal

Note 1 to entry: An example of double banking as part of a hybrid LNG terminal is where an LNGC moors and transfers LNG alongside an FSRU or FSU.

2.1.4
emergency release coupling
ERC
device to provide a means of quick release of LNG transfer system when such action is required only as an emergency measure

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