LNG STANDARDISATION ROAD MAP

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- **Requirement for Standardization**
- **Presentation of the ISO TC 67 WG10**
- **The Project Teams of ISO TC67 WG10**
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REQUIREMENT FOR STANDARDISATION

The LNG chain involves several operations with inherent associated risks which have to be minimized through thorough application of stringent codes, specifications and procedures.

Among the operations with some level of perceived risks: liquefaction process with large inventory of light hydrocarbons, the storage of the liquefied hydrocarbons, ship/shore transfer. Each of these operations requires careful design and procedures built over the years by stakeholders and then translated into a set of standards.

Because of the chain arrangement of a large majority of the LNG trade, a disruption of any link of the chain has an immediate impact on the reliability of the project and the safety record of the LNG supply chain is the sum of the safety record of each participants.

With the arrival of new comers with limited experience in all the segments of the LNG business, a corpus of international standards for the various elements is vital for the Safety aspect of the LNG chain.

The works performed within the ISO TC67 WG10 provide grounds for an alignment of good practices and technologies aiming at a safer and more efficient operation.

It is also important to provide a technological standardisation background for new developments such as LNG fuel or unconventional LNG transfer systems.

THE ISO TC67 WG10 GROUP:

The Working Group 10 “STANDARDIZATION FOR INSTALLATIONS AND EQUIPMENT FOR LIQUEFIED NATURAL GAS, EXCLUDING PRODUCT OR TESTING” was launched in 2006 and directly reports to the Technical Committee TC67.

The steering committee and the project leaders are sourced from a mix of Gas companies, E&P companies, engineering & construction contractors, services providers and international bodies. (TOTAL E&P, SIGTTO, DNV, Tractebel, SKEC, Tokyo Gas, PETROBRAS)

Australia, Belgium, Brazil, China, Denmark, France, Germany, Indonesia, Italy, Japan, Korea, the Netherlands, Norway, Qatar, Spain, U.K., U.S.A. have expert(s) attending the project teams meetings.

There are presently seven WG10's project teams (PTs)

- **PT1 :** LNG as ship fuel Infrastructure
- **PT2 :** Ship to shore interface – port operations
- **PT3:** Guidance on performing risk assessments in the design of onshore LNG installations.
- **PT4:** Characteristics of LNG and materials suitable for construction of equipment for cryogenic uses.
- **PT5:** Guidance for conception, design and testing of LNG storage tanks.
- **PT6** : Installation and equipment for LNG - Design and testing of marine transfer systems – articulated arms
- **PT7** : Unconventional LNG transfer systems

PT1: LNG as ship fuel Infrastructure (Leader DNV – Norway-)

The PT 1 will develop a document to provide guidance on how to meet safety requirements specified by authorities (National and Port). It aims at establishing operational and control procedures to ensure safe, practical and aligned operations in different ports. Requirements to components (Storage tanks, piping, hoses, loading arms, connectors etc) to ensure equipment compliance will be also identified.

This group has received a lot of attention with a very high number of stake holders involves in this future utilization of LNG as fuel.

PT2: Ship to shore interface – port operations (Leader SIGTTO – UK-)

The team prepared the ISO/DIS 28460 voted in 2010.

This document is essentially an adaptation of the proposed European Norm "pr EN 1532: 2008" *(Ship-shore interface and port operations)*

PT3: Safety and risk assessment for LNG facilities (Leader DNV – Norway-)

PT3 deals with Safety and risk assessment for onshore LNG facilities (upstream or downstream).
A New Work Item Proposal has been issued at the end of 2010 to issue a Technical Specification (TS) in 2012.

It makes reference to ISO17776 (Petroleum and natural gas industries – Offshore production installations - Guidelines on tools and techniques for hazard identification and risk assessment)

PT4: Characteristics of LNG and materials suitable for construction of equipment for cryogenic uses (leader Tractebel GDF Suez).

PT4 is working on standardization for equipment in contact with LNG.

A first draft has been started issued based on EN 1160 (*General Characteristics of Liquefied Natural Gas)*

PT5: Guidance for conception, design and testing of LNG storage tanks (Leader SKEC – Korea-)

PT5 deals with Onshore LNG tanks. A review of most of the existing codes and standards has been done except those related to all concrete tanks. Then PT will propose a technical report (TR) and later a technical specification (TS).

PT6: Installation and equipment for LNG Design and testing of marine transfer systems articulated arms (Leader Tokyo Gas – Japan-)

PT6 deals with Transfer arms for conventional onshore terminals. This team is preparing an international standard based on EN1474-1:2008. The group has issued late 2011 a draft of the future ISO 16904.

The other parts (2&3) of this EN standard are not included in the scope of work for this PT.

PT7: Unconventional LNG transfer systems (Leader PETROBRAS – Brazil-)

Objective of this project team is to prepare a document on non conventional LNG transfer systems. This project has received a lot of attention from many key players.

CONCLUSIONS

The LNG industry is yet perceived as a safe industry although handling very large quantities of hazardous material.

Because of the growing number of new actors, keeping the highest standard of safety is paramount.

The ISO TC 67 WG 10 group is actively pursuing Safety related topics as well as new items such as LNG Fuel and Unconventional LNG Transfer, addressing the unique growth of LNG market.

However a high level of participation is the key for the success of a recognized standardisation effort and new participants are always welcome!

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