

LNG Ship to Ship Transfer Guidelines PDF

In recent years, ship-to-ship Liquefied Natural Gas transfers have increasingly become commonplace, following the initial commercial operation in February 2007. Liquefied Natural Gas takes about 1/600th the volume taken by natural gas when in a gaseous state. The implication is that transferring, transporting and storing LNG is easier. If cargo such as Liquefied Natural Gas is being transferred from one ship to the other, standard precautions should be carefully observed.

Even before the commencement of the LNG transfer, the two who are in charge of the respective ships involved need to have common ground on all aspects of the procedure and identify the person who will be in overall charge. If the transfer operation is between two gas carriers, it ought to be carried out in as per the receiving vessel requirements.

LNG Transfer Systems

The Emergency Release System (ERS) is a vital component of any LNG Transfer system. This has been designed to react to any unexpected events. It controls the system towards minimising spills and shutdown the transfer system.

LNG Emergency Release Systems helps in providing a safe and efficient LNG transfer method during normal transfer operations. Whenever an event takes place, the system activates and controls a safe system closedown. The ERS consists of several components that include the Emergency Release Coupling (ERC).

Within the Emergency Release System, there is normally over one transfer line and Emergency Release Coupling. Whenever required by the system, the ERS allow the activation of the Emergency Release Coupling. The ERC comes integrated within the transfer line. It is the one that offers the safety link between the on-ship transfer system and the transfer hose. The ERC has been designed for automatic activation, making the LNG transfer safe in case of an event.

The Transfer Process Safety Systems

LNG safety transfer systems provide solutions to specific aspects of the overall LNG processing and management process. Protection against risk during LNG ship to ship requires an ongoing process of risk assessment and management.

In case an emergency happens during the ship to ship transfer process, then it is the LNG safety system that helps in maintaining the closed system's integrity.

LNG Spill & RPT

If LNG escapes during the transfer or from storage, then its cryogenic liquefied state gets exposed to the surrounding environment's temperature. If this is in an offshore environment, a distinct possibility exists that a LNG spill could come into contact with water. The rapid temperature increase of the LNG triggers a fast transformation to vapour from the liquid state, a process identified as Rapid-Phase Transition (RPT).

The objective of the Emergency Shut-down systems is eliminating any LNG volume spillage. The LNG safety system specific features will vary based on client specification, although the ERC will include instant or controlled shut-off of flow as well as double line closure.

Flip-Flap Valve Mechanism

The Flip-Flap Valve system delivers 100% shut-off of the LNG upstream and downstream during the transfer system. The key advantages offered by this system are based on its ability and simplicity in terms of delivering successful operation under a broad spectrum of transfer circumstances beyond what other closure systems can offer.

The Flip-Flap Valve system in addition offers low pressure drop feature that help in maintaining efficiency as well better LNG transfer times.

ERC Collar Release Mechanism

The collar release mechanism has been designed to shut down, detach and make the flow of LNG safe in case an emergency occurs. The ERC provides 2 clear benefits for Liquefied Natural Gas safety transfer applications.

The first advantage is the fact that it doesn't depend on hose line axial tensile load or any other transfer system parts like loading systems or flange joints. The second is in terms of control as it is hydraulically controlled directly from the HPU, providing several control solutions and options under all manner of emergency situations.

Conclusion

Transfer operations should, of course only be performed in weather conditions that are favourable and only after both ship masters are satisfied that it is safe enough. LNG Ship to Ship Transfer Guidelines should be used during the entire process. However, in all LNG ship to ship transfers cases, each master or the person in charge remains fully accountable for his own ship's safety, its cargo and crew. This must not be prejudiced by the actions of the other party.

Classes and Standards

You should ensure the LNG transportation complies with EN 1474-3 and ISO 18683 and conforms to OCIMF , ISO , SIGTTO and SGMF

For further information see <http://www.lngtransfer.com>