

No: FSN 19-01 | Date 05th April 2019

Recommended actions to prevent LNG leakages from dry-disconnect/connect coupling in service on hose bunkering/transfer systems.

The following Formal Safety Notice (FSN) has been issued by the Society for Gas as Marine Fuel (SGMF) www.sgmf.info to the industry to address concerns regarding the safe operations of LNG fuelled vessels and their equipment and to prevent the risk for assets, people and environment.

Applicability:	<ul style="list-style-type: none"> • LNG bunkering operations, ship to ship, shore to ship and mobile to ship • All type of dry-disconnect/connect coupling size 6" and above
Status:	<ul style="list-style-type: none"> • Active
Duration:	<ul style="list-style-type: none"> • No time limitations
References:	<ul style="list-style-type: none"> • NA
Distribution:	<ul style="list-style-type: none"> • No Restricted

Report:

SGMF Secretariat has received several reports of leakages from dry-disconnect/connect couplings (also known as quick connect/disconnect systems) in service during LNG bunkering operations for 6" and 8" nominal diameter bunkering lines.

It is understood that differential movement between supply and receiving bunkering equipment is causing leakages at the dry-disconnect/connect coupling sealing face/surface. It is not clear that any design loads are being exceeded whilst this movement is occurring, however it is causing the coupling to leak.

So far, all reported cases have been detected and dealt with safely.

Recommendations:

Care needs to be taken to ensure couplings are not overloaded during bunkering operations.

It is recommended that, for coupling sizes 6" and above, the equipment needs to be fully supported throughout the transfer operation.

This might be achieved by using additional support structure around the coupling nozzle and cryogenic hose, however each party should evaluate the best solution depending on their applications and equipment, e.g. straps or clamps might be used instead.

Thermal expansion/contraction should be also considered when structural constrains are placed around the equipment.

Care should be also taken when cryogenic hose movements are restricted, to prevent damages to the hose.

Smaller size dry-disconnect/connect couplings might not require additional support however, these should be closely monitored during the whole bunkering operation.

Risk Impact Rating:

		✓
<p>Yellow:</p> <p>This presents a low risk and impact to assets, people and environment and might cause some disruption to the normal operations.</p> <p>Stakeholders should be aware of the matter, evaluate the impact on their operations and plan their actions accordingly and as applicable.</p>	<p>Amber:</p> <p>This presents a medium risk and impact to assets, people and environment and can cause disruptions to the normal operation if not addressed.</p> <p>Stakeholders should evaluate the impact on their operations and plan to address the matter as part of their safety management plan.</p>	<p>Red:</p> <p>This presents potentially a high risk and impact to assets, people and environment and it should be immediately addressed.</p> <p>Stakeholders are invited to evaluate the impact on their operations and promptly take actions addressing the matter.</p>

Note:

Please note, reporting of details of any such instances is requested to the SGMF Secretariat: office@sgmf.info

Definitions & References:

Dry-disconnect/connect coupling:

A mechanical device enabling quick and safe connection and disconnection of the hose bunkering system of a bunkering facility to the manifold of the receiving vessel without employing bolts. The coupling consists of a nozzle and a receptacle. These couplings are also known as "Dry-Disconnect Couplings" or "Dry-Break Couplings" and sometime also referred as QDC.

Nozzle (coupling):

The half part of the dry-disconnect/connect coupling, bolted to the bunkering facility's transfer system, which permits quick connection and disconnection to the receptacle installed on gas-fuelled vessel's manifold. It includes an internal valve to seal the nozzle/transfer system when disconnected and will be opened by manual operation after connection.

Receptacle (coupling):

The half part of the dry-disconnect/connect coupling, bolted to the gas-fuelled vessel's manifold, to which the nozzle installed on the transfer system will be connected. It includes an internal valve to seal the receptacle/manifold when disconnected and will be opened by manual operation of the nozzle after connection.