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### **Statement regarding external review of LNG Transfer System**

Mann Teknik AB is developing and providing an LNG transfer system with ESD function to be used for ship to ship or terminal to ship LNG bunkering. In order to highlight potential risks, primarily related to safety, a review of the current design including an FMECA with subsequent SIL analysis has been conducted.

The FMECA revealed three high risks related to loss of safety function and/or unwanted release of natural gas to atmosphere. For these three risks, initial actions have been proposed but the effect of these actions should be further looked into as part of the action evaluation. The risks are linked to human errors and manual valves of the system.

With the current design, prerequisites and assumptions, the system qualifies for SIL2 for the ESD2 function. Main contributors to probability of failure on demand are the nitrogen activation bottle with valve and the powered emergency release coupling (PERC) itself.

Sincerely  
for DNV GL Sweden AB

A handwritten signature in blue ink, appearing to read 'Grusell'.

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Senior Consultant

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