



Small-scale LNG release tests and model improvements

Objectives

This project, led by DNV GL, focuses on the safety implications of LNG dispersion from small-scale LNG Infrastructure such as inland shipping, bunkering stations or LNG truck filling stations during & after loss of containment situations. It tries to assess risks and to identify hazards at small scale LNG bunkering stations. The regulation authorities are working on issuing standards for safe design, site construction and operation of LNG filling stations. This requires the presence of approved physical models. The verification and the validation of these models should be done against a wide range of experimental data. In this way, the project aims:

- to assess credible risks and hazards scenarios at small-scale LNG Infrastructure such as inland shipping bunkering stations or LNG truck filling stations,
- to make a significant step forward in the model improvement and development enabling modellers to validate and improve their models,
- to provide a crucial input for QRA and thus contribute into setting up safety guidelines for inland shipping bunkering stations or LNG truck filling stations.

Programme

It consists of two phases,

- Phase 1 looking at catastrophic rupture of LNG tanks and
- Phase 2 looking at failure of LNG transfer hoses.

Phase 1 tests were started at the Spadeadam test facility in September 2016. A single skin LNG tank, half-filled with LNG, was heated, leading to a substantial and fast pressure increase and the results observed and measured

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The next tests are scheduled for mid 2017. Later this year, Phase 2 will commence.



