



**Southern Africa Compressed Gases Association**

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## **Safety Alert: SA02/19**

### **Cryogenic Vessel overfill**

There was recently a serious near miss on a customer site where two cryogenic vessels of different physical size and pressure rating were connected together. This was done as a trial and a change from one gas supplier to another.

Although there was no property damage or injury, this did result in the smaller of the two vessels becoming overfilled which could have resulted in serious consequences for the customer or people operating the facility.

Following an investigation into the incident the key learning points identified were determined to be:

- When conducting trial work, the system design must comply with the normal permanent installation design requirements.
- Do not change cryogenic pressure vessel safety device/valve size or pressure ratings without going through a formal Management of Change (MoC) process.
- A Risk Assessment must be completed for all installations prior to commencing work.
- Special consideration must be given to connecting Cryogenic Pressure Vessels of different heights, sizes and/or pressures.
- Good technical communication both internally and between Gas Companies is critical, especially when there is a change to an existing installation, or a change of Gas Supplier.

When systems with different pressure ratings are connected, a special engineering review is required to ensure that the higher pressure system cannot over-pressure the lower system.

Similarly, whenever different size supply vessels containing liquid are connected together, the installation design must ensure that liquid from the larger/taller vessel cannot feedback into the smaller/lower vessel and inadvertently overfill (flood) it.

When trial or temporary installations are in service at a customer site, it must be made clear that the operation of the system must be done strictly in accordance with the instructions of the gas supplier.

By following these simple rules it will substantially reduce risk, and make the workplace safer going forward.

SACGA Safety Advisory Group Committee

March 2019

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