



Replacing failed low-temperature insulation with Armaflex Cryogenic Systems

Maximum functional reliability and high cost effectiveness

The APA Group is Australia's leading gas transportation business. With over 14,000 km of natural gas pipelines across mainland Australia and various gas storage facilities, APA delivers approximately half of Australia's gas use through its infrastructure. In Dandenong, a suburb of Melbourne, APA operates an LNG (liquid natural gas) storage facility with a fully contracted capacity of around 12,000 tonnes. The facility injects liquid gas into the APA-operated Victorian Transmission System (VTS) to meet peak winter demands and also provides a truck loading station for LNG tankers.

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In 2012, the disintegrated insulation on some LNG pipelines had to be replaced. The insulation had failed and when the pipelines were operated icing often occurred on the surface. Employees from the insulation firm Insulmet Pty Ltd (Moe) first had to remove the decayed cellular glass insulation and clean the pipes thoroughly. APA specified Armaflex Cryogenic Systems made by

Armacell for insulating the pipelines. These flexible insulation systems were specially developed for cryogenic applications at temperatures ranging from -200 to +125 °C. The multi-layered systems ensure exceptional thermal insulation, reduce the risk of corrosion under insulation (CUI) and allow considerable cost savings during the installation process. The core of the new insulation system is Armaflex LTD, a specially developed polymer that prevents thermal stress. Armaflex Cryogenic Systems retain their flexibility even at extremely low temperatures. This flexibility ensures that vibrations and impact are absorbed and the risk of cracking as a result of extreme temperature cycles or external mechanical strain is prevented. An important advantage of the cryogenic foams is that the systems need neither additional expansion joints nor vapour barriers. This reduces the installation time significantly in comparison to traditional cryogenic insulation systems.

Two layers of Armaflex LTD with an insulation thickness of 25 mm and three 25 mm-thick layers of Armaflex were applied on the LNG pipelines of the APA facility and then clad. Before the

installation work began, the six insulators from Insulmet received training in the application of Armaflex Cryogenic Systems from an Armacell employee. In May and June, the insulators installed a total of over 1,000 m² of Armaflex Cryogenic Systems sheet material and some 360 m of tube material.



LNG-Pipes



The insulators from Insulmet Pty Ltd (Moe) received training in the application of the new Armaflex Cryogenic Systems from Armacell



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