

# **Jemena Gas Networks (NSW) Ltd**

## **2015-20 Access Arrangement**

### **Response to the AER's draft decision and revised proposal**

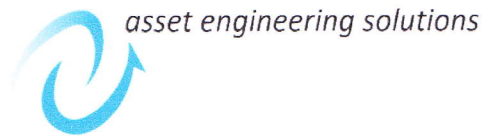
Appendix 4.4 - Report on-line inspection of the Wilton to Horsley Park trunk pipeline

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Ref: JEM-14-001

16<sup>th</sup> December 2014

Mark Drager  
Pipelines Asset Manager  
Jemena  
100 Bennelong Parkway  
Sydney Olympic Park NSW 2127

Dear Mark,

Re: Review of Engineering Assessment : Licence 1 Stress Corrosion Cracking

As requested, I have performed a review of the following document Engineering Assessment-Licence 1 Stress Corrosion Cracking (SCC) Assessment Rev B in order to form an opinion on the following:

- The pre-assessment performed to determine the likelihood of SCC occurring in the Licence 1 pipeline to the extent that it may have an impact on integrity;
- The need for further investment to verify the SCC pre-assessment;
- The efficiency of the recommended investment.

This review has been conducted with reference to the following SCC guidelines:

1. Development of Guidelines for Identification of SCC Sites and Estimation of Re-inspection Intervals for SCC Direct Assessment, Pipeline Research Council International, Inc. May 2010,
2. NACE SP0204-2008 Stress Corrosion Cracking (SCC) Direct Assessment Methodology
3. Canadian Pipeline Energy Association, Stress Corrosion Cracking Recommended Practices, 2<sup>nd</sup> Edition 2007

The pre-assessment performed to determine the likelihood of SCC occurring in the Licence 1 pipeline is consistent with SCC guidelines and local empirical data. All key factors which are known to influence SCC have been addressed. The following further comments can be made to this pre-assessment:

- The pre-assessment incorporates current known operating and field data. Operating conditions (including temperature, CP performance etc) may have been different in early life and hence, while still unlikely, it cannot be categorically concluded that initiation conditions were not present.
- To my knowledge, there has not been any SCC detected in MSP immediately upstream of Licence 1. However, as correctly stated in the assessment it has occurred in sections away from compressor stations, hence due to the uncertainties surrounding the occurrence of SCC, it cannot be categorically discounted from Licence 1.

Therefore I concur with the conclusions drawn from the SCC pre-assessment in the Engineering Assessment, that SCC cannot be categorically discounted.

In accordance with good gas industry practice, there is the need to verify these findings with field data. This is of particular importance since the Licence 1 pipeline is routed through regions of public activity and the consequence of an SCC failure could be significant. Therefore it is prudent and reasonable for the operator to invest in field investigations to verify the pre-assessment findings.

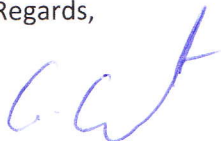
The methods to perform the field investigation discussed in the Engineering Assessment are consistent with those addressed in the SCC guidelines. The following comments can be made regarding the review of inspection methods

- In-line inspection with MFL tools are run at ten yearly periods to determine areas of general corrosion metal loss. Investigations performed on the MSP have shown that there is no correlation between general corrosion metal loss and SCC. Therefore, the use of MFL results to target high probability SCC location is not credible and would not provide any confidence in the SCC verification;
- Integrity digs may be performed, but as discussed in the SCC guidelines, an ongoing campaign will need to be performed with sufficient number of digs performed to statistically “prove” that SCC was not present. The number and location of the digs would need to address all key attributes addressed in the Engineering Assessment (in addition to High Consequence Areas) in order to verify the findings.
- As quoted in CEPA, SCC Recommended Practices, “Current crack detection ILI technology provides the pipeline operator with an increasingly accurate, efficient method to locate SCC”. EMAT technology has been proven within the MSP and the running of such a tool in Licence 1 would verify the pipeline condition along its entire length (i.e. addressing all attributes) in the most efficient manner available, obviating the need for an extensive and resource demanding dig program.

Therefore I concur that the recommendation made regarding the field investigations using EMAT. This investment is the most efficient of all options available to the operator and is no more than that which is required to meet the identified need.

I can be contacted on 0407 780 778 should the need arise.

Regards,



Chris Carter

Principal Pipeline Engineer  
Asset Engineering Solutions