

JPK Comments on Advantica report

We have reviewed the Advantica report in some detail and have provided a comprehensive list of comments (attached).

We list below some key areas where we believe the final report can be modified to give a more balanced view of the design and where changes are required for a report which is intended for public consumption.

We would like to note that it is rare for such a document to be placed in the public domain without giving the designers the chance to review and revert with additional information or to correct any inaccurate statements made, before publication. We would like assurances that the draft report will be removed from the public domain once the final report is issued.

We would insist that a general comment is made in the introduction of the revised report that the design, as currently proposed, is sound, safe and generally uses conservative values and assumptions. Whilst this is stated in a number of places within the report this should be clearly stated in the summary sections.

1) This is a technical document and as such is difficult for lay persons or the media to fully understand the issues involved. A Non – Technical Summary would seem to be very useful in being able to use this report to address remaining concerns over the pipeline design.

2) Advantica **did** review the overall concept and onshore pipeline route options. This should receive the attention it deserves. There is a whole section in the report (section 3 covering 6 pages), which refers to this and yet there is no mention in the summary of their findings. This would enable all parties to show that an independent review of the options chosen has found that the one chosen was properly considered.

3) The draft report lists key concerns expressed in the introduction and in more detail in Appendix B. However there are no specific answers to the questions and it would seem much better to provide specific references to the sections where these concerns are answered, or actually answer the concerns, rather than just state that the report in general has addressed these in the main body of the report.

4) The concern over H₂S appears on many occasions in this and the CPI report. The response from SEPIL has addressed this, but it needs to be clearly stated in the final report that the possibility of H₂S in the field at any time in concentrations likely to cause a problem is very low, will be monitored regularly and actions taken to prevent any damage occurring to the system.

5) Fatigue. The issue of fatigue and related issues is not valid for this pipeline which is designed to operate within a small fixed arrival pressure range of 90 to 110 barg in initial years. After year 4/5, the arrival pressure reduces and the range of possible arrival pressures also reduces. For the Corrib pipeline, this results in very low or negligible stress fluctuations compared to distribution systems. This has important effects which occur many times in the report and the planned operating mode should be identified as not causing an issue with fatigue.

- 6) The section on internal corrosion, does make certain statements about the existing design which we would like to clarify to Advantica and have these clarifications acknowledged in the final report. In general the concept used was valid when the design was undertaken (2001), the calculation did take into account, or conservatively discounted, certain factors and the corrosion calculation was undertaken using a 90% factor and not 95%, as top of the line corrosion rates dominate the corrosion rate for the onshore section.
- 7) The geo-technical section and initial report issued by JPK used conservative assumptions and as these found that the pipeline could survive a land slide using these values, then the additional work performed by Advantica was not required.
- 8) The items on probability of failure in the QRA sections can be read as implying that the probability figures used were incorrect. In fact the risk at lower pressures is significantly less than that predicted by the JPK / SEPIL QRA. This should be re-written as stating that although the Advantica risk / probability figures rise with pressure, their maximum levels are **less** than those previously calculated, therefore the original QRA was conservative in many of its assumptions and calculations.
- 9) IS EN 14161 does add manufacturing tolerance to the design wall thickness and should be considered the prime code for any re-design work.
- 10) The population density figures were correctly calculated and the report does admit that regardless of the pressure used, and hence the band width used, "...it is considered unlikely that the population density calculated would take the pipeline into a higher class location, ..."

JP Kenny
Dec 20th, 2005