

L-147 Internal Corrosion Summary

Internal Corrosion Threat Analysis Process

The Internal Corrosion (IC) threat identification for Line 147 was begun using the concepts of threat identification contained within RMP-16 rev.0, "Threat Identification Procedure". Further, field examination at a drip location was performed to validate the threat identification process.

There were five factors that were analyzed to determine whether the IC threat exists

1. Leaks attributed to IC
2. Evidence of prior IC
3. Documented history of water in the pipeline
4. Documented evidence that gas from a corrosive source was transported
5. Subject Matter Expert (SME) input

Findings of IC Threat Analysis

Leaks attributed to IC – All historical leak data was gathered and the cause was analyzed. There were no historical leaks caused by internal corrosion.

Evidence of prior IC – The Integrity Management team evaluated the data from field pipe inspection reports (16 reports). There were 9 inspections from leaks, 5 from Integrity Management based inspections and 2 in GIS records¹ that range in years from 1990 to 2012. None of the pipe inspection forms indicated internal corrosion.

Furthermore, PG&E performed a Non-Destructive Examination (NDE) at the drip at MP 0.52 and validated that no internal corrosion was present, indicating that liquids or sludges that are present in the drip and pipeline are non-corrosive.

Documented history of water in the pipeline – The history of liquid samples taken and analyzed on Line 147 was evaluated. Annually, the drips at MP 0.52 and 0.77 are blown and liquids are analyzed for corrosivity if free water is found. There are 16 and 15 annual drip blows on the drips at MP 0.52 and 0.77, respectively, as documented in PLM. The results of laboratory tests are documented in the log that is kept for the Internal Corrosion Direct Assessment (ICDA) program and shown here in Table 1. All analyses indicate that any liquids that are present in the line contain no free water and are non-corrosive.

Table 1. ICDA Liquids Analysis Log Results (summarized).

¹ These records document historical leaks that do not have documentation. They come from Pipeline Survey Sheets, usually 1950s to 1980s. They usually only have a location on a pipeline and a date. We incorporated them with a unique number in GIS to incorporate them into our risk model, so that all potential threat data is considered.

Division	GPS (Northing-Easting)	Line number	MP	Drip #	Location Description	Date	Liquids Present?	Free Water Present?	MIC Test Results	Chemical Test Results	Corrosivity Analysis
Peninsula	Redacted	147	0.52	BD303	Redacted	11/19/04	N	N	Dry - Not Required	Dry - Not Required	Non-Corrosive - No liquids, no free water
Peninsula		147	0.77	BD304		11/18/04	N	N	Dry - Not Required	Dry - Not Required	Non-Corrosive - No liquids, no free water
Peninsula		147	0.52	BD303		7/8/05	Y	N	Positive per LSP-2	No Free Water - Not Required per LSP-2	Non-Corrosive - No free water
Peninsula		147	0.77	BD304		6/22/05	N	N	Dry - Not Required	Dry - Not Required	Non-Corrosive - No liquids, no free water
Peninsula		147	0.52	BD303		11/10/10	Y	N	Positive per LSP-2	No Free Water - Not Required per LSP-2	Non-Corrosive - No free water
Peninsula		147	0.77	BD304		11/10/10	N	N	Dry - Not Required	Dry - Not Required	Non-Corrosive - No liquids, no free water

Documented evidence that gas from a corrosive source was transported – There are no production, gathering nor storage lines feeding this line. Therefore, gas quality has not created an IC threat.

Subject Matter Expert (SME) input – SMEs were interviewed to provide input into additional locations where internal corrosion may be a threat. Specific knowledge of the gas operating history, maintenance history, and mitigation efforts were used to identify locations where the IC threat may have historically been present. There was no evidence from SME input that suggested the existence of an IC threat on Line 147.

Conclusion

The results of the above analyses support the fact that there is not presently an internal corrosion threat on Line 147.