



Lodi Gas Storage, L.L.C.

April 30, 2015

Mr. Kenneth Bruno
Program Manager
California Public Utilities Commission
Safety and Enforcement Division
Gas Safety and Reliability Branch
505 Van Ness Avenue
San Francisco, CA 94102-3298

Certified Mail Receipt No. 70133020000153604849

RE: Transmission Integrity Management Program (TIMP) Inspection of Lodi Gas Storage, L.L.C.

Dear Mr. Bruno:

Lodi Gas Storage, L.L.C. (LGS) submits this written response to the Safety and Enforcement Division (SED) of the California Public Utilities Commission (Commission). On behalf of the SED, Paul Penney and Mahmud Intably conducted a Transmission Integrity Management Program (TIMP) inspection of LGS from November 18-22, 2013. The inspection findings identified by SED were provided to LGS on April 1, 2015. The LGS written response, provided as Attachment #1, addresses the inspection findings as noted by SED in the Summary of Inspection Findings.

If you have any questions, or require more information, please contact me at gclark@lodistorage.com or at (209) 368-9277 x21.

Sincerely,

Gregory N. Clark
Compliance Manager

Enclosures (Attachment #1)

cc: File #S3.03
K. Bruno, M. Intably, D. Lee, P. Penney, (via e-mail)
A. Anderson, S. Dupéré, P. Esposito, E. Kuykendall, R. Russell (via e-mail)

ATTACHMENT #1 – SUMMARY OF INSPECTION FINDINGS

A.01.a

Issues Identified:

The 192.3(a)-(c) referenced in LGS's TIMP plan is inconsistent with numbering in the definition of a transmission line and should be corrected; the definition of a transmission line in Title 49, Code of Federal Regulations (CFR), 192.3 Definitions references three categories: (1), (2), and (3).

On page 2, LGS references semi-annual performance measures; the requirement is now annual. The LGS TIMP plan should be updated to the latest requirement.

In section 1.4, page 6, LGS make reference to "See figure E1A at the end of this IMP element" for an illustration of how to determine a HCA segment. However, the referenced figure is not at the end of the element.

To summarize, while not violations, we recommend the three items noted above be corrected in the LGS TIMP plan.

LGS Response:

These recommendations were not discussed during the closing conference held in November 2013. However, the first two recommendations were identified and addressed during the LGS annual TIMP review in October 2014. The third recommendation was addressed by updating the LGS TIMP in April 2015 subsequent to the SED letter dated April 1, 2015.

A.06.a

Issues Identified:

In Section 1.5 of the LGS TIMP, page 10, LGS references FAQ-117 in its discussion of keeping HCA segments up-to-date. LGS follows the language in this FAQ except for one item. LGS states that the Office of Pipeline Safety (OPS) expects that "...operators would evaluate conditions along their pipelines once per calendar year not to exceed 18 months..." While the rule does not specify a frequency for updating data used to identify HCAs, FAQ-117 says that Pipeline and Hazardous Materials Safety Administration (PHMSA) expects operators to evaluate conditions along the pipeline as least once per calendar year.

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We also noted that the LGS cross reference for this protocol question designates a frequency of once per calendar year.

To summarize, while not a violation, we recommend that LGS update the language to accurately reflect the language in FAQ-117 and LGS's protocol cross reference.

LGS Response:

These recommendations were not discussed during the closing conference held in November 2013. The LGS TIMP was updated in April 2015 per SED recommendations.

C.01.a

Issues Identified:

The language in the LGS TIMP plan and threat analysis spreadsheet inadequately addresses the potential threat of cyclic fatigue on the two HCA segments, and why the threat is not applicable to the two HCA segments at this time. LGS discusses this threat in Section 2.5.2, page 7, of the TIMP plan; the language closely follows the language in Title 49, CFR, 192.917(e)(2). LGS also includes consideration of cyclic fatigue in the threat analysis spreadsheet, where two types of fatigue cycling are identified. Those are fatigue cycling of the carrier pipe due to pressure fluctuations, and the potential for fatigue cycling due to railroad traffic.

LGS must provide more detail in its TIMP plan and "BAP and Mitigation" worksheet for why cyclic fatigue was not, and is not, considered a threat at this time. System-wide or generic studies may be used as long as the operator documents the reason(s) why the study is applicable to the HCA segment specific conditions. For example, "Evaluating the Stability of Manufacturing and Construction Defects in Natural Gas Pipelines", by John F. Kiefner (Publication date: April 26, 2007) is one possible report. Another example of a generic study is the "Basics of Metal Fatigue in Natural Gas Pipeline Systems - A Primer for Gas Pipeline Operators", by Kiefner and Associates (Publication date: June 2006). Any generic report(s) used by LGS must address both pressure fluctuations in the pipe and fatigue cycling due to the railroad traffic; further, if LGS chooses to use generic studies, LGS must show why these studies are applicable to the two HCA segment specific conditions.

To summarize, LGS is in violation of 192.917(e)(2) for not doing the analysis required by this code section.

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LGS Response:

Cyclic fatigue was identified as a threat in the "Threat Identification" spreadsheet at the time of the TIMP inspection, and continues to be listed as a threat. The "Threat Identification" spreadsheet is a record in LGS's element 2 documentation. The severity and likelihood of the cyclic fatigue threat, as well as potential mitigation measures, are detailed on the "BAP and Mitigation" spreadsheet, which is a separate element 2 record. Content on the "BAP and Mitigation" worksheet was updated during the October 2014 annual IMP review to make this distinction more salient.

In summary, LGS has consistently identified cyclic fatigue as a threat. Therefore, the SED's finding related to LGS inadequately eliminating cyclic fatigue as a threat is erroneous and not valid. If LGS sought to eliminate cyclic fatigue as a threat, the SED suggestions listed above would be considered.

C.01.a (continued)

Issues Identified:

There is one additional issue related to threat identification and risk-ranking. In the "IMP Risk Rank and Schedule," LGS incorrectly aggregates construction and manufacturing threats together in the spreadsheet. These are two different categories of threat, and should be evaluated separately. LGS includes Welding/Fabrication in the next category of threat, which is synonymous with the construction category. The construction threat language should be removed from the manufacturing category in this spreadsheet. We noted during our records review that the "Gas IMP Threat Analysis" spreadsheet does correctly separate these two categories of threat.

To summarize, while not a violation, we recommend LGS correct the "IMP Risk Rank and Schedule".

LGS Response:

These recommendations were not discussed during the closing conference held in November 2013. The LGS TIMP was updated in April 2015 per SED recommendations.

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C.01.c

Issues Identified:

LGS provides minimum guidance in Section 2.4, page 4 of the TIMP plan on interactive threats. LGS should provide more detail on how it will treat interactive threats. For example, there is an Interstate Natural Gas Association of America (INGAA) report that provides guidance on threat interactions; it's called "Interacting Threats to Pipeline Integrity - Defined and Explained." This report provides background information and guidance on interactive threats; in particular, a matrix of threat interactions is included in the INGAA paper. Some interactions are deemed less likely because of the improbable nature of the interactions.

To summarize, while not a violation, we recommend that LGS update the language to provide more guidance for LGS staff to consider interactive threats.

LGS Response:

LGS shall consider SED's recommendation regarding interactive threats.

C.01.d

Issues Identified:

There are two issues related to this protocol question.

First, in Section 2.4 of the LGS TIMP plan, page 5, LGS discusses elimination of threats. However, the discussion appears contradictory in what it is saying. At the top of the page in the first paragraph, the TIMP plan states: "Specifically, a threat will not be eliminated unless it meets all of the following criteria." Four criteria are then listed below. In the lower part of the same page, the TIMP plan states: "Specific steps for threat identification." In step 2, the TIMP plan says, "Determine if potential threat is threat or no threat based on data collected and reviewed." It says nothing about applying the four threat elimination criteria at the top of the page.

Second, the four criteria listed at the top of the page do not apply to some of the threats under consideration. For example, the second criteria states: "Smart pig capable of discriminating for type of threat being eliminated with results showing no indication of specific threat." This criterion does not apply to Stress Corrosion Cracking (SCC) since the high resolution magnetic flux leakage (MFL) tool is not capable of detecting SCC per ASME B31.8S, Section 6.2.2(b).

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ASME B31.8S-2004, Section 5.10 states in paragraph three: *"The integrity plan shall also provide for the elimination of a specific threat from the risk assessment. For a prescriptive integrity management program, the minimum data required and the criteria for risk assessment in order to eliminate a threat from further consideration are specified in Nonmandatory Appendix A..."*

LGS must clarify the language to eliminate the apparent contradiction in the language on page 5, and correct the threat elimination criteria at the top of the page to ensure the criteria are applicable to the threats under consideration.

Therefore, LGS is in violation of ASME, B31.8S-2004, Section 5.10.

LGS Response:

This finding was not discussed during the closing conference held in November 2013. LGS disagrees with SED's assertion that Section 2.4 of the TIMP is contradictory. If one reads the section from beginning to end, the process for threat identification and elimination is clearly explained. Regarding the four criteria for threat elimination listed in the LGS TIMP, LGS added an "if applicable" statement to the smart pigging criterion to clarify that the smart pigging criterion applies only to threats where smart pigging is listed as an integrity assessment method per ASME B31.8S-2004, Nonmandatory Appendix A.

C.01.f

Issues Identified:

- i. No issues identified
- ii. N/A
- iii. This item was covered previously in C.01.c. There is some guidance in the threat spreadsheet at the bottom; there are three interactive threat categories that reproduce the guidance in this Roman numeral from above. See protocol C.01.c for further details. As noted above, while not a violation, we recommend that LGS update the language to provide more guidance for LGS staff.
- iv. The criteria applied to eliminate threats are flawed as described in protocol C.01.d. Records indicate that two threats were eliminated: SCC and cyclic fatigue. However, the threat elimination criteria do not apply to SCC as discussed in C.01.d. As noted above, LGS is in violation of ASME, B31.8S-2004, Section 5.10.
- v. No issues identified.

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LGS Response:

The SED findings for C.01.f are repeats of the same issues identified in C.01.c and C.01.d. Please see the LGS responses to C01.c and C.01.d.

C.02.f

Issues Identified:

192.917(e)(1) states: *"Third party damage. An operator must utilize the data integration required in paragraph (b) of this section and ASME/ANSI B31.8S, Appendix A7 to determine the susceptibility of each covered segment to the threat of third party damage... If, in conducting a baseline assessment under 192.921, or a reassessment under 192.937, an operator uses an internal inspection tool or external corrosion direct assessment, the operator must integrate data from these assessments with data related to any encroachment or foreign line crossing on the covered segment, to define where potential indications of third party damage may exist in the covered segment." [emphasis added]*

One-call-ticket frequency encroachment data was not integrated into the common spatial reference system. LGS indicated that "irth" data was available, but that data manipulation was needed to integrate the data to the GIS system. Please update us on when LGS plans to complete its integration this data into the GIS system. Also, please indicate any other encroachment data sets that LGS plans to integrate into the GIS system, and has not yet done so.

To summarize, LGS is therefore in violation of 192.917(e)(1) for not integrating this data as of the date of the audit.

LGS Response:

This finding was not discussed during the closing conference held in November 2013. LGS analyzes integrated data during each annual IMP review, and consequently disagrees with SED's characterization of this finding as a violation of 192.917(e)(1). Specifically, LGS demonstrated to SED inspectors during the November 2013 TIMP inspection that ILI data had successfully been integrated in LGS's GIS.

One call data was integrated into LGS's GIS on August 15, 2014. However, inclusion of data into GIS is (and has been) continually improving. Each year, LGS targets one or two new data sets to include in GIS. In 2014, one call data and CIS data were included.

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C.03.c

Issues Identified:

There appears to be an error in the SME risk ranking approach used by LGS that could result in a higher risk segment being ranked lower than a lower risk segment. Step-by-step instructions are described in Section 2.8 of the TIMP plan for using the "IMP BAP & Mitigation" spreadsheet to accomplish the risk ranking.

A segment having a higher total risk score could be ranked lower on the spreadsheet as follows (as noted in step 11, page 24 of 31, higher risk is denoted with a lower risk score). If a higher risk segment (i.e., lower numerical value) has fewer threats than a lower risk segment, then the average score could potentially be a larger average number (i.e., lower risk) than a lower risk segment with more threats. As described in Step 6, *"The worksheet will also determine the average score by dividing the total risk score by the number of risk factors."* Step 7 says, *"Using the average score... compare and rank all HCA segments against each other in the "Risk Rank and Schedule" worksheet."* As long as both segments have the same number of threats, then the approach will work. But if they have a different number of threats, then the potential exists to have an erroneous risk ranking. The risk ranking should be based on the total risk score.

To summarize, LGS is therefore in violation of ASME B31.8S-2004, Section 5.7(a) since the risk ranking approach is erroneous as described above.

LGS Response:

The BAP spreadsheet was modified during the LGS annual TIMP review in October 2014 and now correctly works with average risk score. The theoretical situation presented in SED's "issues identified" would now result in correctly risk ranked segments using average score, even if the segments were impacted by a different number of applicable threats.

C.04.b

Issues Identified:

This protocol question is referenced in the Element#2 protocol cross reference as C.03.d.
NOTE: This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

- i. No issues identified
- ii. No issues identified
- iii. No issues identified

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- iv. This needs to be added to the LGS procedure on page 25 of 31.
- v. This needs to be added to the LGS procedure on page 25 of 31.

LGS Response:

LGS Procedure 2.8 was updated during the LGS annual TIMP review in October 2014 and now incorporates the language referenced in this finding.

C.04.c

Issues Identified:

This protocol question is not referenced in the Element #2 protocol cross reference. LGS should add this new protocol question to the TIMP plan. This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

LGS Response:

The LGS TIMP was updated in April 2015 per SED recommendations.

E.02.b

Issues Identified:

Monitored conditions are covered in Section 5.6.4 of the LGS TIMP plan. However, LGS does not define critical strain, or how strain will be determined. Per B31.8S-2004, Section 5.7(g), an operator is required to thoroughly and completely document its processes. LGS must define what criteria will be used to determine when critical strain levels are reached, and what approach will be used to determine strain in a dent. For example, B31.8, Appendix R (Estimating Strain in Dents) is one approach to estimate strain in a dent. However, there are other approaches.

LGS is therefore in violation of ASME B31.8S-2004, Section 5.7(g).

LGS Response:

The LGS TIMP was updated in April 2015 per SED recommendations.

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I.01.a

Issues Identified:

LGS should update Element #9 of the TIMP plan to include the above bullets, and update the protocol cross reference at the end of Element #9 to identify where in the TIMP plan each of the above bullets is addressed. NOTE: This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

LGS Response:

This finding was not discussed during the closing conference held in November 2013. During the next LGS annual TIMP review (prior to December 31, 2015), the LGS TIMP shall be updated per SED recommendations.

I.01.b

Issues Identified:

LGS should update Element #9 of the TIMP plan to include the above bullets, and update the protocol cross reference at the end of Element #9 to identify where in the TIMP plan these bullets are addressed. The LGS TIMP plan appears not to address some of these bullets and sub-bullets. NOTE: This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

LGS Response:

This finding was not discussed during the closing conference held in November 2013. During the next LGS annual TIMP review (prior to December 31, 2015), the LGS TIMP shall be updated per SED recommendations.

I.02.a

Issues Identified:

LGS should update Element #9 of the TIMP plan to include references to records that address each of the above bullets as appropriate, and update the protocol cross reference at the end of Element #9. NOTE: This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

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LGS Response:

This finding was not discussed during the closing conference held in November 2013. During the next LGS annual TIMP review (prior to December 31, 2015), the LGS TIMP shall be updated per SED recommendations.

I.02.b

Issues Identified:

LGS should update Element #9 of the TIMP plan to include references to records that address each of the above bullets as appropriate, and update the protocol cross reference at the end of Element #9. NOTE: This finding is based on the August, 2013 PHMSA TIMP inspection protocols.

LGS Response:

This finding was not discussed during the closing conference held in November 2013. During the next LGS annual TIMP review (prior to December 31, 2015), the LGS TIMP shall be updated per SED recommendations.