March 10, 2017

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

SUBJECT: General Order 112 Transmission Integrity Management Program (TIMP) Inspection of Wild Goose Gas Storage (WGS)

Dear Mr. Bruno:

As stated in your letter, dated February 10, 2017, the Safety and Enforcement Division (SED) of the California Public Utilities Commission, Paul Penney and Fred Hanes conducted a General Order 112 inspection of the Wild Goose Storage TIMP from October 10-14, 2016. The inspection included a review of the TIMP plan as well as records associated with PHMSA's Form 16.

WGS appreciates the professionalism and dedicated efforts from the SED audit team for the comprehensive review of the subject matter.

Attached please find WGS' written response inserted beneath each of the findings from your February 10, 2017 report.

Please do not hesitate to contact me at 403-513-8657, or by email at Mathieu.Fournier@niskapartners.com, should you have any questions or require additional information.

Sincerely,

Mathieu Fournier
VP Engineering and Operations
Niska Gas Storage Partners LP

Attachments

cc: Paul Penney, CPUC SED (Paul.Penney@cpuc.ca.gov)
Dennis Lee, CPUC SED (Dennis.Lee@cpuc.ca.gov)
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SUMMARY OF INSPECTION FINDINGS

A. Probable Violations

1. PHMSA Form 16, Question 10:
*"**Validation of ILI Results (Confirm)** From Observation of field activities, do employees and vendors validate ILI assessment results per their process? (AR.IL.ILIVALIDATE.O) (confirm) 192.921(a)"*

This question references 49 CFR §192.921(a)(1), which states:
"Internal inspection tool or tools capable of detecting corrosion, and any other threats to which the covered segment is susceptible. An operator must follow ASME/ANSI B31.8S (incorporated by reference, see §192.7), section 6.2 in selecting the appropriate internal inspection tools for the covered segment."

In addition to selecting the appropriate inspection tool identified in the code section above, B31.8S, Section 6.2.6 discusses validation of ILI results:

"Results of in-line inspection only provide indications of defects, with some characterization of the defect. Screening of this information is required in order to determine the time frame for examination and evaluation. The time frame is discussed in para. 7. (Underline Added)

Examination consists of a variety of direct inspection techniques, including visual inspection, inspections using NDE equipment, and taking measurements, in order to characterize the defect in confirmatory excavations where anomalies are detected. Once the defect is characterized, the operator must evaluate the defect in order to determine the appropriate mitigation actions. Mitigation is discussed in para. 7." (Underline Added)

49 CFR §192.947(d) discusses record keeping requirements for the elements of IM, including ILI validation. This code section states in part:

An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection (Underline Added) …

(d) Documents to support any decision, analysis and process developed and used to implement and evaluate each element of the baseline assessment plan and integrity management program. Documents include those developed and used in support of any identification, calculation, amendment, modification, justification, deviation and determination made, and any action taken to implement and evaluate any of the program elements;"

The results of the two ILI inspections in 2007 and 2014 appear not to have been validated (i.e., direct examinations) and documented by WGS or its contractors at the time of this audit.[1] According to WGS, the first ILI run from 2007 did have a direct examination; staff from GTS Engineering and Consulting (GTS) did a direct examination on a section of the

[1] While not incorporated by reference into Part 192, API 1163 (In-Line Inspection System Qualification Standard), Section 8 provides guidance on one approach for ILI validation.

pipe near a pig launcher/ receiver. However, the results of this direct examination (validation) appeared not be known or documented by GTS or WGS staff. It is not known if there were any other direct examinations to validate the 2007 ILI run.

If WGS or GTS staff did validate the 2007 ILI results and has documentation for this validation, please provide the documented results and analysis that the results met specifications of the ILI vendor. In the absence of this documented validation, WGS has violated B31.8S-2004, Section 6.2.6. This code section is incorporated by reference into Part 192, Subpart O.

WGS agrees that validation of the 2007 ILI results were not documented / retained. As a follow up, WGS commits to validating the 2014 ILI results, by November 2017, by examining two anomalies identified by the ILI run. Anomaly #1 will be examined near the launcher/receiver, as identified by SED above (absolute distance from 2014 ILI data of 30.093 feet). Anomaly #2 will be examined at the site of the 12% metal loss indication near the HCA (absolute distance from the 2014 ILI data of 33,803.042 feet). Results of these examinations will be compared to the ILI results for validation and determining the need for further examinations. Please note that the anomalies identified by GE's 2014 ILI run, are not significant enough to result in the need to de-rate the pipeline maximum operating pressure.

WGS has also violated Part 192.947(d) for not maintaining records of all validation digs.

WGS agrees with the finding that records of validations were not maintained. As mentioned above, validation of the 2014 ILI results will be performed by November 2017, and associated relevant records will be produced and maintained as required. In addition, expectations for required recordkeeping will be established in the forthcoming ILI Procedures appendix to the WGS IMP.

For the 2014 ILI run, WGS contracted with GTS. As identified in the GTS report[2], the objective of the work was as follows: *"GTS has been tasked with comparing the data from two In-Line Inspections (ILI), from 2007 and 2014, to assess how the integrity of the pipe has changed and developing recommendations based on the results."* There were numerous recommendations related to the GTS review, one of which was for WGS to do four direct examinations to validate the results of the 2014 ILI run.

If WGS has validated the 2014 ILI results per the recommendation of GTS, please provide the documented results and identify whether the results met the specifications identified in the GE ILI run report[3], Appendix G (Inspection System Performance Specification), Table 1 on page 3. If WGS intends to validate the results, please provide a schedule for when this will be done. In the absence of this validation, WGS has violated B31.8S-2004, Section 6.2.6 for the 2014 ILI run.

As stated above, WGS intends to validate the results of the 2014 ILI by November 2017. WGS believes that direct assessment of two anomalies will be sufficient to validate the GE ILI run results. The examination location for Anomaly #1 (absolute

[2] The report is entitled "Wild Goose Report_Rev3_10-05-2016."
[3] The report is entitled "2014 Colusa to Butte 438352_30A MFC- GE Final Report."

distance 30.092 ft.) was recommended by GTS. The location for Anomaly #2 is based on the recommendation below from SED (5. PHMSA Form 16, Question 10) to perform an examination of the anomaly located near the HCA. Results from these validation efforts will be used to determine the need for additional examinations.

If the results did not/ do not meet the specifications in Appendix G for detection, sizing and location accuracy, please identify what remedial actions WGS will take to account for this inaccuracy.

If results do not meet required specifications, remedial actions will be established in the forthcoming ILI Procedures appendix to the WGS IMP, which is expected to be adopted prior to conducting the next inline inspection.

NOTE #1:
The ILI vendor (GE) did do "Data Quality Assessments" for the geometry tool run and the MFL tool run as a part of the 2014 ILI. For the geometry tool, GE considered several factors, including: Data Completeness, System Functionality and Data Quality. For the MFL tool run, GE considered the same factors identified for the geometry tool run. These factors assessed the quality of the geometry and MFL tools themselves during the ILI runs, and not the results of those runs. WGS staff provided documentation for these two "Data Quality Assessments."

2. PHMSA Form 16, Question 14:
*"**ILI Acceptance Criteria (detail)** Do records indicate adequate implementation of the process for ILI survey acceptance? (AR.IL.ILIACCEPCRITERIA.R) (detail) 192.947(g) (192.921(a))"*

WGS does not have a documented process for ILI survey acceptance in its IMP, nor does WGS reference another documented process in its IMP (i.e., an appendix). If WGS has a documented process that is not documented or referenced in its IMP, please provide a copy of that process.[4] Part 192.947(d) requires WGS's ILI survey acceptance process be documented. In the absence of a documented process, WGS has violated Part 192.947(d).

WGS agrees that it does not have a documented process for ILI survey acceptance. By this, WGS interprets "survey acceptance" to mean the overall acceptance of the results of the ILI run. WGS will establish expectations and criteria for ILI survey acceptance in the forthcoming ILI Procedures appendix to the WGS IMP.

3. PHMSA Form 16, Question 18:
***"Compliance with ILI Procedures (detail)** Are O&M and IMP procedural requirements for the performance of ILI assessments followed? (AR.IL.ILIIMPLEMENT.O) (detail)*

[4] Again, while not incorporated by reference into Part 192, API 1163, Section 8.2.2 (Process Verification or Quality Control) provides guidance for ILI process verification (a.k.a. ILI survey acceptance). See also Section 8, Figure 6 (Inspection Results Verification and Validation Process).

192.921(a)(1) (192.620(d))

WGS does not have any procedures in its IMP for the performance of ILI assessments. However, WGS does have a general reference in the IMP manual pointing to the O&M plan and Environmental, Health and Safety (EH&S) procedures (see Section 5.3.4, page 20). This is based on the 1-12-2016 revision of the IMP (WGS_IMP_Manual_Aug_2015_rev_ 2016_01_12_with_changes_accepted). Section 5.3.4 states:

"Reassessments will be conducted in accordance with WGS Operating and Maintenance (O&M) procedures and Environmental, Health, and Safety (EH&S) procedures to ensure precautions will be implemented to protect employees, members of the public, and the environment from safety hazards during reassessments. Additional job specific procedures will be developed as needed and identified via the Management of Change procedures."

While not referenced above, 192.911(o) provides guidance for this requirement. The requirement states:

"…The initial program framework and subsequent program must, at minimum, contain the following elements. (When indicated, refer to ASME/ANSI B31.8S (incorporated by reference, see §192.7) for more detailed information on the listed element.)…

(o) Procedures for ensuring that each integrity assessment is being conducted in a manner that minimizes environmental and safety risks."

If WGS has specific O&M and EH&S procedures for the performance of ILI inspections, please provide a copy of those procedures. In the absence of a process in the O&M manual and/or EH&S for the performance of ILI assessments/reassessments, WGS must develop and incorporate such procedures in its IMP, O&M manual, EH&S manual and/or some other documented reference. In the absence of a documented process for the performance of ILI surveys, WGS has violated Part 192.911(o)

WGS agrees that it does not have a documented process to specifically ensure that each integrity assessment is being conducted in a manner that minimizes environmental and safety risks. WGS does have a corporate umbrella "HSE Policy" that ensures commitment to environmental health and safety (attached), but it does not have ILI-specific procedures to that effect. In the past, WGS has relied on the ILI contractor to provide ILI operational and safety risk related procedures. WGS will incorporate into its ILI procedures appendix clear documentation and guidance on ILI assessments and reassessments, including assurance that each ILI is being conducted in a manner that minimizes environmental and safety risks (per 192.911(o)).

and Part 192.947(d).

WGS will incorporate into its ILI procedures appendix recordkeeping requirements as well as criteria for what data from ILI results will be kept as required by 192.947(d).

During the next ILI, WGS will ensure that the requirements set forth in the ILI procedures appendix are met.

4. PHMSA Form 16, Question 5
Pressure Test Results (confirm) Do the test records validate the pressure test? *(AR.PTI.PRESSTESTRESULT.R) (confirm)*
192.517(a) (192.505(a); 192.505(b); 192.505(c); 192.505(d); 192.505(e); 192.507(a); 192.507(b); 192.507(c); 192.513(a); 192.513(b); 192.513(c); 192.513(d); 192.517(b); 192.617; 192.619(a); 192.919(e); 192.921(a)(2))

For the sampling of records reviewed, the test records do validate that the pressure tests were conducted per the requirements of Part 192.

The original hydro-test was done in 2003; it was not an "integrity assessment." WGS did the first ILI assessment in 2007; see the IMP[5], Section 5.12, page 17. The second ILI assessment was done in 2014.

While reviewing data from WGS's Master Data Sheet (MDS), we noted a discrepancy between the "System MAOP", identified as 1050 psig, and the "System MAOP" SED staff calculated as 1022 psig. The calculation was made using Part 192.619(a) referenced above in the protocol question and reproduced here.

WGS believes there is an error in the MDS and is in the process of verifying the accuracy of the document. The only segment containing an HCA should be segment #68. The minimum wall thickness of pipe within this segment is 0.625". The MAOP spreadsheet, which had been prepared by the engineering company that designed and managed construction of the 30" pipeline (Rooney Engineering), and was shared with the CPUC during the audit (titled "Wild Goose Storage LLC, 30" Pipeline Specifications"- copy is attached), shows that segment #68 is solely X70 grade 30" OD x 0.625" wall thickness pipe.

The "System MAOP" SED staff calculated as 1022 psi (as detailed below) has assumed that a portion of the HCA was only 0.438" wall thickness:

P= (2 St/D) x F x E x T= (2 x (70,000 psi) x (0.438 inch)/30 inch) x (0.5) x (1) x (1)
P= 1022 psi

The correct design pressure for the HCA segment of the pipeline (#68) equates to 1,458 psig based on the following calculation:

P= (2 St/D) x F x E x T= (2 x (70,000 psi) x (0.625 inch)/30 inch) x (0.5) x (1) x (1)
P= 1,458 psi

However, since the HCA portion of the 30" pipeline was hydro-tested to 1,839 psig, and applying the Class 3 scaling factor of 1.5, the MAOP equates to 1,226 psig. The remainder of the 30" pipeline is in a Class 1 location and has an MAOP of 1,448

[5] The IMP is entitled "WGS_IMP_Manual_Aug_2015_rev_2016_01_12 _with_changes_accepted."

psig, based on minimum hydro-test pressure of 1,811 psig and a scaling factor of 1.25.

Note that under the "Design and Construction" section of the Master Data Sheet (MDS), the term "MAOP (psig)" was incorrectly labeled, and should have been identified as "MOP (psig)" (Maximum Operating Pressure). The 1,050 psig pressure that was referenced in the MDS is not the MOP of the WGS pipeline, but the MOP that WGS can deliver into PG&E's system at the Delevan Meter Station, and therefore should not have been used in the MDS sheet. As mentioned earlier, the 30" pipeline has an MAOP of 1,226 psig (based on hydrotest pressure within the HCA section which has the most stringent scaling factor).

Also note in the MDS, that the desired "DP (psig)" (Design Pressure) is indeed 1,200 psig, as indicated, while the hydro-test results actually allow for an MAOP of 1,226 psig. The MDS will be edited with the correct information.

49 CFR §192.619(a) states:
"No person may operate a segment of steel or plastic pipeline at a pressure that exceeds a maximum allowable operating pressure determined under paragraph (c) or (d) of this section, or the lowest of the following:

(1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part…

(2) The pressure obtained by dividing the pressure to which the segment was tested after construction as follows…
(ii) For steel pipe operated at 100 p.s.i. (689 kPa) gage or more, the test pressure is divided by a factor determined in accordance with the following table…"

Class location	Factors[1], segment—		
	Installed before (Nov. 12, 1970)	Installed after (Nov. 11, 1970)	Converted under §192.14
1	1.1	1.1	1.25
2	1.25	1.25	1.25
3	1.4	1.5	1.5
4	1.4	1.5	1.5

The MAOP must be determined by the lowest value between the design pressure for the weakest element in the Class 3 HCA segments and the hydro-test pressure divided by the appropriate scaling factor.

As noted in the MDS, the class 3 location encompasses four segments (68, 69, 70 and 71). Three of these segments have a wall thickness of 0.438 inches and one has a wall thickness of 0.625 inches. Using the design formula in Part 192.105 for the thinnest pipe wall thickness of 0.438 inches, we have the following:

P= (2 St/D) x F x E x T= (2 x (70,000 psi) x (0.438 inch)/30 inch) x (0.5) x (1) x (1)
P= 1022 psi

The design pressure is 1022 psig. The minimum hydro-test pressure was 1848 psig; using the appropriate scaling factor of 1.5 from the table above, the MAOP by hydro-test is 1232 psig. Per the requirements of 192.619(a), the lower of these two must be chosen. Thus, the "System MAOP" should be 1022 psig.

WGS is therefore in violation of 192.619(a).

Please refer to the explanation WGS has respectfully submitedabove, which provides details on the MAOP calculation, and should resolve the issue of the MAOP for Class 3 HCA segment #68.

5. PHMSA Form 16, Question 10
"Field Inspection - Remedial Actions (IM) (detail) *Is anomaly remediation adequate for the covered segments being observed? (AR.RC.REMEDIATION.O) (detail) 192.933(c) (192.933(a); 192.933(d))*

The written remediation schedule is covered in Section 5.5 of WGS's IMP, and meets the requirements in 192.933. Section 5.5 also references B31.8S-2004, Figure 4 for those conditions not meeting the anomaly definitions covered in 192.933 (i.e. immediate, one-year, or monitored). During the 2014 ILI run, there were no anomalies meeting the requirements of 192.933(d)(1), 192.933(d)(2) or 192.933(d)(3) for immediate, one-year and/or monitored conditions.

There are no violations of the code sections cited above for anomaly remediation. However, WGS did identify a metal loss indication from the 2014 ILI run estimated at 12% of wall thickness in the HCA on Segment #69. In the future, this could potentially result in a violation of the reassessment timelines as described below in Concern #1.

CONCERN #1:
WGS has not validated the results of the ILI run to determine whether the MFL and Geometry tools meet the specifications in the GE ILI run report (entitled "2014 Colusa to Butte 438352_30A MFC- GE Final Report"), Appendix G (Inspection System Performance Specification), Table 1 on page 3. As a result, the reported metal loss indications may be greater than predicted by the MFL tool and could potentially be outside of the tool specifications contained in Table 1 referenced above.
If the predicted metal loss indication on Segment #69 in the class 3 location is greater than predicted by the MFL tool, this could result in a reassessment schedule being less than once every 7 years. As noted in ASME B31.8S-2004, Section 7.2.1 (Metal Loss Indications for internal and External Corrosion), *"Indications characterized with a predicted failure pressure greater than 1.10 times the MAOP shall be examined and evaluated according to a schedule established by Fig. 4."* Where metal loss indications are believed to be external corrosion and are greater than 1.10 (Pf/MAOP), but less than 1.5, this could result in a reassessment schedule less than 7 years for pipelines operating between 30% and 50% of SMYS. WGS has a defined "System MAOP" (i.e., System MOP) of 1050 psig[6]. This means

[6] The 1050 psig value is documented on the spreadsheet "WGS_IMP_Mstr Data Set_2014_10-05-2016", which is also referred to as the Master Data Sheet (MDS).

the MAOP is at 36% of the pressure at SMYS[7]. For example, if the deepest metal loss indication had a Pf/MAOP= 1.4 (not far from the Pf/MAOP of 1.531 in the MDS), this would mean a reassessment interval of 5 years instead of seven years (assuming no remediation of the anomaly takes place).
To summarize, WGS must validate the ILI results to confirm the performance specifications of the ILI tool. Without this validation, WGS may inadvertently exceed the required reassessment interval identified in ASME B31.8S-2004, Figure 4.

WGS intends to validate the results of the 2014 ILI run by November 2017. The results of this validation will be used to determine whether the ILI tools met the specifications in the GE ILI report, Appendix G, Table 1 on page 3.

QUESTIONS #1 and #2:

1. When GE calculated the failure pressure Pf on HCA segment 69 (identified in the MDS as 1608 psig), did GE account for the performance specification in Appendix G to determine the failure pressure as the worst case scenario (i.e. the measured depth, length and width plus the sizing accuracy)?

   As mentioned earlier, the MDS contains an error and the anomaly observed on segment 69 is not within an HCA. WGS is currently working with GE to obtain their assumptions in the calculation of Pf.

2. If the answer to question #1 above is no, please provide an updated Pf taking accuracy into account for the 12% wall loss identified in the HCA on segment 69.

   If it is determined that the answer to #1 above is no, WGS will provide an updated Pf calculation for the 12% metal loss anomaly identified on segment 69 (which was confirmed not to be not within an HCA), taking accuracy into account.

RECOMMENDATION #1 and #2:
If WGS has not already done so, SED staff recommends WGS directly examine the 12% external corrosion indication on Segment #69 in the HCA.

WGS intends to directly examine this anomaly (absolute distance from the 2014 ILI data of 33,803.042 feet) by November 2017.

For monitored conditions identified in Section 5.5.4 of the IMP, WGS follows the language in in Part 192.933(d)(3). However, WGS does not provide guidance for engineering staff on how critical strain levels are determined. This is used in determining which dents fall within the "monitored" category identified in 192.933(d)(3). Therefore, SED staff recommends that WGS incorporate a reference for a documented engineering process into Section 5.5.4 for determining "critical strain." For example, B31.8, Appendix R (Estimating Strain in Dents) is one process that could be used.

WGS intends to provide guidance for engineering staff on how critical strain levels are determined in the forthcoming ILI procedures appendix. This will clarify the

[7] The MAOP was at 36% of SMYS for the Class 3 HCA segment #68; this value for the "%SMYS at MAOP" is in the MDS.

determination of which dents fall into the "monitored" category identified in 192.933(d)(3).

6. PHMSA Form 16, Question 6
   Assessment Method (High pH SCC) (detail) *Do records demonstrate that an assessment was performed using one of the methods specified in B31.8S Appendix A3? (AR.SCC.SCCDAMETHOD.R) (detail)*
   192.947(g) (192.929(b)(2))

WGS's discusses risk assessment for all threats in Section 4 of its IMP (Threats, Data Integration and Risk Assessment). Section 4.1.3 also states that *"A threat will not be eliminated from consideration for a specific segment* ***unless there is documented justification based on sound engineering practices…"*** The risk assessment for High pH SCC discussed in B31.8S-2004, Appendix A3.3 (Criteria and Risk Assessment) uses five screening criteria for determining which segments are potentially subject to SCC. SED staff has two recommendations, which are discussed below.

There are no violations of the code sections cited above, but the recommendations below will provide guidance on the potential threat of high pH SCC in the future.

RECOMMENDATIONS #1 and #2:
WGS should note in its TIMP plan that the screening criteria identified in ASME B31.8S-2004, Appendix A3, for the High pH Stress Corrosion Cracking (SCC) threat is not absolute. These criteria do not account for approximately 25-35% of historical SCC failures. As noted in the National Association of Corrosion Engineers (NACE) RP0204-2004 (Stress Corrosion Cracking Direct Assessment Methodology), Section 1.2.1, *"…It is recognized that these screening factors will identify a substantial portion of the susceptible locations, but not all of them."*

Therefore, while not a violation, SED staff recommends that WGS incorporate language in its TIMP plan that notes the screening criteria in ASME B31.8S, Appendix A3, Section A3.3, are not an absolute guarantee that there will not be High ph SCC in the future. SED staff further recommends that WGS incorporate testing for SCC into all direct examinations (i.e. Magnetic Particle Inspection). This will provide data for any potential SCC that might occur in the future. This data will also inform the threat analysis process, risk assessment and the need for addition assessment techniques to assess for High pH SCC (i.e. as noted in WGS's IMP, Table 6, an ILI tool with crack detection capability or hydro-testing are the two assessment techniques).

The WGS IMP and other relevant documents will be updated to contain this information. Additionally, WGS will ensure that a tool to test for SCC will be incorporated into the next ILI.

7. PHMSA Form 16, Question 18:
   Inspection of Materials (detail) *Are pipe lengths and other pipeline components visually inspected to ensure they are not damaged? (DC.CO.INSPECTVISUAL.O) (detail)*
   192.307

This question references 49 CFR §192.307, which states:
"Each length of pipe and each other component must be visually inspected at the site of installation to ensure that it has not sustained any visually determinable damage that could impair its serviceability."

In addition GO112-E, Rule 101.4[8], which incorporates 49 CFR, Part 192 by reference states:
The utilities shall maintain the necessary records to ensure compliance with these rules and the Federal Pipeline Safety Regulations, 49 CFR, that are applicable. Such records shall be available for inspection at all times by the Commission or Commission Staff. [Underline Added]

There were no records related to visual examination identified during the audit, but there were technical specifications in the book, Line 400 Pipeline, Volume 1 under the tab "Pipeline Construction." The document was entitled "Pipeline Construction Specifications." In that document was a general requirement under Section 3.1 to follow Part 192. Also, significant care in the specification was spelled out.

If WGS has records verifying visual examinations took place, please provide a sampling of those records. In the absence of these records, WGS has violated GO112-E, Rule 101.4.

WGS agrees that subsection 192.307 requires pipe and pipe components to be visually inspected at the installation site to verify they have not sustained visually determinable damage that might impair serviceability. WGS agrees that CPUC GO-112-E mandates in section 101.4 that utilities must maintain the necessary records to ensure compliance with CPUC rules and the 49 CFR, that are applicable. GO112-E, section 101.4 requires those records to be available for inspection at all times by the Commission or Commission Staff. WGS confirms that at the time of the October 2016 CPUC inspection, WGS was unable to locate other records that demonstrated that the pipe lengths and other pipeline components had been visually inspected to ensure they are not damaged, at the time of construction.
During the 2003 pipe installation, the construction specification required the contractor to follow 49 CFR Part 192 requirements. The construction book volume 1, page 21, at section 6.4 detailed the requirements for bedding. Section 3.1 referenced Part 192 requirements.
When CPUC was onsite at WGS for the 2016 audit, WGS and CPUC reviewed Line 400 Pipeline Job Book Volume 1, which included the contractor report and the daily inspection record related to welding. We discussed that WGS representative(s) at the jobsite included Rooney Engineering, and High Mountain Inspection. WGS was unable to locate other records that demonstrated that the pipe lengths and other pipeline components had been visually inspected to ensure they were not damaged. Among other things, these daily inspection records each provided the weather conditions such as "clear" or "overcast". We discussed that other evidence that welding was successful may include inspections and tests such as x-rays, hydro-tests, etc. WGS presents the following construction or operating experience evidence that the pipe lengths and other pipeline components were serviceable and undamaged at the time of installation:

[8] GO112-E was the General Order in effect at the time of WGS's transmission line construction in 2003.

1. **The quality control methods that WGS used during construction included:**
   a. **purchasing X70 fusion bonded pipe from a qualified vendor,**
   b. **Inspections conducted by Rooney Engineering and High Mountain Inspection,**
   c. **Welds were 100% x-rayed,**
   d. **Pipeline was Hydrotested;**
2. **The quality control methods that WGS uses during operations include:**
   a. **Periodic leak survey**
   b. **The pipeline has been under cathodic protection since installation.**
   c. **Periodic cathodic protection surveys conducted by a third party corrosion engineer have confirmed that the cathodic protection system and associated piping and structures meet NACE criteria. The corrosion engineer monitors historic rectifier output measurements to track current demands, and;**
   d. **Periodic inline inspection reports using a smart pig during 2007 and 2014 have confirmed that no dents or gouges have been detected during an ILI of the 30-inch diameter pipeline.**

In the existing federal pipeline safety regulations, there are sections which explicitly specify records retention timeframes of five years for transmission line recordkeeping. Some examples include: 192.709(b) and 192.709(c) and 192.491(c). Additionally, at least seven code sections explicitly require records retention throughout the useful life of the pipeline. Those subsections include:

ECFR Subsection	Topic	Clause
49 CFR 192.517	Records	Each operator shall make and retain for the useful life of the pipeline, a record of each test performed under 192.505 and 192.507.
49 CFR 192.328	Additional Construction Requirements for Steel Pipe using alternate MAOP	For a new or existing pipeline segment to be eligible for operation at the alternative maximum allowable operating pressure calculated under § 192.620, a segment must meet the following additional construction requirements. Records must be maintained, for the useful life of the pipeline, demonstrating compliance with these requirements
49 CFR 192.112	Additional design requirements for steel pipe using alternative MAOP	For a new or existing pipeline segment to be eligible for operation at the alternative maximum allowable operating pressure (MAOP) calculated under § 192.620, a segment must meet the following additional design requirements. Records for alternative MAOP must be maintained, for the useful life of the pipeline, demonstrating compliance with these requirements:
49 CFR 192.947	What records	An operator must maintain, for the useful

	must an operator keep?	**life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection.**
49 CFR 465(a) and (e) and 192.475(b)	**Corrosion control**	**§192.465(a) and (e) and 192.475(b) must be retained for as long as the pipeline remains in service**

However, existing 49 CFR Part 192 is silent on the records retention requirement for 192.307. WGS understands that the proposed Rule published in the Federal Register on April 8, 2016, includes a proposed records retention schedule for transmission pipelines. This proposed rulemaking, upon approval, would establish a new records retention requirement that would require pipe and component materials inspections be retained for the life of the pipeline. WGS respectfully requests the CPUC Staff take the above under consideration in evaluating this element.

8. PHMSA Form 16, Question 8
IM High Consequence Areas - Identification Method 1 (Class Locations) (detail) *Do records demonstrate that application of the 192.903 High Consequence Area definition (1) for the identification of HCAs was adequate? (IM.HC.HCAMETHOD1.R) (detail) 192.947(d) (192.903 (1)(i); 192.903(1)(ii); 192.903(1)(iii); 192.903(1)(iv))*

CONCERN #1:
No violations of the code sections cited above for Method 1 have been identified so far. However, there does appear to be a discrepancy between the extents of the HCA based on two documents provided by WGS. These documents are the "Wild Goose Storage Line 400 MAOP Determination" and the MDS. For the MAOP Determination document, the extent of the Class 3 area is from Station 987+46 to Station 997+60. For the MDS, the extent is from 986+89 to 1057+27. Please explain the apparent discrepancy, and identify the true extent of the HCA based on Method 1 consistent with the engineering stationing format.

WGS is working with the engineering company that designed and managed construction of the 30" pipeline (Rooney Engineering) to clarify how the extents of the HCA were determined. Once the extents of the HCA are confirmed, WGS will update and/or reconcile the appropriate documents, such as the MDS and/or MAOP Determination document, as necessary.

9. PHMSA Form 16, Question 12
Exposed Pipe Coating (detail) *Is exposed buried pipe coating inspected to determine if it is deteriorating? (TD.COAT.EXPOSEINSPECT.O) (detail)*
192.459

In addition to this code section, 192.13(c) states:
"Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

Please provide written procedures for examination of buried pipe when exposed that meets the requirements of 192.459.

These procedures can be found in the WGS O&M manual in sections 2.9 "Excavations" and 3.5 "Corrosion Control".

If buried pipe has been exposed, please provide sample records demonstrating compliance with 192.459.

Attached WGS Forms 104 "Pipeline Exposure and Inspection Report" and 103 "Pipeline Inspection Right of Way and Marker Report" and 112 "Corrosion Control Report" provide for maintenance of records demonstrating compliance with 192.459. At the time of this response, no examinations have been performed or documented within the timeframe required to maintain documentation.

In the absence of a written procedure for examination of exposed buried pipe, WGS has violated 192.13(c).

WGS respectfully submits the above justification demonstrating compliance with this aspect of 192.13(c).

10. PHMSA Form 16, Question 3
Abnormal Operating Condition Recognition and Reaction (detail) *(presented above) Verify the individuals performing covered tasks are cognizant of the AOCs that are applicable to the tasks observed. (TQ.PROT9.AOCRECOG.O) (detail) 192.801(a) (192.809(a))*

In addition to the above code sections for Subpart N, 192.803 defines a qualified individual as a person who can: (1) Perform assigned covered tasks; and (2) Recognize and react to abnormal operating conditions.

WGS's AOCs for rectifier inspection include only general guidance. They are not specific to the covered task of rectifier inspection; in addition to the general guidance, the AOCs need to also include AOCs specific to the task of rectifier inspection. OQ enforcement guidance (entitled_OQ_Enforcement_Guidance_12_7_2015) under 192.805(b) supports this finding. See Page 15, Item 5. Under probable violations, this item states, *"The written operator qualification program does not identify both generic and task specific AOCs."*

SED staff believes that in addition to general guidance, specific guidance is needed for WGS staff to facilitate staff's recognition of AOCs. If WGS has specific guidance, please provide a copy of that guidance, and explain how it fits into the Operator Qualification program.

WGS respectfully submits that task-specific guidance on recognizing AOCs for rectifier inspection is in place. Please see attached document "#4 Sub-Contractor-Rectifier Maintenance", used as evaluation material in providing Operator Qualification for the rectifier inspection covered task. Note that one of the AOCs to check for is "Communications, control system or power interruption or failure", which is specific to rectifier inspection.

In the absence of task specific AOCs, WGS is in violation of 192.805(b), which requires an operator to *"Ensure through evaluation that individuals performing covered tasks are qualified."* As noted above, 192.803 defines a qualified individual as a person who can… (2) Recognize and react to abnormal operating conditions.

B. Other Concerns and Recommendations

1. The GTS report identifies discrepancies between the MDS length and the 2014 ILI run. The 2014 ILI run identifies 368 feet more than is accounted for in the MDS spreadsheet. It is strongly recommended that these discrepancies be resolved and accounted for in the MDS to ensure the extent of the current and potential future HCAs are properly identified in terms of the specific segments in the HCA, and absolute distance from the designated zero location. This will also help ensure that correlation of data can be accomplished if different ILI vendors are used in the future.

   WGS is currently investigating the discrepancies with the data currently available and will respond more definitively at a later date regarding resolution. WGS is currently in the process of validating the accuracy of the MDS and intends to make all necessary corrections to the document and resubmit.

2. The GTS report accounts for five wall thickness changes not accounted for in the MDS when compared to the 2014 ILI run. It is also strongly recommended that these discrepancies be resolved and accounted for in the MDS.

   WGS will be reviewing and editing the MDS to ensure and/or improve its accuracy as noted above. WGS will strive to resolve the discrepancies in wall thickness changes and update the MDS as required.