

1. Why didn't PG&E perform a comprehensive review of all 3755 welds from 10/2010 through 4/2013?
2. According to the PG&E's Extent of Condition Film Review Report dated August 2013, many welds had a combination of objective and subjective quality issues discovered during the comprehensive review. What is PG&E's action plan for these welds?
3. PG&E will identify 43 re-inspection welds based on large gaps in images available, diameter of line in question, two shot process, small gaps in images, and 120 degree view process. Has PG&E considered prioritizing dig locations based on Part 192 requirements (e.g. operating pressure/SMYS, Class Location, Tie-in, etc.)?
4. Based on PHMSA and industry experience, minor weld defects such as porosity and slag inclusions are not the cause of catastrophic pipeline failures. The highest risk is cracked welds.

The Extent of Condition report details many poor radiographs and the use of coarse grain D7 film. The radiographic technique should be optimized for a high probability of detection (POD) of cracks, using good technique with finer grain D4 or D5 film. PHMSA claims that priority for re-radiographing should be in locations of higher risk of earthquake and ground movement, which were radiographed with poor procedures, especially utilizing D7 film. Has PG&E considered making this a priority?

5. Though PG&E claims D4 and D5 film will be used "where a closer look at a weld may be deemed necessary"¹, has PG&E considered exclusively using D4 or D5 film for the re-inspection of girth welds (for reasons listed in Question 4)?
6. Did PG&E examine for duplication during the radiograph review? If not, why not?
7. PG&E's Extent of Condition Film Review Report Appendix E contains the raw data which includes a statement regarding acceptance or rejection. A quick review indicates:
 - Page 51 through page 81 of the .pdf lists 2,375 welds
 - Page 82 through page 96 of the .pdf lists 1,207 welds

A quick count shows 11 rejects, therefore in 3,582 welds there were 11 defects found. (Note not all columns contained accept/reject data and access to the Excel spreadsheet will make metric determination more accurate) These rough numbers indicate a defect rate of 0.307%. PG&E utilizes company welders and some contract welders (stable labor pool) therefore the welders' workmanship may be better than long

¹ PG&E Inspection Test Plan for Re-Inspection of Girth Welds Report dated 9/23/13, p.4

line work, but the defect rate seems abnormally low². This may indicate that radiography missed defects, which is understandable given the poor radiographic practices reported. PG&E should perform an analysis to determine a defect rate based on good radiographs and compare this rate with the numbers of bad radiographs.

8. PG&E claims that “the confidence level, 95%, with a 2% error rate, and a precision of 96% is an industry approved confidence interval.”³ Which industry has approved this confidence level and where does the equation come from?

9. Why does PG&E assume the minimum error rate (2%) instead of the maximum error rate (5%), which is possible according to PHMSA (see footnote 2)?

² A typical rate for SMAW is 2 to 5%. This rate is based on observations made during major transmission construction projects utilizing a transient welder work force typical of the 798 union. If the rate is below 2%, this may indicate the radiographic process is not finding defects. Rates above 5% may indicate procedure or equipment problems.

³ Email RE: Response to Index 4336 - Follow Up Questions from the Meeting at ATS, dated 10/11/13