CPUC Meeting Materials

Weekly Non-Destructive Examination Program Updates

December 20, 2013

Discussion Topics

- PG&E/SED Alignment
  - L-114
  - Extent of Conditions for TCI Inspections
  - NDE Program Enhancements
  - NDE Program Validation Protocols/Extent of Conditions (LLNL)

- Completed Activities To Date

- Next Steps
  - Schedule
  - Immediate Needs

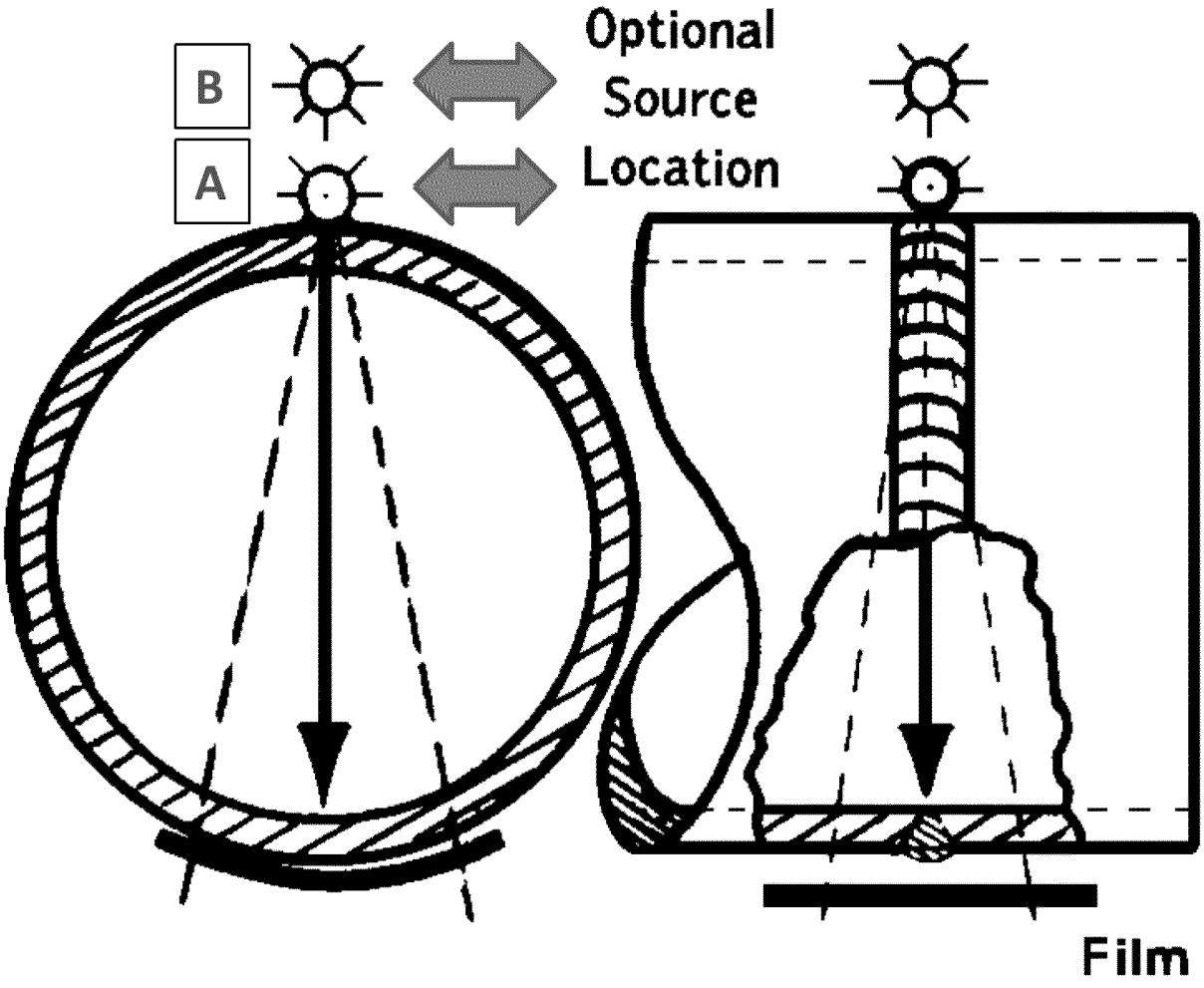
TCI Validation

- See presentation dated 12/6/13 and 12/13/13 for past items
- Leak Survey details
  - Leak Survey began on 600 miles of identified Gas Transmission pipeline (12/2/2013)
  - To date 360 Miles have been assessed (as of 12/10/13)
    - 1 Leak indication (E-53095) has been found on segment within Los Medanos Station
      - Ground survey found two screw fittings loose on Vent Valve
    - 1 indications (G-95927) has been found on segment within Kern Division
      - Repaired leaking relief valve
    - 2 indications (F-70512, A-361169) with no methane detected through ground survey follow-up
    - 2 indications (J-90395, D-625611) found to be 3rd Party

[1]Activity progress/completion is discussed in the Completed Activities To Date section
[2]Dates are contingent on weather, permit, and/or construction schedules

Follow-Up Questions from 12/13/13

- SED: API 1104 states that 4 exposures must be taken if source is >13mm from weld. The PG&E reader sheets state over 13mm in all cases, but only 3 exposures were used.
  - PG&E believes that SED is misinterpreting what the WIX reader sheets are specifying. PG&E acknowledges that the absence of units adds to this ambiguity, but provides a detailed explanation on the following page.



API Std. 1104 - Section: 11.1.3.1 Film Radiography
When a radiographic source is centered in the pipe for exposing a butt weld, one exposure is adequate for the radiographic inspection of the complete weld (SWE/SWV).

When the radiographic source is outside but not more than 1/2 in. (13 mm) from the weld surface, at least three exposures separated by 120° shall be made for the radiographic inspection of a complete weld (DWE/SWV). ***In the drawing above, "A" illustrates when the radiographic source is outside (surface of pipe diameter) and no more than ½ in. (13mm) from the weld surface.***

When the radiographic source is outside and more than 1/2 in. (13 mm) from the weld surface, at least four exposures separated by 90° shall be made for the radiographic inspection of a complete weld (DWE/SWV). ***In the drawing above, "B" illustrates when the radiographic source is outside (surface of pipe diameter) and more than ½ in. (13mm) from the weld surface.***

On the Western Industrial X-Ray (WIX) reader sheet WIX documents the ***SFD*** (source to film distance) which is a line drawn directly through the center of the pipe from the outside surface of the radiation source to outside surface of the pipe where the film is in contact. Additionally, the reader sheet documents the ***Source To Obj.*** (source to object distance) which is a line drawn directly through the center of the pipe from the outside surface of the radiation source to inside surface of the pipe (location in the drawing where the arrow is pointing).

Example:

Dia: 16 in. ***Thickness:*** 0.500 in. ***Reinf:*** 0.125 in.

SFD: 16 in. ***Source To Object:*** 15.5 in.

None of the information in the example above has anything to do with the ½ in. (13 mm) requirement specified in Section 11.1.3.1 within API 1104.

Respectfully,

Co-Chairman of NDT Subcommittee
API Standard 1104

Next Steps

- High Level activities within the next 6 Weeks
  - See 11/22/13 presentation for prior items:
  - Issue L-114 Final Report [12/6/13] Submitted (12/6/2013) ✓
  - Inspection of first 20 TCI Welds [12/31/13] (23 completed as of 12/13/2013) ✓
  - Finalize Keifner & Associates Contract (compl. 12/6/13) ✓
  - Finalize LLNL contract (12/31/2013)
  - Inspection of all 43 TCI Welds [3/31/14]
  - LLNL to validate TCI Dig plan and issue recommendations if necessary (43 digs) (1/15/2013)

Appendix I

Inspection Summary for WV-5 Welds:

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SUMMARY AND ASSESSMENT OF EOC – RE-INSPECTION PERFORMED ON GIRTH WELDS

In accordance with the approved PG&E Inspection Test Plan (ITP), on December 13, 2013 a re-inspection utilizing radiographic examination with AGFA D5 film was performed on four (4) girth welds verification dig WV-5-D/E (L-108 MLV 38.17) at Armstrong Rd and Western Pacific R/R in Lodi, CA. Once each of the welds were radiographed they were "fingerprinted" (weld features compared against original images) to verify that the original radiographic film images of the weld matched the images of the re-inspected girth weld.

The following weld numbers were re-inspected:

	Original Weld Id Number	Re-inspection Weld Id Number
Location: 5E	W-64	W-64-RI
Location: 5E	W-65	W-65-RI
Location: 5D	W-72	W-72-RI
Location: 5D	W-74	W-74-RI

The following were the results of these-inspections:

Weld Number: W-64-RI Comments: Weld matched fingerprint and weld was determined to be acceptable to API 1104, 20th edition.

Weld Number: W-65-RI Comments: Weld matched fingerprint and weld was determined to be acceptable to API 1104, 20th edition.

Weld Number: W-72-RI Comments: Weld matched fingerprint and weld was determined to be acceptable to API 1104, 20th edition.

Weld Number: W-74-RI Comments: Weld matched fingerprint and weld was determined to be acceptable to API 1104, 20th edition.

Location 5E at this site contained one 16 in. OD & one 12 in. OD girth welds identified as Weld #64 & #65 respectively; and Location 5D contained two (2) 12 in. OD girth welds identified as Weld #72 & #74.

This summary completes the evaluation and documentation of the re-inspections performed on the four (4) identified girth welds on the WV-5-D/E project in Lodi, CA.

Let me know should you require any additional information concerning these reviews and approvals.

Respectfully,

David L. Culbertson
President
ASNT Level III – 2820
ACCP Professional Level III

DLC/Letter Concerning Results of PGE Reinspection & Findings at WV-5 –D/E – Lodi CA 12-13-2013

2013 DIG MANAGEMENT PMO TRACKING SHEET

Project ID	Line	Weld Number	City	Assessment Complete	RT Report Received
Weld Verification Digs					
VW-02A	L-400	84, 86	Antioch	20-Jan-14	20-Jan-14
VW-02B	L-400	T1-4, 63	Antioch	20-Jan-14	20-Jan-14
VW-04A	DFM-1616-02	174	Stockton	20-Jan-14	20-Jan-14
VW-04B	DFM-1616-02	162	Stockton	20-Jan-14	20-Jan-14
VW-04C	DFM-1616-02	159	Stockton	20-Jan-14	20-Jan-14
VW-04D	DFM-1616-02	71	Stockton	26-Feb-14	26-Feb-14
VW-04E	DFM-1616-02	72	Stockton	26-Feb-14	26-Feb-14
VW-04F	DFM-1616-02	63	Stockton	26-Feb-14	26-Feb-14
VW-04G	DFM-1616-02	66	Stockton	26-Feb-14	26-Feb-14
VW-04H	DFM-1616-02	18	Stockton	26-Feb-14	26-Feb-14

2013 DIG MANAGEMENT PMO TRACKING SHEET

Project ID	Line	Weld Number	City	Assessment Complete	RT Report Received
VW-05A	L-108	67, 68	Lodi	21-Jan-14	13-Jan-14
VW-05B	L-108	87	Lodi	21-Jan-14	13-Jan-14
VW-05CL-108	23,	80,	81,	62, 61	Lodi 21-Jan-14
VW-132-13	L-132	9, 10, 31, 32, 33	Milpitas	13-Nov-13	A 16-Nov-13 A
VW-03B	L-108	75, 76	Stockton	11-Dec-13 A	11-Dec-13 A
VW-05D	L-108	72, 74	Lodi	13-Dec-13 A	13-Dec-13 A
VW-05E	L-108	64, 65	Lodi	13-Dec-13 A	13-Dec-13 A
VW-06A	L-108/401	8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 21, 22	Vernalis	09-Dec-13 A	10-Dec-13 A