NDE Subcommittee Task Group
API-1104 Section 9.6 & 11.4

Primary Task:
To review current manual and AUT Ultrasonic practices and acceptance criteria
Provide proposed changes to be balloted in the 1104 standard which may be warranted based on the results of that review.

Task Group Members:

- Chuck Woodruff
- Don Stevens
- Jan Van der Ent
- Tim Burns
- Zhenzang Tsang
- Marty Ritz
- John Kern
- Joel Almond
- Ralf Hoffman
- Bob Bates
- Pratik Patel
Progress:

• Task Group Meeting #1 held in Ft. Worth, TX Jan 2012 (1 day)
• Task Group Meeting #2 held in Houston, TX April 2012 (3 days)
• Task Group Meeting #3 held in Houston, TX – September 2012
• Task Group Meeting #4 held in Houston, TX, October 2013 (4 days)
• Task Group Meeting #5 held in Addison, TX, January 2014
• Current Progress – 40% (estimated)
• Next TG meeting April-May 2014 – Houston, TX

TG Determinations:

• Segregation of Manual UT and AUT techniques are warranted considering
  – Stand alone Manual UT inspection for DAC based inspection
  – Manual UT inspection in conjunction with AUT where sizing is required.
• Based on advancements in the industry further definition for UT methods are required in the API-1104 Standard.
• Requirement for additional guidance and requirements for the development of Ultrasonic Procedures
• Requirement for additional guidance and requirements for the demonstration of Ultrasonic Procedures
• Requirement for additional guidance related to the inspection of weld repairs
• Requirements for additional guidance related to the inspection of in-service applications
Report from the Automatic UT Task group to the NDT Subcommittee

1. Motion raised that NDE requirements for in-service welding and repairs be moved to the appropriate section of API-1104 – motioned carried by unanimous task group vote - recommendation that specific task groups (in-service and repairs) be assigned to address the NDE requirements of weld repairs and associated in-service inspection.

2. Motion raised that when standalone Manual UT is performed, the height sizing criteria currently in Section 9.6 shall not be applied. Manual UT shall be performed based on the DAC evaluation method and length as defined in the 19th edition of API-1104. Motion carried by unanimous task group vote. – Task group is recommending to the NDE subcommittee as a need to change the next revision of the standard.

3. It was noted that Section 6, 12 and Appendix A are silent on the use of production NDT methods for qualification where NDT is allowed or required. This TG will formally question the subcommittees and main committee to determine if this is the intent of API 1104. Specific questions:
   - Is it the intent to allow the use of RT to qualify welding procedures when AUT is the required production NDT method?
   - Is it the intent to allow the use of RT to qualify welders when AUT is the required production NDT method?
   - Justification for the questions, historically, this has not been an issue because RT was the only NDT method for production welds.

4. Motion raised “Radiography shall require a demonstration to assure it is capable of detecting the imperfections and defects inherent to the welding process.” Tim Burns seconded. The rational, “Federal regulations now allow the use of a 0.8 stress concentration factor in conjunction with new higher strength materials, resulting in the use of lower wall thickness and therefore smaller safety margins. Additionally, recent advancements in the field of RT (such as digital RT and other imaging media), requires further understanding of detectability and resolution related to IQIs for RT images.”
   - Discussion:
     - How do we pragmatically execute the demonstration?
     - There are nearly a hundred years of history that demonstrate the safe execution of RT.
     - Ultimately we need to understand the relationship between IQIs and imperfections and defects in the weld.
     - Essential wire size in the IQI and its relationship to actual imperfections and defects in the weld need to be understood as well.
   - Motion passed, 7-0-2. This TG shall resolve this motion by raising the question during the Jan 2014 NDT SC meeting.