Fracture Mechanics Subcommittee
Co-Chairs: Yong-Yi Wang and Doug Fairchild

Minutes
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MEETING TIME AND ATTENDANCE
The fracture mechanics subcommittee met in the morning and afternoon of January 24 and the morning of January 25. The number of participants ranged from approximately 25 to 50. The attendance lists were given to the secretary of the main committee.

OVERVIEW
The subcommittee reviewed outstanding items from past meetings. Most of the items were resolved. A few items needed further investigation. Recommendations on the resolution of those items will be made at a web meeting scheduled on February 8, 2018.

ITEMS FOR 22ND EDITION
1. Repair of Mechanized Welds¹
   • Allowed accumulative length of unrepaired indications
     ○ A proposal will be developed and reviewed at the February 8 meeting.
   • Allowed total repair length
     ○ A proposal will be developed and reviewed at the February 8 meeting.
   • Allowed number of repairs
     ○ Members of the NDT committees will be contacted about the current company requirements. A proposal will be developed and reviewed at the February 8 meeting.

2. Selection of Options 1 and 2 vs. Option 3
   • Text was added for clarification.

3. MPS-Controlled Chemistry

¹ Items with italicized heading are considered substantive revisions. Items non-italicized heading are considered for clarifications.
• Text was added as a reminder so the composition is checked if MPS-controlled composition option is chosen.

4. **Allowed Range of Variations of Chemical Composition of Consumables (Table A.1)**
   • Data will be reviewed after this meeting. Recommendations of new table(s) will be reviewed at the February 8 meeting.

5. **Determination of Heat Input, Non-Waveform vs. Waveform Welding**
   • Options for non-waveform and waveform welding were discussed and text were drafted.
   • The goal was to have accurate heat input data.
   • Potential challenges in implementations were discussed.

6. **Location and number of cross-weld tensile specimens**
   • Text was added for clarification.

7. **Dimensional tolerance of cross-weld tensile specimens**
   • Work is being done to have text and sketches to address dimensional tolerance.

8. **Requirements of Cross-Weld Tensile Tests**
   • Text was added to minimize (but not eliminate) the possibility of strain localization in the weld region (weld and HAZ)

9. **Application of UT undersizing error in developing acceptance criteria**
   • Text was added for clarification.

10. **Impact of misalignment on flaw acceptance criteria**
    • PRCI has supported work to investigate the impact of high-low misalignment on flaw acceptance criteria. It was shown that the embedded conservatism in the current procedure is sufficient to cover the impact of high-low misalignment at the maximum level of mechanized GMAW welds. Therefore, no changes to the current procedure are recommended.

**OTHER WORK ITEMS**

1. **The status of strain-based ECA TG was provided to the subcommittee.**
   • The outcome of a Dec. 2017 TG meeting was presented. The current draft SBECAC protocol was reviewed and items for additional editing and modification were identified. This work will proceed in early 2018.
   • For the SBECAC technology, it has been decided to pursue the format of an API Recommended Practice (RP) instead of a new API 1104 Annex.

2. **The status of the reeling ECA TG was provided to the subcommittee.**
• It has become apparent that the effort to create a (detailed) reeling ECA Annex analogous to Annex A will involve continued effort over some years. By straw poll vote it was decided to pursue a parallel effort with two objectives. First, for the sake of near term progress, an effort will proceed to create a higher level (less detailed) guidance procedure analogous to Annex A Option 3. However, there is still interest for a detailed procedure, thus a longer term effort will proceed to further progress the document currently being drafted.