MEETING TIME AND ATTENDANCE

The fracture mechanics subcommittee met in the afternoons of January 23 and 24. There were 50, and 22 participants on the 23 and 24, respectively. The attendance lists were email to the secretary (Melissa Gould) separately.

RESOLUTION OF BALLOT COMMENTS

There were 25 comments from the ballot. Five comments had consequential impact. Two of the five addressed the same issue, but from two different individuals. One was rejected by the subcommittee.

1. **A.3.2.6 Time Between Passes**
   - Original text “An increase in the time between the completion of the root bead and the start of the second bead.”
   - Proposed text “An increase in the time between the completion of the root bead and the start of the second bead. Not required for low hydrogen processes.”

2. **A.3.2.4 Position a)**
   - Original text “A change in position from roll to fixed, or vice versa”
   - Proposed text “A change in position from roll to fixed”

3. **A.6 Record**
   - Original text “The type, location, and dimensions of all imperfections accepted in accordance with this annex shall be recorded on suitable forms.”
   - Proposed text “The type, location, and dimensions of all imperfections rejected in accordance with this annex shall be recorded on suitable forms.”
ITEM FROM INTERPRETATION TG

There was one item related “pop-in cracking” from the recent ITG meeting. After substantial discussion, the subcommittee reached the following resolution.

1. **A.3.4.3.3 6 CTOD Toughness Testing**
   - Original text ““Pop in cracking” must be considered the controlling event if any load drop occurs.”
   - Proposed text “Pop-ins shall be assessed in accordance with BS EN ISO 15653.”

NEW ITEM ADDED AT THIS MEETING

One item that did not come through API inquires was introduced and discussed.

1. **A.5.1.4.2 Determination of Critical Imperfection Size**
   - Original text
     “The allowable imperfection height shall be reduced by the difference between the height undersizing error of the qualified inspection procedure and the assumed height uncertainty, if the height undersizing error is greater than the assumed height uncertainty. No change should be made to the allowable imperfection height, if the height undersizing error is less than the assumed height uncertainty.”
   - Proposed text
     “The allowable imperfection height shall be reduced by the difference between the height undersizing error of the qualified inspection procedure and the assumed height uncertainty, if the height undersizing error is greater than the assumed height uncertainty. The reduction shall be done after applying the maximum imperfection height (i.e., 50% of pipe wall thickness, see A5.1.3.3 Example of Option 1 Application). No change should be made to the allowable imperfection height, if the height undersizing error is less than the assumed height uncertainty.”

MISSED ITEM FROM A PAST MEETING

There was one item that passed 2015 subcommittee vote, but was not incorporated into the 22nd Edition draft that was balloted.

In the January 2015 meeting, the subcommittee approved the replacement of the word “specified” under A.3.2 to “listed.” The 22nd draft still has “specified” in A.3.1 and A.3.2, see bold text below. The subcommittee agreed to let the editorial board to determine whether “specified” or “listed” should be used consistently.

**A.3.1 General**

The controls of the variables necessary to ensure an acceptable level of fracture toughness in a welding procedure are more stringent than those controlling welding procedures without minimum toughness requirements. An appropriate quality control program shall be established to ensure welding is performed within the parameters of the qualified welding procedure. Qualification of welding procedures to be used with this annex shall be in accordance with Section 5 or Section 12 of this standard, with the additional
mechanical property testing in accordance with A.3.4 and the essential welding variables specified in A.3.2.

A.3.2 Essential Variables

Any change in the essential variables specified in Table A.1 below shall require requalification of the welding procedure.

NDE OF GIRTH WELD AS IT RELATED TO ANNEX A

A joint session with the NDT subcommittee was held in the afternoon of January 23. Dr. Robin Gordon introduced a few issues related to AUT qualification, AUT performed in the field, and the correlation between AUT flaw sizes and ECA flaw sizes derived using Annex A. Flaw sizing interpretation that could affect the application of the imperfection criteria developed under Annex A. These issues were further discussed at the subcommittee meeting on January 24.

The main topics of discussion included:

- Differences in AUT sizing procedures adopted during AUT Qualification (PE & TOFD) and AUT performed in the field (predominantly PE)
- AUT Thresholds to measure flaw length and ensure consistency between AUT & ECA.
- Flaw sizing guidelines for meandering flaws (a flaw that breaks 40% Threshold more than once which sections where the flaw drops below 40% Threshold)

REELING ECA TG

A presentation was made on the Reeling ECA Annex. There was discussion on whether the Reeling ECA Annex should be a detailed Annex that includes all the detailed analysis and testing procedures or a more modest Annex that spells out all the phases of a Reeling ECA and defines the key requirements that need to be considered and the input data (similar to the existing Option 3 in Annex A).

It was agreed to proceed with the less detailed approach with the following proposed schedule:

- Establish Work Group to Draft Annex (6 – 8 people)
- Meet every 3 months
- First Meeting – Review Initial Draft
- Second Meeting – Review revised Draft including comments from First Meeting
- Third Meeting – Finalize Annex so it can be presented to the Fracture Mechanics Committee at the API Annual Meeting
- Fourth Meeting – Review Annex with Fracture Mechanics Committee and seek approval to release to Main Committee for review.