Wednesday (1/28/15) 1:00PM to 3:30 PM

Subcommittee Chair: Robert Gatlin

Task Group Attendees
- We had 32 people in attendance
- 8 voting members
- 24 visitors
- The sub-committee wishes to thank Tim & Ed for this year’s schedule

Old Business:
None

New Business:

Review ballot/interpretations comments from Ed’s spreadsheets
12.5.2.7 – No vote to change
13.2.3.2.3 – Sub-committee agreed with the proposed change
   “If the specimens breaks outside the weld fusion zone (i.e. in the parent metal) and meets the specified minimum tensile strength requirements of the specification, the weld shall be accepted as meeting the requirements.”
13.5.2 b – No vote to change
13.5.2 c – Sub-committee agreed with the proposed change
   “pipe end preparation dimensions”

Discussions on LBW
- Discussed previous WPS/PQR data presented to the committee
- Two companies have active LBW development programs
- The sub-committee express the interest in evaluating the process

Discussed current methods for calculating, measuring and monitoring heat input in pulsed Gas Metal Arc Welding (Joel Troyer)

3.2 Acronyms and Abbreviations
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...
\( IE \) instantaneous energy (joules)

\( IP \) instantaneous power (watts or joules per second)

\( IS \) instantaneous welding arc speed (in. per minute)

\( T_s \) arc time (seconds)

\( L \) weld bead length (in.)

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A.3.2 Essential Variables

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q) A change of more than ±10 % from the nominal heat input range recorded for each weld pass during the procedure qualification.

NOTE The heat input may be calculated from the following equations:

for nonwaveform controlled welding:

\[ J = \frac{60VA}{S} \] (A.2);

for waveform controlled welding:

\[ J = \frac{IE}{L} \]

or

\[ J = \frac{IPT}{L} \] (Alternatively, \( J = \frac{60IP}{IS} \))

where

\( J \) is the heat input (joules per in.);

\( V \) is the welding arc voltage (volt);

\( A \) is the welding current (amp);

\( S \) is the welding arc speed (in. per minute);

\( IE \) is the instantaneous energy measurement (joules);

\( IP \) is the instantaneous power measurement (watts or joules per second);

\( IS \) instantaneous welding arc speed (in. per minute);

\( T_s \) is the arc time (seconds);
$L$ is the weld bead length (in.).

**Action Items**

Team of individuals will meet during 2015 to look into:
1. Can the inherent low weld centerline toughness of LBW welds meet minimum requirements
2. Are there current improvements to the root profile
3. Review essential variables previously presented to API 1104
4. Review essential from other welding codes

**Joel Troyer** will head up a group to continue evaluating the feasibility of utilizing alternate heat input calculations and the impacts to our standard.