### API Ballot Summary Sheet

**Ballot:** 43-03: 650-585, Welding of Roof Plates During Hydrotest

**Start Date:** 7/8/03  
**Closing Date:** 8/22/03  
**Associate:** Roland Goodman  
**Coordinator:** Valeen Young  

#### Proposal:

**Voter** | **Company** | **Comments** | **Affirmative** | **Negative** | **Abstain** | **Did Not Vote**
---|---|---|---|---|---|---
134629 Nelson Acosta | HMT Inspection | No | X |  |  |  |
131617 Joel Andreani | Equity Engineering Group, Inc., The | No | X |  |  |  |
73074 Ronald Bailey | American Tank & Vessel, Inc. | No | X |  |  |  |
136219 Mark Baker | Baker Consulting Group, Inc. | Yes | X |  |  |  |
134681 Ernie Blanchard | IMC-Phosphates | No | X |  |  |  |
134699 Steven Braune | AEC Engineering, Inc. | No | X |  |  |  |
134782 Steve Caruthers | Tank Consultants, Inc. | No | X |  |  |  |
141258 John Cornell | BaCo Enterprise, LLC | No | X |  |  |  |
7127 Earl Crochet | Kinder Morgan | No | X |  |  |  |
142685 Domingo de Para | ExxonMobil | No | X |  |  |  |
133403 Jeffrey DeArmond | BP p.l.c. | No | X |  |  |  |
72864 Robert Elliott | Alyeska Pipeline Service Company | No | X |  |  |  |
135965 Kenneth Erdmann | Matrix Service Company | No | X |  |  |  |
105011 David Flight | Dow Chemical Company, The | No | X |  |  |  |
134870 Laurence Foster | Marathon Ashland Petroleum LLC | No | X |  |  |  |
134880 John Fumbanks | Pond and Company Inc. | No | X |  |  |  |
115033 Alan Geis | Colonial Pipeline Company | No | X |  |  |  |
83689 Ty Hagen | Hagen Engineering International, Inc. | Yes | X |  |  |  |
70596 Marty Herlevic | James Machine Works, Inc. | No | X |  |  |  |
93133 Randy Kissell | TGB Partnership | Yes | X |  |  |  |
135014 John Lieb | Tank Industry Consultants, Inc. | No | X |  |  |  |
135072 Francis Maitland | TAQ, Inc. | No | X |  |  |  |
78399 David Martin | Conservatek Industries, Inc. | No | X |  |  |  |
113545 James McBride | Petrex, Inc. | No | X |  |  |  |
137255 Carl Mikkola | Enbridge Energy Company, Inc. | No | X |  |  |  |
131185 Douglas Miller | Chicago Bridge & Iron Company (CBI) | Yes | X |  |  |  |
69609 Bhana Mistry | TIW Steel Platework | No | X |  |  |  |
API Ballot Summary Sheet
9/2/2003

Ballot: 43-03: 650-585, Welding of Roof Plates During Hydrotest

Start Date: 7/8/03
Closing Date: 8/22/03
Proposal:

Affirmative Negative Abstain Did Not Vote

<table>
<thead>
<tr>
<th>MS ID</th>
<th>Name</th>
<th>Company</th>
<th>Vote</th>
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</thead>
<tbody>
<tr>
<td>83736</td>
<td>John Mooney</td>
<td></td>
<td>No</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>92212</td>
<td>George Morovich</td>
<td>TEMCOR</td>
<td>No</td>
<td>X</td>
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<tr>
<td>136286</td>
<td>Philip Myers</td>
<td>ChevronTexaco Corporation</td>
<td>No</td>
<td></td>
<td>X</td>
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<tr>
<td>132210</td>
<td>David Nasab</td>
<td>Kellogg Brown &amp; Root</td>
<td>No</td>
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<tr>
<td>5193</td>
<td>Richard Pinegar</td>
<td>Cargill Inc.</td>
<td>No</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>102412</td>
<td>Roy Ralph</td>
<td>Petro-Canada</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>135169</td>
<td>Michael Richardson</td>
<td>International Paper</td>
<td>No</td>
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<td>X</td>
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<tr>
<td>101360</td>
<td>Marilyn Shores</td>
<td>Sunoco Logistics</td>
<td>No</td>
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<tr>
<td>126019</td>
<td>Larry Speaks</td>
<td>Mass Technology Corporation</td>
<td>No</td>
<td></td>
<td>X</td>
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<tr>
<td>134325</td>
<td>Donald Thain</td>
<td>Shell Global Solutions (US) Inc.</td>
<td>No</td>
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<tr>
<td>145034</td>
<td>Leith Watkins</td>
<td>Explorer Pipeline Company</td>
<td>No</td>
<td></td>
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<tr>
<td>132209</td>
<td>Richard Whipple</td>
<td>Fluor Daniel, Inc.</td>
<td>No</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Balloting Totals:
- Affirmative: 25
- Negative: 2
- Abstain: 1
- Did Not Vote: 11

Total Responses: 28
Total Ballots: 39
Response Rate: 64% (Must be > 50%)
Approval Rate: 93% (Must be > 67%)
Consensus: YES
<table>
<thead>
<tr>
<th>Voter/Commenter</th>
<th>Company</th>
<th>Section No. (e.g. 3.1)</th>
<th>Type of comment</th>
<th>Proposed Change</th>
<th>Comment (justification for change)</th>
<th>Comment Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark Baker</td>
<td>Baker Consulting Group, Inc.</td>
<td></td>
<td>Technical</td>
<td>I believe 5.3.5 should read: &quot;plates are&quot; instead of &quot;plate is&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Douglas Miller</td>
<td>Chicago Bridge &amp; Iron Company (CBI)</td>
<td></td>
<td>Technical</td>
<td>I am not supportive of allowing manufacturers to lay and weld roof plates during h-test. I think the item should be dropped. I think there may be a lot of low ground related to laying/welding roof plates during h-test. Some points: * Concerns with distortions caused by tank settling before roof is welding is complete. If the roof plates were welded before start of h-test and the tank settles, then releveling would remove distortion. If roof is welded while settlement is going on, then the relevel may make the roof look worse. * Concerns with distortions caused by tank rounding up with half the roof plates welded * We have to think through the implications for all kinds of roofs. It's not just for rafter supported cone roofs. What about self supported roofs using temporary support structural that gets removed after roof is complete * Safety concerns with a lot of major work during proof test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ty Hagen</td>
<td>Hagen Engineering International, Inc.</td>
<td></td>
<td>Technical</td>
<td>Keep standard as is</td>
<td>The tank should be completed before hydrotest. This raises both safety and structural concerns.</td>
<td></td>
</tr>
<tr>
<td>Voter/Commenter</td>
<td>Company</td>
<td>Section No. (e.g. 3.1)</td>
<td>Type of comment</td>
<td>Proposed Change</td>
<td>Comment (justification for change)</td>
<td>Comment Resolution</td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>Steven Adolphsen</td>
<td>Morse Construction Group, Inc.</td>
<td>5.3.5</td>
<td>Technical</td>
<td>Testing of the Shell After the entire tank up to rim angle is completed and all the roof plate is placed, the shell (except for the shell of tanks designed in accordance with Appendix F) shall be tested by one of the following methods: B. positive comment: I have no problem with the addition of the small attachments without justification if the scope were increased to include &quot;shell&quot;.</td>
<td>I would vote no. Negative comment: 1. The stated purpose of this agenda item is to add the allowance of welding roof plate after starting hydro. It appears, by adding shell and small shell attachments, that we have stepped over the bounds of this agenda item. 2. Negative comment: If it has been determined to increase the scope to include shell, then the &quot;technical justification&quot; section of the proposal must be augmented to include technical justification of the 1 M value chosen. Is there any and if there is it should be attached to the ballot. 3. Negative comment: first and second paragraphs are not consistent. You can't have the tank shell complete in the first and then not have it not complete in the second paragraph. Positive comment: A. change wording as shown.</td>
<td></td>
</tr>
<tr>
<td>Randy Kissell</td>
<td>TGB Partnership</td>
<td>5.3.5</td>
<td>Technical</td>
<td>I suggest changing to: 5.3.5 Testing of the Shell The tank (except for Appendix F tanks) shall be tested by one of the following methods:</td>
<td>5.3.5a is where we say what parts can be welded after the hydro test begins; let's not try to restate this partially in 5.3.5.</td>
<td></td>
</tr>
<tr>
<td>Randy Kissell</td>
<td>TGB Partnership</td>
<td>5.3.5</td>
<td>Technical</td>
<td>I suggest changing 5.3.5.a to: This test shall be done before permanent external piping is connected to the tank. Attachments defined in Paragraph 3.8.1.1, located at least 1 m (3 ft) above the water level, roof plates, and roof appurtenances may be welded during the filling of the tank.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bruce Roberts</td>
<td>Shell Pipeline Co. LP</td>
<td>5.3.5</td>
<td>Technical</td>
<td>How about separating thoughts as follows: a. All work on the tank shall be completed before starting to fill or otherwise test a tank. Permissible exceptions to this</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Clarification is needed to get this issue explained adequately.**
### Requirement are:

1. For a fixed roof tank, roof plates may be placed on the supporting structure if they will be welded during the filling of the tank.

2. Attachments defined in Paragraph 3.8.1.1, located at least 1 m (3 ft.) above the water level, and roof appurtenances may be welded during the filling of the tank.

3. Non-structural small attachments may be welded to the tank after completion of the hydrotest in accordance with 5.2.1.11.

4. Welded repairs identified as a result of the tank testing may be made after the testing. See 5.4.4.

5. Painting of the tank weld joints, if not the entire tank, may be done after the testing.

6. [Doug Miller’s new agenda item on door sheets installed and replaced after hydrotesting,. if approved]

7. Etc....

b. If water is ...

c. If sufficient water is not ...

The above does not yet include the changes in the PIP Merge item, which would be handled separately anyway.