

EPC MAINTENANCE & RELIABILITY SUBCOMMITTEE MEETING

Location: MS Teams
Date: September 13th, 2023

Minutes Written By: Martin Stoessel

MEMBERS ATTENDING:

Martin Stoessel (ARVOS)	Shailendra Inamdar (Linde)
Lucas Baldesberger (E2G)	Dane DeRouen (BASF)
Mark Karrs (Becht)	Kevin Sprague (INEOS)
Robert Pritchett (LyondellBasell)	James Cleavinger (CP-Chem)

The meeting of the EPC Maintenance and Reliability Subcommittee (SC) was hosted by Martin Stoessel in MS Teams. The meeting was called to order at 10:05 AM CST.

Proceedings:

- I. Called to order, reviewed agenda, and read anti-trust statement.
- II. Reviewed minutes of the August 09th, 2023, meeting.
A motion to approve the minutes as amended was made by Kevin Sprague, with a second by Dane DeRouen. The minutes were approved as read.
- III. Furnace Tube Supplier Shop QA Survey – EPC
 - Background: Internal discussions lead to a discrepancy in the quality control of furnace coils. The questionnaire / poll was sent out by Robert Pritchett to get an idea, how other operators or EPCs handle this matter.
 - The results were collected and shared anonymous.
 - Questions:

Question	Answer Range
Do you use a company rep or 3 rd party inspector to monitor the supplier on your tube orders?	Answer range: No, company rep, or 3 rd party inspector)
Do you specify on the ITP a required hold point for an in-person a kick-off with the shop inspector to confirm order associated documents are approved, prior to starting production?	Answer range: NA, Yes or No
Do you specify on the ITP with the supplier a required production hold point to enable this witness of the hydrotest?	Answer range: NA, Yes or No
What portion of the (100%) hydrotesting performed by the tube supplier do your company QA procedures require to be “live” witnessed by either a company rep or 3 rd party inspector?	Answer range: NA, 0% to 100%
Do you specify on the ITP that the supplier shall provide a required advance witness notice of any approaching witness point?	Answer range: NA, 0 days (no notice) to ? days)
Do you specify in your QA procedures that there will be a pattern of increasing “live” witness points, if a review or witness point has issues?	Answer range: NA, Yes or No
Do you specify on the ITP a required hold point for a final acceptance inspection and require the inspector to approve a “release to ship”, prior to shipment?	Answer range: NA, Yes or No

- Results

Topic	What portion of the hydrotesting at the tube supplier do you require to be "live" witnessed? (0%, 10%, 50 %, 100%)	Does the ITP with the supplier specifically require a production hold point to enable this witness of the hydrotest?	What do you specify to the supplier for the advance notice of the approaching witness point?	Do you specify a pattern of increasing "live" witness points, if there are issues with the hydrotesting?
End User 1	0%	No	No	No
End User 2	0%	No	No	Yes
End User 3	0% required of TPI, opportunity witness during visits and review docs	No	No	Yes
End User 4	100% TPI witness required	Yes	3-5 days	Yes
End User 5	Random TPI witness, no specified amount required	No	5 days	Yes
End User 6	0%	No	No	No
End User 7	10%	No, opportunity observations	5 days	Yes
OEM 1	Witness initial (first casting), Random Inspection and Review Documents for follow-on	Yes, for initial first casting order. No for follow-on orders.	Yes, for first casting, follow-on orders rely on regular shop visits.	Yes
OEM2	100% live witness of hydrotesting	Yes, the ITP specifies a production hold point, with some negotiation on witness levels and hold points on very large repetitive orders.	14 days	Yes

IV. Papers and Presentations

- It was discussed to find a theme for the EPC24 e.g. Hot side / cold side – no new updates
- Keith Wade will check for potential of Refractory regarding Hydrogen firing – Zecco confirmed that the abstract will be issued; comment from SC is to align / partner with a producer → no update, Abstract pending
- Lucas Baldesberger will check for Damage Mechanism Study – E2G confirmed DMR as a co-author with an Enduser. → Enduser answer pending
- Carl Matherne will check for Electric exchangers regarding M&R – Carl will share information; however according to his finding, the electric exchangers show no interesting data and running with low maintenance. After reviewing the data, SC to decide if the topic is worth going forward. → No updates, Reminder will be sent to Carl.
- Attached excel file was updated



MR Session Topics
(updated 2023-09-13)

V. Technical Discussion

- Surveys will be distributed by the lead person; participation is voluntary, and the results will be shared anonymously.

- **Ethylene Furnace Tube Quality Assurance**
 - Suggested by Robert Pritchett, Handled by Robert Pritchett
 - Completed in September Meeting

- **Inspection on linear TLEs vs conventional TLEs**
 - Suggested by Dane DeRouen, Handled by Dane DeRouen
 - Dane collects poll questions for next MoM (September)
 - Results discussed in October
 - i. How are you inspecting linear quench exchangers (TLEs)?
 1. IRIS
 2. eddy current
 3. other testing of the process tubes?
 - ii. How are you inspecting conventional quench exchangers (TLEs)?
 1. IRIS
 2. eddy current
 3. other testing of the process tubes?
 - iii. Is the method you use effective for qualitative testing?
 - iv. Are the results recorded?
 - v. General Comments

- **Charge gas dryer valves reliability** (Leaks, maintenance, Repair)
 - Suggested by Robert Pritchett, Handled by Jimmy Cleavinger
 - Poll due in October and results to be discussed in November
 - i. What issues
 - ii. What type of valves
 - iii. What service
 - iv. Actuator
 - v. Interested in improvements

- **Spring Hangers support and adjustment history**
 - Suggested by Kevin Sprague, Handled by **TBD**
 - Poll due in November and results to be discussed in December

- **Furnace Refractory Inspection and Maintenance**
 - Suggested by Jimmy Cleavinger, Handled by **TBD**
 - Poll due in December and results to be discussed in January

- **Burner Maintenance and Inspection Practices?**
 - Suggested by Robert Pritchett, Handled by **TBD (Keith Wade proposed)**
 - Poll due in January and results to be discussed in February

VI. General Discussion

- Topic mentioned by Shailendra Inamdar
 - Ultrasonic Flow meter in evaporator coil in convection section indicates a reverse flow according to flow meter
- Feedback from the SC was, that the flow meter shall be checked

VII. Next Meetings

- Invitation was sent out as a series → please check that you do not decline the whole series.
- In Person meeting
 - December 13th, 2023, ARVOS Office could be used
 - In 2024 KnightHawk office with Lab tour possible
- Next meeting is on October 11th, 2023

VIII. Meeting Adjourned @11:25 am CST