

EPC MAINTENANCE & RELIABILITY SUBCOMMITTEE MEETING

Location: BASF, Port Arthur, TX

Date: Wednesday Dec 5, 2018

MEMBERS ATTENDING:

In Person:

Thomas Garza (ChevronPhillips)
Dane DeRouen (BASF)
René Kulik (ARVOS)

John Weikel (BASF)
Dave Sankey (BASF)
David Harrison (Eastman Chemical)

Phone:

Linda Robinson (Knighthawk)
Shailendra Inamdar (Linde)

Mike Pelton (LyondellBasell)
Mark Karrs (Becht Engineering)

The meeting was called to order at approximately 9:10 AM.

Proceedings:

- I. Tom Garza called the meeting to order and introductions were made around the table and on the phone.
- II. Tom read the anti-trust statement to start the meeting.
- III. Safety / Reliability moment – John and Dane shared the loss of containment incident surrounding a failed rupture disc on a Heavy Naphtha sample system/cylinder. The failure of the rupture disc was due to cyclic fatigue.
- IV. Tom reviewed the agenda highlighting the points to be discussed during the meeting.
- V. Tom read the Minutes of the Nov 7, 2018 meeting which were approved without changes.
- VI. Mike Pelton updates regarding the Joint Session: 7 papers – 2 from Kubota (need to combine), 1 S&C, 1 Quantum, 1 Sabic, 1 Manoir, possible second from Sabic. Sandvik paper is not being supported by end-user.
- VII. Final Subcommittee Paper Topics:
 - 1) Fitness for Service – Steam Super Heater Coil (KHE: Sponsor – Tom Garza)
 - 2) Transferline Exchanger – Internal Diameter Tube Inspection (VERSA: Sponsor – Jimmy Cleavenger)
 - 3) Case Study of Steam Hammer Event in an Ethylene Plant (E2G: Sponsor – Tatiana Randall)
 - 4) Overview of ASME PCC-2 Piping Repair Methods and Associated Novel Inspection Techniques (Becht Engineering: Sponsor Mark Karrs)
 - 5) Induced Draft Fan Reliability Case Study (Clarage: Sponsor – John Weikel)
 - 6) Case Study of High Pressure Steam Header Failure RCFA (KHE: Sponsor – Tom Garza)
 - 7) Furnace Isolation Valve Reliability (Sponsor – Tatiana Randall)
 - 8) A Probabilistic Approach to Fired Heater Tube Reliability (E2G: Sponsor – Tom Garza)
 - 9.) RAGAGEP for Damage Mechanism ID and Control, Risk Based Inspection Program

10.) Improved Dilution Steam Corrosion and Foiling Control (Sabic with Nalco)

VIII. Abstracts. Shail noted the need for Author's company among standard title page info for the papers. A Bio will be needed later. We reviewed all before deciding which to keep for the 2019 session.

1)**Fitness for Service – Steam Superheater Coil** (KHE and CPChem) regarding a temperature excursion and subsequent evaluation of a Steam Superheater. – Looks good

2)**Transferline Exchangers – Internal Diameter Tube Inspections** (VERSA and CPChem) Inspections of internal TLE tubes (CPChem) regarding inspection of TLEs for continued service. There were historical water quality issues contributing to need. This paper will focus on two techniques. – Looks good

3) **Case Study of Steam Hammer Event in an Ethylene Plant** (E2G and Flint Hills)

600 psig extraction line from the CGC failed due to water hammer. – Looks good, very interesting

4) **Overview of ASME PCC-2 Piping Repair Methods and Associated Novel Inspection Techniques**

(Becht Engineering) Pipe repair methods may equal or exceed the anticipated pipe service life. This will review Dynamic Response Spectroscopy (DRS), Chime and Multi-skip methods of evaluation for overwrap repairs and corrosion of under pipe supports. – good

5) **Induced Draft Fan Reliability Case Study** (Clarage and BASF) Includes case study where ID fan failures resulted in significant production losses. Suggested some reworking for abstract. May need to include that API-673 regards centrifugal fans. – Good paper

6) **Case Study of High Pressure Steam Header Failure RCFA** (KHE and QCHEM) Two separate failure incidents where SHP Steam piping Tees experienced weld failures. Involves thermal stress and not steam hammer. Design failure in warming system that allowed too much cooling of the pipe. – Good paper

7) **Furnace Isolation Valve Reliability:** (Flint Hills) Abstract needs rewording and this is not uploaded to the website – Need a bit more for the paper to progress. Marked for future sessions.

8) **A Probabilistic Approach to Fired Heater Tube Reliability** – Not specific to Furnaces – Hold

9) **RAGAGEP for Damage Mechanism ID and Control, Risk Based Inspection Program** (E2G) Not necessarily furnace related, but applicable to the balance of plant. This regards something that is growing/maturing in Refining and now coming to Petrochemicals. – Interesting Topic

10) **Improved Dilution Steam Corrosion and Fouling Control** (Sabic with Nalco). – Good Topic but need to trim abstract by 2/3rds. The primary concern is that this is more applicable to the Operations Session and may not seem “relevant” to the more maintenance focused crowd in our session.

Feedback from Dane, Rene and Shail help to filter down to the first 6 papers. Number 7 goes to future session and can be kept for back-up if we get it built up. Number 9 is a solid back-up paper and should be first back up. Per Mike and Shail, Number 8 can be developed if made more ethylene relevant for the next session.

With respect to the order of presentations in the session: Couple the steam incident papers along with the fitness for service (papers 3, 6, 1). The inspection papers (2, 4, 5) can go after the break.

Tom assigned 1 reviewer to each paper in addition to the sponsor. The assignments are reflected in the spreadsheet. Tom will inform the authors of the first 6 papers of their selection and the upcoming timelines and who is their sponsor.

IX. Timeframe of Papers and Power Point Presentations.

Need draft papers by January 14 for review in meeting on Jan 16th,

Need draft presentations by Feb 15th for meeting on Feb 20th

EPC needs final papers and presentations by March 15th

X. Upcoming Meetings:

January 16, 2019 @ 9:00 am hosted by Linda Robinson, KHE in Clearlake, TX

February 20, 2019 @ 9:00 am hosted by Mike Pelton, Lyondell Bassell

XI. Meeting Adjourned at 11:05 am
