

**Minutes of EFC WP 15
Corrosion in the Refinery and Petrochemical
Industry**

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1 WELCOME

Francois Ropital opened the meeting.

30 persons attended the meeting and briefly introduced themselves. The list of participants is enclosed in Appendix 1.

2 EFC WP 15 ACTIVITIES

2.1 EFC WP 15 activities And Minutes of Meetings

As proposed during a previous WP15 meeting, the name of the WP has been modified to clearly mention the link with both the refinery and petrochemical industry. The new name of WP15 is "Corrosion in the refinery and petrochemical industry"

Information on the activities of EFC WP 15, was presented by Francois Ropital. This information can also be found on the EFC web site where the minutes of previous WP15 meetings can be consulted and downloaded. More information is enclosed in Appendix 2.

<http://www.efcweb.org/Working+Parties-p-104085/WP+15-p-104111.html>

2.2 Publications from WP15

Discussion on proposals for revision of these publications:

Revision of the EFC Guideline 46 "Amine units corrosion in refineries". This revision takes place in the frame of a joint WP13-15 task force and its advancement is presented in more details in paragraph 8 of these minutes.

Discussion on proposals for future publications:

A best practice guideline on corrosion in sea water cooling systems is proposed. EFC WP9 (marine corrosion) agrees to participate to the guideline. The subject has been discussed later during the meeting (see paragraph 7).

2.3 Downloading Previous Eurocorr Conference Papers

Papers from the previous Eurocorr conferences (from Eurocorr 2004 to 2016) can be downloaded via the member's pages of each of the national member societies of EFC. The list of EFC member societies is available on the web page:

<http://www.efcweb.org/Who+we+are/Member+Societies.html>

Please contact your member society for more information on access to these papers.

2.4 EUROCORR 2017

This annual working party meeting was held in Prague during the Eurocorr 2017 conference ""Corrosion control for safer living"

The session dealing with refinery corrosion took place on 5 and 6th September. Attendance of this sessions was between 25 and 40 persons, figures that reflects the attendance of the joint Euroccor 2017 - ICC conference with about 1400 participants.

2.5 EUROCORR 2018

Eurocorr 2018 "Applied Science with constant Awareness" will take place in Krakow, Poland from 9-13 September

The web site is: <http://eurocorr.org/EUROCORN+2018.html>

A session dealing with corrosion in refineries will take place.

The deadline to submit abstract is 16th January 2018.

2.6 EUROCORR 2019

Eurocorr 2019 will take place in Seville, Spain from 9-13 September 2019.

2.7 Next 2018 WP15 spring meeting

The participants agreed to continue to have 2 working party meetings per year: one in spring and one during the annual Eurocorr conference.

Concerning the 2018 WP15 spring meeting, in order to avoid overlap with the Nace Corrosion Congress, the date should be by the end of March or beginning of May.

3 MONITORING TECHNIQUES

Methodology for monitoring non-uniform corrosion mechanisms

David Lorkin presented Permasense wireless technology based on ultra sound signal to monitor non-uniform corrosion. Signal processing has been developed in order to have more accurate measurements and indication when the surface is changing. More information can be found in Appendix 3.

4 CORROSION IN COOLING WATER TREATMENT

4.1 PSO (phosphino succinic oligomer) capabilities in cooling water high stress conditions

Valerie Bour-Beucler (Nalco Champion) presented the remediation of a high strength conditions cooling water unit by using a phosphine succinic oligomer based corrosion inhibitor avoiding iron contamination. More information can be found in Appendix 4.

4.2 Cefracor Working group “corrosion in heat exchangers”

The activities of the Cefracor (French corrosion association) working group on corrosion in heat exchangers were presented Valerie Bour Beucler its chairperson. Guidelines are in preparation and the advancement of the activities of this group will be sent regularly to EFC WP15. Some information is presented in Appendix 5

5 STRESS RELAXATION CRAKING

Bastien Chareyre reported some work of Arcelor Mittal industeel in order to develop a methodology to characterize the sensibility of stainless and refractory steel to stress relaxation cracking (SRC). The evaluation of more accurate test conditions is in progress.

6 PROPOSAL OF A NEW SURVEY ON CORROSION UNDER PIPE SUPPORTING

Corrosion under pipe supporting is a major problem for our industries and its detection and evaluation are an important challenge. The majors points that could be treated, are :

- Availability of best practice guides ?
- Experiences with Non Destructive Technique for detection and evaluation ?
- Feedbacks to share ?

An enquiry will be sent to the WP15 members to know if they have information to share in order to have a more in-depth discussion during next spring meeting.

7 NEW EFC BEST PRACTICE GUIDELINE ON CORROSION IN SEA WATER COOLING SYSTEMS (JOINT DOCUMENT WP9 MARINE CORROSION AND WP15)

Some preliminary elements of its content have been discussed:

- Main seawater heat exchangers systems
- Seawater environment: aggressivity, living organisms, deposits and scale formation
- Different forms of corrosion in sea water heat exchangers systems (galvanic, crevice,...)
- Biocide treatments (chlorination) – how they can affect the corrosion resistance
- Corrosion tests
- Materials used
 - Carbon steels and coating
 - Stainless steels
 - Nickel base alloy
 - Copper alloys
 - Aluminium, Titanium alloys
 - Plastics and composites
- Others ?

Volunteers are sought to create a task force on this proposal.

8 REPORT ON THE ADVANCEMENT OF TASK FORCE WORK ON THE REVISION OF THE EFC 46 GUIDELINE

Johan van Roij reported on the activities of the task force that works on the update the “Amine unit Corrosion in Refineries”, EFC publication 46. A questionnaire for a survey has been distributed in December 2016 but due to the lack of responses, the deadline is postponed by the end of 2017. The content of the document with revision – addition of updated chapters is in progress.

More information can be found in Appendix 6.

9 NEXT MEETINGS

2018 Spring WP15 Meeting

The date and location have been fixed after the meeting : it will be on Thursday 3rd May 2018 and it will be kindly hosted by Tenaris Piazza Caduti 6 Luglio 1944, 1 - Dalmine (BG), Italy

2018 Autumn Full WP 15 Meeting:

This meeting will take place in Krakow, Poland from 9-13 September 2018