

Minutes of EFC WP 15

Corrosion in the Refinery Industry

Nice (France)

9 September 2009

Prepared by

François Ropital and Hennie de Bruyn

Part 1-5

1	WELCOME	3
2	EFC WP 15 ACTIVITIES	3
2.1	EFC WP 15 Activities and Minutes of Meetings.....	3
2.2	Publications from WP15	3
2.3	Collaboration with NACE	4
2.3.1	Exchange of information	4
2.3.2	Joint publication on cooling water with EFC WP1 and NACE TG151, TG152, TG361 groups	4
2.3.3	Joint NACE EFC congress on corrosion in refineries	4
2.4	EUROCORR 2009.....	4
2.5	EUROCORR 2010.....	5
3	STRESS RELAXATION CRACKING OF STAINLESS STEELS – ADVANCEMENT OF THE CEFRACOR SURVEY	5
4	EFFECT OF TEMPER AND HYDROGEN EMBRITTLEMENT ON FRACTURE MECHANICS AND CVN PROPERTIES OF 2,25CR1MO STEEL GRADE	5
5	NEXT MEETINGS.....	5

1 Welcome

The meeting was opened by Francois Ropital.

23 persons attended the meeting and briefly introduced themselves. Apologies were received from 21 persons. The lists of the participants and the excused persons are enclosed in Appendix 1.

2 EFC WP 15 Activities

2.1 EFC WP 15 Activities and Minutes of Meetings

Information on the activities of EFC WP 15, Corrosion in the Refinery Industry, 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. More information can also be found on our web site:

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

2.2 Publications from WP15

The following publications are available:

- EFC Guideline no. 40: "Prevention of Corrosion by Cooling Waters"
<http://www.woodheadpublishing.com/en/book.aspx?bookID=1193>

An update of this document has been prepared in order to publish a joint NACE – EFC guideline on the topic. More information on this document is provided in section 2.3.2.

- EFC Guideline no. 42: Corrosion in refineries
<http://www.woodheadpublishing.com/en/book.aspx?bookID=1295>

This is a collection of selected papers from previous Eurocorr sessions.

- EFC Guideline n°46: "Amine Unit Corrosion Survey"
<http://www.woodheadpublishing.com/en/book.aspx?bookID=1299>

- EFC Guideline n°55: "Corrosion under insulation CUI guidelines"
<http://www.woodheadpublishing.com/en/book.aspx?bookID=1486>

More information on the availability of these EFC guidelines and how to order these can be obtained with the following web link:

<http://www.woodheadpublishing.com/en/search.aspx?basic=EFC>

Discussion on proposals for future publications:

- Regarding the advancement of the Cefracor group on the subject (see section 3) a best practice guideline to avoid and characterize the high temperature stress relaxation cracking of austenitic materials.

2.3 Collaboration with NACE

Opportunities for collaboration between EFC and NACE are fully supported by the board of administrators of the two associations.

2.3.1 Exchange of information

Exchange of information between WP15 and the NACE groups dedicated to the same topics are encouraged. Rob Scanlan will continue to be the EFC WP15 representative for the NACE meetings during the annual NACE Conferences to inform on the WP15 activities. The minutes of the EFC WP15 and NACE STG 34 meetings will be exchanged between Linda Goldberg and Francois Ropital

2.3.2 Joint publication on cooling water with EFC WP1 and NACE TG151, TG152, TG361 groups

The elaboration of common guidelines between NACE and EFC is also an objective of the collaboration between the two associations. On the cooling water treatment topic, a common document between NACE report 11106 "Monitoring and adjustment of cooling water treatment operating parameters" and the EFC 40 guideline "Prevention of corrosion by cooling waters" has been published : it is available from September 2009 as NACE item 24238.

2.3.3 Joint NACE EFC congress on corrosion in refineries

During meetings between NACE and EFC presidents and vice presidents in New Orleans and Edinburgh, it was suggested that it may be possible for NACE and EFC to cooperate over the organisation of one conference in Europe. The theme of corrosion in refineries has been selected. Due to travel budget restriction in our companies and in order to not overlap with others conferences in 2010, a video tape conference (web cast) is planned in spring 2010: some presentations or workshop will be recorded during the 2010 NACE conference and display later with email questions and answers from overseas attendees.

2.4 EUROCORR 2009

This annual working party meeting was held in Nice during the Eurocorr 2009 conference "Corrosion from nanoscale to the plant"

The session dealing with refinery corrosion has been held on 8 and 9 September. A key note lecture has been given by Robin Tems on "Managing the cost of corrosion" Attendance of the working party sessions has increased. Between 40 and 60 persons attended the above session.

2.5 **EUROCORR 2010**

Eurocorr 2010 "From the Earth's depths to the Space heights" will take place in Moscow, Russia from 13-17 September 2010. Its web site is:

http://www.eurocorr.org/EUROCORR_2010.html

A session related to corrosion in the refinery industry is planned.

A special workshop/roundtable on corrosion of high sulphur crude processing equipment is also proposed

Abstracts are welcomed and the deadline for submission is 15 January 2010.

More information is available in appendix 3.

3 **Stress relaxation cracking of stainless steels – advancement of the Cefracor survey**

The relaxation cracking phenomenon had been previously discussed in WP15 meetings (especially during the 2007 spring meeting). Many WP15 participants supported the proposal to establish a standard test method and a guideline to prevent these failures that could be published in the EFC guidelines series. An enquiry was initiated by Francois Dupoirion under the auspices of the Oil and Gas Committee of Cefracor (French corrosion association). This group continues the activities on this subject in order to propose a characterisation test and to have discussions with steel providers and with Codes authorities. A resume of the advancement of this task force is included in Appendix 4.

In order to get further field experiences, the enquiries form will be sent to all the WP15 members. The document is enclosed in Appendix 5.

4 **Effect of temper and hydrogen embrittlement on fracture mechanics and CVN properties of 2,25Cr1Mo steel grade**

As this paper from S. Pillot (ArcelorMittal) was not presented in the refinery session, but is enclosed in Appendix 6.

5 **Next Meetings**

2010 Spring WP15 Meeting

MOL proposed to host the spring meeting in Budapest on **22 April 2010**. The full agenda will be established later with the following topics: monitoring, inspection, failure cases, relaxation cracking of stainless steels, acid gas amine units treatment, cooling water treatment, other subjects...

2010 Autumn Full WP 15 Meeting:

This meeting will take place in Moscow, Russia from 13-17 September 2010 during the Eurocorr 2010 conference.