

**Minutes of the joint
ENAA – UK Forum – EFC meeting on
Corrosion Under Insulation**

Paris (France) 25 November 2010

Prepared by

François Ropital, Maarten Lorenz and John Thirkettle

1 WELCOME

The meeting took place at one of EFC head offices in Paris "Maison de la Chimie". 17 persons attended the meeting and briefly introduced themselves. The list of the participants is enclosed in the attached document.



List participants 25
November 2010.pdf

2 INTRODUCTION AND PRESENTATION OF JAPANESE SITUATION (ENAA)

2.1 Introduction of ENAA (Dr. K. Kawano)

Dr K. Kawano presented the Engineering Advanced Association in Japan (ENAA). It is a non profitable association created in 1978 that includes 180 Japanese companies. ENAA favours cooperation of industrial, academic sectors and governmental organizations by the enhancement of the competitiveness of Japan's engineering industry and by the promotion of technological advancement. The slides presented are enclosed.



01kawano_ENAA.pdf

2.2 Activity of the CUI committee in ENAA (Dr. S. Hara)

Dr D. Hara presented the activities of the CUI committee in ENAA. Its main objective is to establish a guideline to manage CUI in chemical, oil refinery and petrochemical industry. The activities of this committee are:

1. Investigation of CUI control and management situation in Japan, Europe, USA and Asia
2. Investigation and evaluation of NDT technologies
3. Investigation on CUI corrosion mechanism
4. Issue of a CUI guideline

The slides presented are enclosed.



02Hara_activity of
the committee.pdf

2.3 Deterioration in Japanese refinery and petrochemical industries (Dr. K. Kawano)

Dr K. Kawano presented some failures due to CUI in the Japanese refinery and petrochemical industries.

2.4 Object of the meeting (Dr. S. Hara)

The main object of this meeting was to discuss some important points that ENAA wish to emphasise in its future guideline:

1. Proper application of NDT for screening at proper situation
2. Priority order in piping estimation and deterioration judgement based on the corrosion mechanism of CUI
3. CUI work flow diagram including estimation method for the priority, visual inspection points, deterioration judgement, screening with NDT and data feed back system
4. CUI management with emphasis on the total coordination of constituent members in plant and level up of the individual skill

The slides presented by Dr S. Hara are enclosed.



04Hara_Object of
visit.pdf

2.5 The concept and originality of the Japanese CUI guideline (Dr. K. Shimizu)



05Shimizu_concept
of guideline.pdf

3 PRESENTATION ON THE ACTIVITY TO CUI IN EUROPE (EFC)

3.1 EFC WP15 and CEFACOR activities with emphasis on CUI (F. Ropital)

F. Ropital, chairman of the EFC WP15 Corrosion in refineries, presented the activities of the group and its participation to the elaboration of the EFC guideline n°55 on CUI. The slides presented are enclosed.



Presentation EFC
WP15.pdf

3.2 The CUI UK Forum activities (J. Thirkettle)

John Thirkettle presented the activities of the UK Corrosion Under Insulation Industrial Forum. Since 2000, two workshops are organised each year, implicated mainly specialists from the Oil & Gas production industry. The UK Corrosion Under Insulation Industrial Forum collaborated in the achievement of the EFC n°55 guideline. The slides presented are enclosed.



UK CUI Forum
Presentation.pdf

3.3 The EFC guideline 55 on CUI (F. Ropital, M. Lorenz)

Francois Ropital and Maarten Lorenz presented the objectives of the EFC document through a presentation prepared by Stefan Winnik (Editor of the EFC guideline) and Rob Scanlan. The slides are enclosed.



EFC CUI
Guideline.pdf

4 DISCUSSION ON CUI GUIDELINE (EFC/ ENAA)

Discussion on CUI guideline, in terms of NDT, preventive management (including risk based management to prevent CUI) and case studies on actual applications of EFC's CUI Guideline

4.1 Problems in the Japanese CUI guideline (ENAA/ Dr. S. Hara)

The sections of the Japanese CUI guideline were presented by Dr S. Hara. Some points such as the scope of CUI management, the procedure of inspection and maintenance work flow, the situation of non destructive testing, the application to actual plant field and the involvement from the government, have been discussed. The slides presented are enclosed.



06Hara_problems.pdf

4.2 Case studies on actual applications of EFC's CUI Guideline (M. Lorenz)

Maarten Lorenz presented some ways of application of the EFC CUI guideline by Shell and also some new techniques that are developed to prevent CUI (gel reactive type) and detect CUI (water detection system, sniffing techniques, transmission guide wave tomography)



M Lorenz EFC ENAA
2010.pdf

4.3 Ways of revision of the EFC CUI guideline (EFC/F. Ropital)

The following points have been proposed and discussed during the meeting for a possible revision of the EFC CUI guideline:

- update of the coating section (new coatings to be included, cladding systems ?)
- duplex resistance to CUI
- NDE – NDT techniques sections (guide waves as a standard ?)
- quality insurance: training requirements, certifications ?

4.4 Future plan of Japanese CUI guideline (ENAA/ Dr. S. Hara)

The planning of achievement of the ENAA CUI guideline has been detailed by Dr S. Hara. Also a symposium on CUI with the association of several countries is planned in Japan in 2011.



07Hara_Future
plan.pdf

4.5 Concluding Remarks and Wrap Up (F Ropital)

The assembled members all agreed that the meeting between ENAA and EFC had been of great value and that the presentations clearly presented the issues that were faced on a day by day basis by Corrosion Engineers on an international basis. It was clear from the discussions held that the engineering challenges for the prevention of CUI are identical in both Europe and Asia. As a result it was agreed that information exchange and experience between all parties was of benefit to all.

Dr Kawano, Dr Hara and Dr Shimizu thanked the EFC for facilitating the meeting and providing a valuable and stimulating seminar. They advised that a seminar was in planning for the introduction of the ENAA CUI Guidelines in 2011 and all those present would be welcome to attend the discussions in Tokyo. François Ropital, the chair of the meeting, thanked the ENAA delegation for their attendance and others from Europe who had attended and contributed to the technical discussions.

Following the concluding remarks Francois Ropital Closed the meeting.