

Corrosion Fatigue Developments

15th May 2012

National Physical Laboratory, Teddington, UK, TW11 0LW

Purpose

Environment assisted cracking remains a major challenge across a wide range of industry and business sectors. Within this overall topic, Corrosion Fatigue is of particular significance with implications for both design and the safe and economic operation of components and structures. This is because of the inherent time and loading frequency dependence of crack initiation and propagation and the dependence of damage developed within a wide range of interacting mechanical, material, and environmental variables. Much progress has been made in qualitative understanding of crack development, and substantive amounts of data have been generated for key industrial applications. In this seminar, leading researchers and engineers will highlight progress in characterisation of corrosion-fatigue crack development and in life prediction for critical applications.

Who Should Attend

This Seminar will be of interest to engineers of all disciplines, technology suppliers, regulators and academia. The presentations are to be given by practising engineers and senior academics experienced in this field. **All Registration is on-line at www.fesi.org.uk and then click on the link.**

FESI members: £110; Non-members: £150 [includes FESI membership for 2012]; Students: £75.

Programme

09.30 Coffee and registration

Chairman: Prof. Peter Flewitt, University of Bristol

12:20 High temperature sulphidation in nickel based superalloys and low cycle fatigue
Prof. Martin Bache, University of Swansea

09:55 Introduction

10:00 Life prediction methodologies and factors influencing the accuracy of the prediction
Prof. Phil Irving, University of Cranfield

12:40 **Lunch**

10:40 Overview and Application of Recognized Methods for Including the Effects of a Pressurised Water Reactor (PWR) Environment on the Fatigue Life of Reactor Components
Chris Watson, Rolls Royce

Chairman: Dr. Alan Turnbull, NPL

13:30 Corrosion fatigue issues in oil and gas production
John Martin, BP

11:10 Corrosion fatigue crack growth of austenitic stainless steels in high temperature PWR coolant
Prof. David Tice, Serco TCS

14:00 Initiation and early growth of corrosion fatigue damage
Prof. Bob Akid, Sheffield Hallam University

11:40 Imaging of corrosion fatigue crack development in nuclear reactor environments
Prof. James Marrow, University of Oxford

14:30 Variable amplitude corrosion fatigue of high strength weldable steels
Prof. Feargal Brennan, University of Cranfield

11:50 Corrosion fatigue of steam turbine blade steels
Dr. Alan Turnbull, NPL

15:00 Corrosion fatigue of stainless steels in chloride solution
Prof. Gregor Mori, University of Leoben

15.30 **Open discussion**

16.00 **Close**