

TWI, Granta Park, Cambridge, CB21 6AL - 9 to 10 April 2013

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If you have any problems, contact:  
Becki Parratt at TWI Ltd., Granta Park  
E: Becki.parratt@twi.co.uk, F: +44 (0)1223 892794

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Symposium 2013



# TAGSI/FESI Symposium 2013

## Structural Integrity of Nuclear Power Plant :

learning from history and looking to the future

*In Memory of  
Sir Alan Cottrell FRS, FEng*

9 to 10 April 2013

TWI Conference Centre  
Granta Park  
Cambridge

### FESI

UK Forum for Engineering Structural Integrity is sponsored by EDF Energy, Rolls-Royce, Magnox, Cranfield University, Frazer-Nash Consultancy, Manchester University, Atkins, ESR Technology TWI, NPL, Bristol University, DNV, MCS (Canada), AMEC, OCE (USA), Centrica, the Design Unit and the Open University. It is supported by HSE, ONR and HSL

### TAGSI

The UK Technical Advisory Group on the Structural Integrity of High Integrity Plant is sponsored by: EDF Energy, ONR (Office of Nuclear Regulation), and the MoD (Ministry of Defence)



## Theme

The TAGSI/FESI Symposium - **The Structural Integrity of Nuclear Power Plant: learning from history and looking to the future** - being held in 2013, marks the twenty-fifth anniversary of the formation of TAGSI which followed the Marshall Committee assembled in the 1970s to address structural integrity issues related to the PWR power plants raised by Sir Alan Cottrell in 1974. It is therefore entirely appropriate that this Symposium is dedicated to Sir Alan's memory. In it, we draw from the work of TAGSI undertaken on behalf of its Sponsors for the existing range of U.K. nuclear power generation systems. Discussion Sessions in the Symposium will focus on the extent to which the understanding gained from such work can be used to address future issues of nuclear power generation, incorporating both longer lives for new plant (design life of about sixty years) and life extension for existing plant. These are questions that FESI members consider important in the continuing development of engineering structural integrity best practice across industry.

## Organising Bodies

**TAGSI** (Chairman: Professor John Knott, OBE, FRS, FREng) is the advisory body of both industrial and academic experts, which provides independent advice and peer review to the UK nuclear industry in structural integrity issues.

## FESI - UK Forum for Engineering

**Structural Integrity** (Chairman: Dr Brian Tomkins, FREng) provides a forum for the development and enhancement of best practice for engineering structural integrity practitioners, for academics and across all industry sectors in the UK and overseas.

## Major Sponsoring Body

**TWI** is a global leader in technology and engineering, providing research and consultancy to its members.

Respected for its expertise, professionalism, impartiality and confidentiality, TWI works with the most influential companies worldwide across all industry sectors.

## Terms and Conditions

### How to enrol

The delegate fee is £300 + VAT, the discounted rate is £240 + VAT (for TAGSI/ FESI and ESIS members) or £80.00 + VAT (retired persons or full-time students). The fee includes, lunch, refreshments, documentation and a symposium workbook. The Conference dinner will be held in Jesus College.

### Payment methods

Registration will be on line - see back page for details

### Cancellations

In the event of cancellation, the fees paid will be returned, less a cancellation charge of 20%. If less than 14 days' notice is given, the organisers reserve the right to retain the whole fee. Cancellations must be confirmed in writing.

### Who to contact

Enrolments and general enquiries:  
Becki Parratt, TWI, Granta Park,  
Great Abington, Cambridge  
CB21 6AL, UK  
Tel: +44(0) 1223 899000  
Fax: +44(0) 1223 892794

## Programme Day One

11:00 **Welcome** - John Knott/ Brian Tomkins

11:10 **How it all began** - Brian Eyre

11:30 **Past and Future Advice from TAGSI** -  
Andy Cadman, ONR

12:00 **R6 and Developments** -  
Bob Ainsworth, University of  
Manchester

12:30 **TAGSI 'Legs'** - Mike Burdekin

13:00 Lunch

14:00 **Radiation Damage in RPV Steels** -  
Colin English, University of Oxford

14:30 **Surveillance Results** - Peter Flewitt,  
University of Bristol

15:00 **Fracture Toughness of Materials** -  
Steve Garwood, Rolls-Royce

15:30 Refreshments

15:45 **Microstructural Aspects of Fracture in RPV  
Steels** - John Knott, Chairman, TAGSI

16:15 **Mechanisms of Under-clad Cracking and  
of Stress-relief Cracking** -  
Paul Bowen, University of Birmingham

16:45 **Discussion Panel** - chaired by Brian  
Tomkins,

17:15 Day one finish

19:00 for 19:30

**Symposium Dinner at Jesus College**

## Programme Day Two

9:00 **Welding, Cladding and PWHT** -  
Sayee Raghunathan, TWI

9:30 **Residual Stresses in Welding and their  
Effects** - David Smith, University of Bristol

10:00 **Sub-critical Crack Growth and EAC in  
Steels** - David Tice, AMEC

10:30 Refreshments

11:00 **The Pit-Crack Transition** -  
Alan Turnbull, NPL

11:30 **Hybride Cracking in Zr Alloys** -  
Ted Darby, Rolls-Royce

12:00 **NDT and Defect Characterisation** -  
Charles Schneider, TWI

12:30 Lunch

13:30 **R5 Developments Over 25 Years** -  
George Webster, Imperial College London

14:00 **High Temperature Issues in AGRs** -  
Manus O'Donnell, EDF Energy

14:30 **Generation IV Issues** -  
James Marrow, University of Oxford

15:00 **Discussion Panel** - chaired by John Knott

15:30 **Summary and Close** - John Knott,  
Brian Tomkins

15:45 Refreshments and Depart

**The names shown in the programme are those of the presenters, as many of the papers/  
presentations given will be co-authored.**