

WORKSHOP ON INTEGRITY OF NUCLEAR STRUCTURES “*STRUCTURENUC*” 2012, June 5th & 6th Le Creusot & Chalon-sur-Saône, France

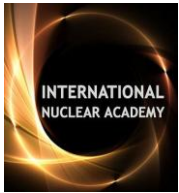
AIMS

- ✓ TO PROVIDE AN UPDATE OF LATEST SCIENTIFIC DEVELOPMENTS IN THE FIELDS OF FRACTURE MECHANICS
- ✓ TO GET AN OPPORTUNITY TO VISIT CETIC CENTER

This scientific workshop is dedicated to latest research activities related to fracture mechanics. It is jointly organized by International Nuclear Academy & PNB – “Burgundy Nuclear Partnership” and supported by French & British experts from Mines Paris Tech graduate school, CEA French research organisation and Dalton Nuclear Institute.

Delegates will get an opportunity to visit the CETIC center in Chalon-sur-Saône, a unique 1:1 scale mock-up of PWR primary loop designed for training on reactor maintenance operations and refueling.

Presentations are given in English by European top-level experts worldwide renowned



JUNE 5TH, 2011 - 9H00 TO 18H00

➤ **FRACTURE MECHANICS**

Chairman Professor André. PINEAU, Ecole des Mines de Paris, ParisTech

➤ **9H00 : A BRIEF INTRODUCTION TO FAILURE MECHANISMS OF STRUCTURES**

⇒ **Speaker**

Professor André PINEAU, Ecole des Mines de Paris, ParisTech

➤ **9H30 : LINEAR AND NON-LINEAR FRACTURE MECHANICS**

⇒ **Speaker**

Professor Andrew SHERRY, Director, Dalton Nuclear Institute at The University of Manchester, UK

⇒ **Content**

Overview of the requirements for fracture mechanics to assess the structural integrity of nuclear structures, including a summary of the main degradation mechanisms. The fundamentals of linear elastic and elastic-plastic fracture mechanics will be described, and areas of future development highlighted including constraint effects, weld residual stress effects, and blunt notch effects.

➤ **14H00 : MICROMECHANISMS OF DUCTILE AND FRAGILE FRACTURES IN PWR STEELS**

⇒ **Speaker**

Professor André PINEAU, Ecole des Mines de Paris, ParisTech

⇒ **Content**

Latest developments in the field of micromechanisms of ductile & fragile failures observed in steels used in PWR reactors.

➤ **15H00 : GLOBAL AND LOCAL APPROACHES TO FRACTURE**

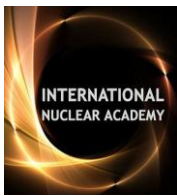
⇒ **Speaker**

Professor André PINEAU, Ecole des Mines de Paris, ParisTech

Dr Benoît TANGUY, CEA- Commissariat à l'Energie Atomique et aux Energies Alternatives

⇒ **Content**

- *limitations of the global approach for non-isothermal loading and mixed-mode*
- *theory of cleavage fracture including Beremin type models*
- *size effect and scatter*
- *theory of ductile to brittle transition*



- applications including 3D cracks, warm pre-stress effect, radiation induced embrittlement, segregated zones, etc...

➤ **17H00 : INTERNATIONAL STANDARDS INCLUDING FITNET FFS AND ISO 27306**

⇒ **Speaker**

Professor André PINEAU, Ecole des Mines de Paris, ParisTech

Dr Benoît TANGUY, CEA- Commissariat à l'Energie Atomique et aux Energies Alternatives

Professor Andrew SHERRY, Director, Dalton Nuclear Institute at The University of Manchester, UK



JUNE 6TH, 2011 - 9H00 TO 12H00

➤ **PRESENTATION OF THE CETIC: MAINTENANCE PREPARATION, QUALIFICATION AND TRAINING CENTRE**

⇒ **Speaker** Pierre-Alain LHOTE, Head Manager & Administrator, EDF CETIC

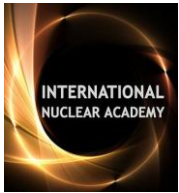
⇒ **Content**

One of the major stakes in any NPP is to optimize operations of maintenance and repairs. To do so, EDF and AREVA, the French Parent Bodies Organizations (PBOs), have built a training centre to prepare site operations. CETIC is a unique facility driving the French nuclear fleet to its performance.

➤ **CETIC VISIT: A UNIQUE FACILITY IN EUROPE**

Get access to 1:1 scale mocks-up of primary system components designed for training on reactor maintenance operations and refueling.





WORKSHOP FEES

The cost of tuition per delegate is either:

JUNE 5TH ONLY	150 €
JUNE 5TH & 6TH MORNING (CETIC VISIT)	350 €

Discount for PNB members: 20 %

This includes VAT, courses, lunch, coffee breaks but does not include accommodation & transportation.

Participation to dinner of June 5th is charged 50 € extra per dinner / per person.

Return transportation from Le Creusot to Chalon-sur-Saône for CETIC visit in the morning of June 6th is charged 50 € extra per person.

On request: special rates for accommodation.

VENUE

Le Creusot (from Paris: 1h20 to Le Creusot TGV station): June 5th

Chalon-sur-Saône (from Paris: 2h30 to Chalon-sur-Saône train station): June 6th morning (CETIC visit)

On request: special arrangements for transfer between railway station and the hotel.