

# ***The Thermal Spraying and Surface Engineering Association***

**will be holding its Autumn Conference**

*on*

**Wednesday, 7<sup>th</sup> December 2011 commencing 9.30 for 10.00 am**

*at*

**TWI Technology Centre (Yorkshire) Ltd,  
Wallis Way, Catcliffe, Rotherham, S60 5TZ**

## ***"Surface Engineering in Nuclear Power"***

There is a resurgence in interest in investing in new nuclear capability both locally in the UK and globally in recognition that nuclear power generation sources can deliver power on a reliable and consistent basis whilst, at the same time, avoiding the production of CO<sub>2</sub> emissions. Indeed, a recent study by the Royal Academy of Engineering has concluded that these issues will ensure that some combination of Nuclear and Carbon Capture and Storage-equipped Fossil-Fuel generation will play a leading role in the future UK "energy mix".

The opportunities for Surface Engineering or Particulate Engineering in nuclear power plant will be greatly influenced by health, safety and environmental issues, highlighting the view that enhancement of safety, rather than of power generation efficiency, will be the major driving force in the next round of new nuclear build. It is widely recognised that ensuring safety in all aspects of the Nuclear Power cycle is always going to be a critical issue in gaining public acceptance for new nuclear build, but, because of the recent Japanese earthquake and tsunami and its after-effects, the issue is in even greater focus.

In particular the replacement of cobalt is a major issue because of its half-life and the high gamma radiation produced by Co<sup>60</sup> and its impact upon refit and maintenance schedules. Surface Engineering technologies are being evaluated for possible cobalt replacement in a number of areas. Surface Engineering solutions for the replacement of cobalt must take into account extended maintenance intervals and also the ability to repair some components at overhauls.

Waste management also carries major safety concerns and there will be opportunities for Surface Engineering in the handling, transportation and storage of nuclear waste. Management of irradiated fuel will initially involve storage in water-filled ponds. The current strategy is that much of the AGR will be stored in this way for many decades. The remainder of the AGR fuel and all of the Magnox fuel is scheduled to be reprocessed to recover uranium and plutonium as fissile material for new fuel. The waste arising from the reprocessing of UK fuels, after separation, the "high level" fission product waste will be immobilised in cement or glass matrices and placed in sealed containers for long-term storage.

This conference highlights the contribution of Surface Engineering in the nuclear power industry.

The event is jointly sponsored by The Thermal Spraying and Surface Engineering Association and the Materials Knowledge Transfer Network.

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**For further details please visit our website [www.tssea.org](http://www.tssea.org) or contact the Secretary on 01788 522792, email [info@tssea.org](mailto:info@tssea.org)**

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## **PROGRAMME**

### **"Surface Engineering in Nuclear Power"**

**Wednesday, 7<sup>th</sup> December 2011**

**09.30 - 10.00 REGISTRATION & TEA/COFFEE**

**10.00 - 10.05 Welcome**

**Steve Bomford, TSSEA**

**10.05 - 10.10 Introduction by Session Chairman**

**Keith Harrison, Materials KTN**

10.10 - 10.40 Keynote

**Andrew Sherry**  
University of Manchester Manchester

10.40 - 11.10 Surface and Particulate Engineering  
Opportunities in the Nuclear Power Sector

**David Whittaker**  
Materials KTN Wolverhampton

**11.10 - 11.30 Tea/Coffee**

11.30 - 12.00 Hot Isostatic Pressing (HIP) of Powders  
for Hardfacing Applications in Water Environments

**Barry Burdett**  
Rolls-Royce Derby

12.00 - 12.30 Coating Technologies for Nuclear  
Waste Management Applications

**Tiziana Marrocco**  
TWI Yorkshire

**12.30 - 13.25 LUNCH**

**13.25 - 13.30 Introduction by Session Chairman**

**Terry Lester, Metallisation**

13.30 - 14.00 Current Applications and Future Challenges

**Keith Harrison**  
Materials KTN Nottingham

14.00 - 14.30 Thermal Spray and Thin Film Technology  
for Wear Reduction in Water

**David Stewart**  
Rolls-Royce Derby

**14.30 - 14.50 Tea/Coffee**

14.50 - 15.20 Understanding 'Legacy' Nuclear Waste Dispersions  
& Sludges: Research at Leeds

**Timothy Hunter**  
University of Leeds Leeds

15.20 - 15.50 Surface Engineering - A Way to Enhance Efficiency  
in a Nuclear Environment

**Nathalie Renevier**  
University of Central Lancashire Preston

**15.50 - 16.00 DISCUSSION & CLOSE**

**Please complete form and fax or post to:-**

TSSEA – Thermal Spraying & Surface Engineering Association  
38 Lawford Lane • Bilton • Rugby • Warks • CV22 7JP  
Tel: 01788 522792 • Fax: 01788 522905 • [info@tssea.org](mailto:info@tssea.org)

## **REGISTRATION FORM**

### **"Surface Engineering in Nuclear Power"**

<b>Title</b>	<input style="width: 100%;" type="text"/>
<b>Name</b>	<input style="width: 100%;" type="text"/>
<b>Position</b>	<input style="width: 100%;" type="text"/>
<b>Company</b>	<input style="width: 100%;" type="text"/>
<b>Order No</b>	<input style="width: 100%;" type="text"/>
<b>Address</b>	<input style="width: 100%;" type="text"/>
	<input style="width: 100%;" type="text"/>
	<input style="width: 100%;" type="text"/>
<b>e-mail</b>	<input style="width: 100%;" type="text"/>
<b>Telephone</b>	<input style="width: 100%;" type="text"/>
<b>Facsimile</b>	<input style="width: 100%;" type="text"/>

**Exhibition Space Required?**

**YES / NO**  
Delete as appropriate

#### FEES

		VAT	TOTAL
Members	£100.00	£20.00	<b>£120.00</b>
Non-Members	£125.00	£25.00	<b>£150.00</b>
Students	£60.00	£12.00	<b>£72.00</b>
Exhibition Space	£150.00	£30.00	<b>£180.00</b>

*Lunch is included.*

*Payment can be made by cheque or credit card.*

*Please note that credit card payments will incur a 3% additional charge.*

**Please complete form and fax or post to:-**

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**TSSEA**  
THERMAL SPRAYING & SURFACE  
ENGINEERING ASSOCIATION

