



Energy presents

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8th Annual

# NORM

# and Natural Radiation Management Conference

*Disposal opportunities and innovative solutions for safe handling of NORM across different industries*

Conference: Tuesday 27 – Wednesday 28 November 2012

Workshop: Monday 26 November 2012

Dexter House, London, UK

Exploring alternative waste strategies for dealing with NORM

## NORM 2012 expert speakers include:

Hans Striuk  
NAM General Radiation Expert  
NAM/Shell Upstream International

Chris Hannon  
Consultancy Services Manager – Waste  
Studsvik

Dr Trevor Jones  
Managing Director  
AdvanSci Limited

Dr Allan Ashworth  
Atkins Associate  
Atkins Global Ltd

James Dillingham  
Business Development Manager  
Lotus, LLC, USA

David Hutchinson,  
Project Manager,  
Doosan Power Systems Ltd

Dr Paul Dale  
Radioactive Substances Unit  
SEPA

Franck Dal-Molin  
Researcher  
Tata Steel

Paul Dockeray  
Waste Management Consultant  
Studsvik

Dr Kevin Butter  
Manager – Field Services  
EnergySolutions

Chris Macey  
Account Manager  
Tradebe Fawley

Dr Brian Heaton  
Radiation Protection Advisor  
Aberdeen Radiation Protection Services

Pete Burgess  
Principal Consultant - Radiation Metrology  
Nuvia Limited

Nick Smith  
Research Fellow  
National Nuclear Laboratory

Gene Wilson  
Group Technical Director  
Augean Plc

## Gain critical insights into:

- NORM issues associated with **shale gas E&P**
- Refurbishment of **oil production installations** and **FPSOs**
- Opportunities and hurdles for development of **alternative disposal solutions**
- Overcoming the challenges associated with the **transport** of NORM waste
- Onsite measurements and **site investigation appraisal**
- Natural radioactivity in the **iron ore sintering process**
- Reducing disposal costs and improving the **packaging efficiency** of NORM waste
- Control of **NORM contaminated equipment**
- The authorisation process for landfill disposal sites including **Kings Cliffe** and **Stoneyhill**
- Radioactive contaminated land issues including a look at **Dalgety Bay**

## Management of NORM Waste Workshop

Monday 26 November 2012

Attend this one day practical workshop and help equip your company with the practical skills and knowledge necessary to meet the technical and environmental challenges associated with managing NORM waste

Workshop Leaders include experts from **Tradebe** and **Doosan Power Systems**



Registration Hotline: +44 (0)20 7017 5518

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NORM & Natural Radiation Management Series

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# NORM and Natural Radiation Management Conference

The NORM and Natural Radiation Management Conference provides a focus for the analysis of NORM policy, strategy and regulation, including the related issues of management of materials and release of wastes from across different sectors including nuclear, oil and gas and mining.

Beyond policy and strategy considerations, the Event will also review practical considerations such as techniques for detection, quantification and characterisation of NORM.

## NEW FOR 2012

### ✓ Stakeholder Strategy Surgery

Exchange ideas and talk to key stakeholders involved in the safe handling of NORM including the industry, regulators and the public. Hear what each stakeholder's view is and learn how you can build successful relationships with each party enabling you to deal with the pressing issue of NORM

### ✓ Focus on NORM in the Oil & Gas Industry

- Hear specifically from **NAM/Shell Upstream International** on NORM from exploration and production activity
- Learn about the problems with **refurbishment of oil production installations** and **FPSO's**
- Hear the USA perspective of **disposal, treatment and storage** of oil and gas NORM
- Examine the NORM issues associated with **shale gas**

### ✓ Management of NORM Waste Workshop Monday 26 November 2012

Through presentations, group work and plenary discussions this seminar will give you a solid basis for understanding the options available for successfully treating, storing and disposing of NORM waste allowing you to give your input into the waste management process.

### ✓ Extended networking opportunities



This year will see longer refreshment breaks each day proving an invaluable opportunity to meet other delegates, speakers, sponsors and exhibitors. There will also

be a networking drinks reception and Speedy Networking ensuring you are able to make as many contacts as you can.

"An excellent opportunity to meet and share ideas"

**Tuesday 27 November 2012**

08.30 Registration and coffee

09.00 **Chairman's welcome and opening remarks**  
Dr Kevin Butter, *Manager – Field Services, EnergySolutions*

## Defining NORM through industry and regulation across the globe

09.10 **Defining NORM by industry standards**

- What is NORM/TENORM?
- Quantification/forms of NORM across different industries
- Why is dealing with NORM critical? Professor David Read, *Professor in Radiochemistry, University of Loughborough* (tentative)

09.40 **Regulation and policy for NORM management across the globe**

- International guidance on managing NORM across various industries
- Recommendations from the ICRP
- Euratom Basic Safety Standards Directive and IAEA policies

10.30 Morning tea

## Detection and measurement of NORM

11.00 **Measurement and detection of NORM**

- Monitoring techniques for surveying areas of land
- Detection limits
- Onsite measurements and site investigation appraisal
- Control of NORM contaminated equipment

Pete Burgess, *Principal Consultant – Radiation Metrology, Nuvia Limited*

11.40 **A practical guide to detection of NORM**  
This step by step guide will talk delegates through the technical understanding for detecting the presence of NORM and quantifying the amount of radiation present. Pete Burgess, *Principal Consultant – Radiation Metrology, Nuvia Limited*

12.00 Lunch

## NORM contamination and waste in the oil & gas industry

13.00 **Problems with the decommissioning/refurbishment of oil production installations and FPSOs**

- Problems arising after several years of production
- Establishing NORM activity present in systems to be disposed of
- Agreeing release criteria
- Availability of suitable workforce
- Suggested solutions

Dr Brian Heaton, *Radiation Protection Advisor, Aberdeen Radiation Protection Services*

#### 13.40 **NORM from E&P industry in the Netherlands**

CASE STUDY

- Dutch legislation and its impact on NORM in oil and gas
  - Accepted expertise levels in NL
  - NORM concentration limits
  - NORM concentration levels in the E&P industry
  - Dealing with contaminated equipment and contaminated rest materials
  - Processing of radioactive materials outside of Netherlands
- Hans Striuk, *NAM General Radiation Expert*, **NAM/Shell Upstream International**

14.30 Afternoon tea and speedy networking  
*Meet new contacts in a relaxed and fun atmosphere and maximise your networking time. Don't forget to bring your business cards!*

#### 15.10 **Management of oil and gas NORM waste in the USA**

- How big is the NORM industry in the United States?
- Shale development and how it has influenced the production of NORM waste
- Individual state regulations and how oil and gas operators are managing differentiating regulations in multiple state operations
- Is it "decontamination", "routine maintenance", or "recycling"? The differences between the three and how regulators view them
- Current NORM waste management and disposal practices
- NORM produced outside of oil and gas operations
- Importing NORM from international operations to the United States

James Dillingham, *Business Development Manager/ Radiation Safety Officer*, **Lotus, LLC**

#### 15.50 **NORM issues associated with shale gas exploration and production**

- Overview of shale gas
- Exploration and production activity and reserves in UK and continental Europe
- NORM issues associated with shale gas
- Other extractive technologies with similar NORM issues
- Mitigation, treatment and disposal options

Nick Smith, *Research Fellow*, **National Nuclear Laboratory**  
Trevor Jones, *Managing Director*, **AdvanSci Limited**  
John Whitton, *Manager*, **Centre for Energy and Power Management, University of Central Lancashire**

### **Radioactive land contamination and radioactivity in steel industry**

#### 16.30 **NORM contamination at Dalgety Bay**

CASE STUDY

NORM contamination has been identified at Dalgety Bay since 1991. This case study will look at the pressing issue of contamination at the site. The session will detail the nature of the contamination and the solutions needed in the short and longer term to deal with the contamination. Topics to be discussed will include:

- history of the site
- nature of the contamination
- monitoring limitations
- hazards and risks
- management options

Dr Paul Dale, *Radioactive Substances Unit*, **Scottish Environment Protection Agency (SEPA)**

#### 17.10 **NORM in the steel industry**

- The integrated steelmaking route
- Natural radioactivity in the iron ore sintering process
- EPR2010(11&12) and new challenge for Tata Steel
- Conclusion

Franck Dal-Molin, *Researcher*, **Tata Steel**

17.35 Chairman's closing remarks and close of day one

#### 17.40 **Networking Drinks Reception**

Mingle with your fellow conference attendees, speakers and exhibitors

### **Wednesday 28 November 2012**

09.00 Morning tea

09.30 Chairman's opening remarks  
Dr Kevin Butter, *Manager – Field Services*, **EnergySolutions**

### **Disposal of NORM wastes: regulations, routes and case examples**

#### 09.40 **The Exemption Order Review – how has it worked in practice?**

- The EOR in practice
- Has it made a difference to the disposal of NORM
- Challenges of the regulation
- Future changes

Dr Allan Ashworth, *Atkins Associate, Environment Division*, **Atkins Global Ltd**

#### 10.20 **Experience and challenges of developing new NORM treatment and disposal routes in the UK**

- Regulatory, policy and political context
- Experience of operators developing near-surface disposal facilities
- Opportunities and hurdles for development of alternative disposal solutions
- Challenges due to hazardous properties of NORM wastes

Dr Trevor Jones, *Managing Director*, **AdvanSci Limited**

11.00 Morning tea and networking break

**Linked in**

The NORM and Natural Radiation Management Series LinkedIn group allows you to share ideas and expertise with

your industry peers. Post a question and discuss the latest challenges facing NORM producing industries.

**NORM and Natural Radiation Management Series**



**11.30 NORM Management at Kings Cliffe**

CASE STUDY

This case study will outline the process involved in gaining authorisation for disposal of NORM at the Kings Cliffe site. Gene will discuss the challenges involved in disposing of NORM at the site alongside the opportunities this site will present for the industries affected by NORM.

Gene Wilson, *Group Technical Director, Augean Plc*

**12.15 Post authorisation Stoney Hill – an update**

- Introduction to Stoneyhill NORM Plant and Disposal Site
- RSA Permit for Decontamination/Disposal
- Plant capability
- Environmental controls
- Acceptance criteria - NORM decontamination
- Acceptance criteria - NORM disposal
- Photo tour

Phil Holland, *Business Development Manager, SITA UK*

12.45 Lunch

**13.45 Stakeholder Strategy Surgery**

Debate and discuss with stakeholders involved and affected by NORM. Take this opportunity to have your views heard and ensure you are able to build the successful relationships to successfully deal with the issue of NORM



14.45 Report back to main room

15.00 Afternoon tea and networking break

**15.30 Transportation of NORM waste**

- Overview of NORM transportation
- Overcoming the challenges associated with the transport of NORM waste
- How packages are adapting to waste management hierarchy
- Tackling national and international regulations and policy

Paul Dockeray, *Waste Management Consultant, Studsvik*

**16.10 Application of nuclear solutions to NORM challenges**

- From nuclear to NORM a waste management perspective
- Waste characterisation techniques
- Metals recycling

Chris Hannon, *Consultancy Services Manager – Waste, Studsvik*

16.50 Chairman's closing remarks

17.00 Close of conference

A panel of waste management experts will give you the key criteria for developing a suitable waste management plan for reducing your NORM waste focussing on processing, characterisation, storage and disposal options

09.00 Registration and coffee

09.30 Chair's opening remarks

**09.40 Establishing a plan for waste management**

- Challenges for waste management in NORM
- Identifying a reliable plan for managing waste
- Implementation of new technologies and investment

10.20 Discussion session

10.40 Morning coffee

**11.10 Processing and characterisation of NORM oily sludge**

- Receipt of Waste
- Management of Non-NORM Hazards
- Processing of Waste
- Characterisation of Waste
- Disposal options

**Dave Hutchinson**, Project Manager, **Doosan Power Systems**

11.50 Discussion session

**12.10 Treatment of NORM bearing waste**

- Waste management practices, and their application to NORM wastes
- Use of the waste management hierarchy and BAT to find the best solution
- Use of the exemption provision, and potential issues
- Technical description of the Fawley incineration process
- Example Radioactive wastes and packages that have been processed at Fawley

**Chris Macey**, Account Manager, **Tradbe Fawley**

12.50 Discussion session

13.00w Lunch

**14.00 Storage and disposal options for NORM waste**

- Examining current disposal options
- Environmental considerations
- Reuse of NORM
- Identifying alternative waste disposal methods

**James Dillingham**, Business Development Manager/  
Radiation Safety Officer, **Lotus LLC**

15.00 Discussion session

**15.20 Open discussion session:**

Developing long term solutions for successful management of NORM Waste

15.50 Chairman's closing remarks

16.00 Close of workshop

## Sponsors and Exhibitors to date:



**Bauer Water** offer decontamination service for removal of NORM deposits from contaminated pipes, which have been taken out of service, under controlled conditions. The mobile plant is equipped with auxiliary systems for treatment of water, off-gas and secondary waste. Decontamination-system is completely encapsulated during the process, which prevents radioactive spread through particles and aerosols. Continuous monitoring of radiation level is ensured by using special radiation measurement equipment. International HSE standards are applied.



**NORM Solutions Limited**, one of the most advanced NORM de-scaling and decontamination facilities in the UK has been launched in Aberdeen. NORM Solutions is a collaboration between Enviroco Limited and John Lawrie Group and is purpose-built to support the UK's exploration, production and decommissioning activities. This new, fully enclosed, multi-million pound facility incorporates cutting edge process equipment for the safe and efficient removal of NORM scale from tubulars and equipment.



**Augean plc** is one of the country's leading waste management companies and is at the forefront of developing innovative process and technological solutions for handling hazardous waste. Augean has developed appropriate safe operating procedures and local rules to undertake NORM disposal operations. Our expertise has developed to provide a safe and cost effective solution for low level radioactive waste.



**EnergySolutions EU Ltd** is an international nuclear services provider, a world leader in the safe recycling, processing and disposal of radioactive waste. We provide bespoke solutions for the disposal of NORM, for example we work closely with NORMCAN to deliver a proven cost effective route for NORM waste. We can support you with fully integrated solutions and our experience in working with regulators and stakeholders will provide you with the confidence that we will safely get the job done.



**Lotus, LLC (Lotus)**, located in the United States, is a fully licensed off loading, processing, and decontamination operation established to handle naturally occurring radioactive material (NORM). With numerous patented processes, Lotus currently decontaminates and disposes of more NORM waste than any other facility in the United States. Lotus is excited to announce expansion into global markets by providing its renowned NORM training, consulting, remediation, and disposal services to customers all over the world



**Studsvik** offers a range of advanced technical services to the international nuclear industry in areas such as waste treatment, decommissioning, engineering services and operating efficiency. The company has more than 60 years' experience of nuclear technology and radiological services and is a leading international supplier. The business is conducted through five segments: Sweden, UK, Germany, USA and Global Services. With our own nuclear licenced sites in Sweden, the UK and the US, Studsvik is well aware of our customers' requirements for working in a highly regulated industry.  
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Do you have a product, service or solution to offer our delegates?

IBC Energy's NORM and Natural Radiation Management Conference offers an excellent opportunity for your company to further enhance or establish its profile in the increasingly important subject of NORM.

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## 8th Annual NORM and Natural Radiation Conference

Conference: Tuesday 27 – Wednesday 28 November 2012  
NORM Waste Management Workshop: Monday 26 November 2012  
Dexter House, London, UK

# VIP CODE:

Event Code  
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Debate the  
challenges and  
review opportunities  
involved in disposal  
of NORM

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### STEP 1: CHOOSE YOUR PACKAGE (please tick option)

	Dates	REGISTER BY 7 September 2012	REGISTER BY 26 October 2012	REGISTER AFTER 26 October 2012
<b>NORM Conference + Waste Management Workshop</b>	26- 28 Sept 2012	<input type="checkbox"/> £1598 (+VAT @20%) = £1917.60 <b>SAVE £300</b>	<input type="checkbox"/> £1698 (+VAT @20%) = £2037.60 <b>SAVE £200</b>	<input type="checkbox"/> £1798 (+VAT @20%) = £2157.60 <b>SAVE £100</b>
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