

Updated: 6June02

'RBM' Seminar

An International Seminar on:

RISK BASED MANAGEMENT OF POWER PLANT EQUIPMENT

Venue: Institute of Materials, London, UK

Dates: 21-23 October 2002

[Provisional Programme & Registration Form](#)

Organiser:



European Technology Development (ETD)

Sponsors:



MANAGING RISKS IN POWER PLANT

In today's highly competitive Power Generation industry key factors for success are consistently high levels of availability and reliability. At the same time stations are under pressure to maximise margins. It is perhaps no surprise that considerable interest within the industry is currently being centred on Risk-informed approaches to managing and maintaining plant. The aim of such approaches is to cost-effectively focus maintenance and inspection resources to the critical (highest risk) areas of the plant. The management focus is on methodologies for identifying risks and for reliable and repeatable evaluation of the likelihood and impact of the risks in a quantitative manner. Almost all approaches try to evaluate the probability or likelihood of an event and the consequences that it will have in terms of safety, cost and environmental impacts. Application of Risk-informed approaches to power plant is however still largely in its infancy.

The **objective** of this Seminar is to provide a forum to exchange experience and prompt discussion in the areas of Risk Based Inspection, Risk Based Life Management and in the general process for identifying, prioritising and controlling risks.

ORAL PRESENTATIONS

These will be as follows:

- Keynote Papers = 25 minutes + 5 minutes for discussion.
- Other Papers = 15 minutes + 5 minutes for discussion.

Technical enquiries and papers in electronic (MS Word) format should be sent to:

Dr I A Shibli, European Technology Development Ltd., 2 Warwick Gardens, Ashted, Surrey KT21 2HR, UK.

Tel: +44 1372 802 555 (direct) or +44 1372 229 164 (general)

Fax: +44 1372 229 164 E.mail: ashibli@etd1.co.uk

PUBLICATION: Copies of the **Proceedings** will be provided at the Seminar.

ORGANISING AND TECHNICAL COMMITTEE

Dr I A Shibli, ETD -- Co-ordinator, UK

Dr D Cheetham, Innogy, UK

Mr F Starr, ETD, UK

Mr D Gray, TXU Energy, USA

Mr Graham Reynolds, Rolls Royce, UK

Mr Mark Lauby, EPRI Worldwide,

Brussels, Belgium

Dr A S Jovanovic, RIMAP-TN

Coordinator, MPA, Germany

Prof Kee Bong Yoon, Chung-Ang

University, Korea

Dr U McNiven, Fortum, Finland

ABOUT THE ORGANISER

European Technology Development Ltd. (ETD) is a UK based engineering advisory, consulting and R&D company specialising in life assessment, life extension, maintenance, materials and engineering issues in all type of power generating and process plant. The company has a particular interest, and actively working, in the growing area of risk based management and inspection and the application of RBI rules to power plant and other energy systems.

ETD has, in the recent past, organised various international conferences in the UK and a number of other countries of Europe (Germany, France, Portugal etc.) mainly on the issues such as: high temperature plant materials, plant component safety and durability, performance of in-service welds and power plant cycling.

At present the company is leading a number of large European industry initiatives (supported by the European Commission) on issues related to the assessment and improvement of high temperature plant performance, materials and design, and maintenance and inspection strategies. Similar initiatives are also being led at the international level supported by industry from North America, Japan and elsewhere.

Further information about the company, its projects, life assessment courses offered and other activities can be seen at: www.etd1.co.uk More recent information about company activities can also be obtained by writing to: enquiries@etd1.co.uk

DAY	1
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REGISTRATION AND COFFEE ----- 0930 – 1030 hours

Introduction and Welcome

SESSION 1: RISK BASED APPROACHES AND PRACTICES

(1030 – 1440 hours)

1. **Keynote paper: Business risk assessment**
Chris Elston, Innogy, **UK**

2. **Risk based management of power plant boilers**
J M Farley, D H Mitchell, B W O Shepherd, Mitsui Babcock Technology Centre,
Mitsui Babcock Energy, Renfrew, **UK**

3. **Maintenance planning and cost reduction by RBM techniques in fossil fired power boilers**
Masaki TORIGOE, Noriko SAITO, Kenichi TARUMI, Yoshiaki OKATSUKA, Akio FUJI, Shigemitsu KIHARA, IHI, Yokohama, **Japan**

4. **Promax - Approach in power plant risk management**
Mikko Pakarinen, Project Manager, Performance Care, Fortum Energy Solutions,
POB 20, 00048 FORTUM, **Finland**

5. **Risk Evaluation And Prioritization (REAP) task model**
John W. McElroy, EPRI Solutions; Jaime Burton, American Electric Power, **USA**

Lunch Break	1220 – 1320 hours
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6. **Keynote paper: Risk-based inspection and maintenance – industry feedback and user needs**
B J Cane, TWI, Cambridge, **UK**

7. **EPRI approach to RBM methodology**
M Decoster, EPRI, California, **USA**; J McElroy, EPRI Solutions, **USA**
N Le Mat Hamata, European Technology Development, **UK**

8. **The need for RBM for power plant and proposals for simple robust guidelines**
N Le Mat Hamata and I A Shibli, European Technology Development, **UK**

SESSION 2: RIMAP*(1430 – 1700 hours)*

1. **Keynote Paper: Critical issues in Risk-Based Life Management of power plant equipment as tackled by the EU-project RIMAP: Practical determination of probability of failure**
A Jovanovic, MPA, Stuttgart, Germany

Coffee Break	1500 – 1530 hours
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2. **Development of RIMAP application workbook for power plants and its practical application in ‘Heilbronn’ power station**
A Jovanovic, P Auerkari, J Bareiss, P Buck, Europe
3. **Consequence of failure in the RIMAP project - overall model**
S. Angelsen, G. Våge and M. Johansson, DNV Consulting, Norway
4. **Consequences of failure for RBMI, concepts from the RIMAP project**
J H A M Heerings, A J den Herder, J E A Reinders, TNO Industrial and Safety Technology, The Netherlands
5. **Risk acceptance criteria and regulatory aspects**
Robert Kauer et al., TÜV Süddeutschland Bau und Betrieb GmbH, München, Germany
6. **Discussion on the RIMAP project** (includes brief presentation on RIMAP-East)
- *(10 minutes)*.

PANEL DISCUSSION**CURRENT RBM APPROACHES / METHODOLOGIES
& NEED FOR FUTURE DEVELOPMENTS****1700 – 1720 hours****SEMINAR DINNER****1900 – 2200 hours**

DAY 2

SESSION 3: CASE STUDIES

(0930 – 1100 hours)

1. **Keynote Paper: Integrated operational risk management in power plants**
Simon Chan, Plant Engineering Manager – Generation, CLP Power Hong Kong Limited, Castle Peak Power Station, Lung Yiu Street, Tuen Mun, New Territories, **Hong Kong**
2. **Risk assessment at a coal-fired power plant**
Mark DeCoster, EPRI, USA; Bill Beck, Salt River Project, USA.
3. **Case studies illustrating the use of qualitative and quantitative risk assessment for maintenance planning**
D Worswick, P Winter and R J Browne, AEA Technology, UK
4. **A posteriori probabilities application to inspection planning of a 0.5Cr0.5Mo0.3V steel piping after 130 000 service hours**
Ondrej Bielak, Vladimir Bína, Jan Korouš, BiSAFE s.r.o., Malebna 2, 149 00 Praha 4, **Czech Republic**

Coffee Break	1100 – 1130 hours
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SESSION 4: TURBINES

(1130 – 1240 hours)

1. **Keynote Paper: Application of probabilistic fracture mechanics in the life assessment of steam turbines**
Albert Bagaviev and Joern Harder, Siemens Power Generation, Muelheim, **Germany**
2. **Steam turbine management in a changing market**
Richard Martin, Innogy, UK
3. **The quantification of risks to steam turbine rotors from stress corrosion cracking**
M D Rowbottom, Cognant Consultants Limited, UK

Lunch Break	1240 - 1400 hours
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SESSION 5: MANAGING TECHNICAL AND ECONOMIC RISKS

(1400 – 1520 hours)

- 1. Generator management, balancing economic risks and rewards**
Dave G Wallis, Innogy, UK
- 2. Risk based maintenance planning for a new supercritical coal fired plant and mid life maintenance review for a coal/gas dual fired plant**
Tim Johnson, Sinclair Knight Merz (Europe) Ltd, UK/Australia
- 3. Managing technical risk for pressure parts**
Dan Pitt, Innogy, UK
- 4. Redundant systems shutdown during low capacity operation**
David Laredo, Reliability Dept., Israel Electricity Corporation, Israel

Coffee Break	1520 – 1550 hours
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SESSION 6: PLANT MONITORING AND SOFTWARE DEVELOPMENT

(1550 – 1700 hours)

- 1. Keynote Paper: On-line monitoring of power plant systems**
Ramesh (Rudy) Shankar, EPRI, Charlotte, USA
- 2. The project on material risk information platform system**
Jun Nobe, Project Manager, Mitsubishi Research Institute Inc., Safety Engineering and Technology Department, Tokyo, Japan
- 3. Risk software**
Andy Read, Group Head - Boiler Engineering, Powergen, Power Technology Centre, Ratcliffe-on-Soar, Nottingham, UK

PANEL DISCUSSION

RBM EXPERIENCE

1700 – 1720 hours

<i>RECEPTION by Innogy</i>

<i>1730 – 1930 hours</i>

DAY 3

SESSION 7: INSURANCE, SAFETY AND INSPECTION ISSUES

(0900 – 1030 hours)

1. **Keynote Paper: Risk based management of power plant equipment**
Glyn Amphlett, Technical Manager, Royal & Sun Alliance, **UK**
2. **Application of a justification factor to a safety improvement program using hazard & operability analysis**
Gordon W Cowan, U G M Engineering Ltd.; James W Prince and J Allan Arnott, Ontario Power Generation, **Canada**
3. **Risk based approach for the determination of reinspect pressure vessels and boilers after 100,000 service hours**
C. Delle Site, F. Di Tosto, A. Tonti, ISPESL, Inspection Dept., Rome, **Italy**
4. **Risk influenced inspection prioritisation**
A. Bissell, ESB Power Generation, **Ireland**

Coffee Break 1030 – 1100 hours
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SESSION 8: RBM ISSUES IN POWER AND PETROCHEMICAL PLANT

(1100 – 1220 hours)

1. **Identification and management of engineering risk**
Jim Knight, Innogy, **UK**
2. **The equivalent operating hour approach to damage rate of power plant**
Chris Harris, Innogy, **UK**
3. **Case study databank for chemical plant**
L Toth, Bay Zoltan Institute, Miskolo, **Hungary**
4. **RBM in petrochemical/refinery industry and lessons for power plant**
Kee Bong Yoon, **Korea**

Lunch 1220 – 1330 hours

SESSION 9: SPARES, SHUTDOWNS AND GENERAL ISSUES

(1330 – 1500 hours)

- 1. Spares – risks, options, and cost benefits**
Lynton Mogridge, Innogy, UK
- 2. Managing the pay-off between risk, reliability and remaining life**
J M Brear, P Jarvis and C J Middleton, SES, UK
- 3. What shutdowns, why and when? The cost/risk optimisation of shutdown work-scopes and intervals**
Colin Labouchere, Technical Director, European MACRO project, Europe
- 4. Managing technical risk in power generation – ESB experience**
A Bissell, ESB Power Generation, Ireland

CONCLUDING SESSION

WAY FORWARD

1500 – 1530 hours

Registration Form – RBM Seminar

(Please copy and post/fax/e mail)

International Seminar on ‘Risk Based Management in Power Plant Equipment’ London, 21-23 October 2002

Registration Fee (As the event is being held in the UK, overseas delegates also need to pay UK applicable VAT (Value Added Tax) @17.5%. All figures are in *pound sterling*).

	Until 20 September 2002			After 20 September 2002		
	Fee	Amount payable (Fee + VAT)	**	Fee	Amount payable (Fee + VAT)	**
Delegates	£400	£470		£500	£540.50	
Authors*	£300	£352.50		300	352.50	

* Applies only to author presenting the paper.

** Please insert X in the applicable box showing the amount of fee paid.

Registration Fee covers the Seminar Proceedings, tea/coffee, lunches, a boat cruise on river Thames and the Seminar dinner.

Payment: Fee should be paid into the UK bank account: A/c Name: European Technology Development Ltd., Nat West Bank, A/C No: 26096625, Sort Code: 60-12-36. [Please quote reference ‘RBM Seminar’](#)

Information on **hotel reservation** will be provided on registration.

Please register by fax, post or e-mail as follows ([attach/enclose statement on the payment of Registration Fee i.e. how and when was it paid or will be paid](#)):

Your title and name:

Company (needed for delegate badge):

Position (needed for delegate badge):

Address:

Phone:

Fax:

E-mail:

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Address for Registration: Please post/ fax/ e-mail this Form to:

Registration Section, RBM Seminar, European Technology Development Ltd., 2 Warwick Gardens, Ashted, Surrey KT21 2HR, UK.
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Fax: +44(0)1372 229 164 **E.mail:** registration@etd1.co.uk