

FLUID MACHINERY IN THE POWER INDUSTRY

Institution of
**MECHANICAL
ENGINEERS**

10 June 2015
Bristol
www.imeche.org/events/S6208

Fluid Machinery Group
Seminar



FLUID MACHINERY IN THE POWER INDUSTRY

10 June 2015, Bristol



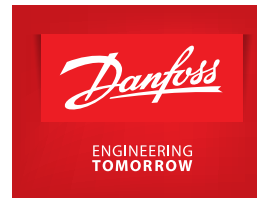
HEAR FROM OPERATORS SUCH AS E.ON, WEIR GROUP, RWE AND EDF TO DISCOVER DIFFERENT APPROACHES TO REDUCING FAILURES AND ADHERING TO INDUSTRY GUIDANCE AND PROTOCOLS.

This unique seminar will offer examples of failures on existing plants, solutions implemented and the latest activities on justifying plant life extensions. Methods being used for predictive maintenance and condition monitoring will also be highlighted, alongside relevant design codes for new plants such as RCCM, ASME and quality assurance protocols.

ORGANISING COMMITTEE:

- Pharic Smith, Weir Group
- Mellish Kett, EDF Energy
- Robert Brown, Sulzer
- Ivor Rhodes, ACE Cranfield
- Ahmed Kovacevic, City University

EXHIBITOR



BENEFITS OF ATTENDANCE:

- **Gain** knowledge of existing issues and challenges
- **Understand** successful methods for dealing with plant issues
- **Network** with leading solution providers and operators
- **Discover** how to improve plant maintenance and operations
- **Learn** how to use condition monitoring systems to boost performance

SPONSORSHIP & EXHIBITION OPPORTUNITIES

GET INVOLVED

Attending this event as either an exhibitor or sponsor will give you the opportunity to display your solutions, services and products to the right people at the right time.

This is an excellent way to enhance your company profile and communicate effectively to your target audience.

BENEFITS OF SPONSORING

- **Showcase** new products
- **Raise** awareness of your operation
- **Improve** perception of your brand
- **Influence** other organisations' spending plans

For more information please call **+44 (0)20 7973 1309** or email **sponsorship@imeche.org**

PROGRAMME

- 08:30 REGISTRATION AND REFRESHMENTS**
- 09:00 CHAIR'S OPENING REMARKS**
Pharic Smith, Member, Fluid Machinery Group, Institution of Mechanical Engineers
- 09:10 KEYNOTE ADDRESS**
To be announced, EDF Energy
- 09:40 CONDITION MONITORING SYSTEM FOR TRACKING BOILER FEED PUMP PERFORMANCE**
Mahesh Mistry, Process Optimisation & Christopher Fraser, Condition Monitoring Engineer, E.ON
- Calculating the pump head using installed plant instrumentation, and establishing the flow based on the original pump performance curve
 - Comparing the design flow to the actual flow measured from installed plant instrumentation
 - Using historical data to track pump performance over several years
- 10:10 MULTI-BIOFUEL PLANT: ANALYSING PUMP PERFORMANCE**
Ian Anderson, Water & Waste Water Sales Manager UK & Ireland, Danfoss
- An overview of the multi-biofuel district heating plant in Hjørring, Northern Jutland, Denmark
 - Implementing the newest IE4 synchronous reluctance (SynRM) motor technology
 - Monitoring performance of each SynRM motor through Danfoss frequency converters
- 10:40 NETWORKING REFRESHMENT BREAK**
- 11:10 PREVENTIVE MAINTENANCE OF MOTORS**
Len Jones, Head of Engineering, Parsons Peebles Motors
- Maintenance routines
 - Modern health monitoring techniques for motors
 - Planned inspections
- 11:40 INCREASED RELIABILITY OF HOT WATER PUMP MECHANICAL SEALING THROUGH LATEST SEAL FACE MATERIALS AND PROFILING TECHNOLOGY WITHOUT ADDITIONAL COOLING**
Stuart Hall, Technical Director, John Crane
- Patented 'macro' face profiling
 - Field-proven 'micro' face profiling
 - Managing fluid film temperatures vs leakage
- 12:10 PANEL SESSION**
An opportunity to ask questions or make comments to the morning presenters. If you would like to submit a question prior to the event please email it, along with your name, to eventenquiries@imeche.org
- 12:40 NETWORKING LUNCH**
- 13:40 POWER PLANT UPGRADES – A CASE STUDY**
Robert Brown, Head of Engineering, Sulzer Pumps and Matthew McGrady, Senior Engineer, RWE nPower
- Reasons behind the re-rate of an existing CCGT plant
 - Project overview and lessons learnt
 - Redesign of the BFP hydraulics to meet revised steam cycle requirements
- 14:10 TARGETING ZERO FAILURES IN SERVICE WHILST ACHIEVING ON-TIME SPARES AVAILABILITY**
Ronan Vance, Business Critical Programmes, EDF Energy Generation
- Equipment reliability challenges, impact of pump reliability
 - Equipment reviews/maintenance gap analysis
 - Managing pump component groups
 - Supplier involvement/engagement
 - Identifying key component spares requirements
- 14:40 NETWORKING REFRESHMENT BREAK**
- 15:10 UNDERSTANDING PUMP DESIGN SPECIFICATIONS**
Pharic Smith, Senior Rotating Equipment Specialist, Weir Engineering Services and Alastair Pollock, General Manager, Weir Power and Industrial
- Understanding the impact of specification requirements
 - Specifying duty and NPSH requirements
 - Materials
 - Operation and maintenance cost vs capital cost
- 15:40 CASE STUDY: THERMODYNAMIC PUMP PERFORMANCE MONITORING IN POWER STATIONS**
Malcolm Robertson and Andy Baird, Robertson Technology
Ivor Rhodes, ACE Cranfield Ltd
- Measuring pump performance
 - Understanding pump applications
 - Continuous monitoring instrumentation and technique limitations
- 16:10 PANEL SESSION**
An opportunity to ask questions or make comments to the afternoon presenters. If you would like to submit a question prior to the event please email it, along with your name, to eventenquiries@imeche.org
- 16:30 CHAIR'S CLOSING REMARKS**
Pharic Smith, Member, Fluid Machinery Group, Institution of Mechanical Engineers
- 16:40 END OF SEMINAR**

Find out more about our speakers at www.imeche.org/events/S6208

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

SPEAKERS AND CONTRIBUTORS

PHARIC SMITH CHAIR MEMBER, FLUID MACHINERY GROUP, INSTITUTION OF MECHANICAL ENGINEERS

Pharic Smith joined Weir Pumps in 1997 and has spent most of his career working on the design of pumps for the conventional and nuclear power industry. In 2008 Pharic took over as Engineering Manager for ClydeUnion's nuclear power business unit, with responsibility for safety-related pumpsets designed to the ASME code. Pharic returned to Weir's aftermarket business in 2012, where he now leads preventive maintenance and equipment improvement projects in the oil, power and nuclear industries.

MAHESH MISTRY PROCESS OPTIMISATION, E.ON

Mahesh Mistry has worked in the power industry for 27 years. His background is performance testing, having worked as a test engineer at Alstom, Rolls-Royce and E.ON. However, he also has experience of commissioning, operations, maintenance and delivering plant improvements gained at Coventry Waste Disposal. Mahesh joined E.ON in 2006 as a plant performance test engineer covering performance testing of steam and gas turbines in the UK and overseas. He has covered acceptance testing for new plant as well as routine testing to demonstrate current plant performance. Boiler feed pump performance has been covered during steam turbine testing and this led to working with the Condition Monitoring Team at E.ON to develop methods for monitoring pump performance.

CHRISTOPHER FRASER CONDITION MONITORING ENGINEER, E.ON

Christopher Fraser has accrued international experience across the generation, oil & gas and commodity aspects of the energy industry. A physicist by background, Chris joined E.ON in 2010 as a condition monitoring engineer. His role as a technology and innovation lead for the department sees him develop and implement new solutions and monitoring systems for varying engineering problems.

STUART HALL TECHNICAL DIRECTOR, JOHN CRANE

Stuart Hall graduated from Aston University in 1985 with a degree in Mechanical Engineering. He has over 28 years of experience in the mechanical sealing industry, mostly in a troubleshooting environment. Stuart currently runs the engineering, quality assurance and internal sales areas of John Crane's domestic business.

LEN JONES HEAD OF ENGINEERING, PARSONS PEEBLES MOTORS

Len Jones joined Peebles in 1966 as a student apprentice and was sponsored through college by the company. He worked in the research division on noise and vibration projects, moving on into machine dynamics involving onshore and offshore North Sea projects and ultimately machine design. He has had involvement in project engineering management and service facility management. Len is now Head of Engineering for the Parsons Peebles Group and advises on motor and generator servicing and repairs, as well as new and reverse-engineered new machine design. He is also involved in group growth in mergers and acquisitions.

ROBERT BROWN HEAD OF ENGINEERING, SULZER PUMPS

Robert Brown has more than 40 years of experience in the pump industry, having worked with Weir Pumps and Sulzer. He has been involved in engineering issues related to high-power pumps and ancillary equipment for the power, oil & gas and water industries. Robert is currently responsible for Sulzer's UK Aftermarket Engineering Group, involved in the following areas: modernisation and re-rating of existing pumping equipment, and troubleshooting and failure investigations.

BOOKING FORM

EVENT CODE: S6208AB

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Bristol

REGISTRATION Please complete in capitals.

Family Name	Title (Mr, Mrs, Miss)
First Name	Job Title
Membership No	Institution
Name of Organisation (for name badge)	
Address for correspondence	
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Postcode	
Contact Telephone	
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Do you have any special requirements?	

How did you hear about this event? Direct mail Website Colleague Other

We would like to keep you informed of relevant services that may be of benefit to you. Please tick the boxes below to let us know what you're interested in:

- Events and training opportunities
 News and updates from the Institution
 Services and offers from our preferred partners

FEES AND CHARGES Please complete the appropriate box.

Registration fees include entry to the sessions, refreshments, lunch and a copy of the event proceedings.

	STANDARD RATE	VAT	TOTAL
Member, Institution of Mechanical Engineers	£233.75	£46.75	£
Member, supporting organisation	£233.75	£46.75	£
Non-member	£310.25	£62.05	£
Student/retired	£63.75	£12.75	£

PAYMENT DETAILS

Payment must accompany this registration form. Registration will be confirmed only on receipt of full payment.

PLEASE INDICATE METHOD OF PAYMENT:

- Cheque** Cheques should be made payable to IMechE and crossed. Please note international delegates may pay only by credit card, BACS or banker's draft. A copy of the draft must accompany this form. It is the delegate's responsibility to pay any bank charges.
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Card type: Visa MasterCard (please note we cannot accept American Express, Diners Club or Maestro)
Card No _____ Valid From _____ / _____ Expiry Date _____ / _____
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- BACS** BACS bank transfers can be made to:
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Sort Code: **60-40-05** Acc No: **00817767**
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A copy of the draft must accompany this form.
- Invoice (UK residents only)** Delegates wishing to be invoiced must provide an order number. If your company does not use order numbers please include a formal request for invoicing on your company's letterhead. A charge of £10 +VAT will be made to cover additional administration costs. Invoices are payable on receipt and no alterations to these terms will be accepted.
- Order No _____
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London SW1H 9JJ**
- 5 Fax:
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Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

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Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

SPECIAL REQUIREMENTS

Please inform us of any special requirements, ie dietary or access, on the relevant section of this form.

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For a refund (minus £25+VAT admin charge), cancellations must be received at least 14 days prior to the event. Replacement delegates are welcome at any time. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, they will receive a full refund of the fee paid.

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OTHER EVENTS TO LOOK FOR:



19 March 2015
London

JOHN PLAYER PRESTIGE LECTURE: THE ROLE OF GOVERNMENT IN SUPPORTING INNOVATION

Mike Oldham, Head of the Catapult Centres Programme at Innovate UK, will discuss the role the Government must play to support innovation advances within the engineering profession.

www.imeche.org/events/L6216



15-17 April 2015
Lyon, France

FAN 2015: INTERNATIONAL CONFERENCE ON FAN NOISE, TECHNOLOGY AND NUMERICAL METHODS

This three-day conference will include keynotes, technical presentations, panel sessions, an exhibition and social networking. This event is one of only a few truly international technical forums for the fan industry.

www.imeche.org/events/C1406



2 June 2015
Birmingham

FIT FOR PURPOSE SAFETY CASES IN THE NUCLEAR INDUSTRY

This event will provide you with the opportunity to hear relevant presentations for your industry specialism, exchange views and share learning and best practice from case studies.

www.imeche.org/events/S6205

INFORMATION AND BOOKINGS

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See www.imeche.org/volunteering for more information or go to <http://nearyou.imeche.org>

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