STEAM TURBINE AND GENERATOR USER GROUP 2020

18-19 March 2020
Manchester United Football Ground, Old Trafford, Manchester
Power Industries Division Conference

KEY SPEAKERS INCLUDE:
Craig Lester, Deputy Director, Advances Nuclear Innovation Team
Department of Business, Energy & Industrial Strategy
Edward Thomas, Head of Performance Management
Viridor
Ian Hedges, FM2 Lead Construction Engineer, SSE
SSE

Event Partner:
www.imeche.org/stug
Book your place today
STEAM TURBINE AND GENERATOR USER GROUP 2020

18-19 March 2020, Manchester United Football Ground, Old Trafford, Manchester

FIND SOLUTIONS FOR KEY CHALLENGES FACING THE MANUFACTURERS AND OPERATORS OF STEAM TURBINE AND GENERATOR TECHNOLOGIES.

Join this specialised community of engineers to exchange ideas, identify potential solutions and learn about new developments at this leading technical event, offering peer reviewed and high-level content. Hear directly from OEMs, service providers and end users of steam turbines, generators and large motors about the latest technologies available and learn best practice from case studies in plant operations and turbine and generator service.

The Institution’s User Groups encourage open debate and problem solving to our technical and specialist communities. Hear from key peer reviewed presentations and promote the sharing of experiences among the steam turbine generator community. Engage and network with thought leaders and decision makers across the industry.

ATTEND THIS USER GROUP TO:

- Gain insight into the current position of the UK power generation industry from policy advisors, major utility companies and manufacturers
- Learn from real-life case studies illustrating project experience and best practice
- Discover the latest steam turbine and generator developments and technologies
- Hear advice from leading specialists on a wide number of issues
- Understand how to manage and minimise plant risks and improve the performance of your plant
- Network at our dinner with leading manufacturers, operators and service providers within the steam turbine and generator community

KEY PROGRAMME HIGHLIGHTS:

- Gain insight into the future of role of nuclear power from the Department of Business, Energy and Industrial Strategy
- Doosan, GE, Uniper and Newcastle University will deliver presentations on the latest Steam Turbine, Generator and Large Motor Technologies
- Explore strategies for Steam Turbine and Generator Integrity and Reliability with EDF Energy, Nord-Lock Group, GE and Quartzlec
- Learn best practice for Steam Turbine Service and Generator monitoring and repairs with Toshiba International, FM Global, KPG and RWE Generation UK
- Hear presentations about successful retrofitting and upgrade projects from SSE Thermal, Siemens, EDF Energy and Uniper

ORGANISING COMMITTEE:
Fossil Power Committee, Power Industries Division
Institution of Mechanical Engineers

MEMBER CREDITS:
Richard Martin, Turbine Engineering Consultants
Andrew Laycock, Centrica Energy
Ben Adams, Charles Taylor
Colin Caldow, Scottish Power
Christopher Whiteley, SSE Engineering Centre
Dave Wallis, Rendcomb Consultancy
Ian Rowntree, Uniper Energy
James Fogden, Toshiba International (Europe)
James Hough, SSE Engineering Centre
Mike Jones, GE Power
Paul Cooper, GE Power
Roy Beardshaw, Brush Electrical Machines
Andrew Young, DRAX
Sam Atkin, EDF-Energy
Richard London, Siemens
Owyn Wallace, DRAX
Steve Mitchell, RWE
Wojciech Betlej, Quartzlec
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<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>08:45</td>
<td>REGISTRATION AND REFRESHMENTS</td>
</tr>
</tbody>
</table>
| 09:20 | CHAIR'S OPENING REMARKS  
Richard Martin, Turbine Engineering Consultants |
| **INDUSTRY TRENDS** |  |
| 09:30 | KEYNOTE ADDRESS: THE FUTURE ROLE OF NUCLEAR POWER  
Craig Lester, Deputy Director, Advanced Nuclear Innovation Team, BEIS |
| 09:50 | ENERGY FROM WASTE  
Edward Thomas, Head of Performance Management, Viridor |
| 10:10 | MULTIFUEL IN YORKSHIRE  
Ian Hedges, FM2 Lead Construction Engineer, SSE |
| 10:30 | QUESTION AND ANSWER SESSION |
| 10:45 | NETWORKING REFRESHMENT BREAK |
| **STEAM TURBINE INTEGRITY** | **GENERATOR INTEGRITY** |
| 11:15 | THE EVOLUTION AND MITIGATION OF STRESS CORROSION CRACKING IN STEAM TURBINE ROTORS  
Mike Jones, Principal Engineer, Steam Turbine Engineering, GE |
| 11:35 | STRESS CORROSION CRACKING OF LP ROTOR GROOVES  
Liam Lawlor, Engineering and Major Projects, Electricity Supply Board Ireland |
| 11:55 | OPTIMISATION OF LOW LOAD OPERATION OF AN EXISTING DISTRICT HEATING POWER PLANT: AS CASE STUDY  
Antonio Mambro, Steam Turbine Performance Domain and Specialist, GE |
| 12:15 | LAST STAGE STEAM TURBINE BLADE INTEGRITY ASSESSMENT EXPERIENCE  
August Pandley, Fleet Lead Mechanical Engineer, EDF-Energy |
| 12:35 | QUESTION AND ANSWER SESSION |
| 12:50 | NETWORKING LUNCH |
| **STEAM TURBINE TECHNOLOGIES** | **GENERATOR TECHNOLOGIES** |
| 13:50 | GOVERNING VALVES FOR MODERN STEAM TURBINES  
Andrew Smallbone and Tony Roskilly, Swan Centre, Newcastle University |
| 14:10 | COMBINING OEM STEAM TURBINE TECHNOLOGIES – THE BEST OF BOTH WORLDS  
Mike Jones, Principal Engineer, Steam Turbine Engineering, GE |
| 14:30 | CONDITION-BASED MAINTENANCE FOR STEAM TURBINES  
Markus Lachner, Steam Turbine Product Manager, Siemens |
| 14:50 | POWER PLANTS REPOWERING  
Cormac Myers, Engineering Manager, Mitsubishi Hitachi Power Systems Europe, Ltd |
| 15:10 | QUESTION AND ANSWER SESSION |
| 15:25 | NETWORKING REFRESHMENT BREAK |

**PLANT CONSTRUCTION COMMISSIONING AND OPERATION**
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>15:55</td>
<td><strong>TORNESS TURBINE GENERATOR AUXILIARY UPGRADES USING LATEST INNOVATIONS AND MODERN EQUIPMENT</strong>&lt;br&gt;Alistair Miller, EDF-Energy, Torness Power Station</td>
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<tr>
<td>16:15</td>
<td><strong>UPGRADING GENERATOR AUXILIARY SYSTEMS-H2</strong>&lt;br&gt;Ion Muyziere, Pressure Systems Engineer, SSE Thermal</td>
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<tr>
<td>16:35</td>
<td><strong>VIBRATION ABSORBERS</strong>&lt;br&gt;Richard Goodfellow, Advisory Engineer, Siemens</td>
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<td>16:50</td>
<td><strong>VISUAL VIBRATION ANALYSIS; NEW TECHNOLOGY TO ENHANCE MACHINERY AVAILABILITY AND RELIABILITY SERVICES</strong>&lt;br&gt;Tony Croucher, Quartzelc</td>
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<td>17:15</td>
<td><strong>QUESTION AND ANSWER SESSION</strong></td>
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<td>17:25</td>
<td><strong>CLOSER OF CONFERENCE DAY ONE</strong></td>
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<tr>
<td>18:30</td>
<td><strong>NETWORKING DRINKS RECEPTION</strong></td>
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<td>19:30</td>
<td><strong>NETWORKING DINNER</strong></td>
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**THURSDAY 19 MARCH 2020**

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<th>Time</th>
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<tbody>
<tr>
<td>08:30</td>
<td><strong>REGISTRATION AND REFRESHMENTS</strong></td>
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<tr>
<td>09:00</td>
<td><strong>CHAIR’S OPENING REMARKS</strong></td>
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<tr>
<td>09:10</td>
<td><strong>LOW PRESSURE STEAM TURBINE - LAST STAGE BLADE EROSION SCARRING, NOTCH REMOVAL AND REFURBISHMENTS</strong>&lt;br&gt;Mehran Zanjani, Structural &amp; Flow Analysis Team, Uniper</td>
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<tr>
<td>09:30</td>
<td><strong>STEAM TURBINE RETROFIT AND REPAIR SOLUTIONS</strong></td>
<td>Klaus Helbig, Engineering Manager, GE</td>
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<td>09:50</td>
<td><strong>BOLTING MATERIALS FOR USE AND SERVICEABILITY AT ELEVATED TEMPERATURES</strong>&lt;br&gt;Jan Mander, Technical Sales Engineer, Nord-Lock Group and Steve Brown, Product Manager, Bolt Tensioning Systems, Nord Lock</td>
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<td>10:10</td>
<td><strong>STEAM TURBINE VALVE OVERHAUL AND MAINTENANCE FOR UNITS OPERATING FLEXIBLY</strong>&lt;br&gt;David Wallis, Lead Steam Turbine Engineer, RWE Generation UK</td>
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<td>10:30</td>
<td><strong>QUESTION AND ANSWER SESSION</strong></td>
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<td>10:45</td>
<td><strong>NETWORKING REFRESHMENT BREAK</strong></td>
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<tr>
<td>11:15</td>
<td><strong>OPERATIONAL TESTING AND MAINTENANCE OF STEAM TURBINE PROTECTION DEVICES</strong>&lt;br&gt;Gareth Hughes, Senior Consultant Engineer, FM Global</td>
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<td>11:35</td>
<td><strong>OPERATIONAL FLEXIBILITY</strong></td>
<td>James Stagnitti, Steam Turbine System Integration Leader, GE</td>
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<tr>
<td>11:55</td>
<td><strong>STEAM TURBINE OPERATIONS - ENHANCED PLANT FLEXIBILITY</strong>&lt;br&gt;Tobias Gabl-Zimmek, Steam Turbine Automation Engineer, Siemens</td>
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<td>12:15</td>
<td><strong>SYSTEMS INERTIA BENEFITS</strong></td>
<td>Peter Woodley, RWE Generation UK</td>
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<td>12:35</td>
<td><strong>QUESTION AND ANSWER SESSION</strong></td>
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<td>12:40</td>
<td><strong>NETWORKING LUNCH</strong></td>
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<tr>
<td>13:50</td>
<td><strong>OPTIMIZED BOLTING STRATEGIES FOR HIGH TORQUE STEAM TURBINE COUPLINGS</strong>&lt;br&gt;Jared Kitchen, Product Development Engineer, Pilgrim International Ltd.</td>
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<td>14:10</td>
<td><strong>REVERSIBLE TEMPER EMBRITTLEMENT OF STEAM TURBINE CASING FASTENERS</strong>&lt;br&gt;Adam Storey, Power Plant Metallurgist, RWE Generation UK</td>
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For the most up-to-date and detailed programme for the event, please visit: www.imeche.org/stug

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.
14:30  A NEW HIGH-STRENGTH STEEL FOR LOW PRESSURE STEAM TURBINE END-STAGE BLADES
Doug Gass, Material Inspection and Test Engineering Manager, Siemens

14:50  ANALYSIS OF WELD CRACK OF MAIN STEAM GOVERNING VALVE
SARAKORN SUKAVIRIYA, ELECTRICITY GENERATING AUTHORITY OF THAILAND

15:10  QUESTION AND ANSWER SESSION

15:25  NETWORKING REFRESHMENT BREAK

15:50  TURBINE GENERATOR MATERIALS

15:50  BLADE HEALTH MONITORING
Christian Siewert, Informatics Specialist Automation, Siemens

16:00  BENEFITS AND LIMITS OF STATOR WINDING PARTIAL DISCHARGE TESTING
Howard Sedding, Qualitrol-Iris Power

16:30  GENERATOR STATOR FOULING CASE STUDY
Lee Beresford, Condition Monitoring Team Leader, Uniper

17:50  QUESTION AND ANSWER SESSION

17:05  CHAIR'S CLOSING REMARKS

17:15  END OF CONFERENCE

EV Batteries campaign image saved as “shutterstock_616064939” in L:\KT\Studio\Working\CON6885_STUG_2020\02_Images
JOIN US AT THE FOREFRONT OF MECHANICAL ENGINEERING.

Featured Events

26/03
26 March 2020
One Birdcage Walk, London

**ASSET MANAGEMENT: RELIABILITY FOR A DIGITAL AGE**

Leveraging asset history and operational data can inform better decisions, enabling you to reduce downtime and expenditure. However, given the potentially disruptive nature of this technology, it is imperative that these digital capabilities are aligned with your mechanical engineering requirements.

Join this seminar to learn how to successfully integrate advanced digital systems and deliver real value for asset owners and operators.

**KEY SPEAKERS INCLUDE:**
- Rhys Davies, Chair, ISO Committee TC251 Asset Management, International Organisation for Standardisation
- Tim Flower, Professional Head of Maintenance, Network Rail
- Harriet Green, Principal Mechanical Engineer – Technical Integrity, Equinor
- Leo Pickford, Strategic Capability Executive, Rolls-Royce

[www.imeche.org/assetmanagement](http://www.imeche.org/assetmanagement)

1-3/04
1-3 April 2020
University of Warwick, Coventry

**ESSENTIAL MANAGEMENT SKILLS 2020**

What does it take to be a truly effective manager? Gain the skills and knowledge needed at Essential Management Skills 2020!

Engineering managers need to offer more than just technical excellence. This three-day conference will equip today’s engineers with the essential management skills required for success within line and project management roles. Attend this event to improve your ability to manage yourself, projects and teams. You can also take the opportunity to gain a Level 3 Award in First Line Management, awarded by the Chartered Management Institute (CMI).

[www.imeche.org/ems](http://www.imeche.org/ems)

8-10 September 2020
Liverpool

**VIBRATIONS IN ROTATING MACHINERY - VIRM 12**

Since 1976, Vibrations in Rotating Machinery conferences have successfully brought industry and academia together to advance state-of-the-art research in dynamics of rotating machinery.

Join industrial and academic experts from different countries to discuss the challenges in rotordynamics, rub, whirl, instability and more. This is your chance to present your work, hear from contemporary leading researchers, exchange ideas from the field and updates on the latest research findings.

Whether you are from industry or academia, involved in transport, power, process, medical engineering, manufacturing or construction, VIRM 12 will provide the latest R&D and useful guidance.

[www.imeche.org/virm](http://www.imeche.org/virm)

**VIEW THE FULL LIST OF MARKET LEADING EVENTS:**
**WWW.IMECHE.ORG/EVENTS**

Online: [www.imeche.org/events](http://www.imeche.org/events)  Email: [eventenquiries@imeche.org](mailto:eventenquiries@imeche.org)  Phone: +44 (0)20 7973 1251
WHO SHOULD ATTEND?

All engineers and professionals who are directly and indirectly involved with these technologies should attend, including:

- Commissioning Engineer
- Design Engineer
- Development Engineer
- Dynamics and Condition Monitoring Engineer
- Electrical Engineer
- Electrical Machines Engineer
- Field Service Engineer
- Generator Engineer
- Maintenance Engineer
- Mechanical Engineer
- Performance & Test Engineer
- Planning Coordinator
- Plant Manager
- Plant Engineer
- Plant Operations Engineer
- Power Systems Engineer
- Process Engineer
- Product Engineer
- Project Engineer
- Rotating Machines Engineer
- Safety Engineer
- Sales Engineer
- Structural Integrity Engineer
- Systems Engineer
- Turbine Control Systems Engineer
- Turbine Engineer

FEEDBACK FROM PREVIOUS CONFERENCES IN THIS SERIES:

“EXCELLENT NETWORKING EVENT WHICH SHOULD NOT BE MISSED BY UK CUSTOMERS AND SUPPLIERS”
Siemens

“ONCE YOU HAVE ATTENDED THIS EVENT IT IS EASY TO BECOME HOOKED. IT’S PACKED WITH GREAT INFORMATIVE INFORMATION AND INTERESTING PEOPLE FROM AROUND THE WORLD”
Engineering & Turbine Consultancy Ltd

“I HAVE ATTENDED SEVERAL OF THESE STEAM TURBINE AND GENERATOR USER GROUPS IN THE PAST SINCE THEY STARTED AND THE TREND IS THAT THEY HAVE BEEN PROGRESSIVELY GETTING BETTER AND BETTER”
UK Atomic Energy Authority

“EXCELLENT EVENT, MANAGES TO PACK IN FRESH AND RELEVANT CONTENT EVERY YEAR”
EDF

“STUG HOSTS INTERESTING TALKS, GIVEN BY PEOPLE WITH TRUE PASSION FOR THEIR SUBJECT AREA”
Toshiba International (Europe) Ltd

“AN EXCELLENT KNOWLEDGE SHARING AND NETWORKING EVENT FOR INDUSTRY PROFESSIONALS”
RWE Generation UKE

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TERMS AND CONDITIONS APPLY
HOW TO BOOK YOUR PLACE

FEES AND CHARGES

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

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<tr>
<td>Member, Institution of Mechanical Engineers / Supporting Organisation</td>
<td>£650 + VAT = £780</td>
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<tr>
<td>Non-member</td>
<td>£530 + VAT = £696</td>
</tr>
<tr>
<td>Full-time Student/Retired</td>
<td>£230 + VAT = £276</td>
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</table>

THREE WAYS TO BOOK

1. online: www.imeche.org/stug
2. email: eventenquiries@imeche.org
3. phone: +44 (0)20 7973 1251

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

CONDITIONS OF BOOKING

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, in dietary or access, on the relevant section of the booking form or email eventenquiries@imeche.org

CANCELLATION

For a refund (minus £25+VAT admin charge), cancellations must be received at least 30 days prior to the 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. The Institution is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

LIABILITY

The organisers do not accept liability for any injuries or loss of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

CONFERENCE VENUE

Manchester United Football Club
Sir Matt Busby Way
Old Trafford
Manchester
M16 0RA

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GET INVOLVED

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• Improve perception of your brand
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FORWARD THINKING

We are the market leader among professional engineering bodies. We’ve been supporting engineers since 1847 and have 121,000 members in over 140 countries, working in the world’s most dynamic and important industries. Our comprehensive events programme brings you the latest research and best practice from industry and academia.

OTHER EVENTS TO LOOK FOR

ASSET MANAGEMENT: RELIABILITY FOR A DIGITAL AGE

26 March 2020, London

This year’s seminar is a key opportunity to beat the buzzwords and understand the true potential for digital twins to meaningfully enhance asset management. Hear from experts with practical experience in the development, implementation and operation of these digital assets.

www.imeche.org/assetmanagement

ESSENTIAL MANAGEMENT SKILLS 2020

1-3 April 2020, Coventry

Specifically designed for engineers, attend this event to improve your ability to manage yourself, projects and teams. Plus, take the opportunity to gain a Level 3 Award in First Line Management, awarded by the Chartered Management Institute (CMI).

www.imeche.org/ems

The Institution of Mechanical Engineers organises over 120 events a year, including free-to-attend lectures as well as conferences, seminars, annual luncheons and dinners. Please visit www.imeche.org/events for the complete list of events.

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