THE TWO-DAY STEAM TURBINE AND GENERATOR USER GROUP 2015 IS THE NEXT IN THIS POPULAR SERIES OF THE INSTITUTION’S POWER GENERATION USER GROUPS.

This event will enable those involved in the management, operation and maintenance of steam turbines and generators to discuss common problems and issues, exchange ideas, identify potential solutions and learn about new developments.

The Institution’s User Groups encourage open debate and problem solving, using informal presentations and discussion forums to promote networking and sharing experiences among the steam turbine generator community.

KEY TOPICS COVERED INCLUDE:

- Plant operation and ownership
- Turbine and generator failures, case studies and repair methods
- Steam turbine technologies
- Generator technologies
- Turbine and generator auxiliary systems and condensers
- Turbine overhauls and life extension
- Generator overhauls and life extension
- Plant condition monitoring and control
- Industrial/CHP/renewables turbine generators
- Steam turbine and generator projects
- Steam turbine last stage blading

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BENEFITS OF ATTENDANCE:

- Learn from real-life case studies illustrating project experience and best practice
- Improve the performance of your plant
- Discover updates on the latest industry developments and technologies
- Hear advice from leading specialists on a wide number of issues
- Understand how to manage and minimise plant risks
# PROGRAMME

## DAY 1
### WEDNESDAY 25 MARCH 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>REGISTRATION AND REFRESHMENTS</td>
</tr>
<tr>
<td>09:00</td>
<td>CHAIR’S WELCOME AND INTRODUCTION</td>
</tr>
</tbody>
</table>

## SESSION 1 - PLANT OPERATION AND OWNERSHIP

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>09:10</td>
<td>KEYNOTE: HIGH LEVEL POWER INDUSTRY INSURANCE</td>
</tr>
<tr>
<td></td>
<td>Don Schubert, Senior Vice President, Marsh Energy Practice</td>
</tr>
<tr>
<td>09:30</td>
<td>POWER PLANT PERFORMANCE ASSESSMENT PROCESS</td>
</tr>
<tr>
<td></td>
<td>Tim Eastwood, Business Development Director, Alstom</td>
</tr>
<tr>
<td>09:50</td>
<td>BLACKBURN MEADOWS RENEWABLE ENERGY PLANT - CHALLENGES DURING CONSTRUCTION AND COMMISSIONING OF THE STEAM TURBINE AND GENERATOR SYSTEMS</td>
</tr>
<tr>
<td></td>
<td>Paul Housley, Steam Turbine Engineer, ETG, EON</td>
</tr>
</tbody>
</table>

### Q&A SESSION

<table>
<thead>
<tr>
<th>Time</th>
<th>Networking Refreshment Break</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:10</td>
<td>Q&amp;A SESSION</td>
</tr>
<tr>
<td>12:40</td>
<td>Q&amp;A SESSION</td>
</tr>
<tr>
<td>11:00</td>
<td>SESSION 2 - PARALLEL SESSIONS</td>
</tr>
<tr>
<td></td>
<td>2A STEAM TURBINE TECHNOLOGIES</td>
</tr>
<tr>
<td></td>
<td>2B GENERATOR TECHNOLOGIES</td>
</tr>
<tr>
<td>11:00</td>
<td>RECENT ADVANCES IN COMBINED CYCLE STEAM TURBINE TECHNOLOGY</td>
</tr>
<tr>
<td></td>
<td>Rainer Quinkertz, Product Manager, Siemens</td>
</tr>
<tr>
<td>11:20</td>
<td>FORCED MISTUNING APPLIED TO FREE-STANDING LAST STAGE BLADES OF THE CP2-1300 MW LOW PRESSURE STEAM TURBINES</td>
</tr>
<tr>
<td></td>
<td>Sébastien Roques, Senior Engineer, EDF</td>
</tr>
<tr>
<td>11:40</td>
<td>LAST STAGE STEAM TURBINE BLADE VIBRATION ASSESSMENT AND DESIGN MODIFICATIONS TO ELIMINATE THE CRITICAL WHEEL RESONANCE</td>
</tr>
<tr>
<td></td>
<td>Mehran Zanjani, Structural Analysis Engineer, ETG, EON</td>
</tr>
<tr>
<td>12:00</td>
<td>STEAM TURBINE LOW PRESSURE LAST-STAGE BLADE ROOT NON-DESTRUCTIVE TESTING INSPECTIONS – PRACTICAL EXPERIENCE</td>
</tr>
<tr>
<td></td>
<td>Paul Crowther, Group Head - Inspection Management, RWE npower</td>
</tr>
<tr>
<td>12:20</td>
<td>Q&amp;A SESSION</td>
</tr>
<tr>
<td>12:40</td>
<td>NETWORKING LUNCH</td>
</tr>
<tr>
<td></td>
<td>LATEST GENERATOR TECHNICAL DEVELOPMENTS</td>
</tr>
<tr>
<td></td>
<td>Andrew Crosby, Section Head, Generator Engineering</td>
</tr>
<tr>
<td></td>
<td>Scott Robinson, Generator Frame Owner, Siemens</td>
</tr>
<tr>
<td>11:20</td>
<td>SHAFT-LINE MODELS AND TORSIONAL NATURAL FREQUENCIES FOR A GRID SUB-SYNCHRONOUS RESONANCE STUDY</td>
</tr>
<tr>
<td></td>
<td>Nik Zelenovic, Principal Engineer, Alstom</td>
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<tr>
<td>11:40</td>
<td>A CASE STUDY OF RETAINING RING CRACKS FROM GRID TRANSIENTS</td>
</tr>
<tr>
<td></td>
<td>Neil Kilpatrick, Principal Expert Engineer, Siemens</td>
</tr>
<tr>
<td>12:00</td>
<td>CONVERSION OF ROTATING EXCITATION SYSTEMS TO STATIC</td>
</tr>
<tr>
<td></td>
<td>Doug Cope, Electrical Engineer, Excitation and Engineering Services</td>
</tr>
</tbody>
</table>
SESSION 3 - TURBINE DEGRADATION, FAILURES AND CASE STUDIES

13:40 STRATEGIC SPARES INVESTMENT
Joe Eckersley, Strategic Spares Manager, EDF Energy

14:00 UNDERSTANDING VARNISH BUILD-UP MECHANISMS ON STEAM TURBINE AND GENERATOR LUBRICANTS
Jo Ameye, European Sales and Marketing Manager, Fluitec

14:20 IMPORTANT ASPECTS OF LP TURBINE OPERATION
John Gilroy, Senior Design Engineer, Siemens

14:40 IRONBRIDGE LP TURBINE LAST ROW BLADE FAILURE
Ben Morrell, Rotating Plant Engineer, ETG, EON

15:00 Q&A SESSION

15:20 NETWORKING REFRESHMENT BREAK

SESSION 4 - GENERATOR DEGRADATION, FAILURES AND CASE STUDIES

15:50 TOP TEN GENERATOR FAILURES AND WHAT YOU CAN DO TO PREVENT THEM
Bill Moore, Director, National Electric Coil

16:10 IMPACT OF NEW FLEXIBLE LOAD OPERATION AND GRID CODES ON TURBINE GENERATORS FOCUSING ON STATOR END WINDINGS
Thorsten Krol, Generator Business Development and Marketing, Siemens

16:30 GENERATOR FAULTS AND FAILURES - UTILITY/INSURERS' PERSPECTIVE
Don Shubert, Senior Vice President, Marsh Energy Practice

16:50 Q&A SESSION

17:10 CHAIR'S CLOSING REMARKS

17:20 CLOSE OF DAY ONE

19:00 NETWORKING DINNER

DAY 2

THURSDAY 26 MARCH 2015

08:30 REGISTRATION AND REFRESHMENTS

09:00 CHAIR'S OPENING REMARKS

SESSION 5 - MATERIALS AND INTEGRITY ANALYSIS

09:10 MATERIALS FOR LARGE STEAM TURBINES
Geoff Horseman, Chief Turbine Engineer, Torsten-Ulf Kern, Principal Engineer Materials, Siemens
Doug Gass, Section Manager Materials and Performance Testing, Siemens

09:30 APPLICATION OF A NEW FRACTURE - MECHANICS BASED CREEP - FATIGUE PROCEDURE FOR STEAM TURBINE ROTORS
Henning Almstedt, Principal Expert, Siemens
Shilun Sheng, Advisory Expert, Siemens

09:50 THE INTERACTION BETWEEN SHOT PEENING AND EROSION NOTCHES ON LAST STAGE BLADE AEROFOIL SECTIONS: STRESS DISTRIBUTIONS AND FATIGUE RESISTANCE
Katherine Soady, Structural Analysis Engineer, ETG, EON

10:10 Q&A SESSION

10:20 NETWORKING REFRESHMENT BREAK
SESSION 6 - TURBINE GENERATOR AUXILIARY SYSTEMS

11:00 BASIC INTRODUCTION TO STEAM TURBINE GOVERNING REQUIREMENTS
Stuart Rowe, Manager Controls and Auxiliaries, Alstom

11:20 HYDRAULIC CONTROLS AND PROTECTION UPGRADES FOR GEC-ALSTOM
STEAM TURBINES
Wolfgang Warmuth, Technical Sales Manager, Siemens

11:40 MAIN BOILER FEED PUMP TURBINE PIPEWORK REPLACEMENT
Bob Thomson, Project Manager, EDF

12:00 Q&A SESSION

12:20 NETWORKING LUNCH

SESSION 7 - PARALLEL SESSION

<table>
<thead>
<tr>
<th>7A TURBINE OVERHAULS AND LIFE EXTENSION</th>
<th>7B GENERATOR INTEGRITY MANAGEMENT</th>
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</thead>
<tbody>
<tr>
<td>13:20 EVENT RECOVERY – MANAGING AN UNPLANNED SHUTDOWN</td>
<td>THE INFLUENCE OF AUXILIARY SYSTEMS ON MAIN GENERATOR AVAILABILITY AND RELIABILITY</td>
</tr>
<tr>
<td>August Pandey, Turbine and Ancillaries Plant Manager, EDF</td>
<td>David Thompson, Plant Check-Up Manager, Alstom</td>
</tr>
<tr>
<td>13:40 DRAX IP RETROFIT - IDEA CONCEPT TO PROJECT INSTALLATION</td>
<td>OFF-LINE PARTIAL DISCHARGE MEASUREMENTS ON LARGE GENERATION PLANT</td>
</tr>
<tr>
<td>Richard Armstrong, Site Manager, Siemens</td>
<td>Chris Burtle, Senior Electrical Diagnostics Engineer, Siemens</td>
</tr>
<tr>
<td>Mark Simmonds, Turbine Engineering, Drax Power</td>
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</tr>
<tr>
<td>14:00 OLKILUOTO LP TURBINE EXHAUST PERFORMANCE ENHANCEMENT PROGRAMME</td>
<td>ABNORMAL OPERATION OF GENERATORS</td>
</tr>
<tr>
<td>Phil Hensley, Engineering Technology Manager, Alstom</td>
<td>Steve Mitchell, Lead Electrical Machines Engineer, RWE Generation UK</td>
</tr>
</tbody>
</table>

14:20 Q&A SESSION

14:40 NETWORKING REFRESHMENT BREAK

SESSION 8 - INSPECTION AND MONITORING

15:10 SMART SIGNAL TECHNOLOGY: OVERVIEW AND USE BY SSE MONITORING CENTRE
John Twiddle, Equipment Performance Centre Manager, SSE
Mark Bate, Solution Consultant, Smart Signal

15:30 VIBRATION MEASUREMENTS OF TURBOGENERATOR STATOR END-WINDINGS
Peter Arend, Principal Engineer, Alstom

15:50 EXPERIENCE WITH ADVANCED NDT METHODS IN TURBINE FIELD SERVICE
Hans Rauchenbach, Head of NDT Laboratory, Siemens
Michael Opheys, NDT Engineer, Siemens

16:10 Q&A SESSION

16:30 CLOSING REMARKS

16:40 CLOSE OF USER GROUP

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- Matthew Patch, SSE Engineering Centre
- Ian Rowntree, E.ON New Build and Technology Limited
- Richard Stewart, EDF Energy
- Dave Wallis, Rendcomb Consultancy Limited
SPEAKERS AND CONTRIBUTORS A-Z

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PRINCIPAL EXPERT, SIEMENS

JO AMEYE
EUROPEAN SALES AND MARKETING MANAGER, FLUITEC

PETER AREND
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NEIL KILPATRICK
PRINCIPAL EXPERT ENGINEER, SIEMENS

THORSTEN KROL
GENERATOR BUSINESS DEVELOPMENT AND MARKETING, SIEMENS

STEVE MITCHELL
LEAD ELECTRICAL MACHINES ENGINEER, RWE GENERATION UK

BILL MOORE
DIRECTOR, NATIONAL ELECTRIC COIL

BEN MORRELL
ROTATING PLANT ENGINEER, E.ON

MICHAEL OPHEYS
NDT ENGINEER, SIEMENS

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GENERATOR FRAME OWNER, SIEMENS

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Registration fees include entry to the sessions, refreshments and lunch.

All prices include accommodation for the night of 25 March at the University of Warwick. If you require additional accommodation please contact us at eventenquiries@imeche.org

<table>
<thead>
<tr>
<th>Member, Institution of Mechanical Engineers</th>
<th>Member, supporting organisation</th>
<th>Non-member</th>
<th>Student/retired</th>
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<tr>
<td>£489.50+VAT</td>
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