European Steam Turbine Users Conference
Ensure Flexible, Efficient and Robust Operations

International Conference: 8-9 February, 2016, Birmingham, UK

Register online at: www.tacook.com/stu

An open and interactive user forum designed to tackle strategic and technical challenges for steam turbine users. Hear case studies and expert presentations on:

» Fleet modernisation and retrofit projects
» Reliable approaches for condition assessment and life extension of steam turbine rotor blades
» Steam turbine fleet integrity assessments
» Blade vibration monitoring for low pressure steam turbine last stage blades
» Managing operational risk
» Contracting and the OEM
» Technical, operational and risk considerations for ageing assets
» Insurance industry guidance and risk appetite
» Outage management best practice

Hear Case Studies and Technical Presentations From:
Advituro
Drax
E.ON
EDF Energy
EnBW
Frazer-Nash
Marsh Risk Consulting
Ruwais Power Company
Scottish Power
Scottish and Southern Energy
T.A. Cook Consultants
Thank you for downloading the brochure for the European Steam Turbine Users Conference.

This open and interactive user forum is designed to tackle strategic and technical challenges for all steam turbine users. Regardless of your industry – and specific turbine design, technology, complexity, application, operating conditions, and size – you will find strategic content and real life user experiences that will allow you to drive continued reliable turbine operations.

In an evolving operational, commercial and regulatory environment, steam turbine fleets face new flexibility and reliability challenges. Ageing steam turbines, originally designed for baseload operation, must adapt to those challenges while continuing to maximise performance and lifetime profitability.

With a core focus on how operators can maintain flexible, efficient, and robust operations, this event has been intended to bring together the international steam turbine community – from owners and operators, to OEMs and third party service providers – for open discussion, benchmarking, information exchange, and networking.

The event will maximise the opportunities for interaction and dialogue via user focused panel discussions that will allow you to have your questions answered by the experts and take away key lessons learned. Also take part in our pre-conference workshop on “Reliable Approaches for Condition Assessment and Life Extension of Steam Turbine Rotor Blades.”

With our networking evening event and a vendor exhibition, you will have plenty of opportunities to meet like-minded colleagues, make new connections and share your thoughts from the day’s conference in a relaxed and friendly atmosphere.

Thomas Cook
Managing Director,
T.A. Cook Conferences

Top 5 Reasons to Attend

1. Hear real experiences from steam turbine operators from a range of industries. Via real-life operator case studies and expert presentations, you will hear about lessons learned, challenges overcome and successes that you can implement within your own operations.

2. Learn, share, and discuss. With presentations focused on strategic issues and challenges facing all steam turbine users, you will have the opportunity to debate all the issues via in panel sessions, Q&A with speakers, and plentiful networking.


4. Undiluted face-to-face interaction with industry leaders and experts. With an agenda built for interaction, this is your chance to meet with like-minded peers, share best practice and take away key learnings.

5. Discover the latest services and offerings available. With a co-located exhibition, this is your chance to make valuable new contacts and learn about services available from OEMs and third party maintenance service providers.
This pre-conference workshop will give you an opportunity to take part in open discussion with peers and hear from a seasoned expert in steam turbine and generator operations and performance. Hear real life case studies during both low cycle and high cycle fatigue and assess root cause analysis data.

With all power plant operators working hard to identify areas for performance improvement and cost reduction, this is an ideal opportunity to discover real solutions that you can put in place to ensure your steam turbine runs through to its next outage without any unforeseen problems. Key topics for discussion will include:

- What’s your current maintenance profile?
- Possibilities of SMART conditional assessment
- Example of L-0 blade monitoring

The workshop will be made up of expert presentations, followed by group discussion. The mix of theory and discussion will give you the opportunity to learn and benchmark with your peers.

**Workshop Leader:**
**Ronald Janzee, Senior Expert Vibrations and Steam Turbines, Advituro**

Ronald Janzee started almost 30 years ago in the power industry and has collected experiences in operation of power plants and condition monitoring of power plants, both thermodynamically as mechanically. He is very experienced with vibration analysis and balancing of all sorts of rotors. Ronald is a certified vibration analyst according to ISO 18436-2 Category 3. For the past year, he has worked as an independent inspector for fact finding and root cause analysis of steam turbines, witness inspections of new steam turbine parts, vibrations issues and high and low speed balancing.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09:30</td>
<td>Optional Pre-Conference Technical Workshop:</td>
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<tr>
<td>13:00</td>
<td>Reliable Approaches for Condition Assessment and Life Extension of Steam Turbine Rotor Blades</td>
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<tr>
<td>13:00</td>
<td>Registration and Networking Lunch</td>
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<tr>
<td>13:30</td>
<td>Chairman’s Opening Remarks</td>
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<tr>
<td></td>
<td>Geoff King, Consultant and Former Senior Power Plant Manager</td>
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<tr>
<td>13:45</td>
<td>Steam Turbine Fleet Modernization over the last 10 Years</td>
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<td>- Experience of 8 retrofit projects, 6 are executed, in the range of 100 to 800 MW</td>
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<td>- Motivation</td>
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<td>- Approach</td>
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<td>- Technical solutions</td>
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<td>- Challenges</td>
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<td>- Results</td>
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<td></td>
<td>Bernd Abröll, Head of Mechanical Engineering, EnBW</td>
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<tr>
<td>14:30</td>
<td>Vibration Case Studies of Steam Turbine Sets</td>
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<td>- Introduction to operational environment</td>
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<td>- Case studies of:</td>
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<td>- Shaft and bearing vibrations</td>
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<td>- Stator endwinding vibrations</td>
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<td>Dr.-Ing. Matthias Humer, Head of Mechanical Construction and Engineering, Global Unit Generation, E.ON, and Guest Lecturer at the TU Dortmund, Germany</td>
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<tr>
<td>15:15</td>
<td>Afternoon Refreshments</td>
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<tr>
<td>16:00</td>
<td>Understanding the Integrity of a Fleet of IP and LP Steam Turbines</td>
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<td>- Overview of program undertaken to understand the integrity of a fleet of IP and LP Steam Turbines that had been in operation for approaching 50 years</td>
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<td>- Initial efforts undertaken to understand the operating history and assess the risks</td>
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<td>- Resulting assessments undertaken to establish the remaining life</td>
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<td>- Challenges posed by operating older steam turbines</td>
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<td>- Outcomes of the program</td>
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<td></td>
<td>Andy Morris, Chief Mechanical Officer, EDF Energy</td>
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<td>Kieran Chalk, Consultant, Frazer Nash</td>
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<tr>
<td>16:45</td>
<td>Closing User Panel: Putting in Place an Effective and Efficient O&amp;M Plan to Ensure Steam Turbine Maintenance Interval Extension</td>
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<td>With steam turbine units under increasing demand to operate flexibly and increase the number of starts as the market requires, hear how international peers have put in place a comprehensive O&amp;M plan in order to establish longer intervals between scheduled outages. Discover the techniques in place, warming procedures, infrastructure for monitoring, processes, impact of new technologies on scheduled overhaul intervals, and considerations to be taken into account.</td>
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<tr>
<td></td>
<td>Dr.-Ing. Matthias Humer, Head of Mechanical Construction and Engineering, Global Unit Generation, E.ON</td>
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<td>Seth Muthuruman, Condition Monitoring Engineer, Scottish &amp; Southern Energy, UK</td>
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<td>Anjan van der Stigchel, Executive Managing Director, Ruwais Power Company, UAE</td>
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<tr>
<td>17:30</td>
<td>Chairman’s Closing Remarks and Depart for Evening Networking Event</td>
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# Agenda Day 2

**Tuesday 9th February, 2016**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
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<tbody>
<tr>
<td>09:00</td>
<td><strong>Chairman’s Opening Remarks</strong>&lt;br&gt;Geoff King, Consultant and Former Senior Power Plant Manager</td>
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<tr>
<td>09:15</td>
<td><strong>Managing Operational Risk</strong>&lt;br&gt;» General introduction to Shuweihat 2 CCGT&lt;br&gt;» What kind of risks are CCGT's exposed to and why should we those manage risks?&lt;br&gt;» How to manage risks - pitfalls, do's/don'ts, processes, and systems&lt;br&gt;» Benefits of a risk management process, example of managing risk regarding a blade failure in a steam turbine&lt;br&gt;Arjan van der Stigchel, Executive Managing Director, Ruwais Power Company (Shuweihat 2), UAE</td>
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<td>10:00</td>
<td><strong>Blade Vibration Monitoring for Low Pressure Steam Turbine Last Stage Blades</strong>&lt;br&gt;» Blade vibration monitoring system&lt;br&gt;» Crack growth calculator&lt;br&gt;» Blade de-tuning&lt;br&gt;» SSE’s approach&lt;br&gt;Seth Muthuruman, Condition Monitoring Engineer, Scottish &amp; Southern Energy, UK</td>
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<tr>
<td>10:45</td>
<td><strong>Morning Refreshments</strong></td>
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<tr>
<td>11:30</td>
<td><strong>Insurance and Risk Considerations for Steam Turbine Operators</strong>&lt;br&gt;» Latest insurance industry guidance, expectations and risk appetite&lt;br&gt;» Recommendations on OEM vs non OEM maintenance planning and execution - from lube oil analysis, to high energy piping, vibration monitoring, and overhauls&lt;br&gt;» Insurers view on flexible operations and mothballing.&lt;br&gt;Mark Shipley, Senior Consultant, Marsh Risk Consulting</td>
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<td>12:15</td>
<td><strong>User Panel Discussion: Contracting and the OEM</strong>&lt;br&gt;Power plant operators in the current market must carefully scrutinize their costs and risk exposure. With options available for OEM, third party and self-performance of steam turbine O&amp;M, take part in this panel discussion in order to share experiences with peers and learn from experienced users. Hear different approaches and examine real life experiences and pros and cons for external contracting strategies.&lt;br&gt;Luke Varley, Lead Engineer Turbine Team, Drax, UK&lt;br&gt;Stuart Walker, Engineering Manager, Scottish Power, UK&lt;br&gt;Dr.-Ing. Matthias Humer, Head of Mechanical Construction &amp; Engineering, Global Unit Generation, E.ON</td>
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<td>13:00</td>
<td><strong>Networking Lunch</strong></td>
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<td>14:00</td>
<td><strong>Management of Ageing Assets – Technical and Risk Related Considerations</strong>&lt;br&gt;» Operational context – ageing steam turbine fleet, coupled with increased operating factors and demands for flexibility&lt;br&gt;» Asset integrity management&lt;br&gt;» How increased demands are impacting O&amp;M and performance&lt;br&gt;» Risk management&lt;br&gt;» Re-sale value&lt;br&gt;Stuart Walker, Engineering Manager, Scottish Power, UK</td>
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<tr>
<td>14:45</td>
<td><strong>Outage Management Best Practice and Guidance</strong>&lt;br&gt;» The importance of robust planning and scheduling to ensure successful turbine outage execution&lt;br&gt;» Effectively embedding contractors into the outage process&lt;br&gt;» Industry case studies&lt;br&gt;David Woods, Senior Manager, T.A. Cook Consultants</td>
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<tr>
<td>15:30</td>
<td><strong>Steam Turbine Technology Advances and Developments</strong>&lt;br&gt;» Update on latest technology and innovation&lt;br&gt;» Impact of new flexible load requirements&lt;br&gt;» O&amp;M guidance&lt;br&gt;Speaker to be Confirmed</td>
</tr>
<tr>
<td>16:15</td>
<td><strong>Chairman’s Closing Remarks and Farewell</strong></td>
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The IGTC Power Plant Technical Forums is a non-commercial, technical forum site that focuses on connecting industry professionals who are responsible for the service, maintenance and reliability of steam, gas and hydraulic turbines, electric generators as well as their respective systems and auxiliaries. The forum is members-only and organized to facilitate access to specialized technical content and encourage professional interaction and mentoring between plant management, engineers and industry academics. To qualify for the free membership, an individual must be a working power industry professional. At this time, technical categories address both fossil and hydro generation. New categories and sub-categories are added based on industry-critical technical issues and mentoring needs. The site also features a monthly Round Table discussion on timely technical and maintenance concerns, and a resource center that includes a searchable community library. Members are encouraged to participate with online postings in the IGTC Forum, Round Table and Library.

For more information please visit: www.generatortechnicalforum.org

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European Steam Turbine Users Conference
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Maple House is located in Birmingham City Centre on Corporation Street; overlooking Old Square and just minutes from New Street, Snow Hill and Moor Street stations. The venue is also a short walk away from the famous Bullring Shopping area and the city’s excellent bars and restaurants. Parking is also available at a number of NCP car parks locally.

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