20th International Conference on Water Chemistry of Nuclear Reactor Systems

The Grand Brighton Hotel, Brighton, UK
2–7th October 2016

CONFERENCE PROGRAMME
Dow combines the power of science and technology to help address many of the world’s most challenging problems. Together, the elements of science and the human element can solve anything.
Contents

Sponsor list ........................................................................................................................................................................................................4
NPC 2016 Chair’s Welcome .............................................................................................................................................................................6
International Advisory Members ...................................................................................................................................................................8
NPC-2016 Organising Committee ..................................................................................................................................................................9
General Information .......................................................................................................................................................................................10
Timetable .........................................................................................................................................................................................................12
Programme ......................................................................................................................................................................................................14
List of Posters .................................................................................................................................................................................................18
Technical Tour ..................................................................................................................................................................................................24
Things to do in Brighton .................................................................................................................................................................................25
Sponsor list

GOLD SPONSORS

SILVER SPONSORS

BRONZE SPONSORS

Conference Reception at British Airways i360 sponsored by

Exhibitors

Supporting Organisations
20th International Conference on Water Chemistry of Nuclear Reactor Systems

The Grand Brighton Hotel, Brighton, UK
OCTOBER 2 – 7, 2016

PROGRAMME
NPC 2016 Chair’s Welcome

On behalf of the Nuclear Institute and the Conference Organising Committee, it is my great pleasure to welcome you to Brighton and to the 20th International Conference on Water Chemistry in Nuclear Reactor Systems, NPC 2016, and the 11th Specialist Workshop on Radiation Chemistry and Electrochemistry in the Nuclear Fuel Cycle.

The NPC Conference Series has a long association with the UK. In 1977, the first International Conference on Water Chemistry in Nuclear Reactor Systems was held in Bournemouth, UK, and the Nuclear Plant Chemistry Conference series was born. Over the following twenty-three years and eleven conferences a further seven would be held in Bournemouth. Whilst some still fondly remember the NPC Conferences as the ‘Bournemouth Conferences’, they are now in their rightful place as a truly international conference series, having been hosted in Japan, France, USA, Germany, Republic of Korea, Canada and the UK.

The Nuclear Plant Chemistry conferences have become the benchmark international conference series for nuclear plant chemistry issues, with a strong tradition for bringing together operators, scientists, researchers, suppliers, regulators and academics to share operational challenges, regulatory strategies and R&D developments; all to help improve the contribution of chemistry to the performance of operating nuclear reactors around the world.

During the era of the ‘Bournemouth Conferences’, the nuclear industry in the UK was strong and we were looking forward to completion of construction of the first water cooled reactor in the UK, Sizewell B in Suffolk. However, by the early 2000’s, the outlook for nuclear in the UK was much less clear. In 2002 British Energy, the dominant nuclear power generator in the UK, effectively went bankrupt by having to request assistance from UK Government to meet its financial obligations. A year later in 2003 the UK Government published its Energy White Paper, in which there was no support for new nuclear build. As a result of this climate of uncertainty, it has been our great regret that the UK was not able to offer to host an NPC Conference for many years since the last Bournemouth Conference in 2000.

And so it was with great pride and some relief that the UK was able to successfully bid to host the NPC Conference in 2016. The UK nuclear industry has now returned to a position of value and confidence. A number of new build projects are being progressed in the UK, including for both PWR and BWR reactor designs. Very recently, the UK government announced its final approval for the construction of the new nuclear plant at Hinkley Point C in Somerset. Meanwhile, Sizewell B has operated successfully with very high levels of reliability – in 2015 the station achieved a UK nuclear industry record of 100% availability delivering 10.5TWh of electricity, enough to power 2.6m homes for a year. Our Advanced Gas-cooled Reactors (AGRs) are also performing strongly. Earlier this year, one of our AGR reactors, at the Heysham 2 power plant in Lancashire, broke the world record operational run for a nuclear reactor of 894 days, the record previously held by one of the Pickering CANDU® reactors in Canada. Hopefully by the time you are reading this, this reactor will have continued to operate until its scheduled statutory outage, which will have taken its record breaking run to around 940 days of continuous operation. At a time
when work progresses on Generation IV nuclear power plant design concepts, it is of real value to the international community that the UK AGRs, operating their primary coolants to \( \sim 650^\circ\text{C} \), have now between them completed nearly three million operating hours, each at around 500MWe capacity.

There are many people and organisations who have helped make NPC 2016 a reality and I would like to thank them all. To name a few, I am very much indebted to the support of the Nuclear Institute, the NPC 2016 Conference Organising Committee, our sponsors and partners, and the international NPC community.

As always we have delegates from all over the world with a wide variety of interesting and revealing experiences to share. Please take the time to visit our exhibitor stands and look through the posters. The NPC poster session has become a very important part of the NPC conference experience, and we expect to have over 100 posters on display.

We hope you get the chance to see Brighton and the surrounding area whilst you are with us. Brighton is one of our most popular UK seaside towns with lots of interesting things to see and do. The nearby South Downs are beautiful and form part of one of our National Parks. Even London is within easy reach by train. Our conference team will be able to help with any queries you might have.

We sincerely hope you enjoy your stay and enjoy the Conference.

Andy Rudge
Chair, NPC 2016 Conference Organising Committee
## International Advisory Members

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Maurizio Chocron</td>
<td>CNEA</td>
</tr>
<tr>
<td>Belgium</td>
<td>Raphael Lecocq</td>
<td>LABORELEC</td>
</tr>
<tr>
<td>Brazil</td>
<td>Ubirahy Caldeira da Silva e Souza</td>
<td>Eletrobras Electronuclear</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Katya Minkova</td>
<td>Kozloduy NPP-EAC</td>
</tr>
<tr>
<td>Canada</td>
<td>Derek Lister</td>
<td>University of New Brunswick</td>
</tr>
<tr>
<td>China</td>
<td>Xinqiang Wu</td>
<td>Institute of Metal Research, Chinese Academy of Sciences</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Kateřina Vonková</td>
<td>Nuclear Research Institute, REZ plc</td>
</tr>
<tr>
<td>Finland</td>
<td>Timo Saario</td>
<td>Technical Research Centre of Finland</td>
</tr>
<tr>
<td>France</td>
<td>Jean-Luc Bretelle</td>
<td>Electricité de France</td>
</tr>
<tr>
<td>Germany</td>
<td>Fred Boettcher</td>
<td>EnBW Kernkraft GmbH</td>
</tr>
<tr>
<td>Hungary</td>
<td>Janos Schunk</td>
<td>MVM Paks-2 Ltd.</td>
</tr>
<tr>
<td>India</td>
<td>Dr. B. N. Jagatap</td>
<td>Bhabha Atomic Research Centre</td>
</tr>
<tr>
<td>Japan</td>
<td>Yosuke Katsumura</td>
<td>Japan Radioisotope Association</td>
</tr>
<tr>
<td>Korea</td>
<td>In Hyoung Rhee</td>
<td>Soonchunhyang University</td>
</tr>
<tr>
<td>Romania</td>
<td>Ioana Pirvan</td>
<td>Institute of Nuclear Research</td>
</tr>
<tr>
<td>Russia</td>
<td>Victor Yurmanov</td>
<td>NIKIET</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>Ivan Smiesko</td>
<td>Slovenske Elektrame</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Milan Simoncic</td>
<td>Nuklearna Elektrarna Krsko</td>
</tr>
<tr>
<td>South Africa</td>
<td>Herman Morland</td>
<td>Koeberg Power Station</td>
</tr>
<tr>
<td>Spain</td>
<td>Juan D. Sanchez Zapata</td>
<td>Iberdrola Generacion SAU</td>
</tr>
<tr>
<td>Sweden</td>
<td>Bernt Bengtsson</td>
<td>Vattenfall AB, Ringhals Nuclear Power</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Irene Mailand</td>
<td>AXPO-Beznau</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Tsung-Kuang Yeh</td>
<td>National Tsing Hua University</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Alexander Arkhipenko</td>
<td>National Nuclear Company “Energoatom”</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Andy Rudge</td>
<td>EDF Energy Nuclear Generation</td>
</tr>
<tr>
<td>USA</td>
<td>Keith Fruzzetti</td>
<td>EPRI</td>
</tr>
<tr>
<td>-</td>
<td>Ki-Sig Kang</td>
<td>IAEA</td>
</tr>
</tbody>
</table>
# NPC-2016 Organising Committee

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Andy Rudge</td>
<td>EDF Energy Nuclear Generation</td>
</tr>
<tr>
<td>Vice-chair</td>
<td>Malcolm Pick</td>
<td>Magnox</td>
</tr>
<tr>
<td>Conference Organiser</td>
<td>Madhu Madhavi</td>
<td>Nuclear Institute</td>
</tr>
<tr>
<td>Members</td>
<td>Ian Armson</td>
<td>Rolls Royce</td>
</tr>
<tr>
<td></td>
<td>Brian Connolly</td>
<td>University of Manchester</td>
</tr>
<tr>
<td></td>
<td>Shirley Dickinson</td>
<td>National Nuclear Laboratory</td>
</tr>
<tr>
<td></td>
<td>Chris Eley</td>
<td>EDF Energy Nuclear Generation</td>
</tr>
<tr>
<td></td>
<td>Jeff Glover</td>
<td>Office for Nuclear Regulation</td>
</tr>
<tr>
<td></td>
<td>Simon Pimblott</td>
<td>University of Manchester</td>
</tr>
<tr>
<td></td>
<td>Stephen Preece</td>
<td>EDF Energy Nuclear Generation</td>
</tr>
<tr>
<td></td>
<td>Stephen Price</td>
<td>Magnox</td>
</tr>
<tr>
<td></td>
<td>Kathryn James</td>
<td>Horizon Nuclear Power</td>
</tr>
<tr>
<td></td>
<td>Julie Tully</td>
<td>AMEC Foster Wheeler</td>
</tr>
<tr>
<td></td>
<td>Richard Wain</td>
<td>Rolls Royce</td>
</tr>
</tbody>
</table>
General Information

The International Conference on Water Chemistry of Nuclear Reactor Systems series started as the Bournemouth Conference on Water Chemistry of Nuclear Reactor Systems in the UK in 1977, and has since become a regular feature of the international conference calendar taking place every two years in Asia, Europe or North America. In 2016, the 20th Nuclear Plant Chemistry Conference, NPC 2016, is coming back to the UK after a long absence and will be hosted in the historic coastal resort of Brighton.

The conference provides a forum for engineers and scientists from universities, research institutes, service organisations and utilities to discuss the challenges of water chemistry control and improvement of material integrity in current and future nuclear power plant operation.

This conference will share the latest developments in the chemistry of nuclear power plants, covering technological improvements, research and development and operating experience.

In addition to the traditional topics of chemistry in operating BWR and PWR systems, NPC 2016 will look at chemistry issues for new nuclear power plants and alternative reactor designs.

The conference will also feature the 11th Specialist Workshop on Radiolysis and Electrochemistry on 7th October.

The official language of NPC 2016 will be English.
Date
2–7th October 2016

Venue
The Grand Brighton Hotel
97-99 King’s Road, Brighton,
East Sussex, BN1 2FW
T: +44 (0)1273 224300
F: +44 (0)8712 224 725
E: reception@grandbrighton.co.uk

The Grand Brighton Hotel is an iconic property in a unique city on England’s South Coast. The hotel is located in the heart of the city only a 10 minute walk from Brighton rail station, with direct links to Gatwick and London, and within easy reach of all the hospitality, leisure and entertainment that vibrant Brighton has to offer.

Built in 1854, the Grand Brighton is an historic landmark situated on the Brighton seafront. NPC 2016 will take place in the Grand’s renowned Empress Suite with the conference exhibition taking place in the adjoining Albert Rooms. Delegates will be able to take advantage of a special delegate room rate and enjoy the Brighton Grand’s 5* spa facilities opened as part of a major refurbishment completed in 2013.
## Timetable

### Sunday, 2 October 2016

The opening times for exhibition are as follows:

**Sunday, October 2**: 16:00 – 17:00  
**October 3-6**: 09:00 – 17:00

**Sunday Welcome drinks reception at British Airways i360**: 18:30 – 21:00.  
**NPC-2016 pod flight**: 19:00

### Monday (08:30-17:50)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-10:15</td>
<td>Conference Opening (17:30 – 21:00)</td>
</tr>
<tr>
<td>10:15</td>
<td>Keynote Speakers</td>
</tr>
<tr>
<td>10:50-12:30</td>
<td>First Session on PWR Primary Chemistry</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30-15:10</td>
<td>First Session on BWR Chemistry</td>
</tr>
<tr>
<td>15:10-16:10</td>
<td>Poster break</td>
</tr>
<tr>
<td>16:10-17:50</td>
<td>First Session on Auxiliary Systems</td>
</tr>
</tbody>
</table>

### Tuesday (08:30-17:50)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:35-10:15</td>
<td>Opening Remarks</td>
</tr>
<tr>
<td>10:15</td>
<td>First Session on PWR Secondary Chemistry</td>
</tr>
<tr>
<td>10:50-12:30</td>
<td>Second Session on PWR Primary Chemistry</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30-15:10</td>
<td>Lifetime Management &amp; Plant Ageing</td>
</tr>
<tr>
<td>15:10-16:10</td>
<td>Poster break</td>
</tr>
<tr>
<td>16:10-17:50</td>
<td>Water Chemistry and Fuel</td>
</tr>
<tr>
<td>Time</td>
<td>Wednesday (08:30-17:50)</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>08:35-10:15</td>
<td>Opening Remarks</td>
</tr>
<tr>
<td>08:35-10:15</td>
<td>Second Session on BWR Chemistry</td>
</tr>
<tr>
<td>10:15</td>
<td>Break</td>
</tr>
<tr>
<td>10:50-12:30</td>
<td>Water Chemistry and Radiation Fields</td>
</tr>
<tr>
<td>16:10-17:50</td>
<td>Other Reactors and Accident Management</td>
</tr>
<tr>
<td>19:30</td>
<td>Conference Banquet</td>
</tr>
</tbody>
</table>
Programme

Monday 3rd October

08:30 Conference Opening

Welcome Address: Andy Rudge, Chair, NPC 2016

Inaugural Address: Norman Harrison, Nuclear Institute

<table>
<thead>
<tr>
<th>Session 1: Keynote Speakers (09:00-10:15) Chairs: Mark Scrancher; Ivan Smiesko</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 Michael Paul Redmond  Office for Nuclear Regulation (UK)</td>
</tr>
<tr>
<td>Regulating Chemistry for Nuclear Power Stations in the UK.</td>
</tr>
<tr>
<td>09:25 Daniel Wells  Electric Power Research Institute (USA)</td>
</tr>
<tr>
<td>Chemistry Control to Meet the Demands of Modern Nuclear Power Plant Operation</td>
</tr>
<tr>
<td>09:50 Yosuke Katsumura  Japan Radioisotope Association (Japan)</td>
</tr>
<tr>
<td>Latest activities of the water chemistry group in Japan.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 2: First Session on PWR Primary Chemistry (10:50-12:30) Chair: Jeff Glover</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:50 Arancha Tigeras  EDF SA (France)</td>
</tr>
<tr>
<td>Flamanville 3-EPR Commissioning: Chemistry and Radiochemistry roles and interfaces</td>
</tr>
<tr>
<td>11:15 Andreas Drexler  AREVA GmbH (Germany)</td>
</tr>
<tr>
<td>Chemistry concept for dose rate minimization treatment of new and decontaminated PWRs and PHWRs</td>
</tr>
<tr>
<td>11:40 Keith Fruzzetti  Electric Power Research Institute (USA)</td>
</tr>
<tr>
<td>Evaluation of Potassium Hydroxide for Reactor Coolant pHt Control in Western PWRs</td>
</tr>
<tr>
<td>12:05 Olga Alos Ramos  EDF (France)</td>
</tr>
<tr>
<td>Enhance of Silica Management in French PWR Fleet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 3: First Session on BWR Chemistry (13:30-15:10) Chairs: Jully Tully; Shunsuke Uchida</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:30 Jim Henshaw  National Nuclear Laboratory (UK)</td>
</tr>
<tr>
<td>Material and Activity Transport Modelling in BWRs.</td>
</tr>
<tr>
<td>13:55 Meiya Wang  National Tsing Hua University (Taiwan)</td>
</tr>
<tr>
<td>IGSCC Behavior of Hydrogen Peroxide on the Components of Stainless Steels with Noble Metal Chemical Addition during Power Startup Operation</td>
</tr>
<tr>
<td>14:20 Susan Garcia  EPRI (USA)</td>
</tr>
<tr>
<td>IGSCC Mitigation Monitoring Results at BWR Plants with Noble Metal Treatment</td>
</tr>
<tr>
<td>14:45 Junichi Takagi  Toshiba Corporation and Tokyo Electric Power Company Holdings, Inc. (Japan)</td>
</tr>
<tr>
<td>Advances in TiO2 Injection Technology Development for IGSCC Mitigation under Various Water Chemistry Conditions in BWRs</td>
</tr>
</tbody>
</table>

15:10 POSTER Break

<table>
<thead>
<tr>
<th>Session 4: First Session on Auxiliary Systems (16:10-17:25) Chair: Richard Wain</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:10 Matthias Devlin  Vattenfall AB (Sweden)</td>
</tr>
<tr>
<td>Membrane filtration and investigation of filter fouling mitigation strategies.</td>
</tr>
<tr>
<td>16:35 Chuck Marks  Dominion Engineering, Inc. (USA)</td>
</tr>
<tr>
<td>Chemistry of Cavity Decontamination.</td>
</tr>
<tr>
<td>17:00 Koji Negishi  Toshiba Corporation (Japan)</td>
</tr>
<tr>
<td>Development of the Advanced T-OZON™ for PWR Decommissioning.</td>
</tr>
</tbody>
</table>

17:25 End of Day 1
**Tuesday 4th October**

### Session 5: First Session on PWR Secondary Chemistry (08:35-10:15) Chairs: Brian Connolly; Yosuke Katsumura

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:35</td>
<td>Keith Fruzzetti</td>
<td>Electric Power Research Institute</td>
<td>PWR Secondary Dispersant Operating Experience Update</td>
</tr>
<tr>
<td>09:00</td>
<td>Michael Little</td>
<td>Dominion Engineering, Inc. (USA)</td>
<td>Updated Experience with Steam Generator Secondary Side Deposit Management</td>
</tr>
<tr>
<td>09:25</td>
<td>Marion Roy</td>
<td>CEA, Department of Physico-Chemistry (France)</td>
<td>Fouling of Steam Generator Tubes in Nuclear Power Plants Investigation on the Preventive Effect of Polyacrylic Acid on Iron Oxides Deposition</td>
</tr>
<tr>
<td>09:50</td>
<td>Christophe Goujon</td>
<td>EDF (France)</td>
<td>Fouling of steam generator tubes in nuclear power plants laboratory tests to investigate chemical cleaning impacts on oxides deposition and impurities behaviour</td>
</tr>
</tbody>
</table>

### Session 6: Second Session on PWR Primary Chemistry (10:50-12:30) Chairs: Drew Odell; Do Haeng Hur

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:50</td>
<td>Chuck Marks</td>
<td>Dominion Engineering, Inc. (USA)</td>
<td>Optimization of RCP Operation during PWR Shutdowns</td>
</tr>
<tr>
<td>11:15</td>
<td>Dewey Rochester</td>
<td>ANT International (France)</td>
<td>Theoretical and Practical Aspects on Primary and Secondary Chemistry in PWR/VVER</td>
</tr>
<tr>
<td>11:40</td>
<td>Moëz Benfarah</td>
<td>EDF (France)</td>
<td>Study of PWR Contamination by 110mAg Using Thermochemical Simulation of Silver, Iodine and Silver Iodide Under PWR Coolant Conditions</td>
</tr>
<tr>
<td>12:05</td>
<td>Frédéric Dacquait</td>
<td>CEA (France)</td>
<td>Zinc effect on the primary circuit contamination of a Belgian PWR using the OSCAR V1.3 code</td>
</tr>
</tbody>
</table>

### Session 7: Lifetime Management and Plant Ageing (13:30-14:45) Chairs: Keith Fruzzetti; Jean-Luc Bretelle

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:30</td>
<td>S Velmurugan</td>
<td>BARC (India)</td>
<td>Effect of Geometry on Flow Accelerated Corrosion - Correlating the Experimental Data with Hydrodynamic Parameters Obtained by CFD Modelling</td>
</tr>
<tr>
<td>13:55</td>
<td>Xinqiang Wu</td>
<td>Institute of Metal Research, Chinese Academy of Sciences (China)</td>
<td>Crevice Corrosion Characteristics of Nuclear-grade 304 Stainless Steel in High Temperature Pure Water</td>
</tr>
<tr>
<td>14:20</td>
<td>John G. Roberts</td>
<td>Bruce Power (Canada)</td>
<td>Comparison of BRUCE A and B Original Steam Generator Tubing and Summary of their Performance on Occurence of SCC</td>
</tr>
</tbody>
</table>

**14:45-15:45 POSTER Break**

### Session 8: Water Chemistry and Fuel (16:10-17:50) Chairs: Peter Bennett; Xinqiang Wu

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:45</td>
<td>Bernt Bengtsson</td>
<td>Vattenfall AB (Sweden)</td>
<td>Safety &amp; Radiation Benefits Using Frequent and Optimized Fuel Cleaning</td>
</tr>
<tr>
<td>16:35</td>
<td>Pascal Grundler</td>
<td>Paul Scherrer Institut (Switzerland)</td>
<td>Influence of Pt deposition on the behaviour of Zircaloy cladding under boiling conditions in simulated BWR environment</td>
</tr>
<tr>
<td>17:00</td>
<td>Jim Henshaw</td>
<td>National Nuclear Laboratory (UK)</td>
<td>Zinc Chemistry in Fuel Crud</td>
</tr>
</tbody>
</table>

**17:25 End of Day 2**
**Wednesday 5th October**

**Session 9: Second Session on BWR Chemistry**
**Time: 08:35-10:15**
**Chairs:** Dewey Rochester; Bernt Bengtsson

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:35</td>
<td>Stephan Hoffmann-Wankert</td>
<td>Iberdrola Generación Nuclear SAU (Spain)</td>
<td>Decontamination and Post-Decon Passivation treatment of the RRS Loops and RWCU System as a Measure for Collective Dose Reduction and Recontamination Reduction at the NPP Cofrentes in Spain</td>
<td>32</td>
</tr>
<tr>
<td>09:00</td>
<td>Toru Kawasaki</td>
<td>Hitachi-GE Nuclear Energy Ltd. (Japan)</td>
<td>Development of a Suppression Method for Deposition of Radioactive Cobalt by a Platinum Deposition Treatment after Chemical Decontamination</td>
<td>33</td>
</tr>
<tr>
<td>09:25</td>
<td>Samuel Holdsworth</td>
<td>University of Manchester (UK)</td>
<td>Effects of water chemistry and metal ion concentrations on the cobalt incorporation into austenitic stainless steel surface oxide under Boiling Water Reactor conditions</td>
<td>34</td>
</tr>
<tr>
<td>09:50</td>
<td>Odd Runevall</td>
<td>Studsvik (Sweden)</td>
<td>Water chemistry options for internal pump BWRs - the Nordic operational experience</td>
<td>35</td>
</tr>
</tbody>
</table>

**Session 10: Water Chemistry and Radiation Fields**
**Time: 10:50-12:30**
**Chairs:** Derek Lister; Tsung-Kuang Yeh

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15</td>
<td>Susannah Bowskill</td>
<td>National Nuclear Laboratory (UK)</td>
<td>Modelling of Fission Product Behaviour in Sizewell B Coolant</td>
<td>37</td>
</tr>
<tr>
<td>11:40</td>
<td>William Cook</td>
<td>University of New Brunswick (Canada)</td>
<td>Evolution of Primary Heat Transport System Radiation Fields at the Point Lepreau Generating Station following Mid-Life Refurbishment</td>
<td>38</td>
</tr>
<tr>
<td>12:05</td>
<td>Irene Mailand</td>
<td>Axpo Power AG, NPP Beznau (Switzerland)</td>
<td>Alpha Source Term Trend in Terms of Dose Rate Reduction in NPP BEZNAU</td>
<td>39</td>
</tr>
</tbody>
</table>

**Session 11: Second Session on PWR Secondary Chemistry**
**Time: 13:30-15:10**
**Chairs:** Jim Henshaw; Raphael Lecoq

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:30</td>
<td>Ian de Curieres</td>
<td>IRSN (France)</td>
<td>Safety-related chemistry stakes on the secondary side of NPP</td>
<td>40</td>
</tr>
<tr>
<td>13:55</td>
<td>Lieve Verelst</td>
<td>LABORELEC (Belgium)</td>
<td>An Investigation into an Alternative to Hydrazine as an Oxygen Scavenger in the Secondary System of NPPs. Literature Review and Plant Trial</td>
<td>41</td>
</tr>
<tr>
<td>14:20</td>
<td>Gwendal Troade, Eva Bres</td>
<td>EDF Ceidre / Vattenfall (France)</td>
<td>Mössbauer analysis on PWR secondary circuit of EDF’s NPP fleet and Ringhals NPP</td>
<td>144</td>
</tr>
<tr>
<td>14:45</td>
<td>Anton Gavrilov</td>
<td>Joint Stock Company Scientific Research and Design Institute for Energy Technologies (Russia)</td>
<td>Modeling of Corrosion Products Migration in the Secondary Circuit of NPP with VVER-1200</td>
<td>43</td>
</tr>
</tbody>
</table>

**Session 12: Other Reactors and Accident Management**
**Time: 16:10-17:50**
**Chair:** Chris Eley

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:10</td>
<td>Shunsuke Uchida</td>
<td>Institute of Applied Energy (Japan)</td>
<td>Fission product behaviour in Fukushima Daiichi NPP under severe accident conditions</td>
<td>44</td>
</tr>
<tr>
<td>16:35</td>
<td>Genn Saji</td>
<td>Ex-Secretariat of Nuclear Safety Commission [retired] (Japan)</td>
<td>Hydrogen Generation Through Radiation-Induced Electrolysis in the Fukushima Accident</td>
<td>45</td>
</tr>
<tr>
<td>17:00</td>
<td>Arancha Tigeras</td>
<td>EDF SA (France)</td>
<td>The role of chemistry and radiochemistry in Post-Accident Monitoring (PAM): FA3 and HPC design capabilities</td>
<td>46</td>
</tr>
<tr>
<td>17:25</td>
<td>Sankaralingam Velmurugan</td>
<td>BARC (India)</td>
<td>Chemistry Issues in Advanced Heavy Water Reactor</td>
<td>65</td>
</tr>
</tbody>
</table>

**17:50 End of Day 3**
Thursday 6th October

**Session 13: Second Session on Auxiliary Systems (08:35-10:00)** Chairs: Alistair Raffel; Sanakaralingam Velmurugan

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:35</td>
<td>Andrew Odell</td>
<td>Exelon Generation LLC (USA)</td>
<td>Stator Water Cooling Chemistry: A Review of Recent Nuclear Industry Issues</td>
</tr>
<tr>
<td>09:00</td>
<td>Ryan Morris</td>
<td>Amec Foster Wheeler/EDF Energy Nuclear Generation Ltd (UK)</td>
<td>Operational Experience of Palladium Resin in Stator Cooling Water Circuits</td>
</tr>
<tr>
<td>09:25</td>
<td>Yi-chen Bao</td>
<td>Shanghai Nuclear Engineering Research &amp; Design Institute (China)</td>
<td>Corrosion Inhibition Properties of NaNO2, Na2MoO4 and TTA-Na Compounds on Materials of Cooling Water System</td>
</tr>
<tr>
<td>09:50</td>
<td>Andy Rudge</td>
<td>NPC 2016 Chair</td>
<td>NPC 2016 Organisation</td>
</tr>
</tbody>
</table>

**Session 14: Third Session on PWR Primary Chemistry (10:50-12:10)** Chairs: John Roberts; Arancha Tigeras

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30</td>
<td>Johan Öijerholm</td>
<td>Studsvik Nuclear AB (Sweden)</td>
<td>Influence of pH, temperature and flow velocity on Co-60 uptake on Alloy 690 and stainless steel in simulated PWR chemistry</td>
</tr>
<tr>
<td>10:55</td>
<td>Andrew John Banks</td>
<td>Rolls Royce PLC (UK)</td>
<td>Modelling and Experiments on Localised CRUD Deposition</td>
</tr>
<tr>
<td>11:20</td>
<td>Daniel Wells</td>
<td>Electric Power Research Institute (USA)</td>
<td>Impact of PWR Primary Water Dissolved Hydrogen Concentration on Fuel Crud and Boron Accumulation</td>
</tr>
<tr>
<td>11:45</td>
<td>Prof. Peter Tremaine</td>
<td>Department of Chemistry, University of Guelph (Canada)</td>
<td>Speciation and Thermodynamic Stability of Boric Acid, Borate and Polyborates under PWR Primary Coolant Conditions by AC Conductivity and Raman Spectroscopy</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:10</td>
<td>Derek Lister</td>
<td>University of New Brunswick (Canada)</td>
<td>Flow-Accelerated Corrosion in Two-Phase Steam-Water Flows: Experiments and Modelling</td>
</tr>
<tr>
<td>13:35</td>
<td>Yutaka Watanabe</td>
<td>Tohoku University (Japan)</td>
<td>Critical potentials for re-passivation of corroding crevice in corrosion resistant alloys</td>
</tr>
<tr>
<td>14:00</td>
<td>Hua Rong</td>
<td>Central Research Institute of Building and Construction (P. R. China)</td>
<td>The research on the corrosion effect on the concrete structure by boric acid cooling water in nuclear power station</td>
</tr>
</tbody>
</table>

**Session 16: Second Session on PWR Secondary Chemistry (15:20-16:30)** Chairs: Ian Woolsey; Andreas Drexler

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:20</td>
<td>Samuel Choi</td>
<td>Electric Power Research Institute (USA)</td>
<td>Filming Amine Use in PWRs: A Pathway to Wider Use</td>
</tr>
<tr>
<td>15:45</td>
<td>Luciana Rudolph</td>
<td>AREVA NP (Germany)</td>
<td>CFD calculation method for the assessment of the impact of Film Forming Amines on local deposition at the tube sheet of steam generators</td>
</tr>
<tr>
<td>16:10</td>
<td>Essi Jäppinen</td>
<td>VTT Technical Research Centre of Finland Ltd (Finland)</td>
<td>Effect of octadecylamine on carbon steel corrosion under PWR secondary side conditions</td>
</tr>
</tbody>
</table>

16:35 Conference Closing Remarks and NPC 2018 Announcement, Andy Rudge, Chair NPC 2016 & Keith Fruzetti, Chair NPC 2018

16:55 Conference Close
<table>
<thead>
<tr>
<th>Poster No.</th>
<th>Title</th>
<th>Poster Session*</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>Regulators’ Role in Research and Development – Status of Chemistry Related Regulations and Research in Canadian Nuclear Power Industry</td>
<td>Monday</td>
</tr>
<tr>
<td>64</td>
<td>Water Chemistry Safety Regulations in Russia’s Nuclear Power Plants.</td>
<td>Tuesday</td>
</tr>
<tr>
<td>66</td>
<td>Assessment of the Interactions of Cationic and Anionic Ion Exchange Resins With Typical PWR Primary Circuit Solution Species</td>
<td>Wednesday</td>
</tr>
<tr>
<td>67</td>
<td>A Modelling Study on Water Radiolysis for Primary Coolant in PWR</td>
<td>Monday</td>
</tr>
<tr>
<td>68</td>
<td>Incorporation of Co-58 and Co-60 into PWR Primary System Surface Oxides</td>
<td>Tuesday</td>
</tr>
<tr>
<td>69</td>
<td>Identification of Phases in PWR Crud Deposits by Synchrotron X-ray Microprobe Techniques</td>
<td>Wednesday</td>
</tr>
<tr>
<td>70</td>
<td>Main Conclusions From the MAI Workshop on Silver 110m Contamination in Pressurized Water Reactors</td>
<td>Monday</td>
</tr>
<tr>
<td>72</td>
<td>Zinc Impact on PWR Coolant Piping Radiation Fields – A Statistical Look.</td>
<td>Tuesday</td>
</tr>
<tr>
<td>73</td>
<td>Steam Generator Tube Release: Assessment by the Use of Electrochemical Impedance Spectroscopy</td>
<td>Wednesday</td>
</tr>
<tr>
<td>74</td>
<td>Abnormal Solid Matter Observations at Loviisa NPP Unit 2</td>
<td>Monday</td>
</tr>
<tr>
<td>75</td>
<td>Preparation for Hot Functional Tests (HFT) in Mochove NPP</td>
<td>Tuesday</td>
</tr>
<tr>
<td>76</td>
<td>Development of a Computational Fluid Dynamics Model for Flow Enhanced Deposition</td>
<td>Wednesday</td>
</tr>
<tr>
<td>77</td>
<td>Characterisation and Behaviour of Particulate Material in PWR Primary Coolant</td>
<td>Monday</td>
</tr>
<tr>
<td>78</td>
<td>The Challenges of Modelling Corrosion Product Transport in PWRs</td>
<td>Tuesday</td>
</tr>
<tr>
<td>79</td>
<td>Determination of Ultra-Trace Nickel in Lithium/Boron Media: Development of Inductive Coupled Plasma</td>
<td>Wednesday</td>
</tr>
<tr>
<td>81</td>
<td>110mAg Behaviour in PWRs: Lessons Learnt From the EMECC Campaigns</td>
<td>Monday</td>
</tr>
<tr>
<td>82</td>
<td>Development of a Dynamic Model (OPERA) in Order to Optimize Fluids Management and Limit Tritium Release in EPRTM Systems</td>
<td>Tuesday</td>
</tr>
<tr>
<td>83</td>
<td>High Temperature (Photo-)Electrochemical Setup for Studying Zr-based and Ni-based Alloys in Simulated LWR Conditions</td>
<td>Wednesday</td>
</tr>
<tr>
<td>85</td>
<td>Empirical Fuel CRUD Deposition Model in Simulated PWR Primary Water.</td>
<td>Monday</td>
</tr>
<tr>
<td>86</td>
<td>BEATRICE: a Unique Test Facility Simulating the EPR Primary Circuit for Corrosion Studies.</td>
<td>Tuesday</td>
</tr>
<tr>
<td>87</td>
<td>Investigating Particulate Matter Transport</td>
<td>Wednesday</td>
</tr>
<tr>
<td>88</td>
<td>Solubility of Cobalt Oxide and other Cobalt Compounds: Development of MULTEQ models</td>
<td>Monday</td>
</tr>
<tr>
<td>Session</td>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Radioactive Silver Species in LWR Coolant - An EDS Study Using Transmission Electron Microscopy.</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Interactions of Corrosion Products with Radiolytic Species in PWR Primary Coolant</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Testing Reverse Osmosis System for the Treatment of Primary Coolant in Temelín Nuclear Power Plant</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Formation of activated corrosion products in Mochovce NPP</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Investigation into the Interaction of Zinc With Anionic Resin as a Function of Temperature Under Anaerobic, Alkaline Conditions Akin to Those in the Primary Circuit</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Hydration Structures at Zirconia-Water Interface</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Evolution of the Isotopic Abundance of Boron-10 in the Systems of the EPR Reactors: Impacts and Applications.</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Role of Magnesium ions in the Passivation Behaviour of Incoloy 800</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Recovery of Lithium-7 from Primary System Resins</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Reduction in Dose Rates During Refuelling by Oxygenating the RCS With the Reactor Coolant Pumps Stopped</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Development of a Calculation Code to Predict Transport of Radioactive Corrosion Products in BWRs</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Effect of Pt Pre-treatment of Fresh Stainless Steel Surfaces on the 60Co Build-up During BWR Power Operation</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Seawater Intrusion Event Consequence Assessment, Hamaoka Unit 5</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Chemistry Performance at Browns Ferry Unit 1 following restart from a 22 year shutdown.</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Development of a Method to Lower Recontamination After Chemical Decontamination by Depositing Pt Nano Particles</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Feasibility Study on Improved Injection Method of Noble Metal Chemical Addition</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Study on Platinum Deposition Treatment on Material Surfaces by Addition of Platinum Oxide Nano-particle in High Temperature Water</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Platinum Behaviour in BWR Systems</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>BWR Hydrogen Demand at Low Power</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Water Chemistry Control Guidance and Technologies for New Design Boiling Water Reactors</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>BWR Flexible Operations: An Assessment of Plant Chemistry Impacts</td>
<td></td>
</tr>
</tbody>
</table>
116 TEM Examination of Oxide Films Formed in the Crack Opening of Alloy 182 Weld Metal under BWR Normal Water Chemistry Conditions ........................................................... Monday
117 Assessing the SCC Mitigation by Hydrogen Water Chemistry in an Advanced Boiling Water Reactor. ........................................................................................................... Tuesday
119 The COD Reduction Methods Review of CPP Chemical Waste in PWR to Satisfy the Environmental Release Limits ........................................................................... Wednesday
120 Improved Corrosion Monitoring of Chloride and Sulfate by On-line Micro-Capillary Electrophoresis. ........................................................................................................... Monday
121 The Use of Gas Sampling Equipment to Detect Failed PWR Fuel Prior to Long Term Dry Storage at Sizewell B Power Station. ....................................................... Tuesday
123 Study on the Chemical Effect Head Loss on Sump Strainer. ........................................................................................................... Wednesday
124 Development of Radioactive Waste Water Treatment Technique for Fukushima Daiichi Nuclear Power Station, and Enlargement of Application Target. .................. Monday
125 Water Chemistry Challenges in the Operation of a 60-Year Old Test Reactor. ........................................................................................................... Tuesday
126 Dissolved Oxygen and Hydrogen Analysis in Nuclear Power Plants. ........................................................................................................... Wednesday
127 Conventional Resin Cation Exchangers versus EDI for CACE Measurement in Power Plants – Feasibility and Practical Field Results. ................................................ Monday
129 The Search For More Robust Ion Exchange Material For Primary Circuit Use. ........................................................................................................... Tuesday
130 Assessment of Possible Dispersant Effects on South Texas Project Unit 1 Condensate Demineralizer Resin Performance. ............................................................... Wednesday
131 EPRI Condensate Polishing Sourcebook Revision – A Status Update. .................................................. Monday
132 Characterization of Reactor Cavity Water Contamination. ........................................................................................................... Tuesday
133 Evaluation of the Suitability of a Titania - Biosorbent Composite for Use in Nuclear Reactor Decontaminations as Antimony Removal Agent. ................................ Wednesday
136 Experience at Diablo Canyon NGS with the New Ion Exchange Resin Designed to Mitigate ETA Related Anion Resin Kinetic Impairment in PWR Condensate Polishers. ................ Tuesday
137 Study of Film-forming Amine Application in PWR Secondary Circuit Layup Protection. .................................................. Wednesday
138 Formation and Consolidation of Hard Sludge under Secondary Circuit Conditions. .................................................. Monday
139 Microstructural Characterization of Sludge Steam Generator From Spanish NPP’s. .................................................. Tuesday
140 Physical Speciation and Characterization of Corrosion Products in Nuclear Environments By On Line Sampling Device. .................................................. Wednesday
141 Investigation of 08Ch18N10T (AISI321) Stainless Steel Corrosion Behavior in the SG Crevice Environment – Influence of Monoethanolamine ................................... Monday
| 142 | Effect of Polyacrylic Acid on the Corrosion Behaviour of Carbon Steel and Magnetite in a Simulated Wet Layup Condition. | Tuesday |
| 143 | Optimisation of Chemical Conditioning for Hydraulic Tests of Steam Generators Regarding Generalized and Localized Corrosion | Wednesday |
| 145 | Synthesis and Characterization of Magnetite Deposits on Tube Support Plate in COLENTEC Diphasic Loop Dedicated to the Study of Steam Generator's Clogging | Monday |
| 146 | Effect of Liquid Film Temperature on Thinning Rate of Flow Accelerated Corrosion under Water-steam Two-phase Flow. | Tuesday |
| 147 | Water Chemistry Management for Plant Start up after Long Term Outage | Wednesday |
| 148 | Experiences of Takahama Unit 3 and 4 Plant Start up Water Chemistry Control After Long Term Suspended Operation. | Monday |
| 149 | Steam Generator Chemical Cleaning Waste Treatment: AREVA Operating Experience and Perspectives | Tuesday |
| 151 | Determining Zeta Potential of Magnetite Particles in PWR Secondary Side Water Treated with Ammonia or Ethanolamine by Using Streaming Potential Technique. | Wednesday |
| 153 | Steam Cycle Contamination and Remediation Following the Refurbishment Outage at the Point Lepreau Generating Station. | Monday |
| 154 | Chemical Thermodynamic Data for Assessment of Carbon Steels Flow-Accelerated Corrosion (FAC). | Tuesday |
| 155 | Treatment of Hydrazine by Injection into the Secondary Circuit at Sizewell B | Wednesday |
| 156 | Effect of Acetate and Formate on the Pitting Potential of PWR Steam Turbine Materials. | Monday |
| 157 | Statistical Evaluation Comparing XRF and ICP Analyses of PWR Secondary Feedwater and Blowdown Iron Samples | Tuesday |
| 159 | Study On the Prevention of Oxide Deposition on the Nuclear Steam Generator Materials using Poly (acrylic acid-co-maleic acid) | Wednesday |
| 160 | Evaluation of Uncertainty in the Ni/NiO Transition (Assessment of Contradictory Observations) | Monday |
| 162 | Leak History of the Wylfa Boilers. | Tuesday |
| 163 | Containment Liner Leakage Due to Corrosion at Ringhals | Wednesday |
| 164 | Galvanic Corrosion Behavior between Ni-Based Alloys and Magnetite in Simulated Secondary Water Conditions | Monday |
| 165 | PWSCC of Cold Worked Alloy 690 With Regard To Formation Of Grain Boundary Cavities | Tuesday |
| 167 | An Investigation into Stress Corrosion Cracking of 316L SS-Alloy 52 Dissimilar Weld Metal in High Temperature Pure Water | Wednesday |
| 168 | Effect of Nickel Ferrite Coating on Corrosion Resistance of Carbon Steel | Monday |
169 Investigations on and Operational Experience with M5® Claddings under High Lithium Water Chemistry ................................................................. Tuesday

170 Mechanisms of Crud Deposition in Pressurised Water Reactors ............................................. Wednesday

171 The Role of Microstructural Segregation in Possible Stress Corrosion Cracking Pre-Initiation Events on the Surface of Niobium-Stabilised Nuclear Grade Stainless Steel .......... Monday

172 Ultrasonic Fuel Cleaning Update: Case Studies, Industry Experience and Lessons Learned .... Tuesday

173 Effects of Zinc Injection and Dissolved Hydrogen Concentration on ZIRLO™ Oxidation. ........ Wednesday

174 A Concept for Inhibiting Corrosion Rate of the PWR Fuel Cladding by the Electro–Reduced Aqueous Coolant. ................................................................. Monday

175 Finite Element Modelling of CRUD Deposition in Nuclear Plants Utilising COMSOL Multiphysics ... Tuesday

177 Water Clarity Issues in Spent Fuel and Reactor Pools; An Analysis of French and International OPEX to find Preventative and Curative Solutions ......................................................... Wednesday

178 Development of a Management Strategy for Mitigation of CISCC of a 316L Dry Fuel Storage System at Sizewell B. ............................................................... Monday

179 Ion Adsorption at Zirconia-Water Interface ............................................................................. Tuesday

180 Investigation of Primary Coolant Corrosion Product Activity at Slovak NPPs During Refueling Period ......................................................................................... Wednesday

181 Experience of Dose Reduction Measures by the Improvement of Water Chemistry in Tokai Daini Nuclear Power plant ................................................................. Monday

182 The Impact of Crud Behaviour on the Predictions of Activity Transport in CANDU-6 Reactors... Tuesday

184 Uptake of Radio-antimony on PWR Auxiliary Systems – A Radiation Field Management Challenge ............................................................................................................. Wednesday

185 Radiation Field Control Utilizing BRAC Dose Rates as an Analysis Tool ............................... Monday

186 Progress in LBE Coolant Technology for MYRRHA ............................................................... Tuesday

187 Interaction of Water Vapour With Liquid Lead-Bismuth Eutectic .............................................. Wednesday

188 In-situ Electrochemical Measurements of Platinum and Carbon Steel in The Diluted Artificial Sea Water Under Gamma Ray Irradiation ..................................................... Monday

190 The Effect of Dissolved Oxygen Content on Stress Corrosion Cracking of 310S in SCWR .......... Tuesday

191 Corrosion Inhibition of Carbon Steel Piping in Flowing Diluted Seawater ............................. Wednesday

192 Effect of Aluminum Surface on I- Oxidation Under Gamma-ray Environment ........................ Monday

193 Radiolysis of Water at High Temperature and High Pressure Conditions Studied by a Picosecond Time-resolved Electron Pulse Radiolysis ........................................... Tuesday

194 Evaluation of ECP Measured in In-pile Environment ............................................................. Wednesday

195 Study of Irradiation Effect on ECP Using In-pile Loops in the JMTR ..................................... Monday
Experimental Setup for Radiolysis and Corrosion Studies Under Light Water Reactor Operating Conditions. Tuesday

Dissolution Behaviour of Mixed Ferrites Containing Zinc in Oxidizing Formulation Wednesday

Development of Conceptual Water Chemistry Guidelines for Water Coolant Circuits of a Demonstration Fusion Power Reactor. Monday

* Posters will be displayed in the Albert Room during the conference on all days from Monday-Thursday. Poster authors must, however, be present next to their posters as per the poster sessions identified above.
Technical Tour

Unwind after the conference with a social tour of Dungeness B AGR and Chapel Down Winery

Registrants for the Dungeness B and Chapel Down winery tour will enjoy a trip through the beautiful South Downs in Sussex and Kent, the Garden of England, on the way to visit Dungeness B nuclear power station.

Dungeness B – the first AGR station

Situated on the Kent Coast, Dungeness B is the first of the Advanced Gas-cooled Reactor design. With construction beginning in 1965, its two reactors have a combined output of 1050 MW.

AGRs are high temperature reactor designs, with carbon dioxide coolant, a graphite moderator, and steam temperatures up to 540°C. The secondary circuit chemistry is similar to a water reactor circuit, but the primary circuit is very different, with several unique challenges.

The tour of Dungeness B will show many features of unique reactor design to the UK, and a member of the station chemistry department will explain some of the chemistry issues.

Picturesque landscapes and the Chapel Down Winery

Dungeness B is on the exquisite Romney Marsh, an area of outstanding natural beauty and home to a vast array of birdlife. On the return journey, the tour will visit the award-winning Chapel Down Winery near Tenterden in Kent.

Chapel Down produces a range of still and sparkling wines, as well as traditional beers and ciders. The sparkling wines, produced using the same method as in Champagne, are particularly well-regarded.

The tour includes lunch and a chance to taste some of the delicious wines on offer.
Things to do in Brighton

Beachfront

Nivea Sun Yellowave is Britain’s first beach sports centre and you can play any beach sport you can think from volleyball to beachminton www.yellowave.co.uk

The Artists’ Quarter is an eclectic collection of over 20 artist’s workshops underneath the arches. www.theartistquarter.co.uk

Kitesurfkings Kitesurf lessons in this extreme sport involving, boards, kites and the waves. www.kitesurfkings.com

Hove Lagoon has two lagoons, the larger one is used for wind surfing and the smaller one for model boats www.hovelagoon.co.uk

Volks Railway was the first public electric railway in the world and it’s still going! www.volkselectricrailway.co.uk

Petanque this game originated in France where you have to roll your metal boules as close to the jack as possible www.bhpetanque.org

Fishing Museum charts the city’s origins as a fishing centre called Brighthelmstone and it’s free www.sussexmuseums.co.uk

The Kids Play Area has a paddling pool and sand pit as well as a cafe so the adults can relax too! www.brighton-hove.gov.uk

Brighton Bandstand has been restored to its former glory. You can come and listen to bands or just relax at the cafe underneath www.brightonbandstand.com

For all things Brighton & Hove: www.visitbrighton.com

Countryside

Stanmer Park Walks for all in this largest public open space on the edge of the city www.brighton-hove.gov.uk

West Blatchington Windmill Discover how the grain from the downs is turned into flour www.virtualmuseum.info

Ditchling Beacon Panoramic views of the Weald from this Iron Age hill fort site and nearby nature reserve www.sussexwt.org.uk

Castle Hill National Nature Reserve Traditionally managed chalk grassland www.naturalengland.org.uk

Devil’s Dyke The largest dry chalk valley in the country with great views from the pub at the top www.nationaltrust.org.uk

West Pier Starlings Extraordinary spectacle as the starlings come in at dusk from the downs to roost on the rusting remains www.rspb.org.uk

Foredown Tower Countryside Centre Observe the surrounding landscapes and skies from the camera obscura on top of this water tower www.virtualmuseum.info

Beacon Hill Local Nature Reserve surrounding Rottingdean Windmill www.citywildlife.org.uk

Chattri Memorial commemorating the Indian soldiers who died in the First World War in Brighton www.chattri.com

The South Downs Way national trail following the old droveways along the chalk downs around the city www.nationaltrail.co.uk

For all things Brighton & Hove: www.visitbrighton.com
Innovation Delivered

We at Hitachi-GE Nuclear Energy provide wide-ranging support for the nuclear power industry to open up a new horizon for a promising tomorrow of the earth, using highly reliable monozukuri in the integrated Hitachi Group. Nuclear energy produces no carbon dioxide and has a low environmental load while providing a stable supply of electricity to support a comfortable life. Our aim is an abundant, secure, and promising future based on the theme of a human society that coexists with nature.

Hitachi-GE Nuclear Energy, Ltd.

http://www.hitachi-hgne.co.jp/nuclear/index.html