WANO Overview

- In 1986, the accident at Chernobyl occurred; in May 1989 WANO was formed.

- The world’s nuclear operators realised that an event at one plant would impact every plant.

- Four Regional Centres and London office:
  - Atlanta
  - Moscow
  - Paris
  - Tokyo

- Today every operator of a commercial nuclear plant is a member of WANO; 119 members.
To maximise the safety and reliability of nuclear power plants worldwide by working together to assess, benchmark and improve performance through mutual support, exchange of information, and emulation of best practices.
<table>
<thead>
<tr>
<th>WANO Governing Board</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WANO Chairman</strong></td>
</tr>
<tr>
<td>Laurent Stricker (EDF)</td>
</tr>
<tr>
<td><strong>WANO President</strong></td>
</tr>
<tr>
<td>Vladimir Asmolov (JSC Concern Rosenergoatom)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WANO Atlanta Centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Willard (INPO)</td>
</tr>
<tr>
<td>Tom Mitchell (Ontario Power Generation)</td>
</tr>
<tr>
<td>Gary Gates (OPPD)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WANO Paris Centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Henri Proglio (EDF)</td>
</tr>
<tr>
<td>Jos Bongers (EPZ)</td>
</tr>
<tr>
<td>Bern Güthoff (E.ON Kernkraft)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WANO Moscow Centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Evgeny Romanov (JSC Concern Rosenergoatom)</td>
</tr>
<tr>
<td>Arvo Vuorenmaa (Fortum)</td>
</tr>
<tr>
<td>Yuriy Nedashkovsky (NNEGC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WANO Tokyo Centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Makoto Yagi (FEPC/JNO)</td>
</tr>
<tr>
<td>Jong-Shin Kim (KHNP)</td>
</tr>
<tr>
<td>Dr. Shreyans Kumar Jain (NPCIL)</td>
</tr>
</tbody>
</table>
Four programmes define WANO member support:

1. Operating Experience
2. Peer Reviews
3. Professional and Technical Development
4. Technical Support and Exchange
The programmes work together to drive continuous performance improvement
Fukushima Lessons

- Significant Operating Experience Reports (SOERs)
  - 2011-2: Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami
  - 2011-3: Fukushima Daiichi Nuclear Station Spent Fuel Pool / Pond Loss of Cooling and Makeup
  - 2011-4: Near-Term Actions to Address an Extended Loss of all AC Power
  - 2011-2, Addendum 1
  - 2012- X: Under Development (human performance and organizational issues)
Fukushima SOERs

For each SOER:

- Urgent action required by every member
- Report to WANO on actions taken and gaps found
- Member reports analysed and analysis report sent to members (benchmarking)
- Follow up to ensure closure of gaps
- Inspect results during WANO peer reviews

Net result: Significant safety enhancements industry-wide
Established in April 2011, the Post-Fukushima Commission was charged with determining changes which should be implemented within WANO, based on lessons from the event at Fukushima Daiichi.

Five recommendations to strengthen WANO and its focus on nuclear safety emerged:

- Expand the scope of WANO’s activities
- Develop a worldwide integrated event response strategy
- Improve WANO’s credibility, including important changes to WANO’s peer review process
- Improve visibility and transparency
- Improve internal consistency

WANO’s Governing Board approved the recommendations in October 2011. At the 2011 BGM in Shenzhen, China, WANO members unanimously supported the Board’s decision.
Important WANO Changes

- Add EP to the scope of WANO activities
- Add severe accident management to the scope of WANO activities
- Add on-site fuel storage to the scope of WANO activities
- Add some aspects of design to the scope of WANO activities
- Implement an integrated emergency response strategy
- Improve visibility and transparency
Important WANO Changes

- Implement a real-time event reporting process
- Address equivalency of INPO, JANTI, IAEA and other peer reviews
- Conduct a corporate review of every member within six years
- Increase peer review frequency to every four years
- Add an assessment or grading process
- Conduct internal assessment of each WANO Region and London
WANO Challenges

- Fifty shutdown units in Japan
- Rapid growth of our industry
  - Aggressive programmes to build new units
  - New entrants to the nuclear community
  - Pre startup review of every new unit
- Aging, life extension and power uprates
- Programs phasing out – maintaining a strong nuclear safety focus
- Turnover in workforce
- Expanding the size and scope of WANO – improving credibility and effectiveness
- Moving from prevention to prevention and mitigation
Thank you for your attention

www.wano.info