The Role of TSOs in the Context of Increasing Demand for Safety Expertise – Expectations of the Nuclear Industry
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- The Context
- The Role of TSOs to Play in
  - Standardized Products
  - Licensing Support
  - International Cooperation
  - Keeping Competence
The Context: Global New Builds

- Rising demand and tight market in the front-end
- Nuclear plant construction set to accelerate after 2010

Replacement: ~100 reactors / Additional: ~35-300 reactors
The Context: Evaluation of Worldwide NPP Market Development

Source: WNA 2005, IAEA 2006, DOE-EIA 2006 and AREVA calculations
The Context: Vendors with International Operations and their Generation III/III+ Type of Reactors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>1000-1100MW</th>
<th>1200-1250MW</th>
<th>1350-1700MW</th>
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<td>AREVA NP</td>
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Capacity range:
- 1000-1100MW
- 1200-1250MW
- 1350-1700MW
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EPR –
A Standardized Design

The first Generation III+ reactor under construction:
- Core catcher, hydrogen recombiner
- Air plane crash resistance
- Double wall containment with ventilation and filtration system
- 4-train redundancy
- Short maintenance
The Olkiluoto 3 Project
Operation 2012

The first “Generation III+” reactor under construction in the world
Standardized Products

- Standardization required from
  - economical reasons
  - safety reasons

- One step licensing (combined construction and operation license) versus conventional two step licensing process

- Cooperation of international TSOs and mutual acceptance/acknowledgement of licenses desirable

- The decision made during the G8 summit in Hokkaido, to launch an international initiative on “3S-based” nuclear energy infrastructure (Safeguards, Safety and Security) is for sure a step towards making the licensing process easier on a global basis.
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1- Finland STUK review OL3 Construction License according to the YVL guides February 17 2005

2- French Government delivered the construction License for Flamanville 3 on 10 April 2007 after favorable advice of the French ASN

3- Taishan 1&2 Construction License expected in September 2009 in China

4- Design certification in the USA according to Part 52 rulemaking docketed by the NRC

5- General Design Approval process was initiated in August 2007 in the UK
Licensing Support

- **TSO’s support in prelicensing of new reactor concepts during early stage of design work** (ATMEA 1, SWR 1000)

- **Cooperation of TSOs with countries with no/inadequate infrastructure for nuclear licensing** (past experiences in eastern countries)

- **International training courses**
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International Cooperation

- **International cooperation**
  (French, German, Belgium TSOs exemplarily)

- **Mutual exchange of information on a regular basis**

- **Exchange of experts**  (e.g. between GRS and NRC)

- **Cooperation in licensing activities**
  (mutual support in common teams)

- **Mutual membership of TSO representatives in national nuclear safety committees**
  (GRS in SPN; IRSN in RSK)
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Keeping Competence

- Keep independent, technically oriented view

- Keep competence at TSOs on major safety issues to back-up the inspection agencies (TÜV) in generic technical questions

- Be open to work on new reactor concepts (even in the political phase out situation in Germany)

- Support R&D on new reactor concepts/models (through cooperation and/or funding)

- Organize training sessions/seminars on safety issues/safety culture

- Recruit young talents to follow senior experts

- Exchange/training of people at TSOs in abroad and in nuclear industry