

Authorization of new reactors

The point of view of the French Nuclear Safety Authority

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- Some challenges for the regulators
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The French Authorization procedure (1)

The main steps

- 1) Fixing the safety objectives
- 2) Position on the safety options
- 3) Authorization of creation
 - Preliminary safety analysis report
- 4) Authorization for first core loading
 - Intermediate safety analysis report
- 5) Authorization for final commissioning
 - Final safety analysis report
- 6) Every 10 years : periodic safety review
 - ASN position on operation for the next 10 years

The French Authorization procedure (2)

The philosophy behind

■ Iterative process

- Enables ASN to influence the safety options from the very beginning

■ Authorization rather than certification

- ASN's policy is to improve safety, not only maintain it
- Keep the ability to ask for improvements of the design :
 - 9/11 events

■ Improve safety, using up-to-date knowledge

- When fixing the safety objectives, the ambition shall be commensurate to the time left for R&D

The French Authorization procedure (3)

The philosophy behind

- **A light regulatory framework**
 - Regulation is less imaginative than designers
 - Better to discuss with the designer on a proposal
- **Qualitative safety objectives**
 - Expressed in terms of improvements compared to the existing plants
 - Very few quantitative criteria : in-depth technical discussions between the licensee and the regulator
- **International cooperation at various stages of the process**
 - EPR : cooperation with BMU/GRS, STUK, NRC...

Some challenges for the regulators (1)

■ Human means and competencies

- 20 years since the preparation of the last Authorization decree for a NPP
- Work load

■ Fixing ambitious and realistic safety objectives in a changing environment

- Gen 3 reactors could still operate at the end of the century
- More and more constraints (electricity supply security)
- Globalization of the industry

Some challenges for the regulators (2)

- **Comparison between future and existing reactors**
 - Use the work on future reactors to improve safety of existing ones

- **Harmonization : minimize regulatory differences**
 - Requirement from the public and from the industry
 - A few designs on a global market (e.g. : EPR)

The value of international cooperation (1)

The example of EPR

- **Cooperation between ASN / IRSN and BMU / GRS**
 - Joint examination, definition of a joint safety approach
 - Positions signed in common by ASN and BMU

- **Cooperation between ASN / IRSN and STUK**
 - Full access to the documentation
 - Technical meetings
 - Analysis of the regulatory differences
 - Finnish expert nominated in the GPR

The value of international cooperation (2)

■ Many benefits

- Added value for safety of multiple evaluation approaches
- Regulator's positions stronger when internationally shared
- Share the workload

■ Conditions

- Accept to be challenged by foreign regulators
- Mutual respect : nobody imposes its viewpoint
- Trust the work done abroad

Concluding remarks

- **Many projects of new reactors in the world**
 - But few different designs

- **Interest of an international cooperation**
 - An opportunity to reinforce the relationships between the regulators
 - Need to prepare the conditions of a fruitful cooperation
 - Exchanges of personnel, mutual trust
 - Need to follow a pragmatic approach
 - Example of WENRA