

# Authorization of new reactors

## The point of view of the French Nuclear Safety Authority

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# The French Authorization procedure (1)

## The main steps

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- 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

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### ■ 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

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- **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)

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- **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)

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- **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

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- **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)

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- **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

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- **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