

**IRSN**  
INSTITUT  
DE RADIODÉTECTION  
ET DE SÛRETÉ NUCLÉAIRE

## RIC 2010

### IRSN's Views on Mid and Long-Term Research in Nuclear Safety for Operating and Future NPPs in France

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Director General IRSN  
March 10th, 2010

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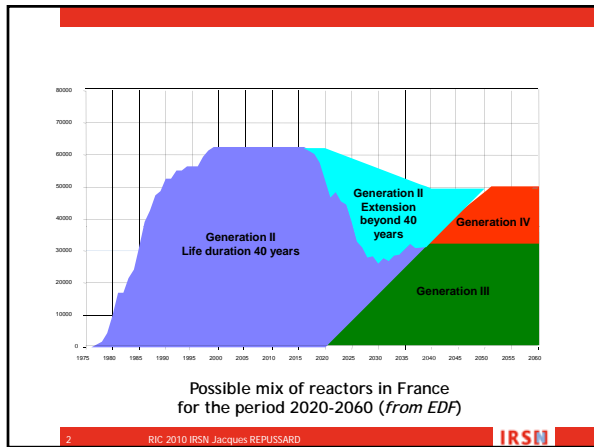
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### Reactor safety issues for the coming years

- GEN I reactors : deconstruction
- GEN II reactors: operating life extension beyond 40 years
- GEN III reactors: licencing and construction process (EPR)
- GEN IV reactors (and ITER): safety related concepts and objectives
- European nuclear safety harmonisation process
- Globalisation of nuclear industry, and progressive multinational mutualisation of regulatory processes

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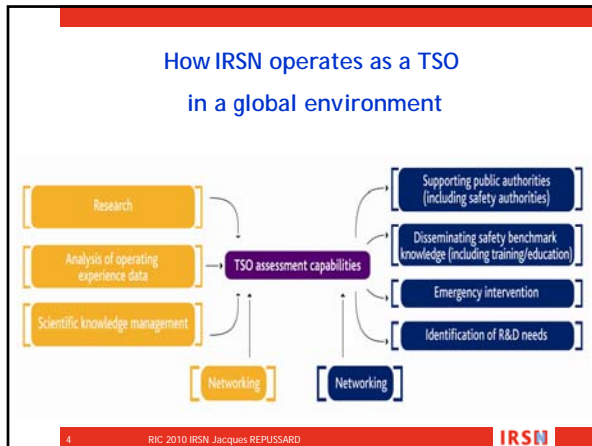
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- ### Current scientific reactor safety issues
- Understanding limitations and uncertainties affecting safety margins in the data related to ageing degradation process
  - Safety enhancement perspectives in existing reactors (reducing core melt probability)
  - Technical assessment capability for advanced technologies and increasingly sophisticated safety file demonstrations (fuel behaviour: RIA, LOCA, digital I&C, ...)
  - Extending safety assessment knowledge and associated « tool box » (PRA, codes, human and organisational risk factors, external hazards,...)
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- ### Reactor safety R&D strategy
- Systematic coordination and mutualisation of efforts
    - SNETP, SARNET, GEN IV Forum, NEA, bilateral cooperation,
    - R&D experimental infrastructures, Codes development and benchmarking, simulator type interfaces, PRA models
    - Operating experience analysis: IRS, European Clearing House
  - Striving for excellence
    - Listening to stakeholders, working with the industry
    - Ensuring where necessary the independance of assessment capability
    - Transparency and accountability
    - Benchmarking and evaluation of results
  - Adapting the effort and work methods to different time frames
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