Licensing Process Considerations for Small and Medium-sized Reactors

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International Atomic Energy Agency

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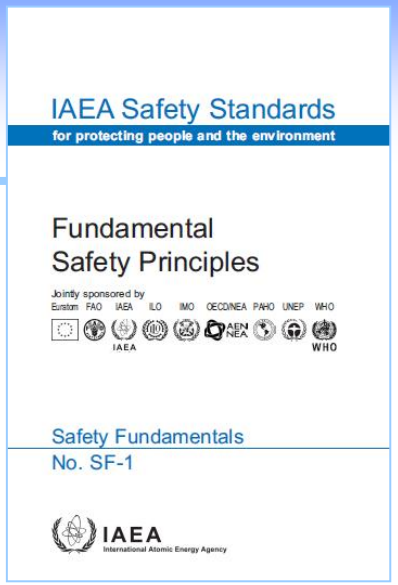

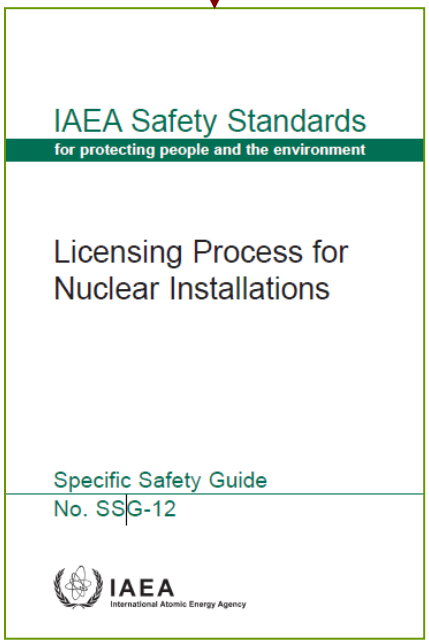

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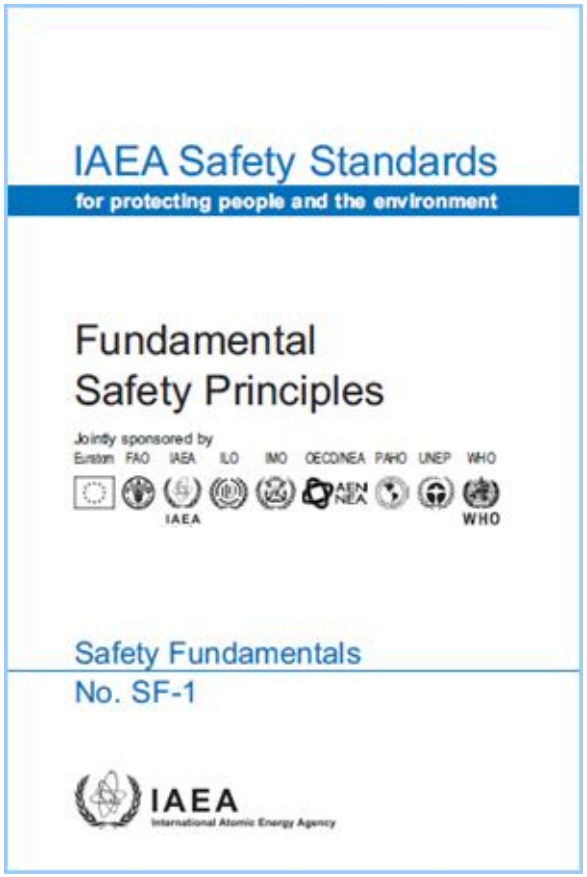
SF-1: Fundamental Safety Principles

- **Principle 1: Responsibility for safety**

  3.4. ***Authorization*** to operate a facility or conduct an activity may be granted to an operating organization or to an individual, known as the **licensee**.



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Requirement 23: Authorization by the regulatory body

Requirement 24: Demonstration of safety for authorization of facilities and activities

Requirement 25: Review and assessment of information relevant to safety

Requirement 26: Graded approach to review and assessment

Requirement 36: Communication and consultation with interested parties

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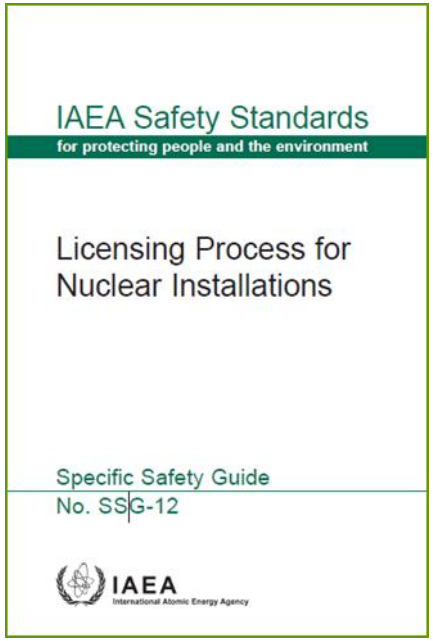
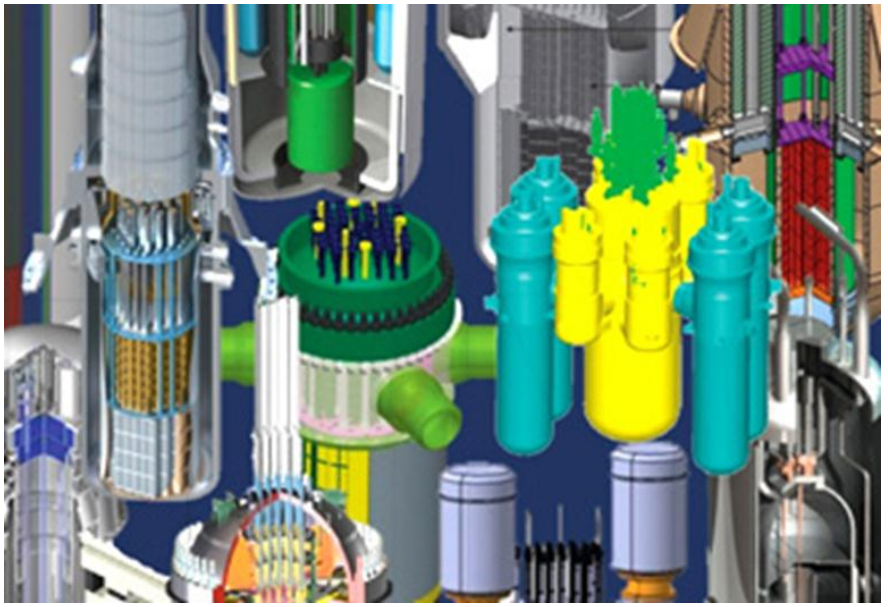
Which licensing process stage(s) are candidates for attention?

- **Siting and site evaluation**
- **Design**
- Construction
- Commissioning
- Operation
- Decommissioning
- Release



Design Considerations

What safety issues might licensees face in deploying SMR's and how does the regulator prepare to provide oversight for these issues?



Siting Considerations

- ***Should SMR's be located in high population density areas?***
- ***How does the lower source term affect emergency planning?***
- ***What are the implications of siting SMR's in remote locations?***
- ***Marine based and transportable SMR's?***

Application of Graded Approach

"*the resources devoted to safety… have to be commensurate with the magnitude of the radiation risks*" **(Fundamental Safety Principle 5)**

Do SMR's realistically pose a sufficient reduction in risk to apply the graded approach to the regulatory requirements?

Public Participation

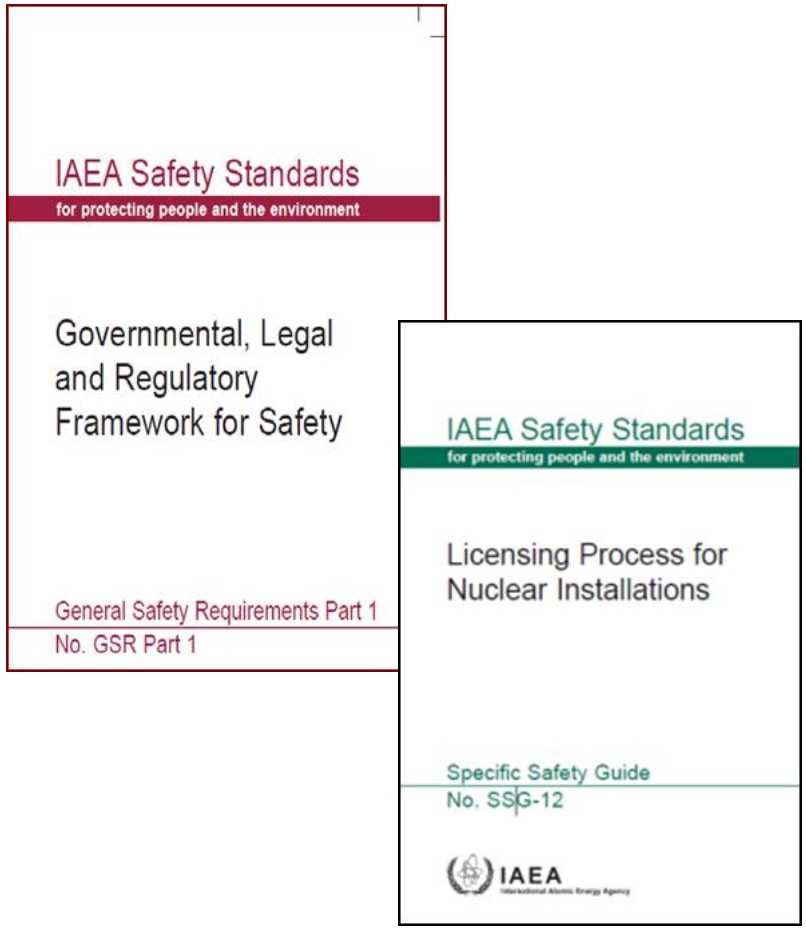
How might SMR's cause public concerns?

- ⇨ *where will the plant be located?*
- ⇨ *how does it work?*
- ⇨ *is it safe?*
- ⇨ *what if it breaks?*

How to communicate terms such as inherently safe, passive safety systems, smaller source term, etc.

Legal and Regulatory Framework

- ***Would National Legislation be expected to change for SMR's?***
- ***Would regulations need to be developed or revised specific to SMR's?***
- ***Are changes to the Safety Standards needed?***
- ***How might the licensing process for SMR's be different?***



The challenge this week…

To identify a prioritized set of **substantive licensing and safety issues** that SMR's might pose and to propose a path forward for resolution