

# ***Regulatory Structure for New Plant Licensing, Part 1: Technology-Neutral Framework***

Session G3 – Research Activities – New  
Reactors

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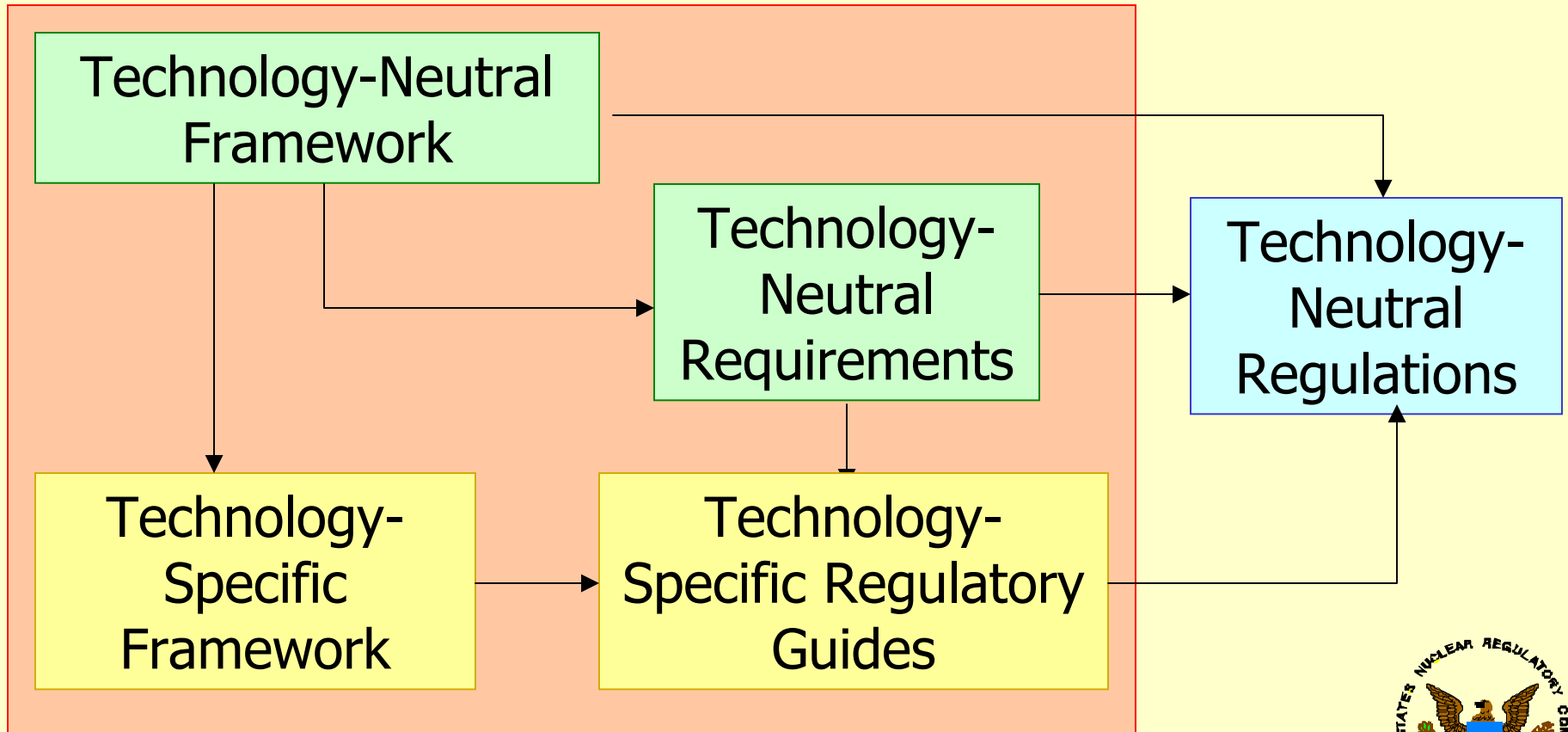
# ***What is this New Structure?***

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- The technical basis for a set of regulations for licensing new reactors
- Process for identifying safety issues uniquely associated with new reactor technology
- Technology-neutral to accommodate different reactor technologies
- Risk-Informed to identify the more likely safety issues and gage their significance
- Performance-based to provide flexibility to accomplish effectiveness and efficiency
- Defense-in-depth to address uncertainties



# *Regulatory Structure*





# ***Framework Elements***

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- Safety philosophy
  - ❖ Defines the safety goal that the requirements need to meet
- Protective strategies
  - ❖ Defines the safety fundamentals or building blocks for developing technology-neutral requirements and regulations
- Risk objectives
  - ❖ Defines the quantitative objectives for ensuring that the safety philosophy is met



# ***Framework Elements (cont'd)***

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- Design/construction/operation objectives
  - ❖ Defines the process for identification of the accidents against which the design, construction and operation need to withstand
  - ❖ Defines the process for safety classification of the structures, systems and components
- Treatment of uncertainties
  - ❖ Provides the process to ensure that defense-in-depth is an integral part of the design, construction and operation
- Process for developing requirements
  - ❖ Defines the process for how the above elements are integrated and implemented to develop the technology-neutral requirements





# ***Complex Policy and Technical Issues, Examples***

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- What level of safety should the technology-neutral regulations be written to achieve?
- Should the consideration of integrated risk be applied to all reactors on a site, not just modular reactors?
- Is meeting a frequency consequence (F-C) curve an appropriate way to achieve enhanced safety for new reactors?
- With respect to implementing the F-C curve, where and how should the consequences be evaluated? (For example: evaluated at a particular site and its boundary? Averaged over all weather or for a conservatively defined weather?)
- What risk criteria and process are appropriate to address accident prevention and safety classification?
- Is identification of event sequence categories by frequency reasonable in defining abnormal operational occurrences (AOOs), design basis accidents (DBAs), and beyond-design-basis events?



# ***Framework Schedule***

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- **SECY-05-0006**
  - ❖ Draft NUREG, “Regulatory Structure for New Plant Licensing, Part 1: Technology-Neutral Framework,” out for public review and comment
- **March 14, 15, 16, 2005 — public workshop (NRC headquarters)**
- **December 2005 — NUREG final draft (public review/comment)**
- **Stakeholder meetings/workshops – to be scheduled**
- **Late 2006 — NUREG issued for use**

