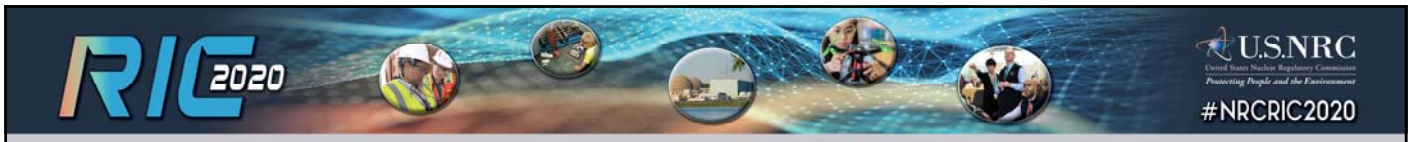

Exploratory Process for a Generic Environmental Impact Statement for Advanced Nuclear Reactors

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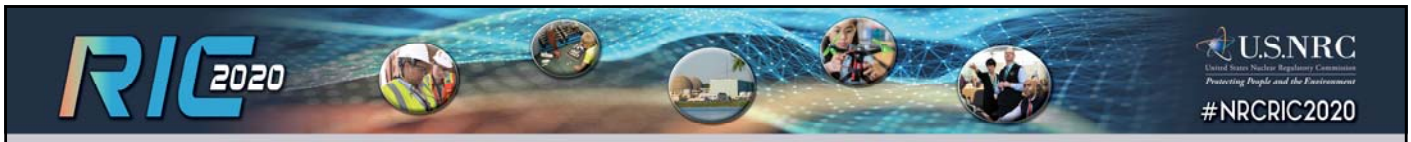
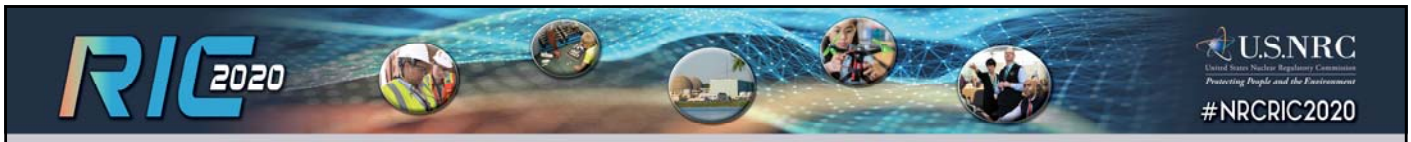


What Would an Advanced Reactor Generic Environmental Impact Statement (GEIS) Address?

- Define the scope of the environmental effects of the construction and operation of advanced reactors
- Identify and determine generic and site-specific environmental impacts



How Would an Advanced Reactor GEIS Streamline the Environmental Review?

- GEIS process used effectively in license renewal
  - Resolved a majority of issues generically; remaining issues addressed in a site-specific supplemental environmental impact statement
- GEIS for advanced reactors may provide similar efficiencies

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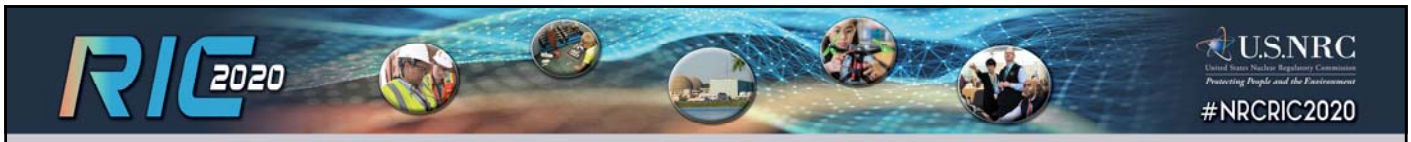
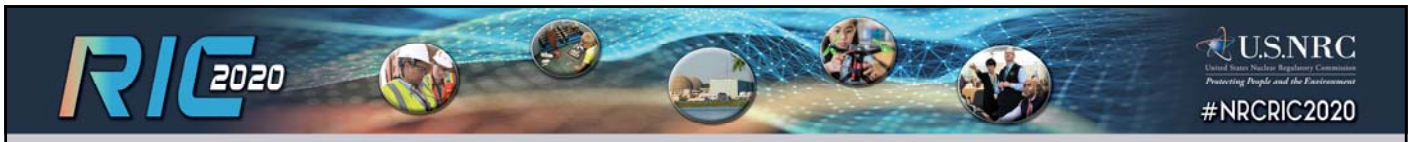


Exploratory Process

- Gathered input from various sources to determine whether to develop a GEIS for the construction and operation of advanced reactors
  - Conducted two public webinars on November 15 and 20, 2019, to reach out to stakeholders
  - Conducted public workshop on January 8, 2020, for input on the construction and operation of advanced reactors
  - Federal Rulemaking Web Site (https://www.regulations.gov) under ID: NRC-2019-0226; public comment period closed January 24, 2020

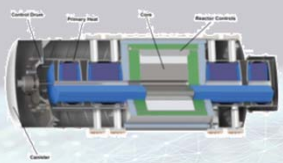


Information Sought to Support GEIS Development

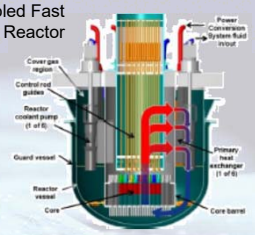
- Footprint and power output level of the advanced reactors
- Construction considerations
  - Constructed/assembled on site or manufactured elsewhere for delivery and installation
  - Onsite and offsite land required to construct the reactor
  - Number of construction workers
- Operation considerations
  - Core lifetime and nuclear fuel management
  - Number of workers during operations
  - Effluents released; gaseous, liquid, and solid wastes
  - Cooling system designs

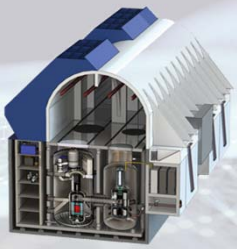
Reactor Technologies

Compact Fast Reactor

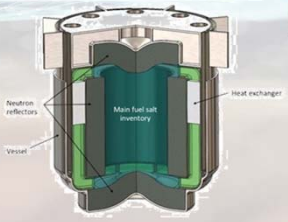


Lead-Cooled Fast Reactor

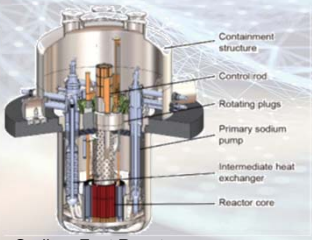




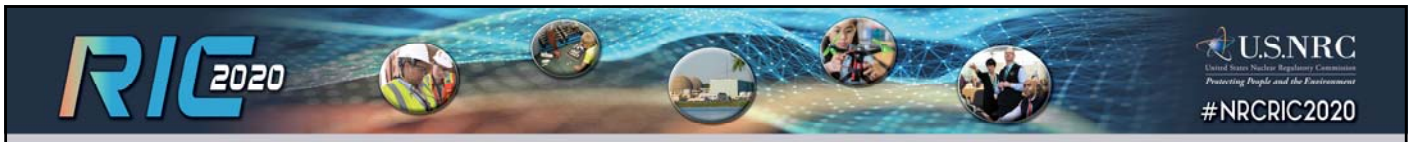
High-Temperature Gas Reactor



Molten Salt Reactor

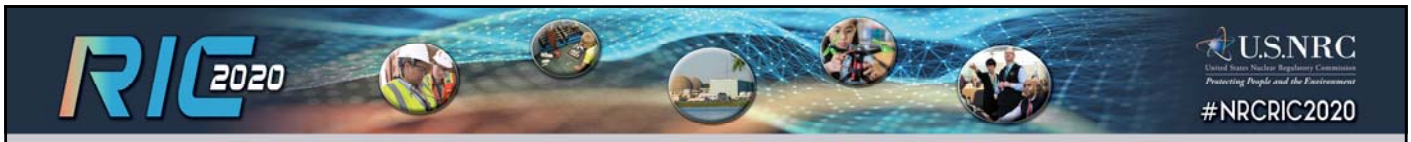


Sodium Fast Reactor



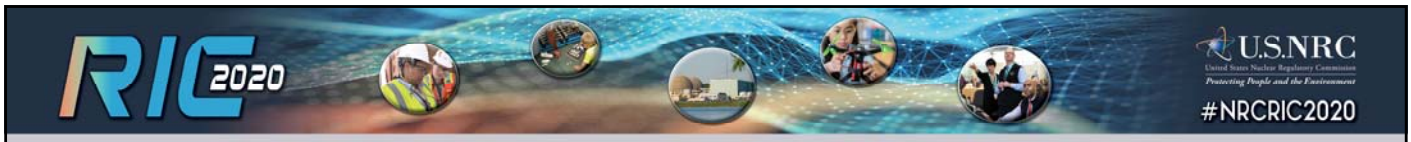
Reactor Utilization

- Demonstration
- Electric production
- Desalination
- Process heat
- Others?



Path Forward

- The NRC continues to evaluate methods and processes for effective environmental reviews of advanced reactors
- Can a GEIS be developed, given the various types and sizes of advanced reactors ?
- Current status



Picture Citations

http://www.westinghousenuclear.com/Portals/0/new%20plants/evincitm/eVinci%20Micro%20Reactor%20NPJ%20M-A%202019.pdf?ver=2019-04-30-211410-367

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