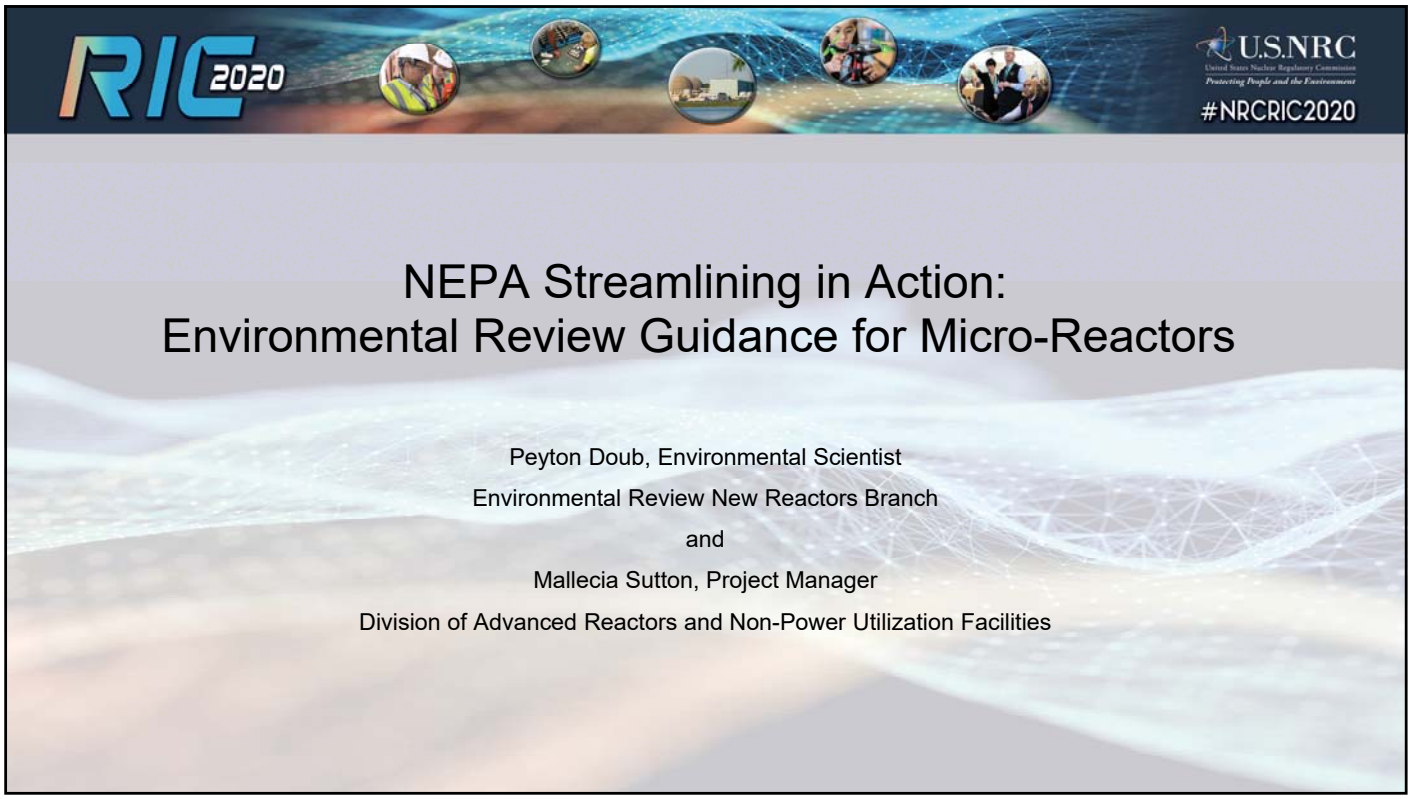

NEPA Streamlining in Action: Environmental Review Guidance for Micro-Reactors

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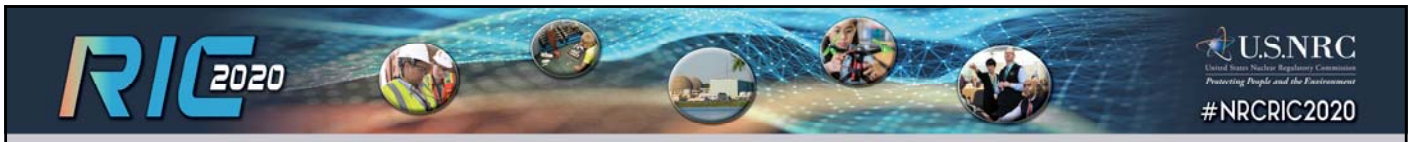
The Challenges

Current new reactor environmental review practices were originally developed for licensing large reactors:

- How to adapt the practices to licensing micro-reactors?
- How to scale the practices to reflect a reduced potential for adverse environmental impacts?
- How to streamline the practices while maintaining the necessary rigor?



Possible Environmental Characteristics of a Micro-Reactor

- Occupies small land area
- Low usage of resources such as water or fuel
- Low level of emissions
- Smaller footprints could avoid sensitive lands such as wetlands and floodplains
- Smaller footprints could avoid areas with cultural, historic, or environmental justice significance
- More opportunities to use mitigation to reduce impacts
- Construction and operation phases would require fewer workers
- Simpler designs with limited interfaces with the environment

Possible Short-Term and Long-Term Approaches

Short Term

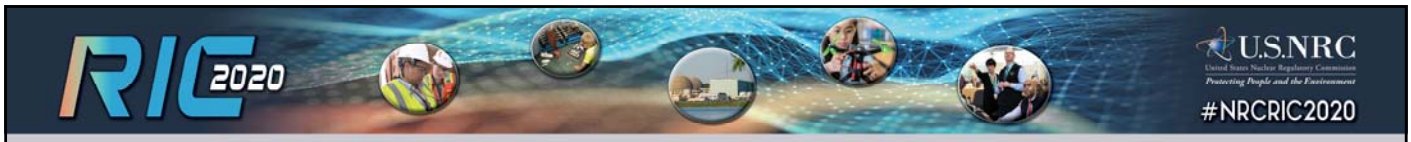
- Development of Interim Staff Guidance (ISG)

Long Term

- Generic Environmental Impact Statement (GEIS)
- New Regulatory Guides

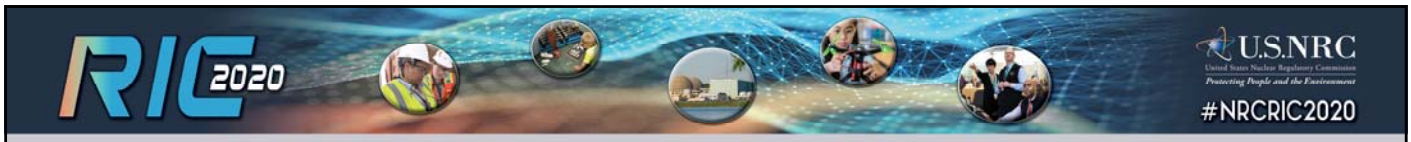
Interim Staff Guidance

- Engaged interdisciplinary team of environmental subject matter experts
- Concurrent with effort to develop safety review guidance for micro-reactors
- Anticipated publication for public comment in 2020
- To be finalized upon receipt and consideration of public comments



Environmental Resource Areas Addressed in ISG

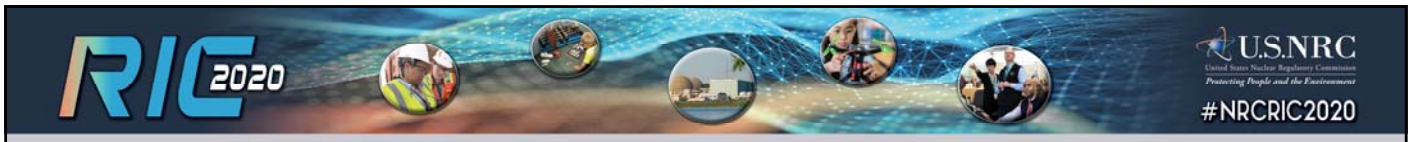
- Land Use
- Water Resources
- Terrestrial Ecology
- Aquatic Ecology
- Socioeconomics and Environmental Justice
- Historic and Cultural Resources
- Need for Power and Alternatives
- Meteorology and Air Quality
- Nonradiological Health
- Radiological Health
- Postulated Accidents
- Severe Accident Mitigation Alternatives
- Fuel Cycle, Transportation of Fuel and Waste, and Continued Storage of Spent Fuel
- Cumulative Impacts



Looking Ahead

- Publication of ISG for Public Comment
- Finalization of ISG
- Possible Development of GEIS

Questions and Discussion



Picture Citations

Slide 2

https://www.defenseone.com/ideas/2018/09/build-small-nuclear-reactors-battlefield-power/151434/

Slide 4

https://www.ornl.gov/news/nuclear-remote-controlled-reactors

Slide 5

https://www.energy.gov/ne/articles/what-nuclear-microreactor

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