Discussion of ISG-029

Jack Cushing Senior Environmental Project Manager
Division of Rulemaking, Environmental, and Financial Support
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission

Advanced Reactor Stakeholders Meeting
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The Challenges

• Current environmental review were originally developed for licensing large reactors.
• How to adapt the new 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
Possible Environmental Characteristics of a Micro-Reactor (cont.)

• 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
• Discussed at stakeholder meetings
• Provides guidance to scale guidance in NUREG-1555 to micro reactors
• Applicants should be aware of how to scale the analysis
• Discuss it with NRC in pre-application before and during the development of the environmental report
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
Environmental Resource Addressed in ISG (cont.)

- 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
Status

• Comment on regulations.gov at https://www.regulations.gov/docket?D=NRC-2020-0051
• Finalization of ISG
• ISG will inform advance reactor generic environmental impact statement
Discussion & Questions