



Exploratory Process for Developing an Advanced Reactor GEIS

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Purpose for a GEIS

- A GEIS defines and assesses the scope and impact of the environmental effects of construction and operation of advanced reactors.
- Identifies and assesses impacts that are expected to be generic.
- Defines the number and scope of environmental impact issues that need to be addressed in site-specific EISs.

Exploratory Process

Background

- On June 25, 2019, Senators Barrasso and Braun sent a letter to NRC Chairman Svinicki (ADAMS Accession No. ML19176A444) requesting that the NRC “initiate a process to develop a Generic Environmental Impact Statement (GEIS) for the construction and operation of advanced reactors.”
- In response, the NRC staff are initiating an exploratory process to gather information needed to determine whether to develop a GEIS for the construction and operation of advanced reactors.
- At the end of the process the Staff will make a recommendation based on cost/benefit on whether to proceed with developing a GEIS.

Questions

- Is there sufficient available information regarding types of technologies and environmental impacts to support development of an ANR GEIS?
- Would an ANR GEIS improve the efficiency of the environmental review process and avoid duplication of effort?
- What are the costs and benefits of doing an ANR GEIS versus doing individual environmental reviews?

Questions Continued

- Should the scope of the ANR GEIS include reactors regardless of technology or be limited to specific reactor technologies?
- What reactor sizes (footprint) and power levels should the NRC include in the scope the ANR GEIS?

Questions Continued

- Should the NRC consider limiting GEIS to geographical regions with common environmental conditions; or should the GEIS not be geographically limited?
- Should the NRC consider a set of bounding plant parameters when developing the scope of the ANR GEIS? If so, what parameters should be considered?

Environmental Impacts Area

The next couple of slides list the environmental areas to be considered in the GEIS. NRC is gathering information to determine if the issue can be considered generically or will need to be evaluated in the supplemental EIS.

Environmental Impact Areas (cont.)

- Land use
- Terrestrial and aquatic impacts
- Water use (surface and groundwater)
- Air quality/greenhouse gas
- Socioeconomic
- Environmental justice
- Noise

Environmental Impact Areas (cont.)

- Visual impacts
- Historic and cultural resources
- Rad and non-rad human health
- Postulated accidents and SAMAs
- Fuel Cycle
- Transportation of fuel and wastes
- Waste management

Environmental Impact Areas (cont.)

- Decommissioning
- Cumulative impacts
- Alternatives
- Need for project
- Cost benefit

Factors NRC is Considering

Siting

- Where would the reactor be located?
 - ⊕ In or near a city or rural area?
 - ⊕ Brownfield or greenfield site?
 - ⊕ In an existing structure?
 - ⊕ Co-located with existing power plant or other industrial facilities?

Factors NRC is Considering

- What is the size/dimension/power output level of the advanced reactor?
- Construction considerations
 - ⊕ Will the reactor be constructed/assembled onsite or manufactured elsewhere for delivery and installation?
 - ⊕ How much land would be required to construct and operate the reactor?
 - ⊕ How many months is the construction period?

Factors NRC is Considering

Operation Considerations

- ⊕ How many years can the reactor operate without replacement?
- ⊕ How many construction and operation workers? (peak and annual average)
- ⊕ What radiological and non-radiological constituents will be emitted or released from the reactor during operations? (airborne and liquid)
- ⊕ How does the reactor refuel (and how often)?

Other Factors

Are there any factors or questions that NRC should be considering or asking but isn't?

Summary Report

At the conclusion of exploratory process, NRC staff will assess the information collected, prepare a summary report by February 15, 2020, of the findings of the exploratory process and make a recommendation based on cost/benefit on whether to proceed with developing a GEIS.

Submit Comments

- Email comments to AdvancedReactors-GEIS.resource@nrc.gov
- If you have any question contact Mallecia Sutton or Jack Cushing

Next meeting Wednesday November 20th
same time and place.