U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Early Site Permit Application Review Clinch River Nuclear Site

Environmental Panel

August 14, 2019

Panelists

- Tamsen Dozier – Environmental Project Manager
- Kenneth Erwin – Chief of the Environmental Technical Review Branch

Proposed Federal Action

- Issuance of an ESP
- Site suitability determination
- Provides for early resolution of issues
- The staff prepares an EIS to meet requirements under NEPA and other laws

Project Description

- No specific design referenced – PPE
- Cooling water source is the Clinch River arm of the Watts Bar Reservoir
- Project objective considered in the environmental review

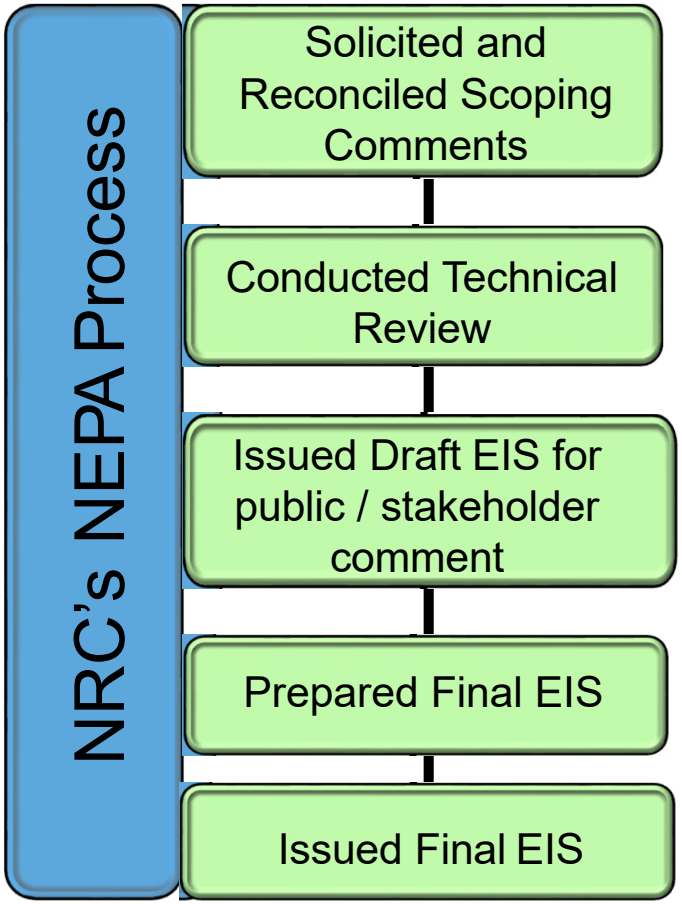
Proposed Clinch River Nuclear Site

- Not currently used for power generation
- Previously disturbed for Clinch River Breeder Reactor

Environmental Review

- US Army Corps of Engineers was a Cooperating Agency
- Environmental Review Team

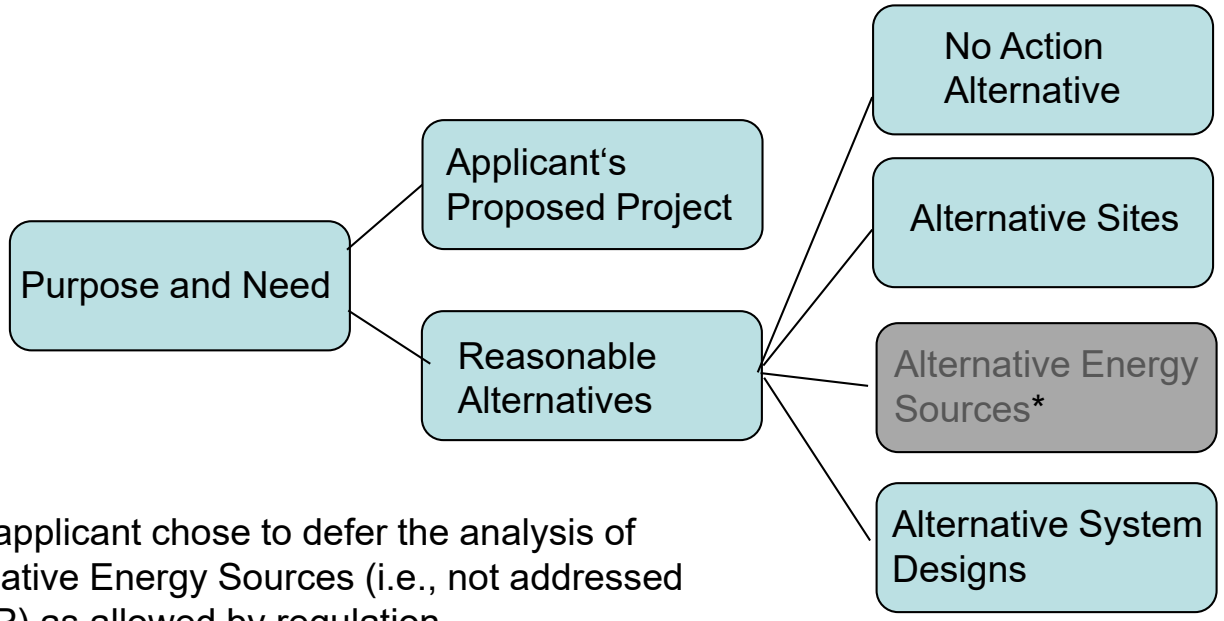
Environmental Review Process



- Scoping period (60 days) from April to June 2017; Scoping meetings held in Oak Ridge, TN
- Draft EIS published April 2018
- Comment period on Draft EIS from April to July 2018 (75 days); meetings held in Kingston, TN
- Considered and dispositioned comments in preparing final EIS
- Final EIS published April 2019

Alternatives

- Purpose and need bounds the alternatives for consideration and shapes the suite of reasonable alternatives



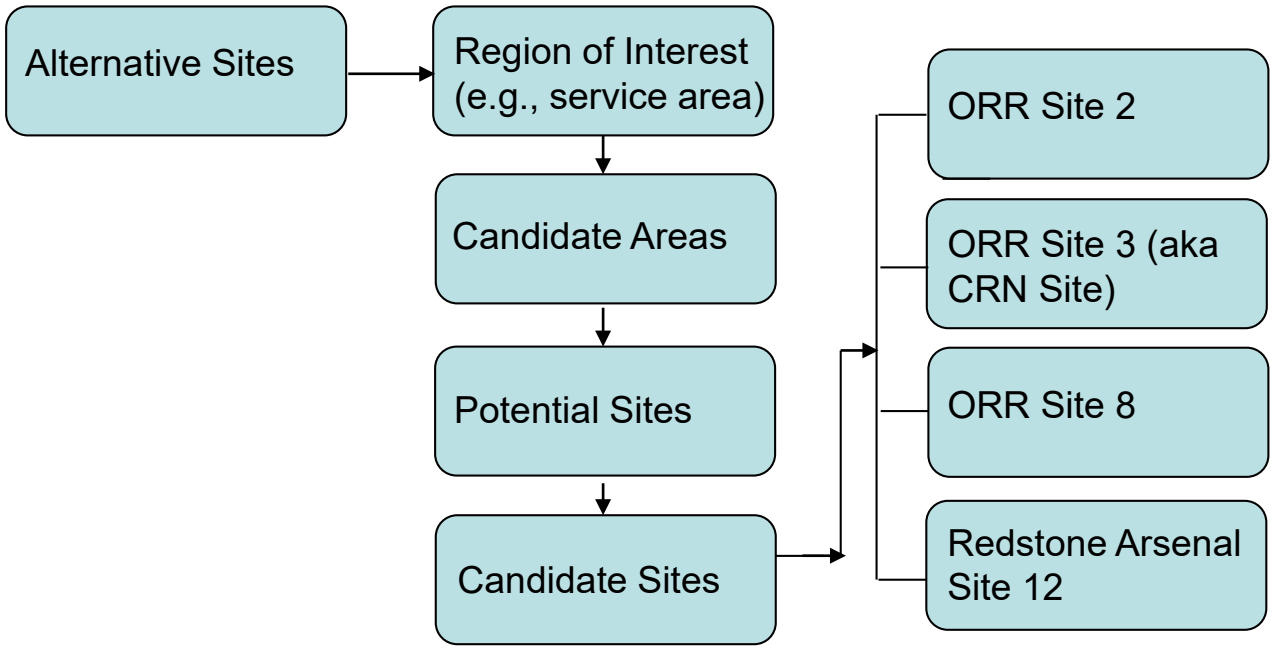
*The applicant chose to defer the analysis of Alternative Energy Sources (i.e., not addressed in ESP) as allowed by regulation.

No-Action Alternative

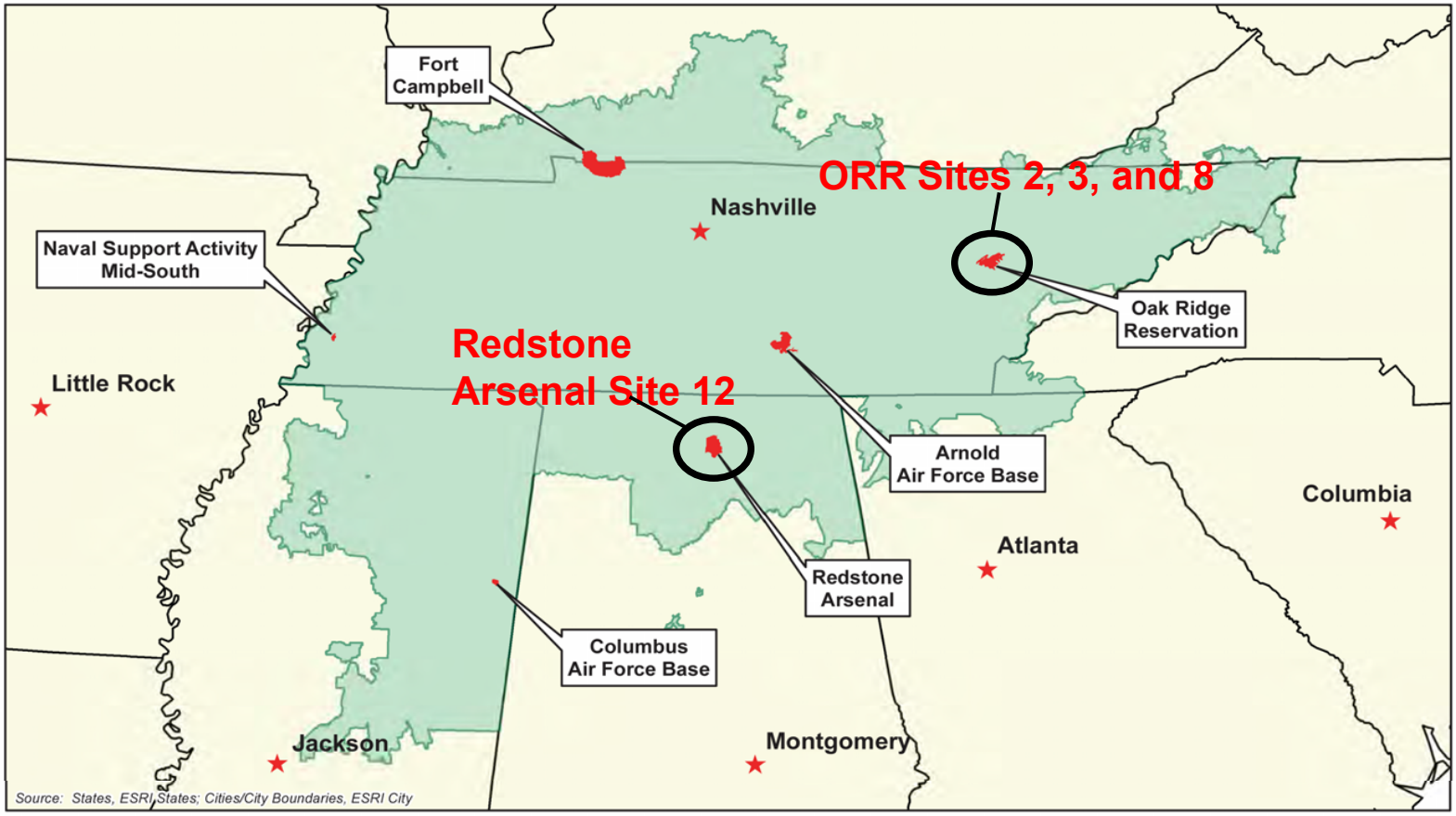
- The purpose and need for an ESP is early resolution of issues, further informed by the applicant's purpose and need for the project
- There would be no environmental impacts associated with not issuing the ESP; however, this "no-action alternative" would not accomplish any of the intended benefits of the ESP process

Alternative Sites

- Process of identifying possible alternative sites



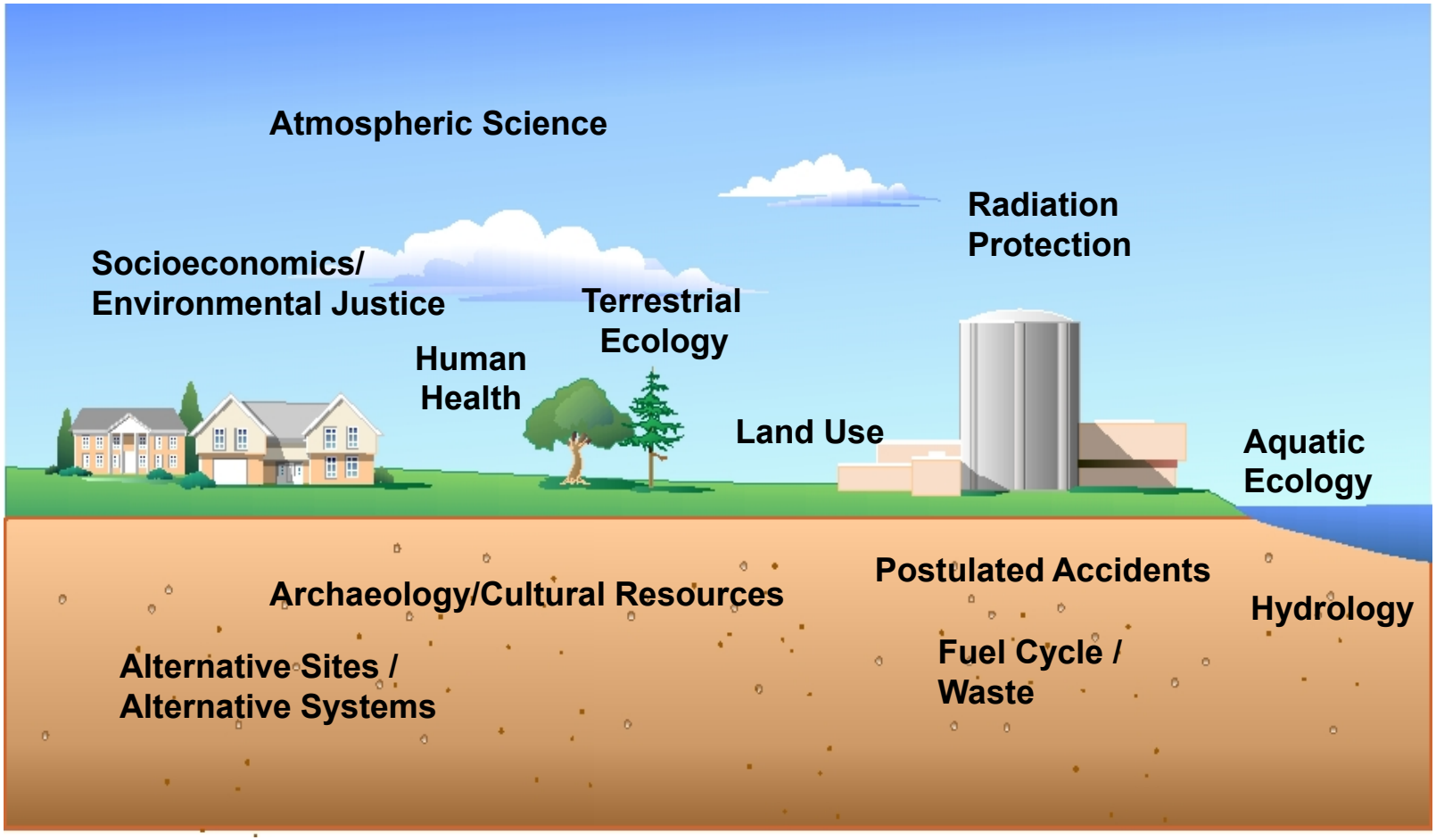
Location of Candidate Areas and Alternative Sites



Comparison of Alternative Sites

- Impacts at alternatives sites (i.e., Sites ORR 2, ORR 8, and Redstone Arsenal 12) were compared to CRN Site
- No alternative sites were environmentally preferable to the proposed CRN Site

Environmental Review Areas



Impacts on Resources – Small

Resource Area	Building	Operation
Water-related		
Surface-water use and quality	SMALL	SMALL
Groundwater use and quality	SMALL	SMALL
Ecology (Aquatic)	SMALL	SMALL
Socioeconomic		
Demography	SMALL	SMALL
Economic impacts	SMALL (beneficial)	SMALL (beneficial)
Environmental justice	NONE	NONE
Air quality	SMALL	SMALL
Radiological health	SMALL	SMALL
Nonradiological waste	SMALL	SMALL
Postulated accidents	NA	SMALL
Fuel cycle, transportation, and decommissioning	NA	SMALL

Impacts on Resources – Moderate And Large

Resource Area	Building	Operation
Land use	MODERATE	SMALL
Terrestrial Ecology	MODERATE	SMALL
Socioeconomic		
Physical impacts	SMALL to MODERATE	SMALL to MODERATE (aesthetics)
Infrastructure and community services	SMALL (for all categories except traffic) and MODERATE to LARGE (for traffic)	SMALL to MODERATE (recreation)
Historic and cultural resources	MODERATE to LARGE	SMALL
Nonradiological health	SMALL to MODERATE	SMALL

Indiana Bats

CRN Site

Forest on CRN Site

Historic and Cultural Resources

- Coordinated NHPA Section 106 consultation through the NEPA process
- Consulted with 20 American Indian Tribes, the Tennessee Historical Commission, and the Advisory Council on Historic Preservation

Historic and Cultural Resources (Cont.)

- Combined impact from construction and preconstruction activities would be MODERATE to LARGE
  - Impacts from NRC-authorized construction would be SMALL
  - TVA has executed a Programmatic Agreement (PA) to address its ongoing NHPA Section 106 responsibilities

Traffic

- TVA completed a traffic study
- During Construction:
  - LARGE adverse impacts on traffic for routes near the CRN Site without mitigation
  - Reduced by planning and mitigation
  - Mitigated impacts would still be MODERATE to LARGE

Cumulative Impacts

- Cumulative impacts result from the incremental impact of the action when added to other past, present, and future actions
- No change to most impact areas from cumulative analysis
- Some resource impacts increased due to past activities

Future NEPA Analyses

- If a future application references the ESP, the supplemental EIS for that future application would address:
  - Issues deferred from or not resolved in the ESP
  - New and significant information

Conclusions

- Environmental impacts for most resource areas would be small
- None of the reasonable alternatives were environmentally preferable

Recommendation

The staff's assessments documented in the final EIS support a recommendation to the Commission to issue the early site permit.