



# Preliminary Results of Environmental Review North Anna Units 1 and 2

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Nuclear Regulatory Commission  
June 25, 2002



## Purpose of Today's Meeting

- 
- Discuss NRC's license renewal process
  - Describe the environmental review process
  - Discuss the results of our review
  - Provide the review schedule
  - Accept any comments you may have today
  - Describe how to submit comments



## North Anna Units 1 and 2 License Renewal

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- Operating licenses expire in 2018 (Unit 1) and 2020 (Unit 2)
- Application requests authorization to operate units for an additional 20 years

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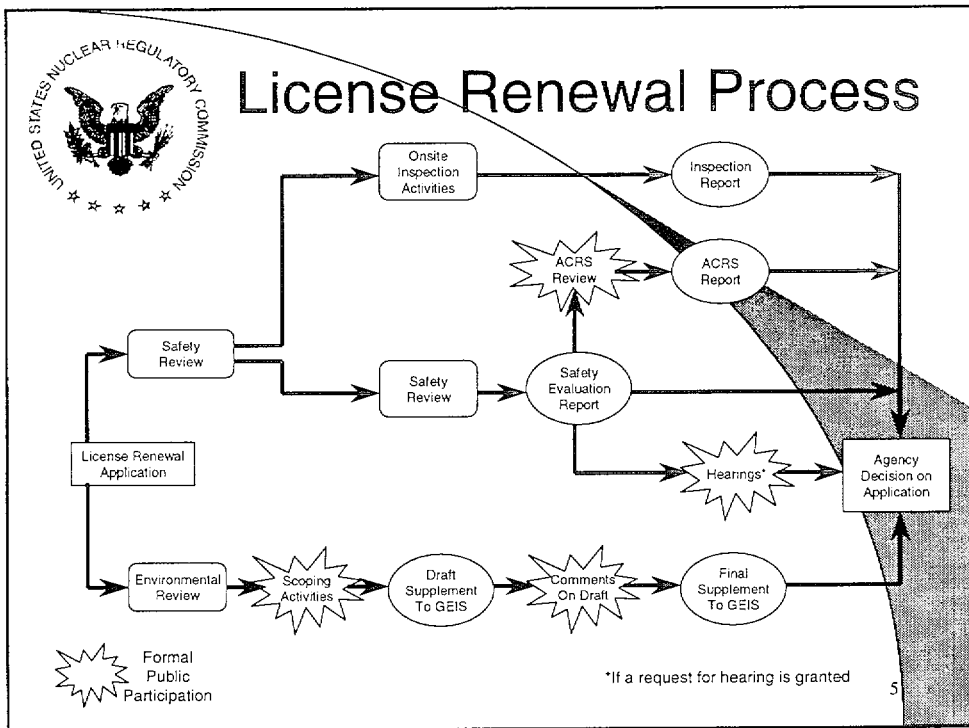


## NRC's License Renewal Review

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- Safety review
- Environmental review
- Plant inspections
- Advisory Committee on Reactor Safeguards (ACRS)

4



**National Environmental Policy Act**

United States Nuclear Regulatory Commission

- NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- Commission has determined that an environmental impact statement (EIS) will be prepared for a license renewal action

6

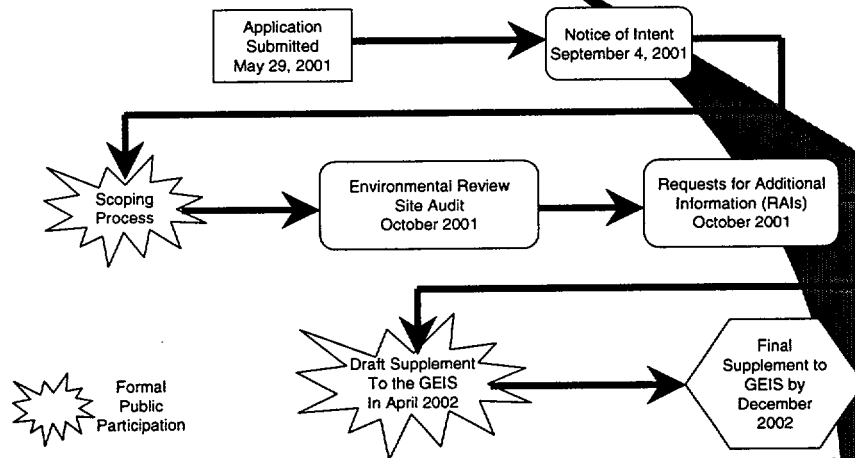


# Decision Standard for Environmental Review

To determine whether or not the adverse environmental impacts of license renewal for North Anna Units 1 and 2, are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

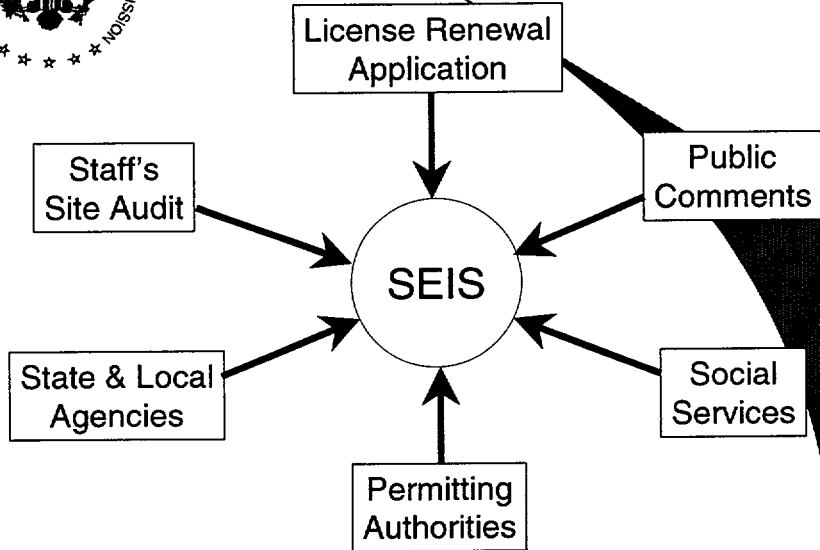


# Environmental License Renewal Process





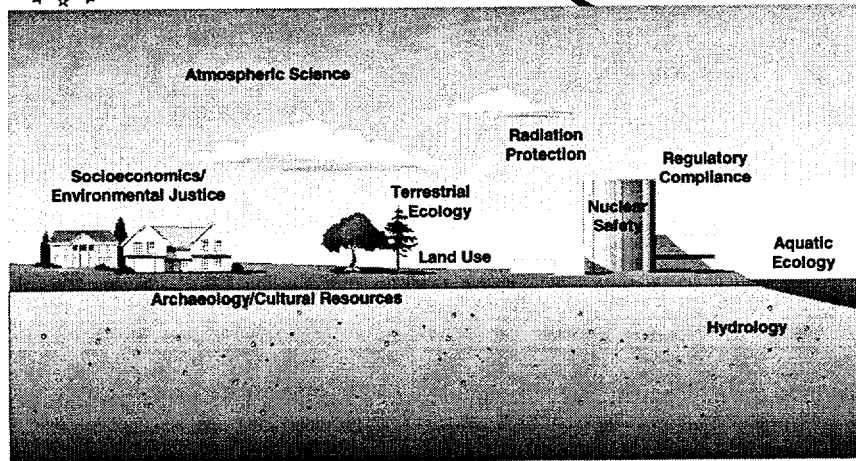
# Information Gathering



9



# Team Expertise



10

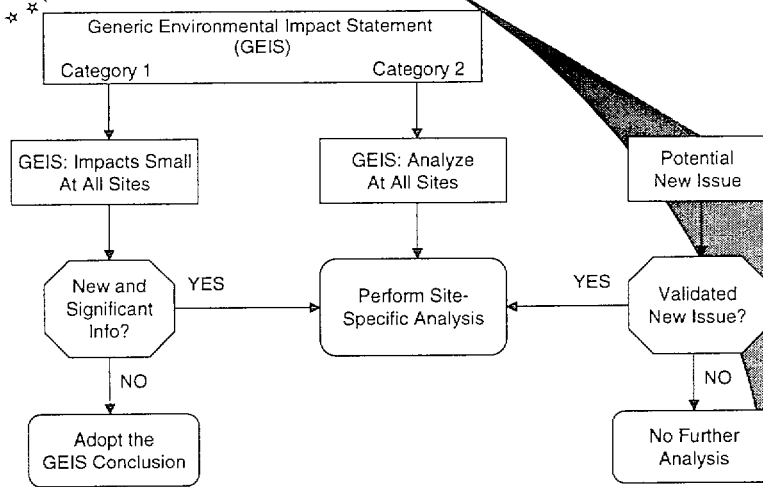


# How Impacts are Quantified

- NRC-defined impact levels:
  - **SMALL**: Effect is not detectable or too small to destabilize or noticeably alter any important attribute of the resource
  - **MODERATE**: Effect is sufficient to alter noticeably, but not destabilize important attributes of the resource
  - **LARGE**: Effect is clearly noticeable and sufficient to destabilize important attributes of the resource
- Consistent with the Council on Environmental Quality guidance for NEPA analyses



# Analysis Approach





# Environmental Impacts of Operation

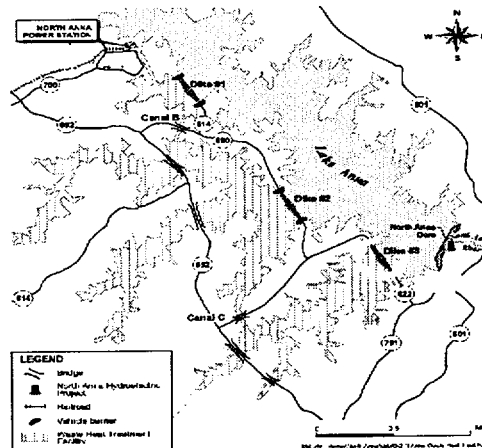
- Cooling System
- Transmission Lines
- Radiological
- Socioeconomic
- Groundwater Use and Quality
- Threatened or Endangered Species

13



# Cooling System Impacts

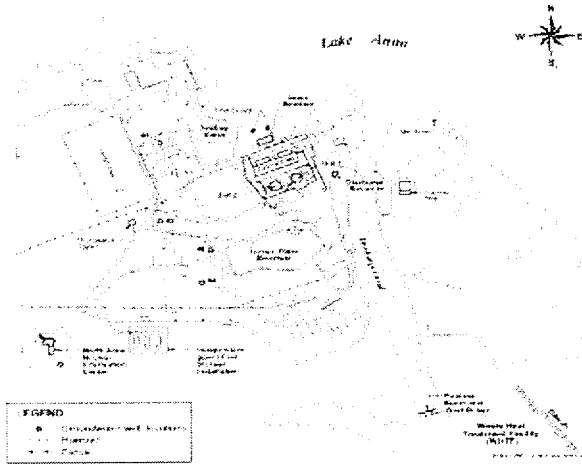
Figure 3-2  
North Anna Power Station, Waste Heat Treatment Facility  
Detail Vicinity Map



14



# Cooling System Impacts



# Radiological Impacts

## Category 1

- Effluent monitoring and controls
- Rad Waste processing and packaging
- Environmental monitoring
  - TLDs
  - Air monitoring
  - Biota sampling



Dose to the public during license renewal





## Threatened and Endangered Species



## Potential New and Significant Information

- No new and significant information identified
  - during scoping
  - by the licensee
  - by the staff



## Other Environmental Impacts Evaluated

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- Uranium Fuel Cycle and Solid Waste Management
- Decommissioning

19



## Alternatives

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- No-action
- New generation
- Purchased electrical power
- Alternative technologies
- Combination of alternatives

20



## Preliminary Conclusions for Alternatives

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- Alternatives (including the no-action alternative) may have environmental effects in at least some impact categories that reach MODERATE or LARGE significance

21



## Impacts of Postulated Accidents

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- Design-Basis Accidents
- Severe Accidents
  - Severe Accident Mitigation Alternatives (SAMAs)

22



## Results of SAMA Evaluation

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- 158 candidate improvements identified
  - 37 were already implemented
  - 70 not applicable
- Cost/benefit analysis for 51 remaining candidates, with detailed estimates for 9 candidates
- None of the 51 candidates were found to be cost beneficial

23



## Results of SAMA Evaluation (continued)

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- Overall conclusion:

Additional plant improvements to further mitigate severe accidents are not required at North Anna Units 1 and 2.

24



## Conclusion

- Impacts of license renewal are SMALL for all impact areas
- Impacts of alternatives to license renewal range from SMALL to LARGE
- The staff's preliminary recommendation is that the adverse environmental impacts of license renewal for North Anna Units 1 and 2 are not so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable

25



## Environmental Review Milestones

- Draft EIS issued – 4/23/02
- Comment period – 5/17/02 to 8/1/02
- Final EIS issued on or before – 12/02

26



## Point of Contact

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- Agency point of contact:  
Andrew J. Kugler  
(800) 368-5642, Ext. 2828
- Documents located at the Louisa County Library and UVA Charlottesville, and can be viewed at the NRC's Web site ([www.nrc.gov](http://www.nrc.gov))
- Draft SEIS can also be viewed at:  
[www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement7/](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement7/)

27



## NRC Addresses

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### Provide comments:

- By mail at: Chief, Rules and Directives Branch  
Division of Administrative Services  
Mailstop T-6D59  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001
- In person at: 11545 Rockville Pike  
Rockville, Maryland
- E-mail at: [NorthAnnaEIS@nrc.gov](mailto:NorthAnnaEIS@nrc.gov)
- On-line comment form with web version of draft

28