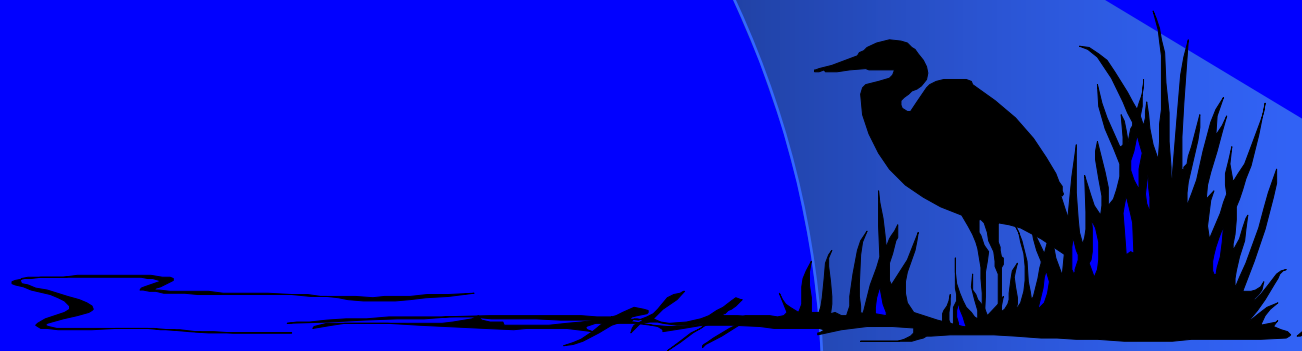


Preliminary Results of Environmental Review Arkansas Nuclear One, Unit 2

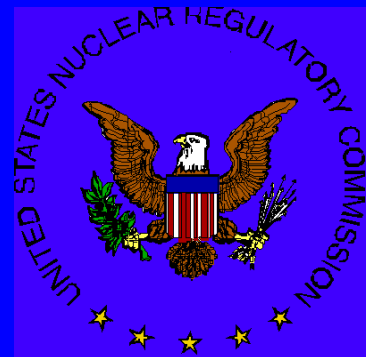
Nuclear Regulatory Commission
October 21, 2004





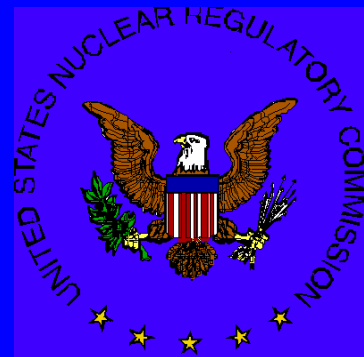
Purpose of Today's Meeting

- 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



Arkansas Nuclear One, Unit 2 License Renewal Application

- Current operating license expires 07/17/2018
- Requests authorization to operate Arkansas Nuclear One, Unit 2 for up to an additional 20 years

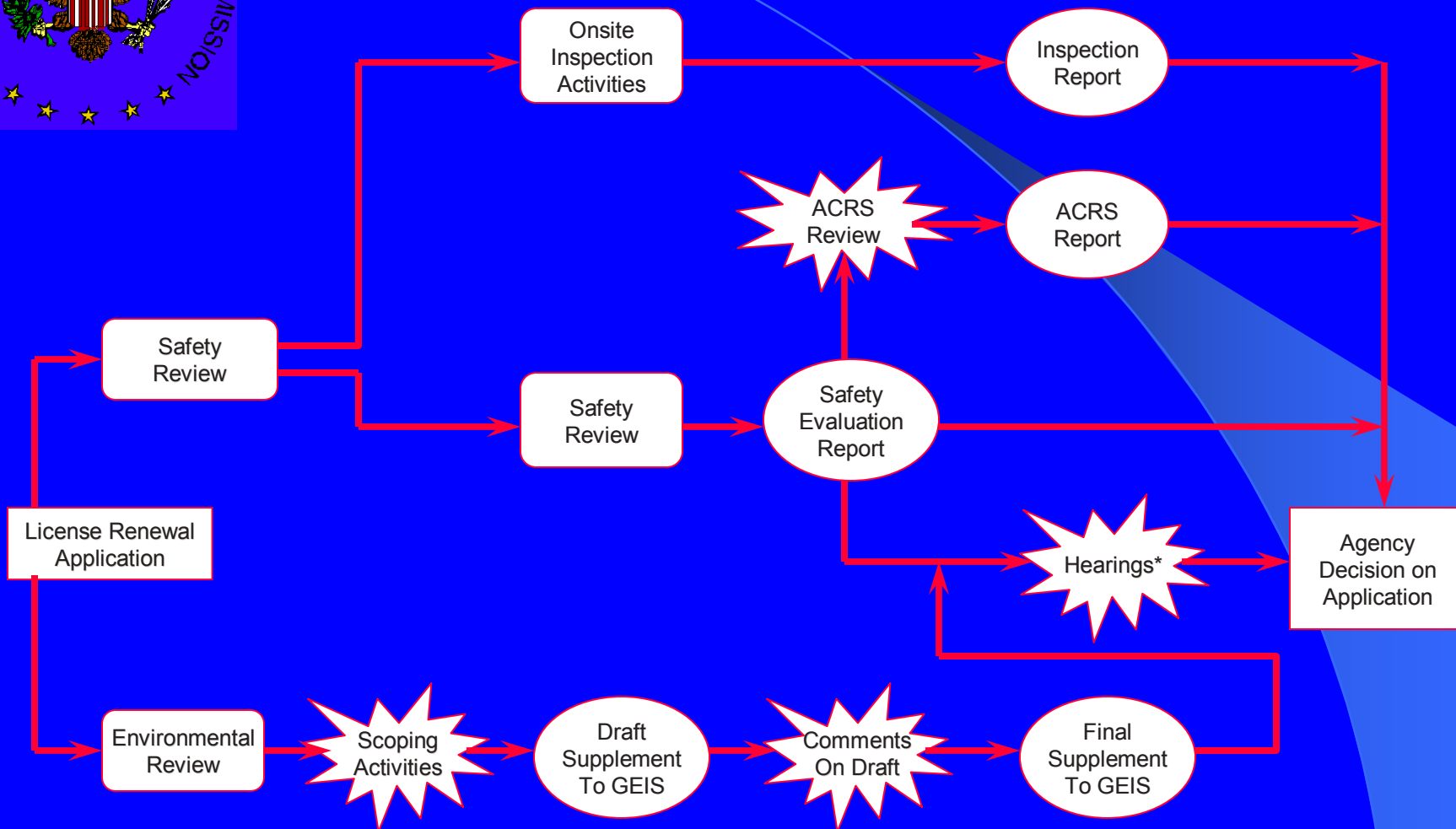


NRC's License Renewal Review

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

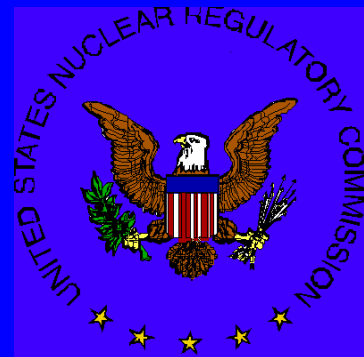


License Renewal Process



 Formal Public Participation

*If a request for hearing is granted



National Environmental Policy Act

-
- 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

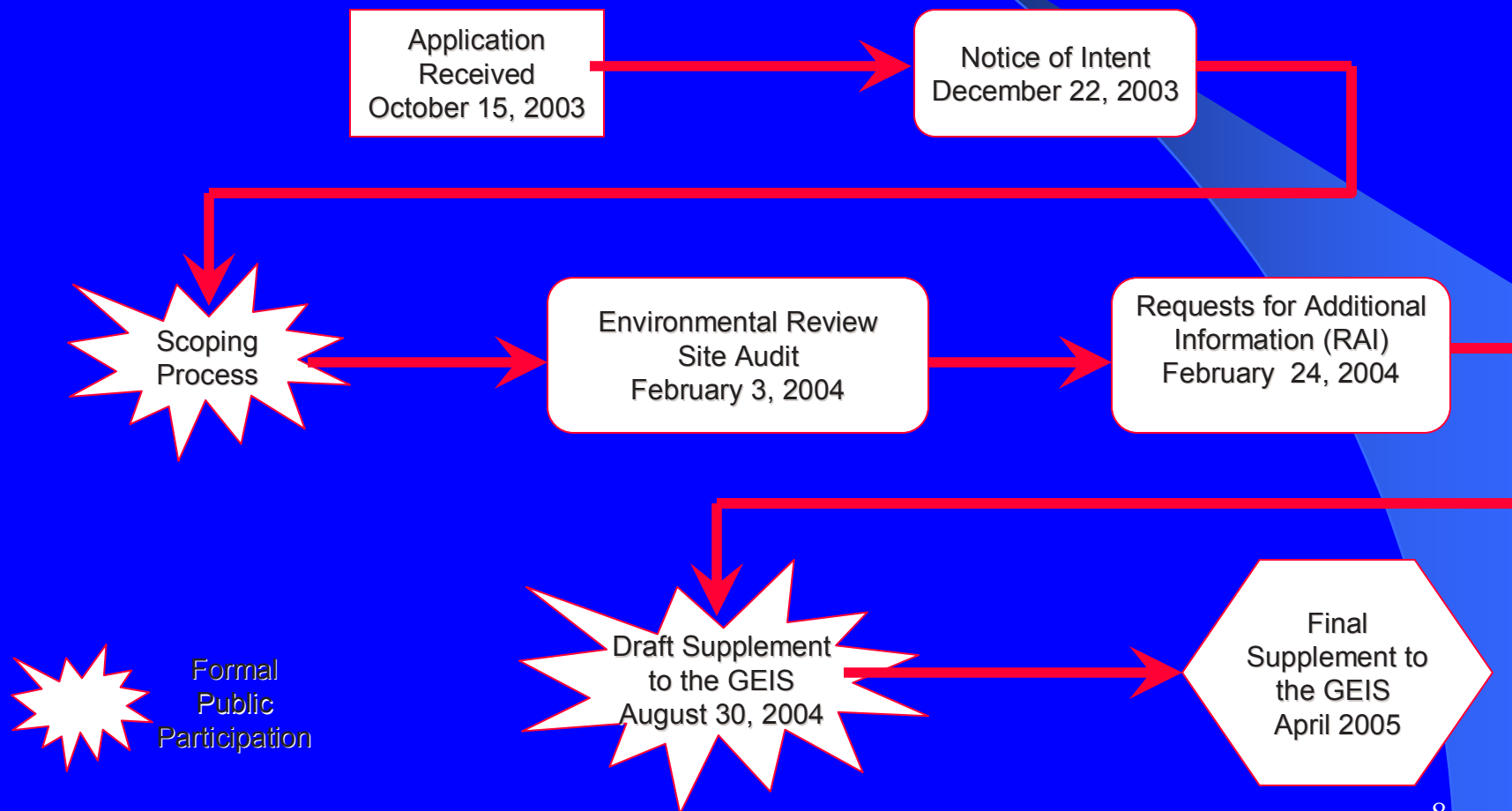


Decision Standard for Environmental Review

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

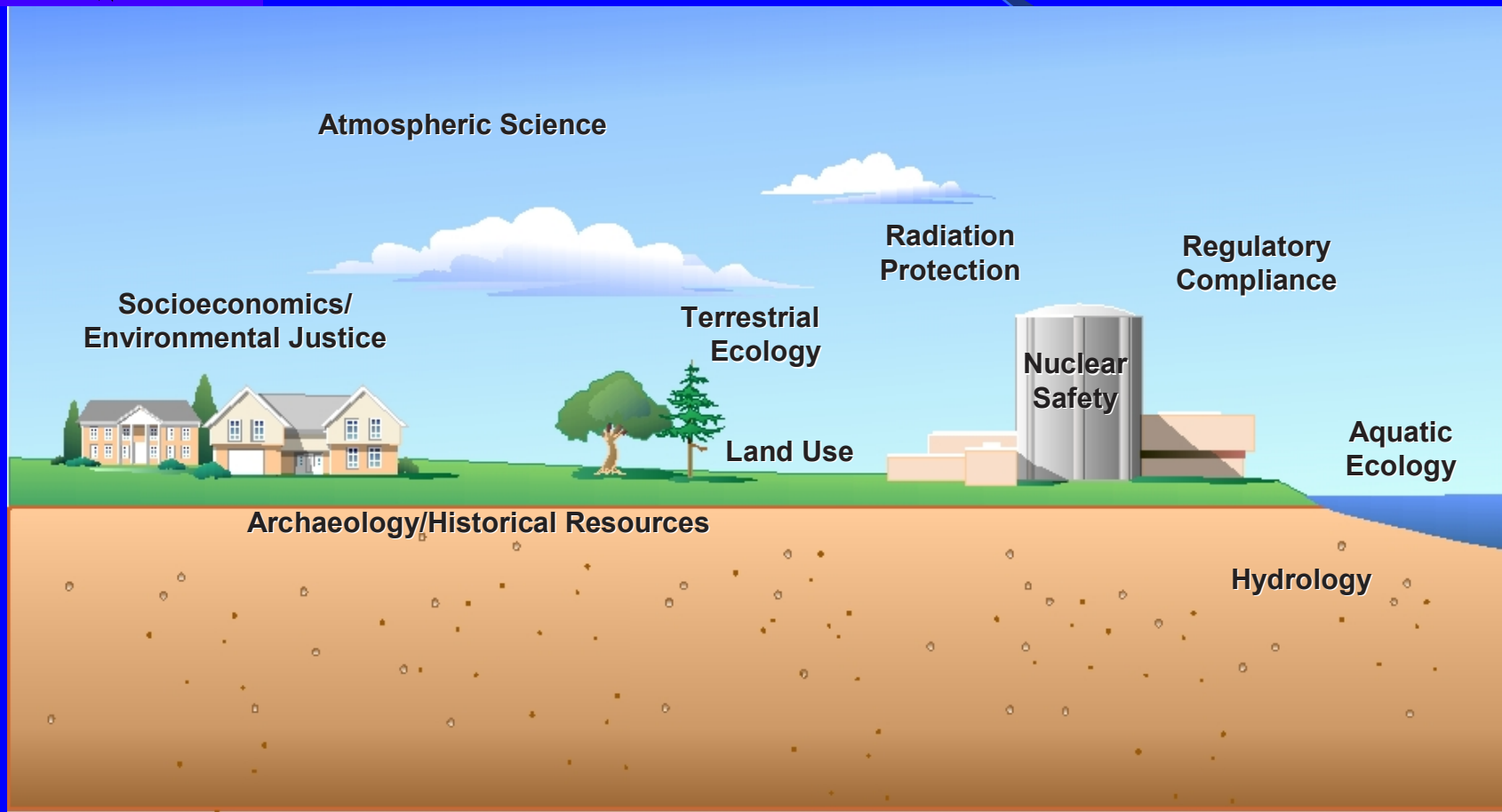


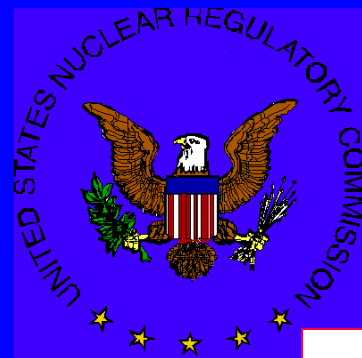
Environmental License Renewal Process



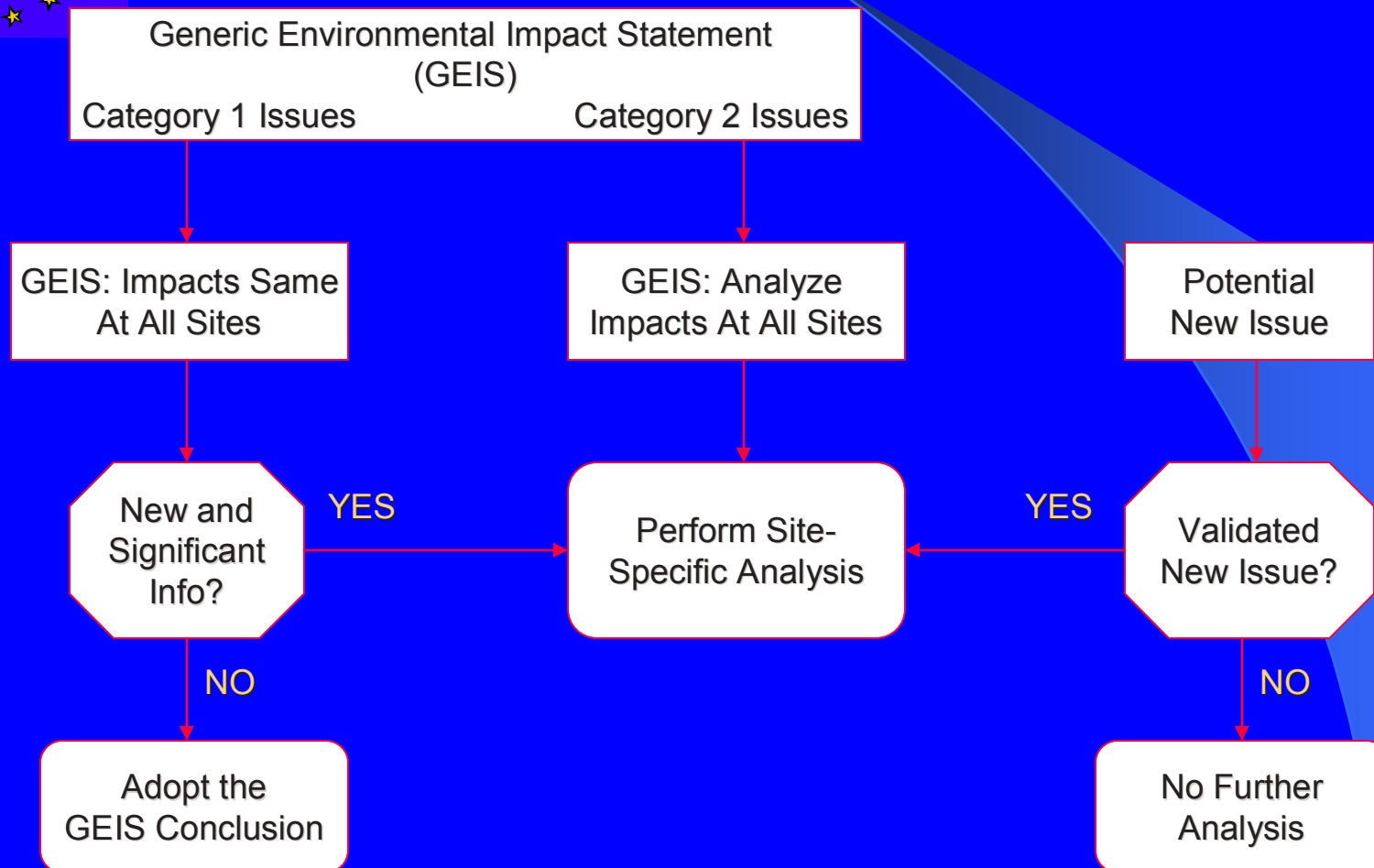


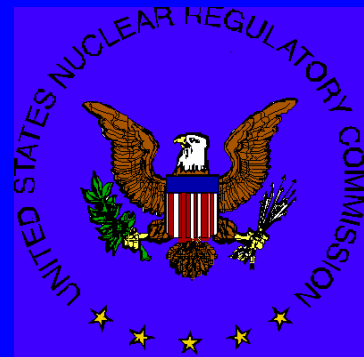
Team Expertise





Analysis Approach





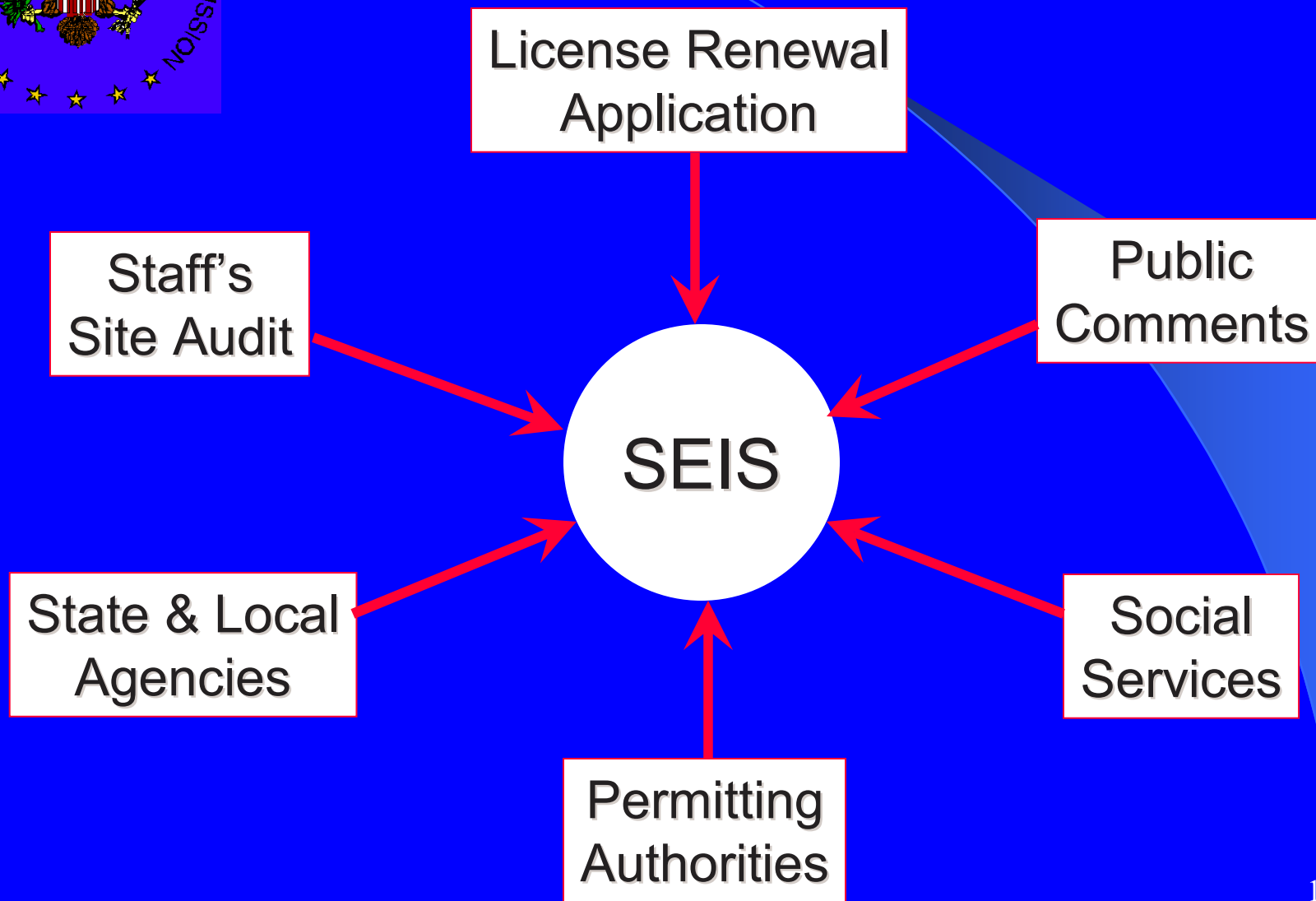
How Impacts are Quantified

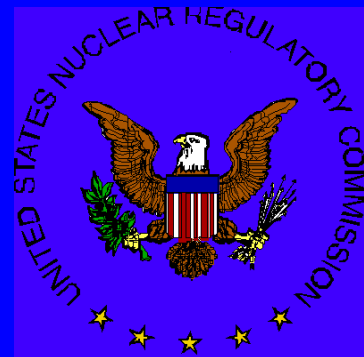
- NRC-defined impact levels:
 - **SMALL**: *Effect is not detectable or too small to destabilize or noticeably alter any important attribute of the resource*
 - **MODERATE**: *Effect is sufficient to alter noticeably, but not destabilize important attributes of the resource*
 - **LARGE**: *Effect is clearly noticeable and sufficient to destabilize important attributes of the resource*

- Consistent with the Council on Environmental Quality guidance for NEPA analyses



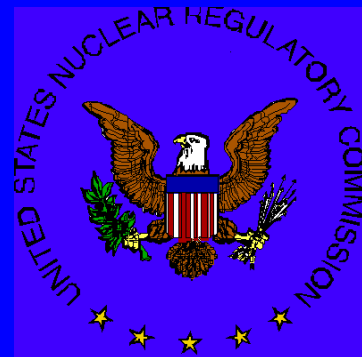
Information Gathering





Environmental Impacts of Continued Operation

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



Cooling System Impacts

- Category 2 issues
 - Water Use Conflicts
 - Microbiological Organisms

- Preliminary findings
 - Impacts are SMALL
 - No additional mitigation required



Transmission Lines

- Category 2 issues
 - Electromagnetic fields (EMF), acute effects (electric shock)
 - Electromagnetic fields, chronic effects not categorized
- Preliminary findings
 - Impacts are SMALL
 - No additional mitigation required



Radiological Impacts

- Category 1 issues
 - Radiation exposures to the public
 - Occupational radiation exposures

- Preliminary findings
 - No new and significant information identified
 - GEIS concluded impacts are SMALL



Socioeconomic Impacts

- Category 2 Issues
 - Housing
 - Public Services: public utilities
 - Offsite land use
 - Public services, transportation
 - Historic and archaeological resources
- Environmental Justice issue not categorized
- Preliminary findings
 - No new and significant information identified
 - Impacts are SMALL



Groundwater

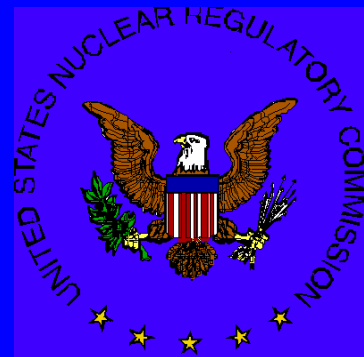
- Category 2 Issues
 - Groundwater use conflicts (cooling towers)

- Preliminary findings
 - No new and significant information identified
 - Impacts are SMALL



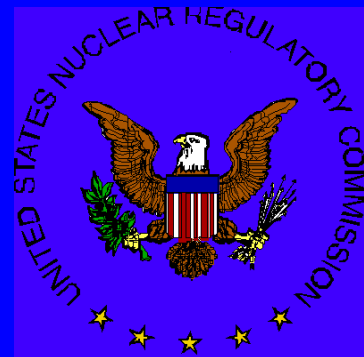
Threatened or Endangered Species





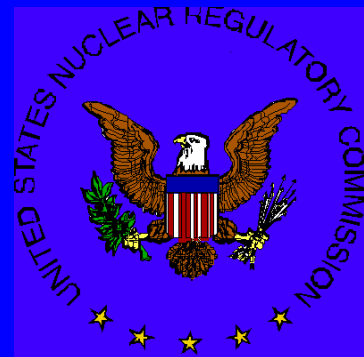
Threatened or Endangered Species

- *Myotis grisescens*, gray bat
- *Haliaeetus leucocephalus*, bald eagle
- *Sterna antillarum*, least tern
- *Notropis girardi*, Arkansas River shiner



Cumulative Impacts of Operation

-
- Considered impacts of renewal term operations combined with other past, present, and reasonably foreseeable future actions
 - evaluated to end of 20-year renewal term
 - geographic boundaries dependent on resource
 - No significant cumulative impacts



Other Environmental Impacts Evaluated

- Uranium Fuel Cycle and Solid Waste Management
- Decommissioning

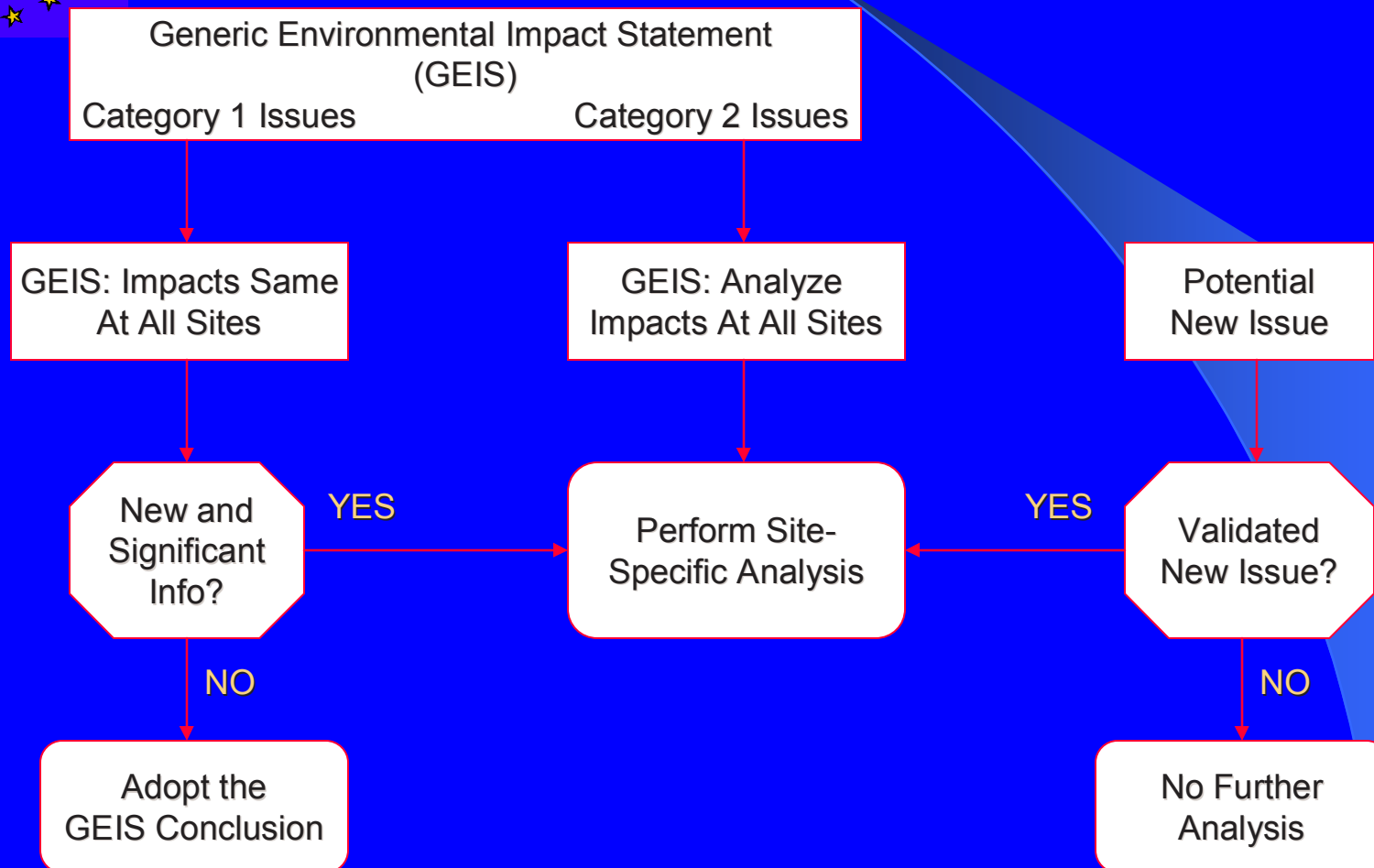


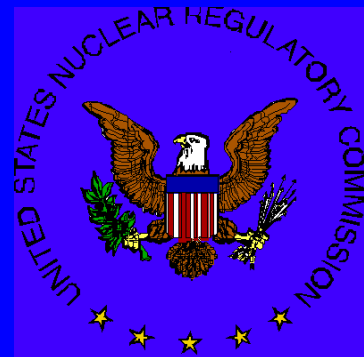
Alternatives

- No-action
- Alternative energy sources
 - New generation (Coal, Natural Gas, Nuclear)
 - Purchased electrical power
 - Other alternatives (Oil, Wind, Solar, Conservation)
 - Combination of alternatives
- Environmental effects of alternatives in at least some impact categories reach MODERATE or LARGE significance



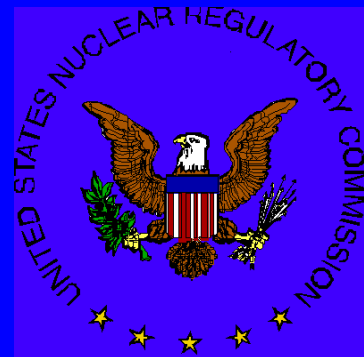
Analysis Approach





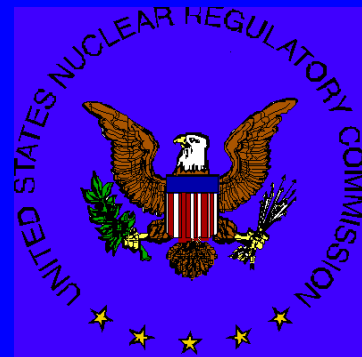
Preliminary Conclusions

- GEIS Conclusions on Category 1 issues adopted.
- Impacts resulting from Category 2 issues are of SMALL significance.
- No new impacts identified.
- Environmental effects of alternatives may reach MODERATE or LARGE significance.



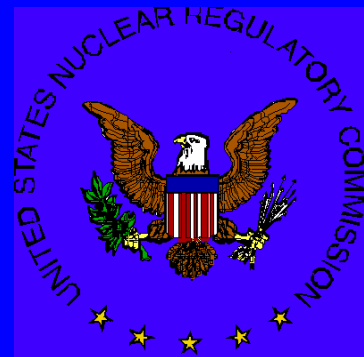
Postulated Accidents

- Design-basis accidents
- Severe accidents
 - Severe accident mitigation alternatives (SAMAs)



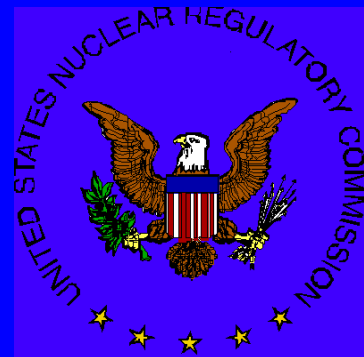
SAMA Evaluation Process

- Characterize overall plant risk
- Identify potential improvements
- Quantify risk reduction potential and implementation costs
- Determine whether implementation of any of the improvements is required to support license renewal



Preliminary Results of SAMA Evaluation

- 192 candidate improvements considered
- Set of SAMAs reduced to 93 based on multi-step screening process
- Detailed cost/benefit analysis
 - 2 procedural SAMAs potentially cost beneficial
 - 2 SAMAs related to diversity of equipment could be cost beneficial



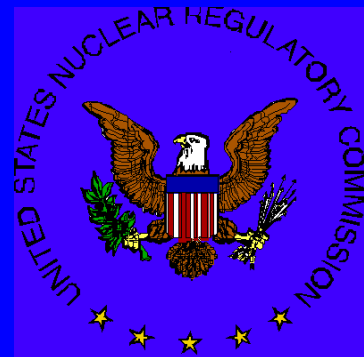
Preliminary Results of SAMA Evaluation

- Potential cost-beneficial SAMAs not related to managing the effects of aging
- Not required to be implemented as part of license renewal



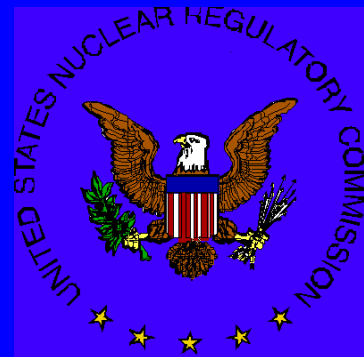
Preliminary Conclusions

- 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 ANO-2 are not so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable



Environmental Review Milestones

- Draft EIS issued – 8/30/04
- Comment period – 8/30/04 to 11/24/04
- Issuance of Final EIS – April 2005



Point of Contact and Reference Documents

- Agency point of contact:
Thomas Kenyon
(800) 368-5642, Ext. 1120
- Documents are located at the Ross Pendergraft Library at Arkansas Tech University
- Draft SEIS can also be viewed at the NRC's Web site (www.nrc.gov) at www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement19



Submitting Comments

- By mail at: Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T-6D59
U.S. Nuclear Regulatory Commission
- In person at: 11545 Rockville Pike
Rockville, Maryland
- E-mail at: ANOEIS@nrc.gov

