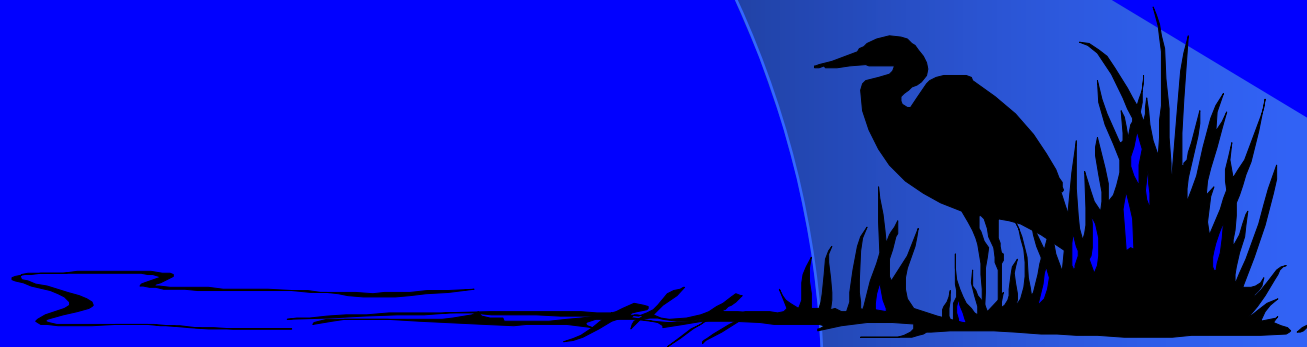


# Preliminary Results of Environmental Review D.C. Cook Nuclear Plant, Units 1 and 2

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Nuclear Regulatory Commission

November 9, 2004

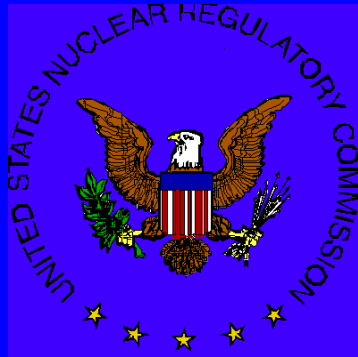




# Purpose of Today's Meeting

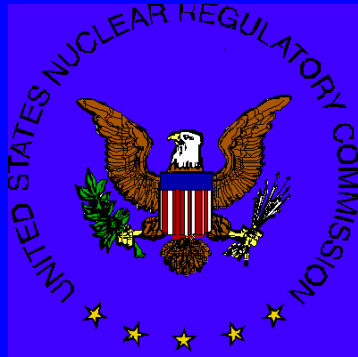
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- Discuss NRC's license renewal process
- Describe the environmental review process
- Discuss the results of our review
- Provide the review schedule
- Accept any comments you may have today
- Describe how to submit comments



# D.C. Cook Nuclear Plant, Units 1 and 2 License Renewal

- 
- Operating licenses expire
    - October 2014 for Unit 1
    - December 2017 for Unit 2
  - Application requests authorization to operate D.C. Cook Nuclear Plant, Units 1 and 2 for up to an additional 20 years



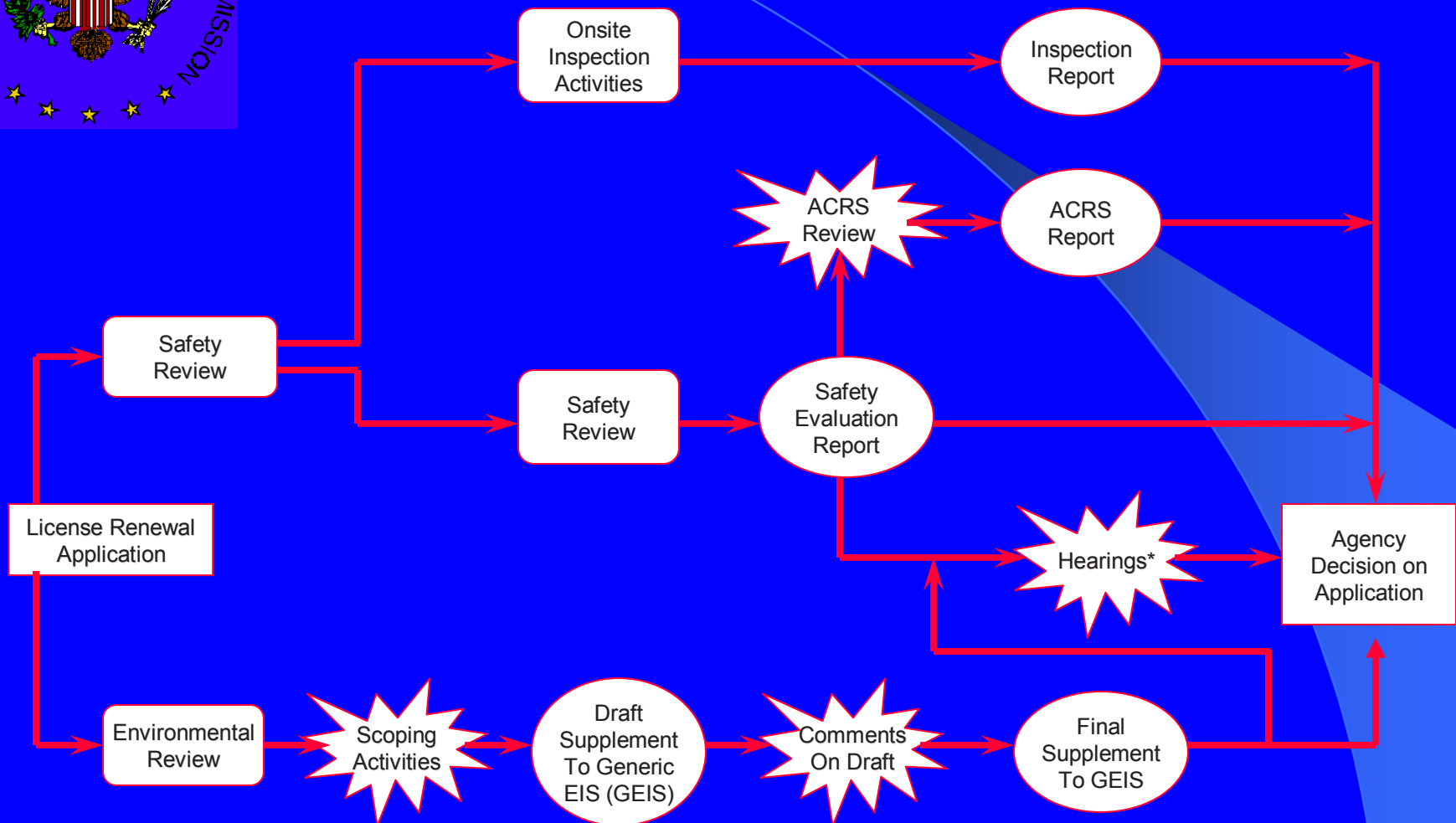
# NRC's License Renewal Review

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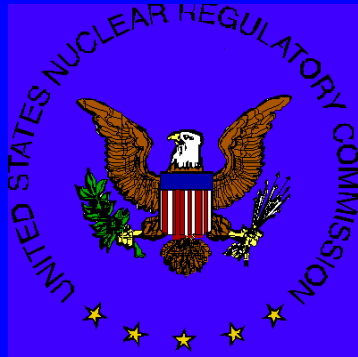
- Safety review
  - Safety evaluation
  - Plant inspections
  - Advisory Committee on Reactor Safeguards (ACRS)
- Environmental review



# License Renewal Process



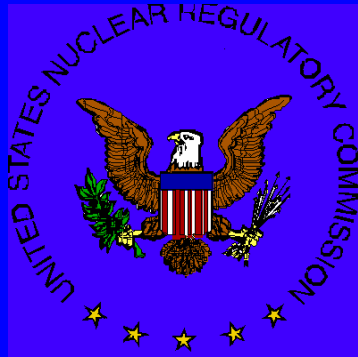
\*If a request for hearing is granted



# National Environmental Policy Act (NEPA)

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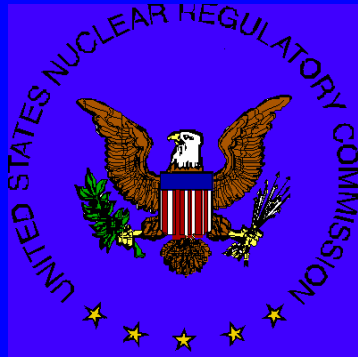
- NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- Commission has determined that an environmental impact statement will be prepared for a license renewal action



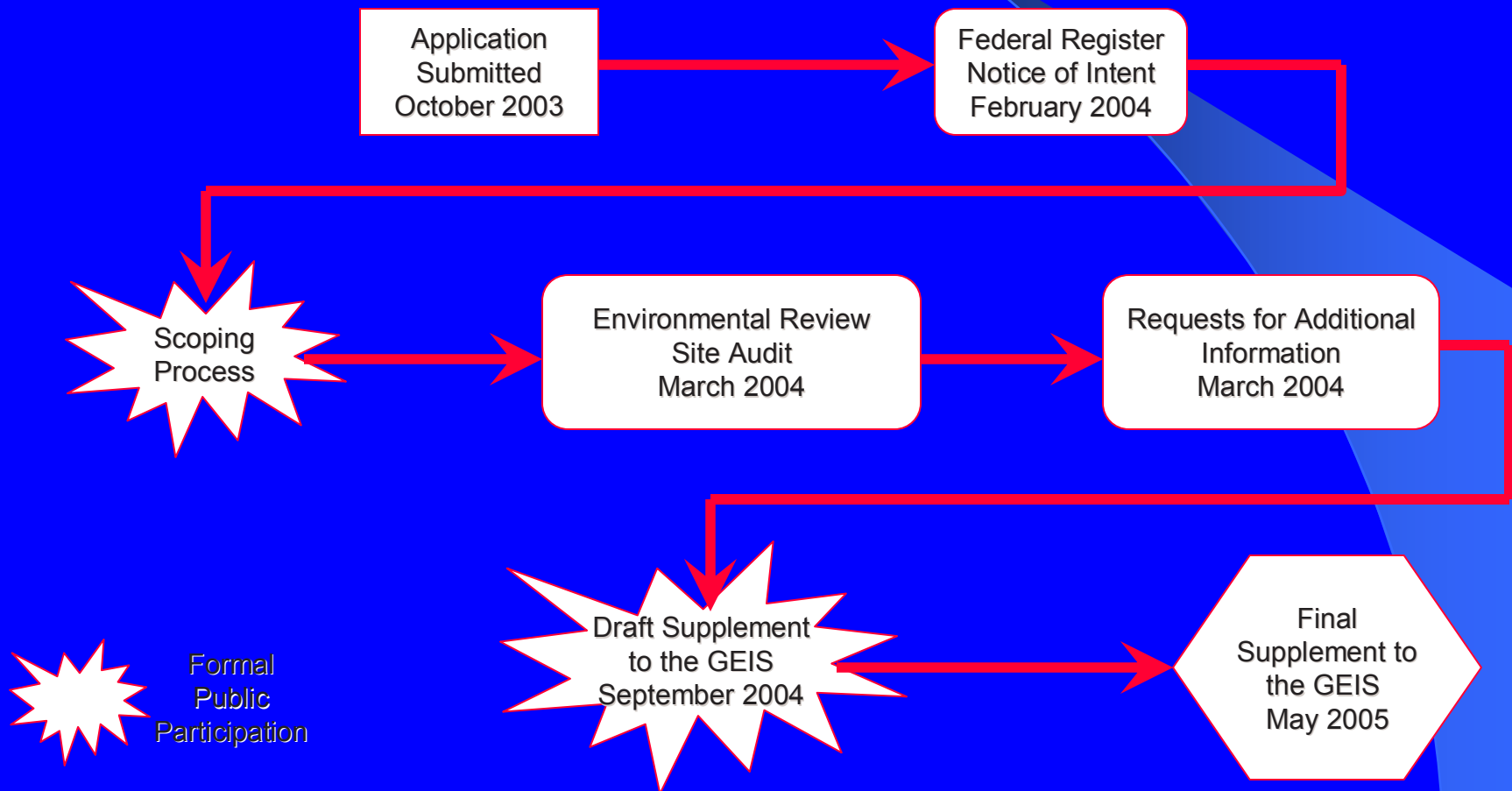
# Decision Standard for Environmental Review

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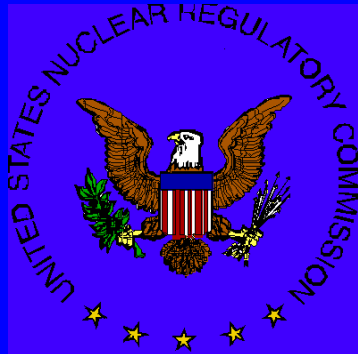
To determine whether or not the adverse environmental impacts of license renewal for D.C. Cook Nuclear Plant, Units 1 and 2 are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.



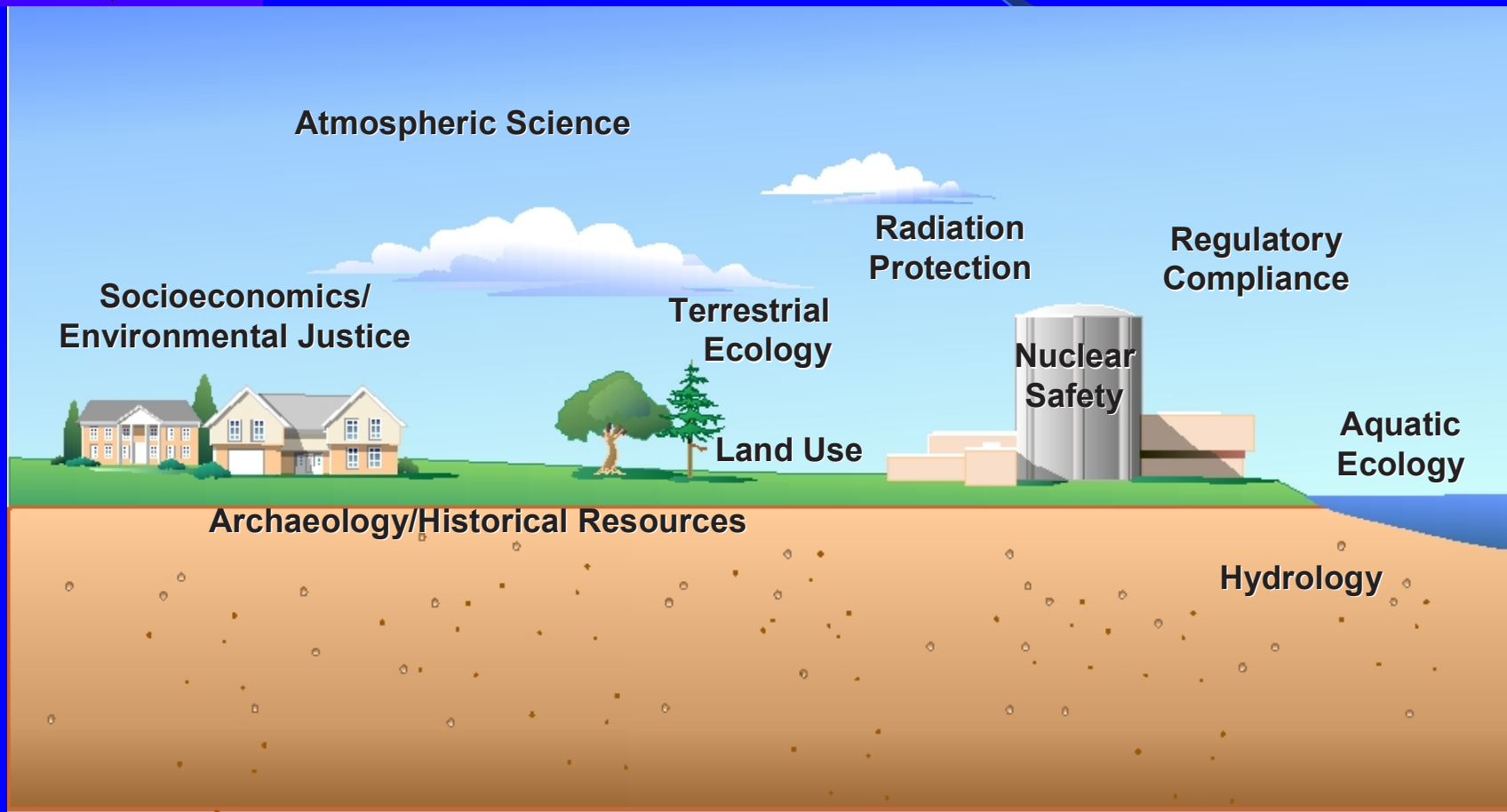
# Environmental License Renewal Process





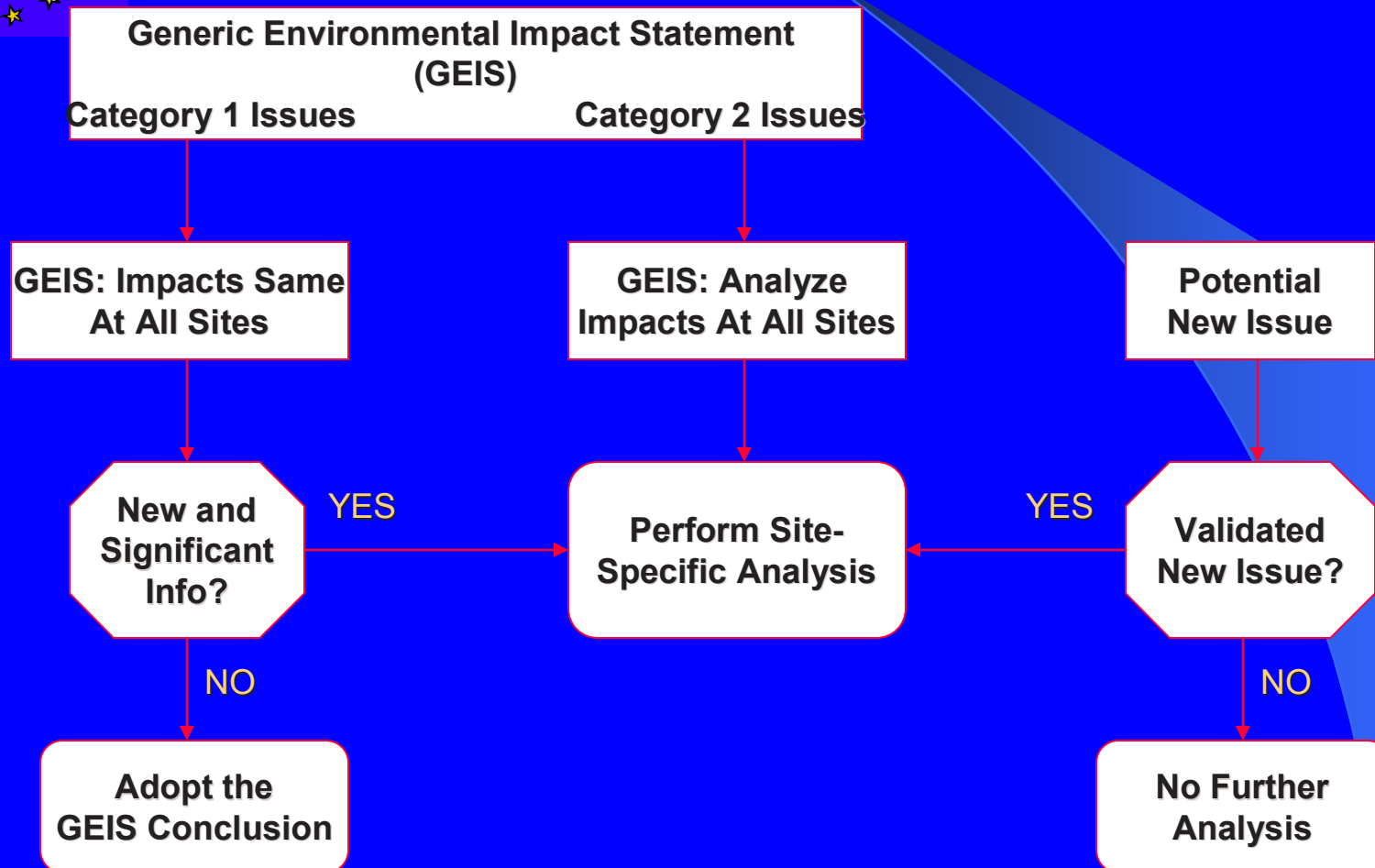


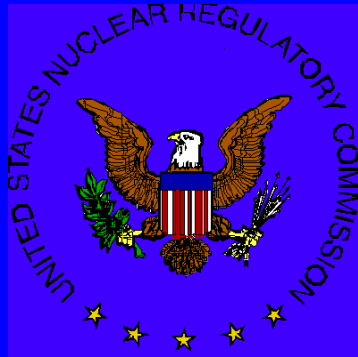
# Team Expertise





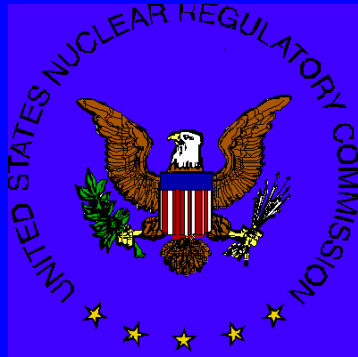
# Analysis Approach



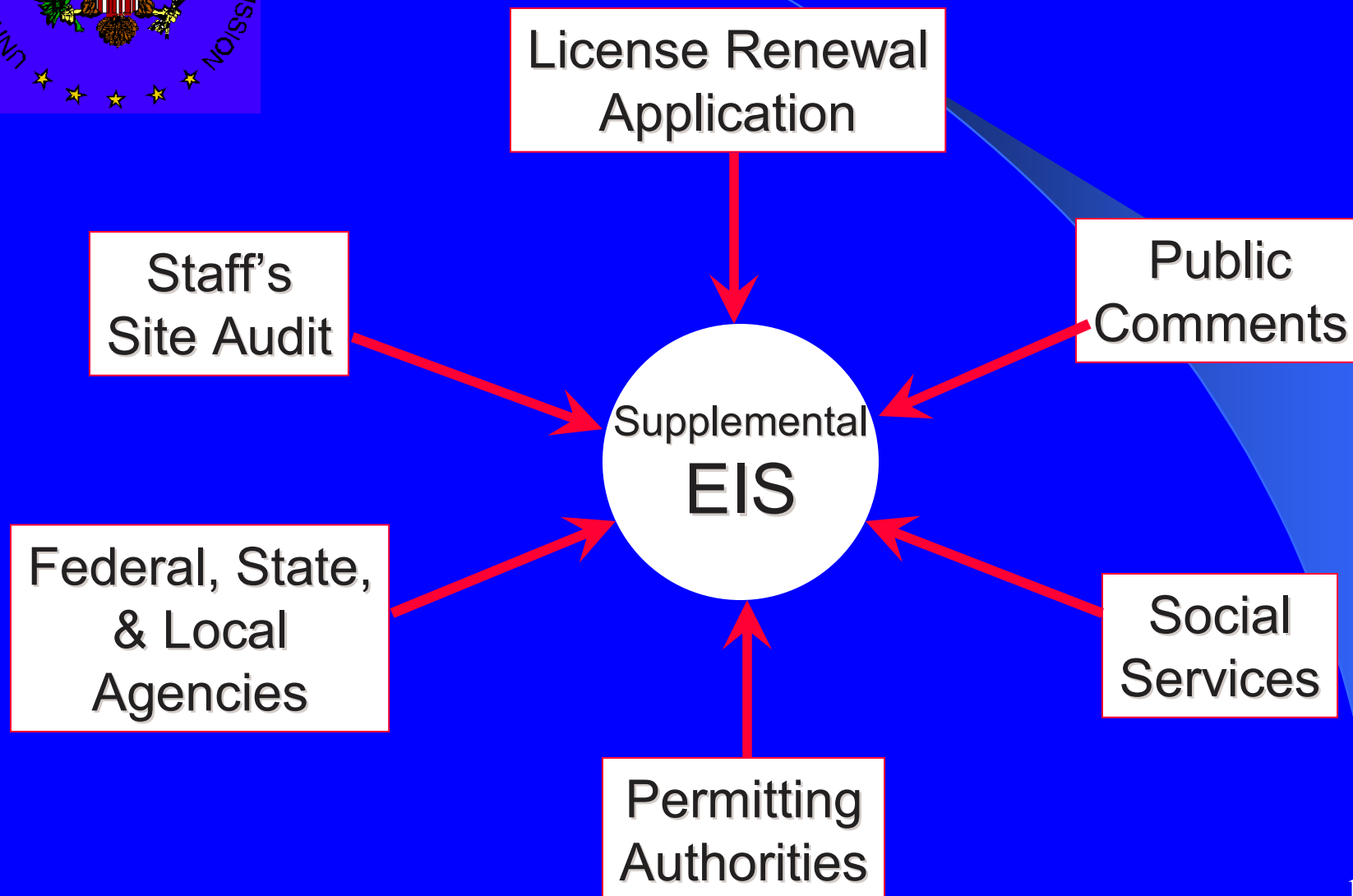


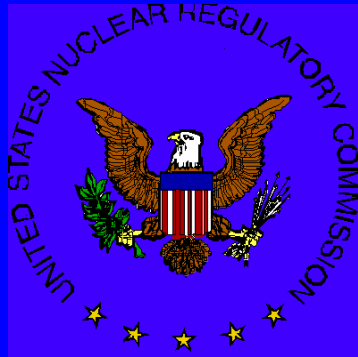
# How Impacts are Quantified

- **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

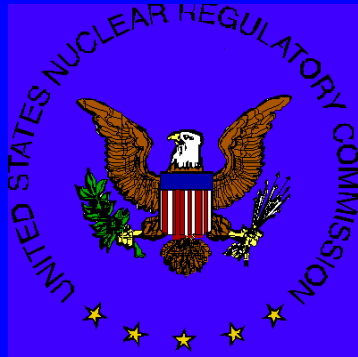




# Environmental Impacts of Continued Operation

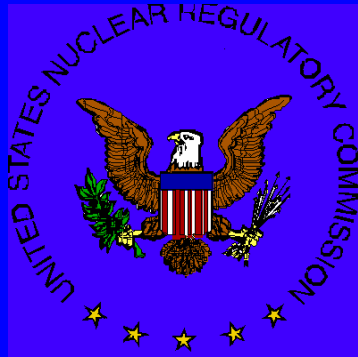
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- Cooling System
- Transmission Lines
- Radiological
- Socioeconomic
- Groundwater Use and Quality
- Threatened or Endangered Species
- Cumulative Impacts
- Accidents



# Cooling System Impacts

- 
- Category 2 Issues
    - Entrainment of Fish and Shellfish in Early Life Stages
    - Impingement of Fish and Shellfish
    - Heat Shock
  - Preliminary findings
    - Impacts are SMALL
    - No additional mitigation required



# Radiological Impacts of Normal Operations

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- Category 1 issues
  - Radiation exposures to the public
  - Occupational radiation exposures
  
- Preliminary findings
  - No new and significant information identified
  - GEIS concluded impacts are SMALL



# Threatened or Endangered Species

Aquatic Mussels	Animals	Insects and Plants
1. white cat's paw pearly mussel 2. northern riffleshell 3. clubshell	1. Indiana bat 2. bald eagle 3. piping plover 4. Copperbelly water snake	1. Karner blue butterfly 2. Mitchell's satyr 3. Pitcher's thistle 4. small whorled pogonia

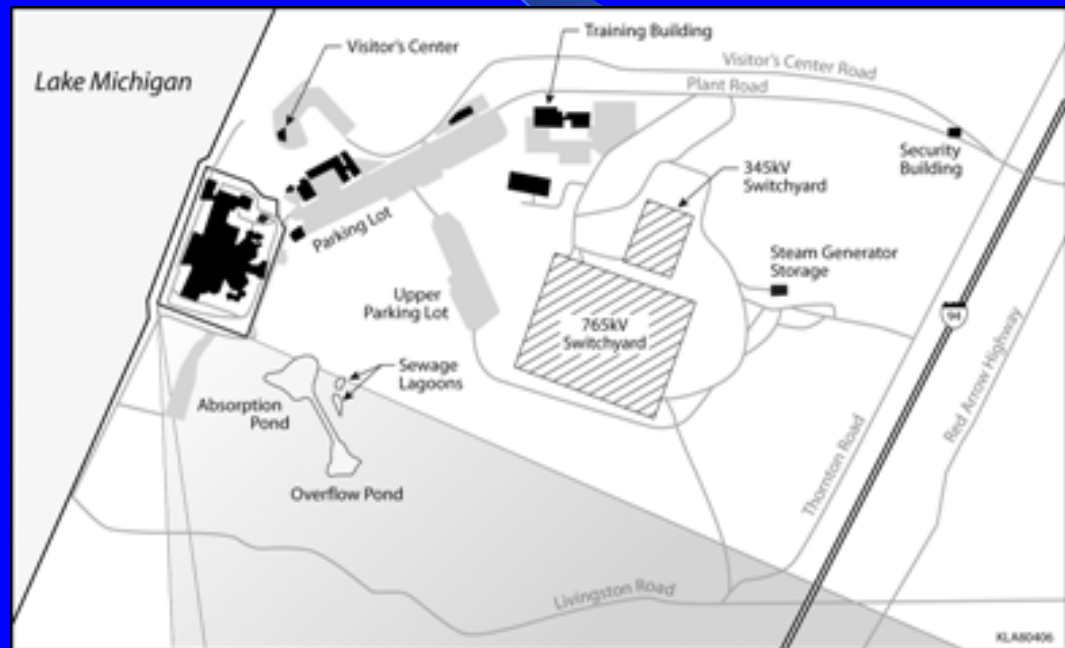
Preliminary findings: Impacts are SMALL  
No additional mitigation required

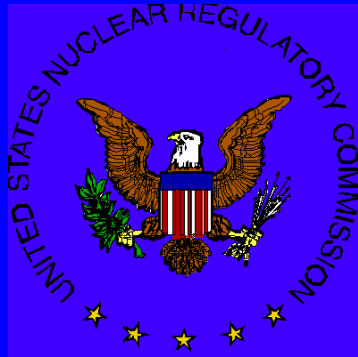




# Impacts to Groundwater Quality

- Process wastewater and sanitary wastes are discharged to onsite absorption ponds and sewage lagoons
- Preliminary findings
  - Impacts are SMALL
  - No additional mitigation required

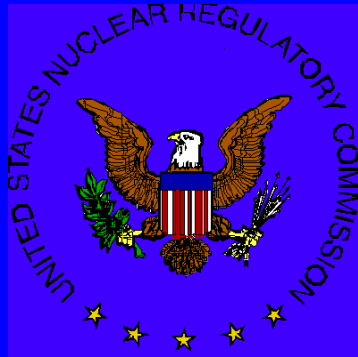




# Cumulative Impacts of Operation

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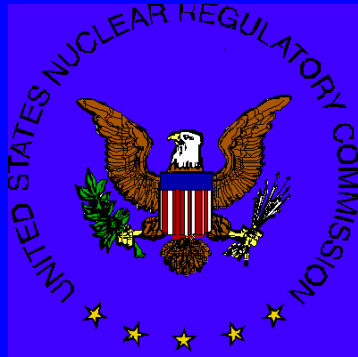
- Considered impacts of renewal term operations combined with other past, present, and reasonably foreseeable future actions
- Evaluated to end of 20-year renewal term
- No significant cumulative impacts



# Other Environmental Impacts Evaluated

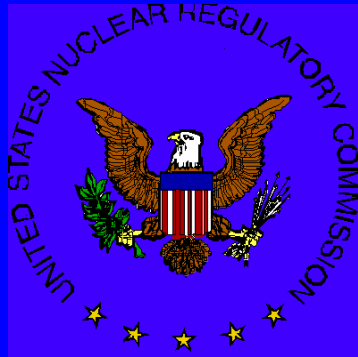
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- Uranium Fuel Cycle and Solid Waste Management
- Decommissioning



# Alternatives

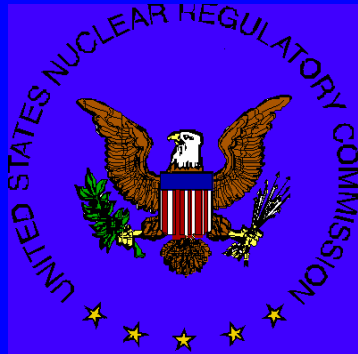
- 
- **No-action**
  - **Alternative energy sources**
    - **New generation (Coal, Natural Gas, Nuclear)**
    - **Purchased electrical power**
    - **Other alternatives (Oil, Wind, Solar, Conservation)**
    - **Combination of alternatives**
  - **Environmental effects of alternatives in at least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



# Preliminary Conclusions

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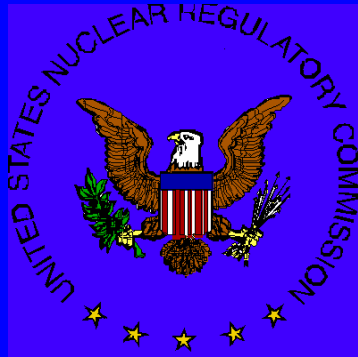
- **GEIS Conclusions on Category 1 issues adopted.**
- **Impacts resulting from Category 2 issues are of SMALL significance.**
- **Impacts to groundwater quality resulting from onsite disposal of process wastewater and sanitary wastewater would be SMALL.**
- **Environmental effects of alternatives may reach MODERATE or LARGE significance.**



# Postulated Accidents

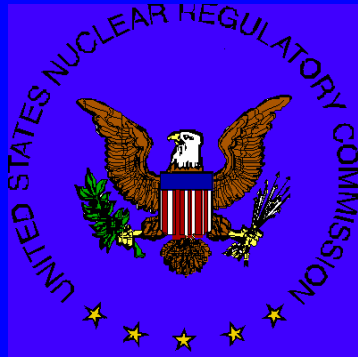
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- **Design-basis accidents**
- **Severe accidents**
  - **Severe accident mitigation alternatives (SAMAs)**



# SAMA Evaluation Process

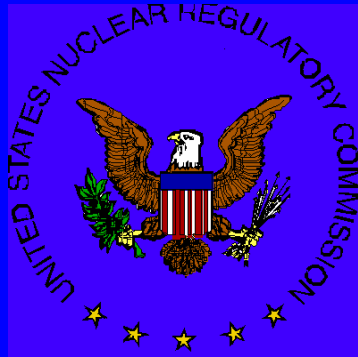
- 
- Characterize overall plant risk
  - Identify potential improvements
  - Quantify risk reduction potential and implementation costs
  - Determine whether implementation of any of the improvements is required to support license renewal



# Preliminary Results of SAMA Evaluation

- 
- 194 candidate improvements considered
  - Set reduced to 72 by multi-step screening process
  - Detailed cost/benefit analysis
    - Identified 16 SAMAs
    - Grouped into 5 areas of risk reduction

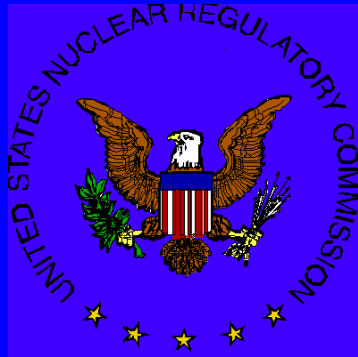




# Preliminary Results of SAMA Evaluation

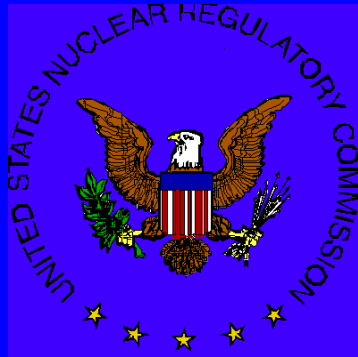
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- Potential cost-beneficial SAMAs not related to managing the effects of aging
- Not required to be implemented as part of license renewal



# Conclusions

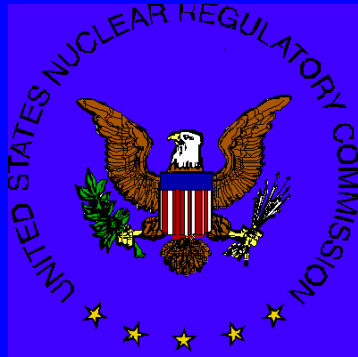
- 
- Impacts of license renewal are **SMALL** for all impact areas.
  - Impacts of alternatives range from **SMALL** to **LARGE**.
  - The staff's preliminary recommendation is that the adverse environmental impacts of license renewal for D.C. Cook Nuclear Plant, Units 1 and 2 are not so great that preserving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



# Environmental Review Milestones

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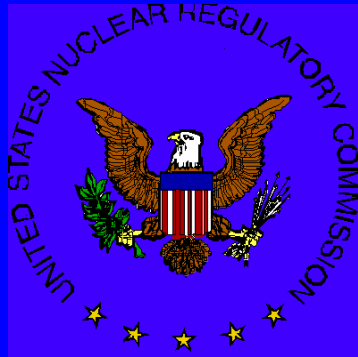
- Draft EIS issued – 9/24/04
- Comment period – 9/24/2004 to 12/08/04
- Issuance of Final EIS – May 2005



# Point of Contact and Reference Documents

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- NRC contact: Bill Dam  
(800) 368-5642, Ext. 4014
- Documents located at local libraries
  - Bridgman Library
  - Maud Preston Palenske Memorial Library
- Draft SEIS can also be viewed at the NRC's Web site ([www.nrc.gov](http://www.nrc.gov)) at: [www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement20/](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement20/)



# Submitting Comments

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- By mail: 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: [CookEIS@nrc.gov](mailto:CookEIS@nrc.gov)

