

**AGENDA**  
**NRC PUBLIC MEETING**  
**DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)**  
**OCONEE NUCLEAR STATION LICENSE RENEWAL APPLICATION**

- 1:30 p.m. Welcome and Groundrules  
Francis "Chip" Cameron, Facilitator
- 1:35 p.m. Meeting Overview and Purpose  
Cynthia Carpenter, Branch Chief  
Generic Issues, Environmental, Financial, and Rulemaking Branch, NRC
- 1:45 p.m. License Renewal  
Christopher Grimes, Branch Chief  
License Renewal and Standardization Branch, NRC
- Public comment and discussion
- 2:00 p.m. The NEPA Process  
Jim Wilson, Environmental Project Manager  
Generic Issues, Environmental, Financial, and Rulemaking Branch, NRC
- Public comment and discussion
- 2:30 p.m. Results of the Oconee Nuclear Station plant-specific Environmental Review  
Eva Hickey, Staff Scientist, Pacific Northwest National Laboratory  
Robert Palla, Reactor Engineer, Probabilistic Safety Assessment Branch, NRC
- Public comment and discussion
- 3:15 p.m. Staff's Preliminary Conclusions  
Jim Wilson, NRC
- Public comment and discussion
- 4:30 p.m.<sup>1</sup> Adjourn

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<sup>1</sup>Meeting may end early, depending on the number of public comments and questions.

**AGENDA**  
**NRC PUBLIC MEETING**  
**DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)**  
**OCONEE NUCLEAR STATION LICENSE RENEWAL APPLICATION**

- 7:00 p.m. Welcome and Groundrules  
Francis "Chip" Cameron, Facilitator
- 7:05 p.m. Meeting Overview and Purpose  
Cynthia Carpenter, Branch Chief  
Generic Issues, Environmental, Financial, and Rulemaking Branch, NRC
- 7:15 p.m. License Renewal  
Christopher Grimes, Branch Chief  
License Renewal and Standardization Branch, NRC
- Public comment and discussion
- 7:30 p.m. The NEPA Process  
Jim Wilson, Environmental Project Manager  
Generic Issues, Environmental, Financial, and Rulemaking Branch, NRC
- Public comment and discussion
- 8:00 p.m. Results of the Oconee Nuclear Station plant-specific Environmental Review  
Eva Hickey, Staff Scientist, Pacific Northwest National Laboratory  
Robert Palla, Reactor Engineer, Probabilistic Safety Assessment Branch, NRC
- Public comment and discussion
- 8:45 p.m. Staff's Preliminary Conclusions  
Jim Wilson, NRC
- Public comment and discussion
- 10:00 p.m.<sup>1</sup> Adjourn

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<sup>1</sup>Meeting may end early, depending on the number of public comments and questions.

July 8, 1999  
Oconee Nuclear Station Draft SEIS public meeting  
Public Attendees

1:30 p.m. session

Tom Abbatiello	
Sharon Cribb	SC DHEC
Jon Cudworth	Tetra Tech, Inc.
Calvin Daniels	
Tim DeVol	
Phil Fisher	Entergy Operations
Alfred Friend	
Laura Gabrels	Anderson Independent
R. Michael Gandy	SC DHEC
Henry Gordon	
Tom Harper	
Julea Hovey	BGE
Michael Jones	Southern Company
Cindy Landrum	Greenville News
Bill McCollum	Duke Energy
Donald Plotnik	
Frances Plotnik	
Patrick Rockey	WYFF-TV
Bruce Rollin	Northland Cable News
Nancy Stancill	Charlotte Observer
Margaret L. Thompson	Strom Thurmond Institute
Charles Timms	Oconee County Council
Doug Walters	NEI
David Wehmeyer	
Buzz Williams	Chattooga River Watershed Coalition (CRWC)

7:00 p.m. session

Barbara Barker	
W. E. Castro	
Calvin Daniels	PMPA
Henry Harling	
Nicole Hayler	CRWC
Dick Mangrum	WGOG
Greg Robison	Duke Energy
Bruce G. Rollin	Northland Cable News
Donald Sanders	CRWC
Nancy Stancill	Charlotte Observer
Margaret Thompson	Strom Thurmond Institute
Doug Walters	NEI
Barbara Zary	Southern Nuclear

# PUBLIC MEETING SEIS FOR COMMENT

Nuclear Regulatory Commission  
July 8, 1999



## Introduction

- ▶ Purpose
- ▶ Statutory background
- ▶ NEPA process
- ▶ Role of the GEIS
- ▶ Review results
- ▶ Schedule
- ▶ Public comment



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## Oconee License Renewal

- ▶ Units 1, 2, and 3
- ▶ Operating licenses to expire in 2013, 2013, and 2014, respectively
- ▶ Duke Energy's license renewal application includes their Environmental Report
- ▶ Review process, contents, preliminary conclusions, and recommendations

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## Oconee License Renewal Environmental Review Milestones

- ▶ Application received - 7/98
- ▶ Notice of Intent - 9/98
- ▶ Scoping meeting - 10/98
- ▶ Draft supplement to GEIS - 5/99
- ▶ Comment period - 5/99 - 8/16/99

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## Purpose of Today's Meeting

- ▶ Present results of environmental review
- ▶ Discuss what the staff considered
- ▶ Clarify issues of interest to assist members of the public in preparing comments
- ▶ Identify whether or not an environmental license renewal issue was inappropriately excluded
- ▶ Accept any comments from the public
- ▶ Inform the public of schedule and process to submit comments

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## NRC Mission

- ▶ NRC governed by:
  - ▷ Atomic Energy Act
  - ▷ Energy Reorganization Act
  - ▷ National Environmental Policy Act (NEPA)
  - ▷ Other statutes
- ▶ Mission statement:
  - ▷ Health and safety protection
  - ▷ Environmental protection
  - ▷ Common defense and security

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## What is License Renewal?

- ▶ Atomic Energy Act
  - ▷ Limits term of license
  - ▷ Allows for renewal
- ▶ License Renewal (10 CFR Part 54)
  - ▷ Operate an additional 20 years beyond current license term
  - ▷ NRC review
  - ▷ Public participation
  - ▷ Commission decision

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## Purpose and Need

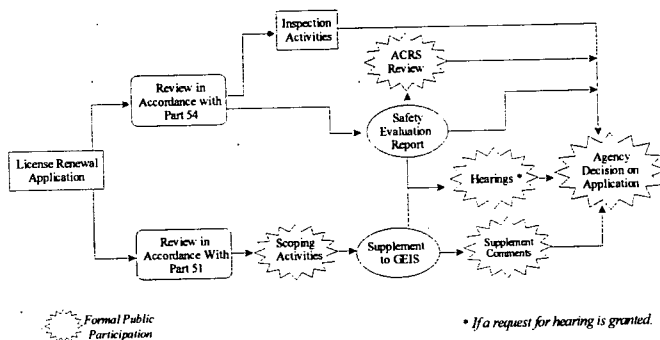
Renewal of an operating license

“... to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs...”

Generic Environmental Impact Statement  
for License Renewal of Nuclear Power  
Plants NUREG-1437

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## License Renewal Process



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## NEPA Process

- ▶ NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- ▶ Environmental Impact Statement (EIS) is required for major federal actions significantly affecting the quality of the human environment
- ▶ License renewal is considered a major Federal action

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## NEPA Process (continued)

- ▶ Notice of Intent - notifies public of preparation of EIS
- ▶ Scoping Process - identifies scope of EIS and solicits public input
  - ▷ Public Meeting
  - ▷ Public Comment Period

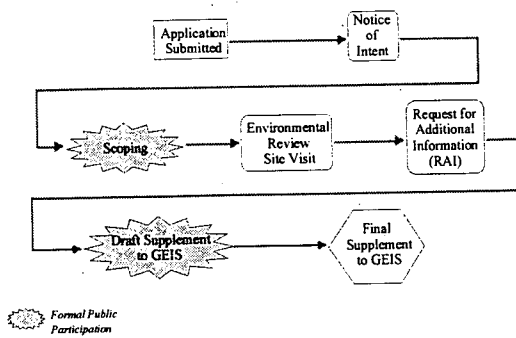
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## NEPA Process (continued)

- ▶ Review - evaluates environmental impacts, alternatives, & mitigation measures
- ▶ Issue draft EIS for public comment
  - ▷ Public Meeting
  - ▷ Public Comment Period
- ▶ Issue final EIS

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## Environmental License Renewal Process



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## Regulatory Background

### Environmental License Renewal Review Process

- ▶ Regulations
  - ▷ 10 CFR Part 51
  - ▷ Generic Environmental Impact Statement (GEIS)
- ▶ Regulatory Guidance
  - ▷ Environmental Standard Review Plan for License Renewal

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## Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS, NUREG-1437)

- ▶ To improve efficiency of license renewal process
- ▶ Identified 92 issues of potential consequence
- ▶ For each issue, approach consisted of:
  - ▷ Describing activity
  - ▷ Identifying population or resource affected
  - ▷ Assessing nature and magnitude of impact
  - ▷ Characterizing significance of the effect
  - ▷ Considering whether additional mitigation is warranted

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## Standard of Significance

### Council on Environmental Quality definition

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

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## Category 1 Issues

68 issues meet these criteria

- ▶ Impacts apply to all plants or to plants with specific plant or site characteristics
- ▶ Single-significance level applies (**SMALL, MODERATE, LARGE**)
- ▶ Additional plant-specific mitigation measures not likely to be sufficiently beneficial to be warranted

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## Category 2 Issues

- ▶ 22 of the categorized issues did not meet one or more of Category 1 criteria
- ▶ Plant-specific review required

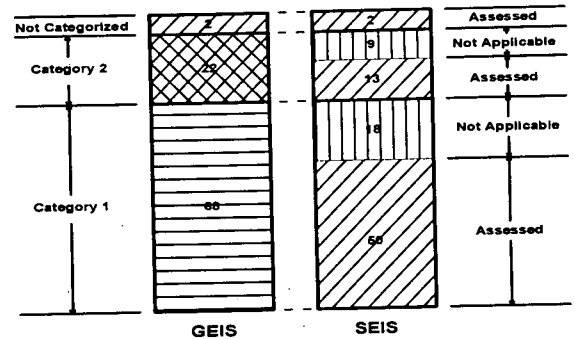
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## Additional Issues

- ▶ Two issues were not categorized
  - ▷ Environmental justice
  - ▷ Chronic effects of electromagnetic fields (EMF)
- ▶ Review process to identify whether there is any significant new information

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## Issues Considered in SEIS



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## Oconee SEIS

- ▶ Supplement to GEIS
- ▶ Plant-specific environmental effects during the renewal term
  - ▷ Category 1 issues
  - ▷ Category 2 issues
  - ▷ Not categorized
  - ▷ New issues

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## Limited Scope of the SEIS

The SEIS does not consider:

- ▶ Need for power
- ▶ Cost of power
- ▶ Safety
- ▶ Spent fuel disposal (except for transportation)

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## SEIS Information Gathering Process

- ▶ Duke's License Renewal Application
- ▶ Public input during scoping process
  - ▷ Considered all comments
  - ▷ Referred comments not related to license renewal to appropriate NRC programs
- ▶ Site visit and review of Duke's process for identifying new information

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## SEIS Information Gathering Process (continued)

- ▶ County, regional, and State government, environmental and resource regulators
- ▶ Federal regulating agencies - discussions of potential impacts during renewal term
- ▶ Information services agencies
- ▶ Environmental permits and requirements for continuing operations

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## Category 1 Issues

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- ▶ Staff identified no new and significant environmental information for Category 1 issues
- ▶ Staff relies on conclusions of the GEIS

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## Category 2 Issues

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- ▶ All 22 issues are considered
- ▶ 5 issues are not applicable to Oconee Nuclear Station
- ▶ 4 issues are related to refurbishment
- ▶ 13 issues are specifically addressed
- ▶ 2 additional "non-categorized" issues
  - ▷ Environmental Justice
  - ▷ Chronic exposure to EMF

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## Contents of Oconee Draft SEIS

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- ▶ **Chapter 1** - Introduction
- ▶ **Chapter 2** - Description of site and environment
  - ▷ Land use
  - ▷ Water use and quality
  - ▷ Air quality
  - ▷ Aquatic resources
  - ▷ Terrestrial resources
  - ▷ Radiological impacts
  - ▷ Socioeconomic factors
  - ▷ Historic and archaeological resources

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## Contents of Oconee Draft SEIS (continued)

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- ▶ **Chapter 3** - Refurbishment
- ▶ **Chapter 4** - Operation during the renewal term
  - ▷ Cooling system
  - ▷ Transmission lines
  - ▷ Radiological impacts
  - ▷ Socioeconomic impacts
  - ▷ Groundwater use and quality
  - ▷ Threatened and endangered species

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## Contents of Oconee Draft SEIS (continued)

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- ▶ **Chapter 5** - Postulated Plant Accidents
- ▶ **Chapter 6** - Uranium Fuel Cycle and Solid Waste Management
- ▶ **Chapter 7** - Decommissioning
- ▶ **Chapter 8** - Alternatives to License Renewal
- ▶ **Chapter 9** - Summary and Conclusions

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## Specific Highlights of the SEIS for ONS License Renewal

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- ▶ Cooling system impacts
- ▶ Radiological impacts
- ▶ Socioeconomic impacts
- ▶ Water use and quality
- ▶ Threatened and endangered species

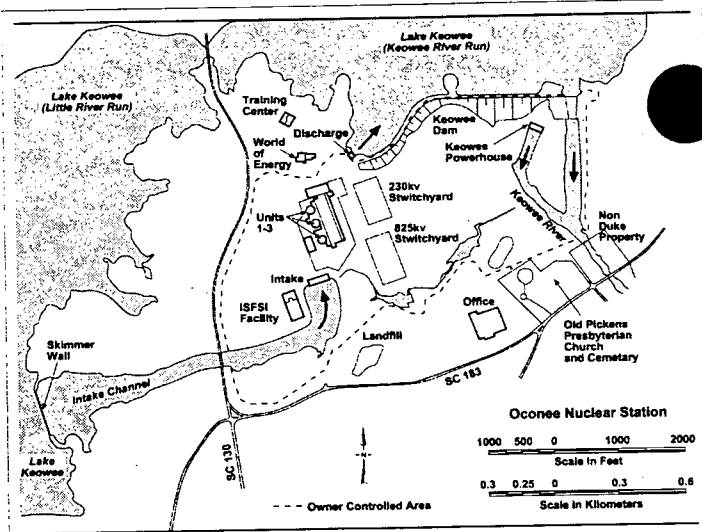
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## Oconee Cooling System Environmental Effects During Renewal Term

- ▶ Entrainment and impingement of fish and shellfish
  - ▷ Low mortality due to skimmer wall
  - ▷ No significant population of endemic shellfish
  - ▷ Mostly threadfin shad (nonsport fish)

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Oconee Nuclear Station Layout

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## Oconee Cooling System Environmental Effects During Renewal Term (continued)

- ▶ Heat Shock
  - ▷ Regulated by NPDES permit
  - ▷ Low potential due to design of plant
- ▶ Microbiological organisms
  - ▷ State Public Health Department determined the potential for adverse effects was low

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## Radiological Impacts

No anticipated increase in either public or occupational radiation doses during the license renewal term

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## Socioeconomic Impacts

- ▶ Housing impacts
  - ▷ "Medium" population area
  - ▷ No increase in staffing anticipated
- ▶ Public utility impacts
  - ▷ Cooling water from Lake Keowee
- ▶ Offsite land use
  - ▷ No plant-related, population-driven changes
  - ▷ Continued operation would provide significant continuing tax revenues to county

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## Socioeconomic Impacts (continued)

- ▶ Transportation impacts
  - ▷ ONS employment would not contribute to anticipated population growth in region
- ▶ Historic and archaeological resources
  - ▷ No plans for future land disturbances or structural modifications beyond routine maintenance
  - ▷ Conservation and security of adjacent National Register property - Old Pickens Church and cemetery

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## Socioeconomic Impacts (continued)

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- ▶ Environmental Justice
  - ▷ Federal actions should not result in disproportionately high and adverse impacts on low-income or minority populations
  - ▷ Staff examined geographic distribution of minority and low-income populations
  - ▷ Minority populations are small, dispersed, and a declining proportion of the study area's population

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## Water Use and Quality

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- ▶ Oconee Nuclear Station uses surface water from Lake Keowee
- ▶ Groundwater used for irrigation and facilities at station baseball field
- ▶ Water quality is regulated by South Carolina Department of Health and Environmental Control

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## Threatened and Endangered Species

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- ▶ Field survey conducted by Duke within 1 mile radius of site
  - ▷ No Federally-listed species identified
  - ▷ Three State-listed plant species
    - Drooping sedge
    - Indian olive
    - Three-parted violet
  - ▷ One State recorded species
    - Loose-flowered sedge

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## Threatened and Endangered Species (continued)

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- ▶ Near ONS or transmission lines (330 miles)
  - ▷ Five animals
    - Bald eagle (Threatened)
    - Bog turtle (Threatened)
    - Peregrine falcon (Threatened)
    - Red-cockaded woodpecker (Endangered)
    - Indiana bat (Endangered)
  - ▷ 13 plants
    - 9 endangered
    - 4 threatened

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## Alternatives to License Renewal

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- ▶ Limited to those alternatives with "demonstrated capability and with sufficient generating capacity to replace plant power generation"
- ▶ Includes "No action" alternative
- ▶ Coal-fired power generation
- ▶ Gas-fired power generation

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## Alternatives to License Renewal (continued)

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Coal	Municipal solid waste
Gas	Biomass-derived fuel
Wind	Oil
Solar	Nuclear power
Hydro power	Fuel cells
Geothermal	Delayed retirement
Wood energy	Conservation

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## Alternatives to License Renewal - Conclusions

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- ▶ Alternative actions, including the "no-action" alternative, have environmental effects that, in at least some impact categories, reached **MODERATE** or **LARGE** significance
- ▶ **MODERATE** - sufficient to alter noticeably, but not destabilize important attributes of resource
- ▶ **LARGE** - effect is clearly noticeable and sufficient to destabilize important attributes of resource

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## Staff's Preliminary Conclusions

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- ▶ The significance of the environmental effects of the license renewal of Oconee Nuclear Station are **SMALL** for all impact categories
- ▶ **SMALL** - effect not detectable or too small to destabilize or noticeably alter any important attribute of the resource

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## Postulated Plant Accidents

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- ▶ **Chapter 5 - Postulated Plant Accidents**
  - ▷ Design Basis Accidents
  - ▷ Severe Accidents
    - Severe Accident Mitigation Alternatives (SAMAs)

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## Evaluation of Severe Accident Mitigation Alternatives (SAMAs)

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- ▶ Purpose of Evaluation:

To ensure that plant changes (design or procedural) with the potential for improving severe accident safety performance are identified and evaluated

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## Evaluation Approach

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- ▶ Characterize overall plant risk and lead contributors to risk
- ▶ Identify design improvements that can further reduce risk
- ▶ Quantify risk reduction potential and costs for each improvement
- ▶ Determine whether or not implementation of improvement is justified
  - ▷ Significant reduction in total risk
  - ▷ Favorable value/impact ratio

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## Results of SAMA Evaluation

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- ▶ None of candidate SAMAs are cost beneficial
- ▶ Additional plant improvements to further mitigate severe accidents are not required at ONS as part of license renewal pursuant to 10 CFR Part 54

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## Environmental Findings from License Renewal Review

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- ▶ Supplement 1 to the GEIS (NUREG-1437) contains NRC staff's preliminary conclusions regarding the environmental acceptability of the license renewal action
- ▶ Overall license renewal decision based on safety and environmental review

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## Staff Preliminary Conclusions and Recommendations

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- ▶ Based on:
  - ▷ The analysis and findings of the GEIS
  - ▷ The ER submitted by Duke
  - ▷ Consultations with local, State and Federal agencies
  - ▷ Independent review, including results of scoping process

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## Staff's Overall Preliminary Conclusions and Recommendations

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The adverse environmental impacts of license renewal for ONS Units 1, 2, and 3 are not so great that preserving the option of license renewal for energy planning decision makers would be unreasonable.

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## Public Comments

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- ▶ Comment period ends on August 16, 1999
  - ▷ 75 day comment period
- ▶ Comments not bearing on decision to renew license will be referred to appropriate NRC programs.

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## Oconee License Renewal Environmental Review Milestones

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- ▶ Application received - 7/98
- ▶ Notice of Intent - 9/98
- ▶ Scoping Meeting - 10/98
- ▶ Draft supplement to GEIS - 5/99
- ▶ Comment period - 5/99 - 8/99
- ▶ Final Supplement to GEIS - 2/00



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## Point of Contact

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- ▶ Agency point of contact:

James H. Wilson  
1 (800) 368-5642

- ▶ Documents located at Public Document Room and Local Public Document Room
- ▶ Provide comments: by mail, in person, or e-mail at [oconeeis@nrc.gov](mailto:oconeeis@nrc.gov)

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