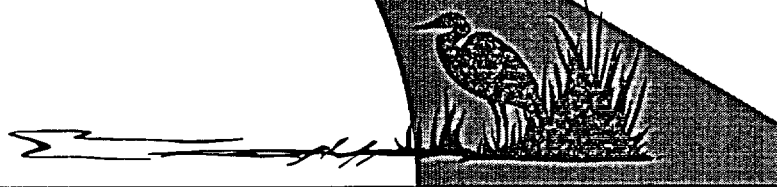




Preliminary Results of Environmental Review St. Lucie Units 1 & 2

Nuclear Regulatory Commission
December 3, 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



St. Lucie Units 1 and 2 License Renewal

- Operating licenses expire in 2016 (Unit 1) and 2023 (Unit 2)
- Application requests authorization to operate units for an additional 20 years

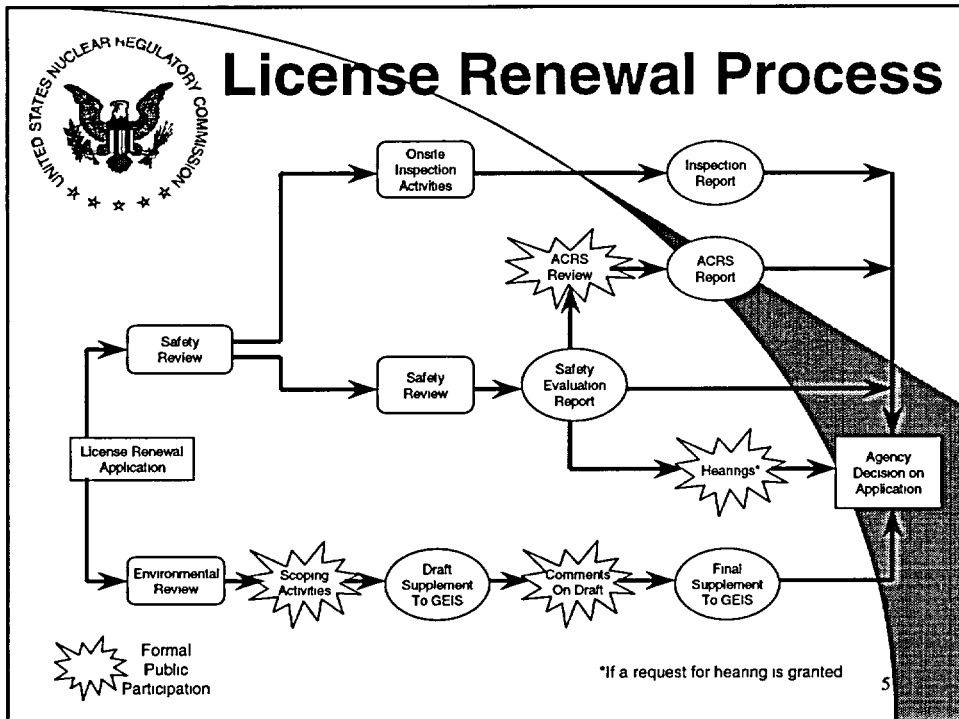
3



NRC's License Renewal Review

- 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



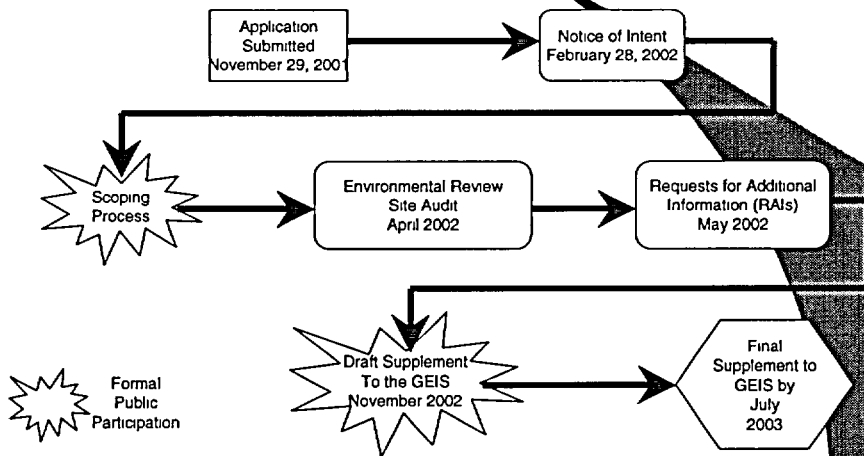
Decision Standard for Environmental Review

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

7



Environmental License Renewal Process



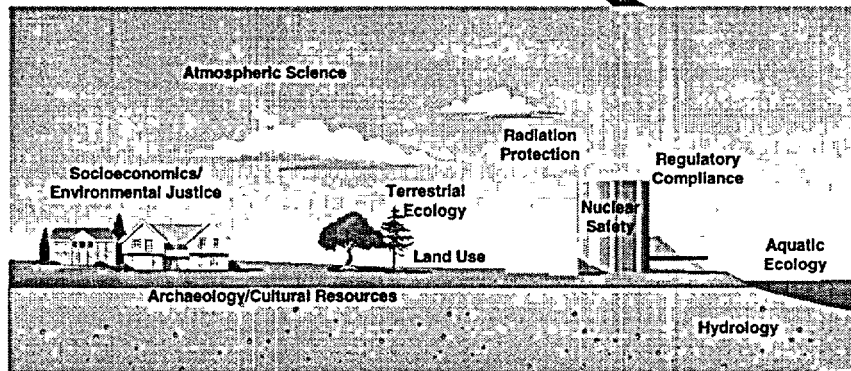
8



Information Gathering



Team Expertise



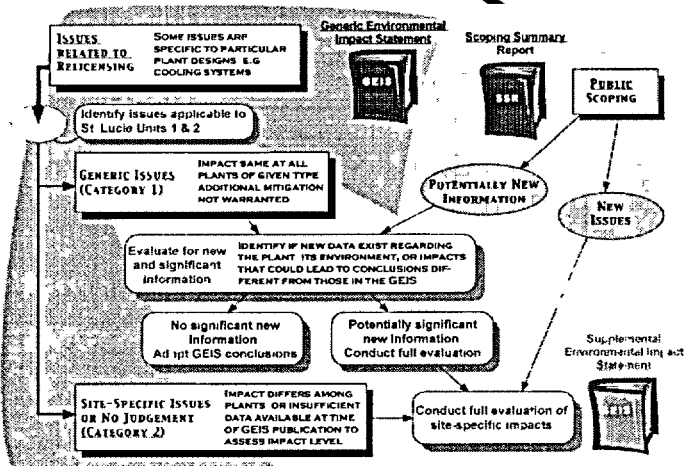


How Impacts are Quantified

- NRC has defined the following 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
- These were used in the GEIS and all Supplemental EISs
- Usage is consistent with the Council on Environmental Quality guidance for NEPA analyses



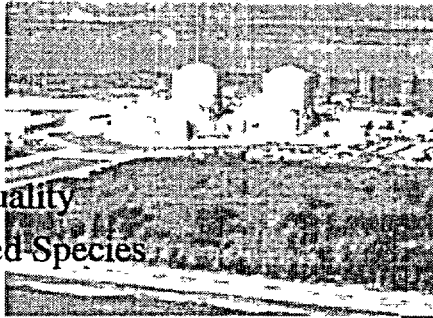
Scope & Approach





Environmental Impacts of Operation

- Cooling System
- Transmission Lines
- Radiological
- Socioeconomics
- Groundwater Use and Quality
- Threatened or Endangered Species
- Uranium Fuel Cycle
- Decommissioning



13



Cooling System

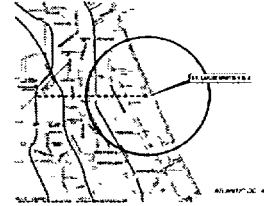


- **Entrainment**
 - <0.02% mortality of fish eggs and larvae passing the intake
- **Impingement**
 - <4 lb/day fish and <2 lb/day shellfish impinged
 - Velocity caps limit # in intake canal
- **Heat Shock**
 - Complies with Florida Water Quality Standards
- **ALL IMPACTS SMALL**

14



Transmission Lines

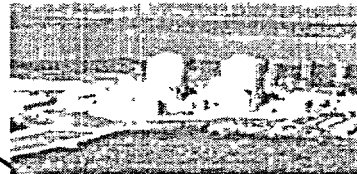


- 11 mi of corridors covering 766 acres
 - ROW impacts SMALL
- Electric shock from electromagnetic fields
 - Maximum induced currents below National Electric Safety Code limits - impacts SMALL
- Health effects of chronic exposure to electromagnetic fields
 - National Institute of Environmental Health Sciences review concluded that health studies do not show sufficient evidence of risk to warrant concern - impact is not further characterized

15



Radiological



Category 1

Effluent monitoring and controls
Rad Waste processing and packaging
Environmental monitoring

- TLDs
- Air monitoring
- Biota sampling



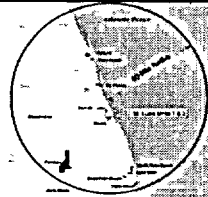
Dose to the public during license renewal

- All impact are SMALL

16



Socioeconomics



- **Housing and public utility impacts during operation**
 - No discernable change in housing availability, value, or rental rates
 - Increase in water usage can be met with existing capacity
 - Impacts are SMALL
- **Offsite land use and transportation**
 - Maximum employee addition (60) would not affect land use or congestion
 - Tax payments are small relative to county revenues
 - Impacts are SMALL
- **Historic and archaeological resources**
 - No known historic or archeological resources at the site
 - Ground disturbances will be preceded by surveys
 - Impact is SMALL
- **Environmental justice**
 - All impacts were SMALL, therefore Environmental Justice impact is SMALL



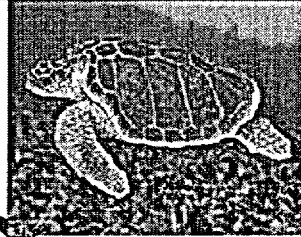
Groundwater Use and Quality



- **St. Lucie Units 1 & 2 use 1.4 million gal/d of groundwater**
 - < 10% of county supplies
- **Impacts are SMALL**



Threatened or Endangered Species



- Numerous federally- and state-listed species on plant site and within transmission corridors
- National Marine Fisheries Service determined that continued operation of St. Lucie Units 1 & 2 would not adversely affect listed aquatic species
- NRC still in consultation process with US Fish and Wildlife Service
- Preliminary conclusion that impacts of license renewal would be SMALL

19



Uranium Fuel Cycle

- No issues that were not addressed in the GEIS and found to be SMALL at all plants
- No new and significant information was discovered since the GEIS and during the review
- GEIS concluded that impacts are SMALL

20



Decommissioning

- No issues that were not addressed in the GEIS and found to be SMALL at all plants
- No new and significant information was discovered since the GEIS and during the review
- GEIS concluded that impacts are SMALL

21



Potential New and Significant Information

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

22



Alternatives to License Renewal

- Alternatives not considered in detail
 - Alternative energy sources
 - Wind power
 - Solar power
 - Hydropower
 - Geothermal energy
 - Wood waste
 - Municipal solid waste
 - Other biomass-derived fuel
 - Fuel cells
 - Delayed retirement
 - Utility-sponsored conservation

23



Alternatives to License Renewal (continued)

- Alternatives considered in detail (*i.e. deemed most reasonable for St Lucie Units 1 & 2*)
 - No Action (decommission after current term expires)
 - Alternative Energy Sources
 - Coal
 - Natural gas
 - New nuclear
 - Purchased Electrical Power
 - Combination of Alternatives

24



Alternatives to License Renewal (preliminary conclusions)

- Impacts of alternatives, including the “No Action” alternative, range from SMALL to LARGE
 - Current site prevents alternative generation there
 - Alternative sites present
 - Higher socioeconomic impacts
 - More land/ecology disturbance
 - Higher atmospheric emissions
 - Potential aesthetic impacts

25



Impacts of Postulated Accidents

- Design-Basis Accidents

- Severe Accidents
 - Severe Accident Mitigation Alternatives (SAMAs)

26



Results of SAMA Evaluation

- 169 candidate improvements identified
 - 90 were already implemented
 - 29 not applicable
- Cost/benefit analysis for 50 remaining candidates
- None of the 50 candidates were found to be cost beneficial

27



Results of SAMA Evaluation (continued)

- Overall conclusion:

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

28



Preliminary 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 St. Lucie Units 1 and 2 are not so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable

29



Environmental Review Milestones

- Draft EIS issued – 11/1/02
- Comment period – 11/1/02 to 1/13/03
- Final EIS issued on or before – 7/03

30



Point of Contact

- Agency point of contact:
Michael T. Masnik
(800) 368-5642, Ext. 1191
- Documents located at the Indian River Community College library, and can be viewed at the NRC's Web site (www.nrc.gov/reading-rm.html)
- Draft SEIS can also be viewed at:
www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement11/

31



NRC Addresses

- 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: St_Lucie_EIS@nrc.gov
 - On-line comment form with web version of draft

32

