
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station Units 2 and 3
Combined Licenses

Mandatory Hearing
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Environmental Overview – Panel 1

April Rice (SCE&G)
Stephen Summer (SCANA Services)
Lisa Matis (Tetra Tech)

Topics

- Summary of the Environmental Review Process
- Environmental Impacts of the Proposed Action
- Alternatives to the Proposed Action
- Cost/Benefit of the Proposed Action

Summary of Environmental Review Process

- Environmental Report (ER) submitted to satisfy National Environmental Policy Act (NEPA) and NRC regulations
- ER defines purpose and need of the proposed action
- ER satisfies 10 CFR Part 51
 - ER Table 1.3-1 provides a comparison of Part 51 requirements and the responsive ER sections
- ER followed NRC guidance
 - NUREG-1555, “Standard Review Plans for Environmental Reviews for Nuclear Power Plants”

Summary of ER Development and Review

- ER Revision 0 - March 27, 2008
- ER Revision 1 - February 13, 2009
- ER Revision 2 - July 2, 2010
- Thorough NRC staff audits of ER and alternative site analysis
- Responded to over 70 environmental Requests for Additional Information (RAIs)
- Provided supplemental information on environmental topics
- Supported public meetings
- Public outreach
- Pre-application consultations with Federal, State, and Local Government entities

ER Contents

- Chapter 1 – Introduction
- Chapter 2 – Environmental Description
- Chapter 3 – Plant Description
- Chapter 4 – Impacts of Construction
- Chapter 5 – Impacts of Station Operation
- Chapter 6 – Environmental Measurements and Monitoring Programs
- Chapter 7 – Environmental Impact of Postulated Accidents
- Chapter 8 – Need for Power
- Chapter 9 – Proposed Action Alternatives
- Chapter 10 – Environmental Consequences of the Proposed Action
- Appendix A – Agency Letters

Environmental Impacts of Proposed Action

- ER evaluates the impacts of construction and operation
 - Chapter 4 – construction impacts
 - Chapter 5 – operation impacts
- Significance level designated for each resource
 - SMALL – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource
 - MODERATE – Environmental effects are sufficient to alter noticeably, but not to destabilize, any important attribute of the resource
 - LARGE – Environmental effects are clearly noticeable and are sufficient to destabilize any important attributes of the resource

Environmental Impacts of Proposed Action

Construction Impacts

- Land Use Impacts
 - Site and Vicinity – SMALL
 - Transmission Rights-of-Way – MODERATE
 - Air Quality – SMALL
- Water Related Impacts
 - Water Use – SMALL
 - Water Quality – SMALL
- Ecological Impacts
 - Terrestrial Ecosystems – SMALL
 - Aquatic Ecosystems – SMALL
 - Threatened and Endangered Species – SMALL

Environmental Impacts of Proposed Action

Construction Impacts (continued)

- Socioeconomic Impacts
 - Physical Impacts – SMALL
 - Demography – SMALL
 - Economy – SMALL to LARGE (Beneficial)
 - Taxes – SMALL to LARGE (Beneficial)
 - Transportation – MODERATE to LARGE
 - Aesthetics – SMALL
 - Recreation – SMALL
 - Housing – SMALL
 - Public and Social Services – SMALL
 - Education – SMALL
 - Historic and Cultural Resources – SMALL
 - Environmental Justice – SMALL

Environmental Impacts of Proposed Action

Operation Impacts

- Land Use Impacts
 - Site and Vicinity – SMALL
 - Transmission Rights-of-Way – SMALL
 - Air Quality – SMALL
- Water Related Impacts
 - Water Use – SMALL
 - Water Quality – SMALL
- Ecological Impacts
 - Terrestrial Ecosystems – SMALL
 - Aquatic Ecosystems – SMALL
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Environmental Impacts of Proposed Action

Operation Impacts (continued)

- Socioeconomic Impacts
 - Physical Impacts – SMALL
 - Demography – SMALL
 - Economy – SMALL to MODERATE (Beneficial)
 - Taxes – SMALL to LARGE (Beneficial)
 - Transportation – SMALL to MODERATE
 - Aesthetics – SMALL
 - Recreation – SMALL
 - Housing – SMALL
 - Public and Social Services – SMALL
 - Education – SMALL
 - Historic and Cultural Resources – SMALL
 - Environmental Justice – SMALL

Chapter 9 - Alternatives

- No-Action Alternative
 - Alternative for NRC to not issue COLs for the new units
 - Potential consequences
 - No baseload power
 - May not meet need for power
 - Lower reserve margin
 - More expensive power
 - Less diverse fuel supply portfolio
 - Lower air quality
 - Need to implement energy alternatives or construct on alternative site

Chapter 9 - Alternatives

- Energy Alternatives
 - Evaluated alternatives that do not require new generating capacity
 - Evaluated alternatives that provide new generating capacity
 - Performed more detailed evaluation of reasonable alternatives
 - Conclusion: No environmentally preferable energy alternatives

Chapter 9 - Alternatives

- Alternative Sites
 - Region of Interest
 - 20 Potential Sites
 - Removed potential sites based on exclusionary criteria and environmental weighting factors
 - 5 Candidate Sites
 - V.C. Summer Site (Proposed Site)
 - Savannah River Site, Saluda Site, Cope Site and Fairfield-1 Site (Alternative Sites)
 - Detailed evaluation of alternative sites
 - No obviously superior site to V.C. Summer

Benefits of Proposed Action

- Benefits of the proposed action are addressed in ER Section 10.4.1
 - Baseload electricity generation
 - Need for power
 - Approximately 2,200 MW
 - 16,000,000 to 18,000,000 MWh per year
 - Fuel diversity and natural gas alternative
 - Advanced Light Water Reactor development
 - Fewer carbon emissions
 - Hedge against global warming

Benefits of Proposed Action

- Benefits (continued)
 - Emissions avoidance
 - Local economy
 - 2,500 jobs
 - Tax payments
 - Property taxes
 - Corporate income taxes

Costs of Proposed Action

- Costs of the proposed action are addressed in ER Section 10.4.2
 - Monetary
 - Cost to construct
 - Cost to operate
 - Unavoidable Impacts
 - Land use
 - Water related impacts
 - Ecological impacts
 - Socioeconomic impacts
 - Commitment of Resources
 - Radiological Impacts