TENNESSEE VALLEY AUTHORITY

FINAL

ENVIRONMENTAL STATEMENT

SEQUOYAH NUCLEAR PLANT
UNITS 1 AND 2

Tennessee Valley Authority

FINAL ENVIRONMENTAL STATEMENT

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Chattanooga, Tennessee

SUMMARY SHEET
ENVIRONMENTAL STATEMENT
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2

[ ] Draft [X] Final environmental statement prepared by the Tennessee Valley Authority

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1. [X] Administrative action [ ] Legislative action

2. This action is the construction and operation of a 2-unit nuclear power plant in Hamilton County, Tennessee.

3. Environmental impacts associated with the construction and operation of the Sequoyah Nuclear Plant include:

   a. Minute additions of radioactivity to the air and water.
   b. Release of large quantities of heat to the environment.
   c. Change in approximately 525 acres of land for the plant site from rural nonfarm or agricultural to industrial use and easements on 2,700 acres of land for transmission lines.
   d. Release of small quantities of nonradioactive materials to the air and water.
   e. Temporary stress on social infrastructure (schools, roads, housing, and similar services).
   f. Stimulus to area economic development (jobs, attraction of visitors, etc.).
   g. Some loss of aquatic organisms due to entrainment in the condenser cooling water.
   h. Operation of the cooling towers will result in evaporation of water and in occasional local fog and ice and some visual obstruction.

   No significant adverse environmental effects are expected to occur as a result of these impacts.

4. To meet projected peak loads, TVA considered the following alternatives: (1) base-loaded coal-fired units and (2) nuclear-fueled units. The second alternative provides the lowest cost of generating power and the least environmental impact. The purchase of power in the quantities needed is not a realistic alternative.

   Alternative systems were considered for waste heat dissipation and reduction of releases of radioactive products from the plant.

Alternative heat dissipation systems considered in addition to the originally planned diffuser system included:

a. Mechanical draft cooling towers.
b. Natural draft cooling towers.
c. Spray canal system.
d. Cooling lake.

Considering feasibility, environmental impact, and cost, the natural draft cooling towers represent the best balance and will be added to supplement the original plant design to meet the recently adopted water temperature standards.

Alternatives considered in addition to the original 45-day holdup system to further reduce gaseous radioactive emissions included:

a. 60-day holdup system.
b. Hydrogen recombiners.
c. Solvent absorption system.
d. Cryogenic distillation system.

Selection of a 60-day holdup system was made as a result of balancing feasibility, environmental benefit, and cost.

Tritium recycle by segregating drains and steam generator blowdown treatment by a reverse osmosis unit and an evaporator were adopted to reduce radioactive liquid discharges. Consideration of feasibility, environmental benefit, and cost shows that these systems represent the best balance, and TVA is proceeding to install these alternatives.

5. Comments have been received from the following agencies:

Atomic Energy Commission
Environmental Protection Agency
Federal Power Commission
Department of Agriculture
Department of Commerce
Department of Defense
Department of Health, Education, and Welfare
Department of the Interior
Department of Transportation
Office of Urban and Federal Affairs, State of Tennessee
  Tennessee Department of Public Health
  Tennessee Game and Fish Commission
  Tennessee Historical Commission
Chattanooga-Hamilton County Regional Planning Commission

6. The draft statement was sent to the Council on Environmental Quality and made available to the public on October 19, 1971. The final statement was sent to the Council and made available to the public on February 13, 1974.

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PREFACE

This detailed statement of environmental considerations, prepared by the Tennessee Valley Authority, evaluates the effects on the environment of the construction and operation of the Sequoyah Nuclear Plant (AEC Docket Nos. 50-327, 50-328) and is made in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. Section 4331 et seq).

TVA, a corporate agency of the Federal Government, and the Atomic Energy Commission, a regulatory agency of the Federal Government, have agreed that TVA is the lead agency for the preparation and circulation of the detailed statement of environmental considerations for the Sequoyah Nuclear Plant. A draft statement for the Sequoyah plant was circulated for review and comments by other Government agencies on October 19, 1971.

In accordance with the lead agency agreement, TVA has consulted AEC in the preparation of this final detailed environmental statement. Copies of AEC's comments on this statement and TVA's responses are included in Section 7.0.

The information contained in the draft statement as well as the agency comments on the draft statement and TVA's response thereto have been incorporated into this statement.