



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

September 29, 1978

Docket Nos. ~~50-327~~  
~~50-328~~

Tennessee Valley Authority  
Attn: Mr. N. B. Hughes  
Manager of Power  
830 Power Building  
Chattanooga, Tennessee 37401

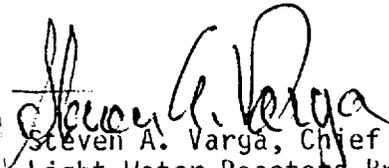
Gentlemen:

SUBJECT: ORDER EXTENDING CONSTRUCTION COMPLETION DATE - SEQUOYAH

In response to your requests of July 29, 1977 and February 14, 1978, the Nuclear Regulatory Commission has issued an Order extending the construction completion dates for the Sequoyah Nuclear Plant, Units 1 and 2. In lieu of the latest completion dates of September 1, 1977, and May 1, 1978, as specified previously in Provisional Construction Permits Nos. CPPR-72 and CPPR-73, the latest completion dates have been extended to August 1, 1979, and April 1, 1980 for Units 1 and 2 respectively.

A copy of the Order, the staff safety evaluation, negative declaration and environmental impact appraisal are enclosed for your information. The Order and the negative declaration have been transmitted to the Office of the Federal Register for publication.

Sincerely,

  
Steven A. Varga, Chief  
Light Water Reactors Branch 4  
Division of Project Management

Enclosures:

1. Order Extending Completion Date
2. Staff Safety Evaluation
3. Negative Declaration
4. Environmental Impact Appraisal

ccs: See next page

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Tennessee Valley Authority

CCS:

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Chairman  
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Nashville, Tennessee 37219



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

ORDER EXTENDING CONSTRUCTION COMPLETION DATES

Tennessee Valley Authority (TVA) is the holder of Provisional Construction Permits Nos. CPPR-72 and CPPR-73, issued by the Atomic Energy Commission\* on May 27, 1970 for construction of the Sequoyah Nuclear Plant, Units 1 and 2, presently under construction at the licensee's site in Hamilton County, Tennessee.

On February 14, 1978, TVA filed a request, superseding their previous request of July 29, 1977, for an extension of the completion dates because construction has been delayed due to:

1. Delays in delivery of critically needed equipment and materials;
2. Additions to the plant fire protection systems;
3. Interference problems in the installation of seismic and pipe rupture restraints;
4. Modification of the feedwater design to include all volatile treatment for water chemistry, and addition of the requirement for acid cleaning of the secondary system prior to hot functional testing; and
5. Indirect effect of additional construction activities associated with additions to the scope of the project.

\*Effective January 20, 1975, the Atomic Energy Commission became the Nuclear Regulatory Commission and permits in effect on that day were continued under the authority of the Nuclear Regulatory Commission.

This action involves no significant hazards consideration; good cause has been shown for the delay; and the extension is for a reasonable period, the bases for which are set forth in a staff evaluation dated September 28, 1978.

A negative declaration and an Environmental Impact Appraisal have been prepared and are available, as are the above stated documents, for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. 20555, and at the Chattanooga-Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

IT IS HEREBY ORDERED THAT the latest completion dates for Provisional Construction Permits Nos. CPPR-72 and CPPR-73 be extended from September 1, 1977 and May 1, 1978 to August 1, 1979 and April 1, 1980 for Units 1 and 2, respectively.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'Roger S. Boyd', is written over the typed name and title.

Roger S. Boyd, Director  
Division of Project Management  
Office of Nuclear Reactor Regulation

Date of Issuance:  
September 29, 1978

Docket No. 50-327  
50-328

EVALUATION OF REQUEST FOR  
EXTENSION OF PROVISIONAL CONSTRUCTION PERMITS  
FOR SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

A. Introduction

Provisional Construction Permits No. CPPR-72 and No. CPPR-73 were issued by the Commission on May 27, 1970 for construction of the Sequoyah Nuclear Plant, Units 1 and 2, at the licensee's site in Hamilton County, Tennessee. By letter dated July 29, 1977, Tennessee Valley Authority (TVA) had requested that the latest completion dates for the construction permits be extended to September 1, 1978 and May 1, 1979 for Units 1 and 2 respectively. This request was subsequently superseded by letter of February 14, 1978, wherein it was requested that the latest completion dates be extended to August 1, 1979 and April 1, 1980 respectively. Fuel loading for Units 1 and 2 are presently scheduled for January 31, 1979 and September 30, 1979, so that the requested completion dates provide for a six-month contingency for additional unforeseen delays.

TVA states that as a result of installation of a computerized project control system, they are now better able to identify factors contributing to the construction delay of the Sequoyah plant. These include the following:

1. Delays in delivery of critically needed equipment and materials, including valves, instruments, and hangers, have severely impeded construction progress. These delays have resulted in a four-month impact to the critical path for cold hydrotesting.
2. In response to Appendix A to Branch Technical Position APCS-9.5-1, the design of the plant has been altered by additions to the plant fire protection systems. Of particular significance among these design changes is a substantial increase in the amount of cable that must be pulled. These additions have necessitated work in heavily congested areas which will result in a nine-month impact to the critical paths for many preoperational tests.
3. In the course of installation of the seismic restraints and pipe rupture restraints, physical interferences with existing components have been encountered. These interference problems have impeded and will continue to impede construction progress. It is estimated that a general critical path schedule impact of an additional twelve months has occurred.

4. In response to concerns about secondary side water chemistry impact on plant operational availability, the two following **design changes** have occurred which are now required before fuel load:
  - a. The plant design has been altered to include all volatile treatment for water chemistry. This has resulted in the addition of a condensate demineralizer building and related equipment. Completion of this building has been delayed six to eight months beyond the original schedule because of foundation-related problems.
  - b. Acid cleaning of the secondary system is required before hot functional testing. This will add three to four months to the total cleaning cycle.

These two design changes will result in approximately a six-month impact to the critical path for hot functional testing.

5. In addition to these factors which directly affect the construction schedule, there continue to be additions to the scope of the project which have a material but indirect impact on the plant schedule. Additional construction activities are causing delays by requiring substantial effort which could otherwise be devoted to other construction activities.

TVA states that the above items constitute some of the factors which contributed to the unanticipated construction delays and demonstrate good cause why an extension of the construction permits should be granted as requested pursuant to 10 CFR 50.55(b).

B. Good Cause and Reasonable Time

The staff concurs that the events cited above as reasons for the construction delay were unforeseen, that these reasons constitute good cause for the requested extension and that the delays caused by these factors are approximately as TVA has indicated. Based on our estimate of the time required to perform the remaining work, supported by estimates of Office of Inspection and Enforcement personnel, we concur that the requested extension time to complete the work is reasonable.

C. Significant Hazards Consideration

The staff finds that because the request is for more time to complete work already reviewed and approved and to complete work on facility design improvements described above, the probability or

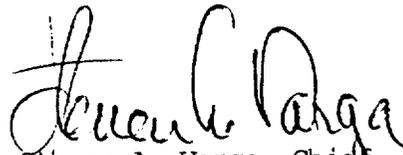
consequences of accidents previously considered will not be increased, nor will any safety margins associated with this facility be decreased. Accordingly, no significant hazards consideration is involved in granting the request and prior public notice of this action is not required.

D. Conclusions and Recommendations

For the reasons stated herein, the staff concludes and recommends that the latest completion dates for Provisional Construction Permits No. CPPR-72 and No. CPPR-73 should be extended to August 1, 1979 and April 1, 1980 respectively.



Harley Silver, Project Manager  
Light Water Reactors Branch 4  
Division of Project Management



Steven A. Varga, Chief  
Light Water Reactors Branch 4  
Division of Project Management

SEP 28 1978



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NEGATIVE DECLARATION

SUPPORTING: EXTENSION EXPIRATION DATE OF PROVISIONAL CONSTRUCTION

PERMIT NO. CPPR-72 (UNIT 1) AND PERMIT NO. CPPR-73 (UNIT 2)

FOR THE

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

TENNESSEE VALLEY AUTHORITY (TVA)

DOCKET NOS. 50-327 AND 50-328

The U. S. Nuclear Regulatory Commission (the Commission) has reviewed the Tennessee Valley Authority's (permittee) request to extend the expiration date of the provisional construction permits for the Sequoyah Nuclear Plant, Units 1 and 2 (CPPR-72 and CPPR-73) which is located near Daisy in Hamilton County, Tennessee. The permittee has requested an extension of the latest completion dates specified in the permits to August 1, 1979 for Permit No. CPPR-72 (Unit 1) and April 1, 1980 for Permit No. CPPR-73 (Unit 2) so as to allow for a reasonable period for completion of construction of the Sequoyah Nuclear Plant, and further allowance for contingencies. The principal cause of delay is attributable by the permittee to schedule impacts of new fire protection design requirements, delays in delivery of critical equipment, and other required retrofits and add-ons.

The Commission's Division of Site Safety and Environmental Analysis (staff) has prepared an environmental impact appraisal relative to this change to CPPR-72 and CPPR-73. Based upon this appraisal, the staff has concluded

that an environmental impact statement for this particular action is not warranted because, pursuant to the Commission's regulations in 10 CFR Part 51 and the Council of Environmental Quality's Guidelines, 40 CFR 1500.6, the Commission has determined that this change to the construction permits is not a major federal action significantly affecting the quality of the human environment.

The environmental impact appraisal is available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555; and at the Chattanooga-Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

Dated at Bethesda, Maryland, this 25<sup>th</sup> day July 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

*Ronald L. Ballard*  
Ronald L. Ballard, Chief  
Environmental Projects Branch 1  
Division of Site Safety and  
Environmental Analysis



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

ENVIRONMENTAL IMPACT APPRAISAL

BY THE DIVISION OF SITE SAFETY AND ENVIRONMENTAL ANALYSIS

SUPPORTING EXTENSION OF PROVISIONAL CONSTRUCTION PERMITS

NOS. CPPR-72 (UNIT 1) AND CPPR-73 (UNIT 2)

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NO. 50-327 AND 50-328

TENNESSEE VALLEY AUTHORITY

ENVIRONMENTAL IMPACT APPRAISAL

Description of Proposed Action

By letter dated February 14, 1978, superseding the previous request by letter dated July 29, 1977, the applicant, Tennessee Valley Authority (TVA), filed a request with the Nuclear Regulatory Commission (NRC) to extend the completion date specified in Construction Permit Nos. CPPR-72 and CPPR-73 for the Sequoyah Nuclear Plant, Units 1 and 2. The action proposed is the issuance of an order providing for an extension of the latest completion dates of the construction permits from September 1, 1977 to August 1, 1979 for Permit No. CPPR-72 (Unit 1), and from May 1, 1978 to April 1, 1980 for CPPR-73 (Unit 2).

Under a TVA/NRC Memorandum of Understanding of June 20, 1971, the TVA under the lead agency concept, published its Draft Environmental Statement for the Sequoyah Nuclear Plant and submitted it to the AEC (now NRC) in October 1971. After comment by NRC and the public agencies, TVA published its Final Environmental Statement on February 13, 1974.

The original completion dates as given in Construction Permits CPPR-72 and CPPR-73 as issued by AEC (NRC) to TVA on May 27, 1970 for completion of construction of the nuclear units was not earlier than April 1, 1973 or later than October 1973. The construction permits were subsequently extended to September 1, 1977 (Unit 1) and May 1, 1978 (Unit 2). The applicant now plans to have the proposed units in commercial operation by August 1, 1979 (Unit 1) and April 1, 1980 (Unit 2). The applicant attributes the need for extension of these permits principally to schedule impacts

due to new fire protection requirements, and design and installation of a number of other plant retrofits and add-ons. Other factors include delays in receipt of critical equipment and materials and other safety-related design changes. None of these changes has been judged by the staff to have a direct effect on the environmental impact associated with the plant. The staff in reviewing the proposed extension considered the following environmental impacts.

### Environmental Impact of the Proposed Action

#### A. Need for Power

The TVA Final Environmental Statement concluded that there was a demonstrated need for the power to be provided by the Sequoyah Nuclear Plant, Units 1 and 2, as part of the TVA System. The TVA is now scheduled to complete construction and begin operation of Unit 1 by August 1, 1979 and Unit 2 by April 1, 1980. Net electrical output is proposed to be 1140 MWe for each unit. The staff has reassessed the need for the Sequoyah Nuclear Plant with respect to its planned operation in 1979 and 1980.

Based on the applicant's most recent official load and power requirement forecast, substantial projected peak load and power deficiencies are demonstrated with respect to desirable capacity reserves. These peak load deficiencies have been estimated at approximately 500 MWe in the winter of 1978-1979, 1900 MWe during the summer of 1979, and 700 MWe for the winter of 1979-1980. The staff has reviewed and evaluated the load forecast and requirement data provided by the applicant, and has determined that a reasonable approach to power forecasting has been employed and a demonstrated need for power continues to exist. This conclusion as to need for power within the TVA system was further substantiated by independent NRC staff assessments for TVA's Yellow Creek and Phipps Bend Nuclear Power Plants at the construction permit stage. In demonstrating need for power at Yellow Creek and Phipps Bend (facilities to be constructed and operated subsequent to Sequoyah), the staff assessment included the power to be supplied to the TVA system by the Sequoyah plant.

#### B. Social and Economic Impacts

The Final Environmental Statement for the Sequoyah Nuclear Plant issued by TVA in February 1974 includes an assessment of potential environmental, economic and community impacts due to site preparation and plant construction.

The Sequoyah Nuclear Plant is now estimated to be approximately 80 percent complete. Employment at the project is at or near its peak of 3,700 to 3,800 people and is expected to decline slowly until the end of the construction period. With the completion of construction to date, much of the anticipated environmental impact due to construction has already taken place. Furthermore, its surrounding community has already adapted to the plant construction activities and has already experienced or is now experiencing the impacts of the peak construction activity with its associated housing, school facilities, and transportation related aspects. The result of the proposed extension will not increase the intensity of the construction activity but merely extend the period of construction activity at a reduced level of impact.

In the staff's judgment, the increase in the period of construction of the project will not result in additional socioeconomic or environmental impacts. The environmental impacts associated with construction of the plant described in the FES (i.e., housing, school facilities, and transportation) are not significantly affected by the proposed extension.

#### Summary, Conclusion and Basis for Negative Declaration

1. The applicant, because of design modifications and other delays, has requested extension of the Construction Permits from January 31, 1979 to August 1, 1979 (Unit 1) and from September 30, 1979 to April 1, 1980 (Unit 2).
2. The NRC staff has reviewed the total environmental effects which could result from the requested extension by the applicant of the latest completion dates.
3. No significant adverse changes in socio-economic impact is expected to result from the requested extension of the term of the Construction Permits.

On the basis of the information given herein and the NRC staff evaluation of this information, the staff concludes that there will be no adverse environmental impact attributable to the proposed action other than those predicted and described in the applicant's FES issued in February 1974 and the Board's Initial Decision of December 2, 1975. Having made this conclusion, the Commission has further concluded that no environmental impact statement for the proposed action need be prepared, and that a negative declaration to this effect is appropriate. The subject change to the construction permit is judged not to be a major Federal action significantly affecting the quality of the human environment.

JUL 25 1978

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