

September 15, 1986

Docket Nos.: 50-327  
and 50-328

Mr. S. A. White  
Manager of Nuclear Power  
Tennessee Valley Authority  
6N 38A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

Subject: Issuance of Amendment No. 45 to Facility Operating License  
No. DPR-77 and Amendment No. 37 to Facility Operating  
License No. DPR-79 - Sequoyah Nuclear Plant, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 45 to Facility Operating License No. DPR-77 and Amendment No. 37 to Facility Operating License No. DPR-79. These amendments are in response to your request dated June 20, 1986.

The amendments change the Technical Specifications (TS) to delete the maximum fuel rod weight limit of 1,766 grams of uranium from the Design Features Section. The amendments are effective as of their date of issuance. This letter should not be construed as an authorization to commence operation prior to the Tennessee Valley Authority appropriately addressing the concerns identified in the 50.54(f) letter dated September 17, 1985.

A copy of the related safety evaluation supporting Amendment No. 45 to Facility Operating License DPR-77 and Amendment No. 37 to Facility Operating License DPR-79 is enclosed.

Notice of issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

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Carl R. Stahle, Project Manager  
PWR Project Directorate #4  
Division of PWR Licensing-A

Enclosures:

1. Amendment No. 45 to DPR-77
2. Amendment No. 37 to DPR-79
3. Safety Evaluation

cc w/enclosures: See next page

PWR#4/DPWR-A  
MDuncan/rad  
08/15/86

PWR#4/DPWR-A  
JHolonich  
08/15/86

PWR#4/DPWR-A  
CStahle  
08/15/86

PWR#4/DPWR-A  
BJYoungblood  
08/15/86

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Mr. S. A. White  
Tennessee Valley Authority

Sequoyah Nuclear Plant

cc:  
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Health  
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Environmental Health Services  
Cordell Hull Building  
Nashville, Tennessee 37219

Regional Administrator, Region II  
U.S. Nuclear Regulatory Commission,  
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Atlanta, Georgia 30323

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ATTN: J. A. Raulston  
Tennessee Valley Authority  
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Knoxville, Tennessee 37902

Mr. Michael H. Mobley, Director  
Division of Radiological Health  
T.E.R.R.A. Building  
150 9th Avenue North  
Nashville, Tennessee 37203

Mr. Bob Faas  
Westinghouse Electric Corp.  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230

County Judge  
Hamilton County Courthouse  
Chattanooga, Tennessee 37402

R. L. Gridley  
Tennessee Valley Authority  
5N 157B Lookout Place  
Chattanooga, Tennessee 37402-2801

M. R. Harding  
Tennessee Valley Authority  
Sequoyah Nuclear Plant  
P.O. Box 2000  
Soddy Daisy, Tennessee 37379

Resident Inspector/Sequoyah NPS  
c/o U.S. Nuclear Regulatory Commission  
2600 Igou Ferry Road  
Soddy Daisy, Tennessee 37379



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 45  
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Sequoyah Nuclear Plant, Unit 1 (the facility) Facility Operating License No. DPR-77 filed by the Tennessee Valley Authority (licensee), dated June 22, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the license, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is hereby amended by page changes to the Appendix A Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 45 are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A

Attachment"  
Appendix A Technical  
Specification Changes

Date of Issuance: September 15, 1986

PWR#4/DPWR-A  
MDungan/rad  
08/28/86

PWR#4/DPWR-A  
JHolenich  
08/28/86

PWR#4/DPWR-A  
CStahle  
08/28/86

OGC/BETH  
Sut  
09/2/86

PWR#4/DPWR-A  
BJYoungblood  
09/15/86

ATTACHMENT TO LICENSE AMENDMENT NO. 45

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the areas of change.

Amended  
Page

5-4

### 5.3 REACTOR CORE

#### FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.15 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.0 weight percent U-235.

#### CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

### 5.4 REACTOR COOLANT SYSTEM

#### DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

#### VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is 12,612  $\pm$  100 cubic feet at a nominal  $T_{avg}$  of 525°F.

### 5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 37  
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Sequoyah Nuclear Plant, Unit 2 (the facility) Facility Operating License No. DPR-79 filed by the Tennessee Valley Authority (licensee), dated June 20, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the license, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is hereby amended by page changes to the Appendix A Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 37 are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A

Attachment  
Appendix A Technical  
Specification Changes

Date of Issuance: September 15, 1986

PWR#4/DPWR-A  
MDungan/rad  
08/28/86

PWR#4/DPWR-A  
JHolonich  
08/14/86

PWR#4/DPWR-A  
CStahle  
08/14/86

OGC/BETH  
09/2/86

PWR#4/DPWR-A  
BJYoungblood  
09/15/86



ATTACHMENT TO LICENSE AMENDMENT NO. 37

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the areas of change.

Amended  
Page

5-4

## DESIGN FEATURES

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### 5.3 REACTOR CORE

#### FUEL ASSEMBLIES

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#### CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

### 5.4 REACTOR COOLANT SYSTEM

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5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

#### VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is 12,612 ± 100 cubic feet at a nominal  $T_{avg}$  of 525°F.

### 5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.45 TO FACILITY OPERATING LICENSE DPR-77  
AND AMENDMENT NO.37 TO FACILITY OPERATING LICENSE DPR-79  
TENNESSEE VALLEY AUTHORITY

I. INTRODUCTION

By letter dated June 20, 1986, the Tennessee Valley Authority (TVA) requested changes to Operating Licenses DPR-77 and DPR-79. The requested changes dealt with the Design Features Section 5.3.1, Fuel Assemblies, of the Sequoyah Units 1 and 2 Technical Specifications which identify a maximum total fuel rod weight of 1,766 grams of uranium. Recent changes by Westinghouse to the fuel design, including chamfered pellets with a reduced dish and use of the integrated dry route process, have increased fuel weights slightly. The weight increases have caused the assembly averaged fuel rod weight for Cycle 3 fuel to exceed the 1,766 limit by as much as 10 grams. The proposed change will delete the weight limits from the Technical Specifications to allow use of the slightly heavier fuel.

II. EVALUATION

The important safety related parameters which are indirectly affected by fuel weight, such as reactor criticality, power level, power distribution and the rate of decay heat production, are all regulated by requirements in the Limiting Condition for Operation section of the Technical Specifications. In addition, the fuel weight is implicitly included in the nuclear design analysis performed for each reactor operating cycle and used to evaluate conformance with established limits for Design Basis Events. For the slight weight increases reported by the licensee for Cycle 3 and any similar possible design, there is no impact on the safety analysis. A significant change in the fuel design would be the subject of review and changes to the other governing Technical Specifications or may be an unreviewed safety question as defined in 10 CFR 50.59.

Therefore, the staff concludes that there will be no significant safety impact in deleting the maximum fuel weight from Technical Specification Section 5.3.1 for Units 1 and 2. The staff also finds this action preferable to changing the Specification for each cycle to accommodate the applicant weight, or to specifying an artificial upper value of the weight to bound future variations. The proposed changes are, therefore, acceptable.

#### IV. CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register on August 13, 1986 (51 FR 29014) and consulted with the state of Tennessee. No public comments were received, and the state of Tennessee did not have any comments.

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors:                      Carl R. Stahle, PWR#4, DPWR-A  
   Joe Holonich, PWR#4, DPWR-A  
   L. Bell, RSB

Dated: September 15, 1986

September 15, 1986

AMENDMENT NO.45 TO FACILITY OPERATING LICENSE NO. DPR-77 - Sequoyah Nuclear Plant  
Unit 1

AMENDMENT NO.37 TO FACILITY OPERATING LICENSE NO. DPR-79 - Sequoyah Nuclear Plant  
Unit 2

DISTRIBUTION w/ enclosures:

Docket No. 50-327/328

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Local PDR

NSIC

PRC System

PD#4 Reading File

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