

April 16, 1976

Docket Nos. (50-259)  
and (50-260)

Tennessee Valley Authority  
ATTN: Mr. Godwin Williams, Jr.  
Manager of Power  
818 Power Building  
Chattanooga, Tennessee 37201

DISTRIBUTION:  
Docket File (2)  
NRC PDR  
Local PDR  
ORB#1 Rdg  
RAPurple  
TVWambach  
SMSheppard  
KRGoller  
TJCarter  
OELD  
OI&E (3)  
ACRS (16)  
BJones (8)  
BScharf (10)  
JMcGough  
JSaltzman  
OTBr. Chiefs

R  
CMiles, OPA  
TBAbernathy  
JRBuchanan

Gentlemen:

The Commission has issued the enclosed Amendments No. 21 and 18 to Facility Licenses No. DPR-33 and DPR-52 for the Browns Ferry Nuclear Plant, Units 1 and 2. These amendments consist of changes to the Technical Specifications and are in response to your request of April 9, 1976.

These amendments revise the Interim Technical Specifications to allow removal of the canal gate and three canal blocks in order to allow safe transfer of the neutron sources from the reactor vessel to the fuel storage pool. Alternate methods to protect against possible loss of spent fuel pool water through a leak in the primary coolant system or in other systems connected thereto are required by these amendments when the canal gates and plugs are not in place.

Copies of the Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

/s/ R. A. Purple

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosures:

1. Amendment No. 21 to DPR-33
2. Amendment No. 18 to DPR-52
3. Safety Evaluation
4. Federal Register Notice

*R. T. Tippetto*

OFFICE	ORB#1	ADPS	EIGSB	OELD	ORB#1
SURNAME	TVWambach:sms	ELong	Tippolito	4/15/76	RAPurple
DATE	4/12/76	4/13/76	4/13/76	4/15/76	4/16/76

Tennessee Valley Authority

- 2 -

April 16, 1976

cc w/enclosures:

H. S. Sanger  
General Counsel  
629 New Sprankle Building  
Knoxville, Tennessee 37919

Athens Public Library  
South and Forrest  
Athens, Alabama 35611

Mr. William E. Garner  
Route 4, Box 354  
Scottsboro, Alabama 35768

Mr. Thomas Lee Hammons  
Chairman, Limestone County Board  
of Revenue  
Athens, Alabama 35611

cc w/enclosures and incoming:

Ira L. Myers, M.D.  
State Health Officer  
State Department of Public Health  
State Office Building  
Montgomery, Alabama 36104



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT UNIT 1

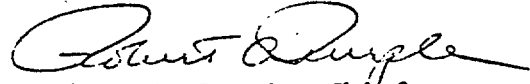
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 21  
License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 9, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: April 16, 1976



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT UNIT 2

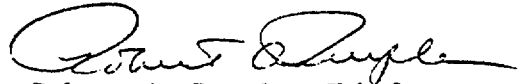
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 18  
License No. DPR-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 9, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: April 16, 1976

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 21 TO FACILITY LICENSE NO. DPR-33

AMENDMENT NO. 18 TO FACILITY LICENSE NO. DPR-52

DOCKET NOS. 50-259 & 50-260

Revise Appendix A as follows:

Remove pages 131a, 133, 133a and 146 and insert revised identically numbered pages.

fied in 3.5.C.1. When a fuel pool cooling pump is required to be operating or as a backup, the associated RBCCWS loop and service water system must be functional.

3. Whenever irradiated fuel is stored in the fuel pool, the gates on the fuel transfer canal between unit 1 and unit 2 shall be left in place and the transfer canal drain valves 1-78-561 and 1-78-562 shall be shut. The fuel pool gates between the fuel pools and the reactor cavities shall be installed with the canal blocks in place, except as specified in 3.5.C.4.

4. When it is necessary to transfer radioactive components through the canal, the fuel pool gate and three canal blocks may be temporarily removed from between the reactor vessel and the fuel pool, provided at least one block is left in the canal and the overhead crane is available and rigged to the second canal block of the affected unit. If at any time when the canal blocks are removed, the fuel pool level drops to the low level alarm, all canal blocks and the fuel pool gate shall be reinserted and normal SFSP water level reestablished and the cause of the low level determined and corrected.



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.5 CORE, CONTAINMENT AND FUEL POOL COOLING SYSTEMS

Each pump must run continuously with its loss of voltage trips deactivated or it shall be capable of automatic start in its normal D/G load sequencing mode of operation. Each pump on the same header shall be assigned to a separate diesel power supply.

4. Whenever irradiated fuel is stored in the spent fuel pool, two independent flow paths for water make up to the spent fuel pool will be available from two RHRSW pumps, capable of being supplied by separate diesel power.

4.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

3. Routine surveillance for an operating or backup RHR or fuel pool cooling pump is as follows:

<u>Item</u>	<u>Frequency</u>
a. Pump operability	Upon restoration and monthly thereafter if not in continuous service.
b. Motor-operated valve operability	Upon restoration and monthly thereafter

4 Whenever the fuel pool gate is removed from the canal, an operator will be stationed on the refuel floor to continuously observe the fuel pool level.

D. RHR Service Water System (RHRSWS)  
And Emergency Equipment Cooling  
Water System (EECWS)

1. RHR Service Water System .

Each of the required RHRSW pumps and associated essential control valves on the RHR heat exchanger headers shall be demonstrated to be functional upon restoration and once every month thereafter if not in continuous service.

3.5.C Spent Fuel Pool Cooling (continued)

The gates and all the blocks except one may be removed from the canal between the spent fuel storage pool and the reactor cavity to allow transfer of the sources from the cavity into the pool. When the blocks and gates are removed, the overhead crane will be rigged to the second block ready to install it into the canal in the unlikely event that a low level in the spent fuel storage pool occurs. The addition of the second block will prevent the water level from dropping to within 8 1/2 feet of the top of the fuel. (Refer to Bases 3.10/4.10).

The decay heat removal requirements for a full core stored in the fuel pool can be conservatively met by the operation of one RHR pump and its associated RHR heat exchanger in the fuel pool cooling mode. The total heat load for this mode is estimated to be less than 20 percent of the heat exchanger capability under the required flow and temperature conditions.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 21 TO FACILITY LICENSE NO. DPR-33

AND AMENDMENT NO. 18 TO FACILITY LICENSE NO DPR-52

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-259 AND 50-260

Introduction

By letter dated April 9, 1976, Tennessee Valley Authority (TVA), the licensee for Browns Ferry Nuclear Plant Units 1 and 2 (BFNP), applied for amendments to licenses DPR-33 and DPR-52 to change the Technical Specifications for Units 1 and 2 to allow removal of three canal blocks and the canal gate between the spent fuel pool and the reactor vessel. Subsequent to the March 22, 1975 fire, the Technical Specifications for Units 1 and 2 were changed to take into account the conditions of equipment and systems at the plant and specified requirements to ensure that the fuel would be safely maintained in a stored, shutdown, cooled condition (Ref. 1, 2 and 3). Because of the conditions in the plant at that time and the planned activities to return the plant to an operable status, additional precautionary measures were required by these Interim Technical Specifications. Among these was the requirement to have the canal gate and the canal shield blocks in place between the spent fuel pool and the reactor vessel to prevent loss of pool water through drainage or leakage during restoration and testing of systems connected to the primary coolant system.

The licensee now must remove the neutron sources from the Unit 1 reactor to send them to Oak Ridge National Laboratory for reactivation. In order to accomplish this the sources must be transferred from the vessel to the spent fuel pool where the shipping cask is located. The sources must be kept under water to shield the operator. This requires use of the transfer canal.

### Evaluation

Whenever the canal gate and blocks are not in place, the licensee proposes to station an operator on the refuel floor to continuously observe the water level in the fuel pool and to immediately take corrective action if the water level should start decreasing. A canal block will be rigged to the overhead crane and can be lowered into place in a few minutes. Even if the water level should drop to the top of this canal block, it would still be above the 8-1/2 feet of water required over the top of the stored fuel. If this canal block were not put in place, at least 5 feet of water would remain above the spent fuel and at least 18 hours would be available to install the blocks and gate or provide supplemental cooling before the spent fuel pool water would reach the boiling point. We find that this alternative method for preventing excessive loss of spent fuel pool water through leakage or drainage from the primary coolant system during the limited time needed to pass radioactive components through the canal satisfactorily compensates for the removal of canal blocks and canal gate and allows the neutron sources to be safely handled for offsite shipment.

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of the amendments.

### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

### References

- (1) Amendments 9 to DPR-33 and 6 to DPR-52 dated May 9, 1975 and accompanying SER.
- (2) Amendments 10 to DPR-33 and 7 to DPR-52 dated June 13, 1975 and accompanying SER.
- (3) Amendments 18 to DPR-33 and 15 to DPR-52 dated December 19, 1975 and accompanying SER.

Date: April 16, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-259 AND 50-260

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY  
OPERATING LICENSES

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 21 to Facility Operating License No. DPR-33 and Amendment No. 18 to Facility Operating License No. DPR-52 issued to Tennessee Valley Authority (the licensee) which revised the Technical Specifications of the Browns Ferry Nuclear Plant, Units 1 and 2, located in Limestone County, Alabama. The amendments are effective as of the date of issuance.

These amendments revise the Interim Technical Specifications to allow removal of the canal gate and three canal blocks in order to allow safe transfer of the neutron sources from the reactor vessel to the fuel storage pool. Alternate methods to protect against possible loss of spent fuel pool water through a leak in the primary coolant system or in other systems connected thereto are required by these amendments when the canal gates and plugs are not in place.

The application for these amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

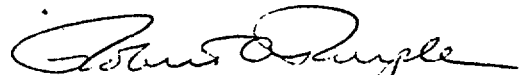
The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated April 9, 1976, (2) Amendment No. 21 to License No. DPR-33 and Amendment No. 18 to License No. DPR-52, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W. Washington, D. C. 20555, and at the Athens Public Library, South and Forrest, Athens, Alabama 35611.

A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 16th day of April 1976.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors