DEC 19 1975

Docket Nos. 50-259
and 50-260

Tennessee Valley Authority
ATTN: Mr. James E. Watson
Manager of Power
818 Power Building
Chattanooga, Tennessee 37201

Gentlemen:

The Commission has issued the enclosed Amendments No. 18 and 15 to Facility Licenses No. DPR-33 and DPR-52 for the Browns Ferry Nuclear Plant, Units 1 and 2. These amendments include Changes No. 18 to the Technical Specifications and are in response to your request of November 7, 1975.

The amendments revise the Interim Technical Specifications to remove the requirements for certain cooling and ventilation equipment that are no longer needed. The cooling requirements are reduced since the decay heat of the fuel has been greatly reduced with the elapsed time since reactor operation. The ventilation requirements are reduced for the same reason and because the need to control air movement to prevent the spread of chloride contamination no longer exists with the burned cables and soot having been removed from the plant.

This change is required in order to allow the installation of the permanent control and power supplies to this equipment and in the case of the Standby Gas Treatment System to allow the connection of the third train of the system to accommodate the requirements of Unit 3. This equipment and their associated systems also are involved in the retest program that is required prior to return to operation. You have informed us that this work must be started at this time so as not to adversely impact your restoration schedule. The Interim Technical Specifications as amended, continue to ensure that the two units will remain in a safe and stable posture during the period of the remaining restoration work with the fuel stored in the fuel storage pools.

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

Sincerely,

Original signed by
R. A. Purple

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

Enclosures:
See next page

| OFFICE ➤ | | | | | | |
|---|---|---|---|---|---|---|
| SURNAME ➤ | | | | | | |
| DATE ➤ | | | | | | |

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

DEC 19 1975

Enclosures:
1. Amendment No. 18 to DPR-33
2. Amendment No. 13 to DPR-52
3. Safety Evaluation
4. Federal Register Notice

cc w/enclosures:
H. S. Sanger
General Counsel
629 New Sprankle Building
Knoxville, Tennessee 37919

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

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

Athens Public Library
South and Forrest
Athens, Alabama 35611

cc w/enclosures & incoming:
Mr. Jim Payne, Director
Office of Urban & Federal Affairs
1312 Andrew Jackson Building
Nashville, Tennessee 37219

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| DATE | 12/15/75 | 12/17/75 | 12/ /75 | 12/19/75 | 12/19/75 |

Form AEC-318 (Rev. 9-53) AECM 0240

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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. 18
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 November 7, 1975, 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; and

   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.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility License No. DPR-33 is hereby amended to read as follows:

"2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 16."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple

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

Attachment:
Change No. 16 to the Technical Specifications

Date of Issuance: DEC 18 1975

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. 15
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 November 7, 1975, 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; and

   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.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility License No. DPR-52 is hereby amended to read as follows:

"2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 16."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple

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

Attachment:
Change No. 16 to the Technical Specifications

Date of Issuance: DEC 18 1975

ATTACHMENT TO LICENSE AMENDMENT NO. 18 TO LICENSE NO. DPR-33

AND LICENSE AMENDMENT NO. 15 TO LICENSE NO. DPR-52

(CHANGE NO. 13 TO THE TECHNICAL SPECIFICATIONS)

DOCKET NOS. 50-259 AND 50-260

Revise Appendix A as follows:

Remove the pages listed below and insert identically numbered pages.

Table 3.2.A (page 54)

131

131a

132

133

134

135

144

145

146

147

148

149

176

176a

206

256a

## Table 3.2.A

## SURVEILLANCE INSTRUMENTATION

| Minimum # of Operable Instrument Channels | Instrument # | Instrument | Type Indication and Range | Alarm Setting | Notes |
|---|---|---|---|---|---|
| 2 | LI-3-206 or<br>LR-3-53 or<br>LI-3-53 or<br>LI-3-55 and<br>LI-3-46A or 46B | Reactor Water Level | Indicator 0" to 60"<br>Recorder 0" to 60"<br>Indicator 0" to 60"<br>Indicator 0" to 400"<br>Indicator +60" to -155" | Low $\geq$ 27", high $\leq$39" | (1)(4) |
| 2 | PI-3-54<br>PR-3-53 | Reactor Pressure | Indicator 0-1200 psig<br>Recorder 0-1200 psig | High $\leq$ 1040 psig | (1)(5) |
| 2 | PR-64-50 and<br>PI-64-67 | Drywell Pressure | Recorder 0-80 psig<br>Indicator 0-80 psig | | (1)(5) |
| 2 | TI-64-52A and<br>TR-64-52 | Drywell Temperature | Indicator 0-400° F.<br>Recorder 0-400° F. | High $\leq$ 145° F. | (1)(5) |
| 2 | TI-64-55A and<br>TIS-64-55 | Suppression Chamber Water Temperature | Indicators 0-400° F. | High $\leq$ 90° F | (1)(4) |
| 1 | LI-64-54A or<br>LI-64-66 | Suppression Chamber Water Level | Indicator -25" to +25" | | (1)(4) |
| 1 | NA | Control Rod Position | Continuity | | (2)(4) |
| 2 | SRM A, B, C, D | Neutron Monitoring | Indicator and Recorder<br>0.1 to $10^{+6}$ cps<br>-100 to +10 sec. (period) | Downscale $\geq$ 3 cps<br>Retract permit $\geq$ 100 cps<br>Upscale HI $\leq 10^5$ cps<br>Upscale HI-HI$\leq 5\times10^5$ cps<br>Period $\geq$ 30 sec. | (1)(3)(4) |
| 1 | LS-78-2A | Fuel Storage Pool level high | NA | $\leq$EL 663' 1/2" | (6)(7) |
| 1 | LS-78-2B | Fuel Storage Pool level low | NA | $\geq$EL 662' 7 1/2" | (6)(7) |
| 1 | TR-74-80 pT 17 | Fuel pool temperature | Recorder 0-600°F | $\leq$ 125°F | (6)(7) |

ENCLOSURE 1

3.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

shall be capable of manual operation. Diesel generators must also be available to power the pumps. A service water supply must be available.

C. Spent Fuel Pool Cooling

1. Whenever irradiated fuel is stored in the spent fuel pool, a cooling system for the spent fuel pool shall maintain the temperature of the fuel pool coolant ≤125°F.

2. When irradiated fuel is stored in the spent fuel pool, any combination of two pumps and associated heat exchangers from the spent fuel cooling or RHR supplemental cooling systems shall be available from different operable diesel generators to maintain fuel pool temperatures as specified

4.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

flow, another core spray pump with an available diesel generator shall be selected, and all active components in the flow paths shall be immediately demonstrated to be capable of delivering flow.

B. Residual Heat Removal System (RHRS) (Containment and Shutdown Cooling)

1. Residual Heat Removal System Testing

| | Item | Frequency |
|---|---|---|
| a. | Pump operability | Upon restoration and monthly thereafter |
| b. | Motor operated valve operability | Upon restoration and monthly thereafter |

2. When it is determined that one RHR pump (containment and suppression pool cooling) or associated heat exchanger is incapable of delivering flow and removing heat at a time when flow capability and heat removal are required, the remaining RHR pump and associated heat exchanger and available diesel generator, and all active components in the flow paths shall be demonstrated to be

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, and the fuel pool gates between the fuel pools and the reactor cavities shall be installed with the canal blocks in place.

3.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

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

1. When a RHR pump is required to be operating or as a backup for supplemental cooling, an associated RHRSW pump must be functional and aligned to RHR header service corresponding to the selected RHR pump.

2. At all times, at least 2 RHRSW pumps shall be assigned to EECW header service with one pump assigned to each header. Each pump must run continuously with its loss of voltage trip deactivated, or it shall be capable of automatic start in its normal D/G load sequencing mode of operation. Each pump shall be assigned to a separate diesel power supply.

3. Prior to restoration of any non-essential EECW loads that could result in exceeding the capacity of one RHRSW pump, a second RHRSW pump will be assigned to each EECW header.

4.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

capable of delivering flow and heat removal immediately and weekly thereafter until the inoperable RHR pump and associated heat exchanger is returned to service or an alternate pump and heat exchanger with an available diesel generator selected and verified.

C. Spent Fuel Pool Cooling

1. The spent fuel pool water temperature shall be checked and recorded at least every 8 hours.

2. When it is determined that the the RHR or fuel pool cooling pump for spent fuel pool cooling is incapable of heat removal, another RHR or fuel pool cooling pump capable of being supplied with diesel power shall be selected and all active components required for heat removal shall be demonstrated to be capable of delivering flow.

LIMITING CONDITIONS FOR OPERATIO

.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 shall be available from two RHRSW pumps, capable of being supplied by separate diesel power.

SURVEILLANCE REQUIREMENTS

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:

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

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 three months thereafter if not in continuous service.

3.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

16 E. Maintenance of Filled Discharge Pipe

Whenever the core spray system or RHR systems are required to be functional, the discharge piping from the pump discharge of these systems to the last block valve shall be filled. The condensate head tank shall be aligned to serve the discharge piping of the RHR and CS pumps. The pressure indicators on the discharge piping of the RHR and CS pumps shall indicate not less than listed below.

| | |
|---|---|
| PI-75-20 | 70 psig |
| PI-75-48 | 70 psig |
| PI-74-51 | 70 psig |
| PI-74-65 | 70 psig |

4.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

2. EECW System

16 Each of the RHRSW pumps assigned to EECW service and associated essential control valves on the EECW headers shall be demonstrated to function once every three months.

3. When it is determined that one RHRSW pump and associated control valves on an RHR heat

16 exchanger header are incapable of delivering flow at a time when flow delivery capability

16 is required, another RHRSW pump and associated heat exchangers and available diesel

16 generator and all active components in the flow paths shall be demonstrated to be capable of delivering flow immediately and weekly thereafter.

16

4. When it is determined that one RHRSW pump and associated

4.5 CORE, CONTAINMENT, AND FUEL POOL COOLING SYSTEMS

control valves on an EECW header is incapable of delivering flow at a time when flow delivery capability is required, an alternate RHRSW pump on a corresponding diesel generator shall be selected and assigned to the same EECW header.

5. At intervals not to exceed 7 days each independent fuel pool makeup flow path from its respective EECW header to the fire hose outlet connection on the refueling floor will be tested to verify makeup water supply availability.

E. Maintenance of Filled Discharge Pipe

The following surveillance requirements shall be adhered to to assure that the discharge piping of the core spray system and RHR system are filled:

3.5.B Residual Heat Removal System (RHRS) (Containment and Shutdown Cooling)

The decay heat removal requirements for one unit in the cold shutdown condition can be conservatively met by the operation of one RHR pump and its associated RHR heat exchanger in the shutdown cooling mode. The total heat load for the heat exchanger is estimated to be less than one-fourth of the heat exchanger capability under the required flow and temperature conditions. The low decay heat and absence of pressure which could foster an unacceptable loss of coolant allows ample time for manual operation in accordance with established operating instructions.

DEC 18 1975

3.5.C Spent Fuel Pool Cooling

The spent fuel pool cooling system consists of two 600 gpm pumps and heat exchangers. Figure D-2 of the TVA Safety Analysis of the BFNP Units 1 and 2 included as Part VI, Section E, of the "Plan for Evaluation, Repair, and Return to Service of Browns Ferry Units 1 and 2 (March 22, 1975, Fire)" shows that one pump and associated heat exchanger are capable of maintaining the spent fuel coolant temperature below 125°F based on the Browns Ferry actual power operational decay heat curve.

In response to NRC Question 10.1, dated March 25, 1971, TVA committed to modify and upgrade the spent fuel pool cooling system to qualify as a Seismic Class I system. The system was subsequently analyzed and designed in accordance with the requirements of ANSI B 31.1.0, 1967. The loading combinations and allowable stresses used in the analysis were in accordance with ASME Section III, Subsection NC, 1971 requirements. The analysis meets the intent and requirements of ASME Section III, 1974. All piping, valves, and equipment as shown in Figure Q10.1-1 of the response, except that identified as nonseismic, were analyzed.

The gates on the fuel transfer canal between Unit 1 and Unit 2 will be left in place and the transfer canal drain line will be valved out. This provides redundant seismically qualified barriers for the prevention of pool leakage through the transfer canal.

3.5.C Spent Fuel Pool Cooling (continued)

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 per cent of the heat exchanger capability under the required flow and temperature conditions.

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

The decay heat removal cooling water requirements for two units in the cold shutdown condition can be conservatively met by the operation of one RHRSW pump on one heat exchanger on each unit. One RHRSW pump is required for each unit if the units are using heat exchangers which are not on the same service water header. Four RHRSW pumps are presently available and capable of delivering flow to meet this requirement. Less than one-half the flow delivery capability of each pump is needed to remove the present decay heat for each unit. The low decay heat level and ample flow delivery capability allow ample time for manual operation in accordance with established operating instructions.

The standby emergency equipment cooling water (EECW) requirements for two units in the cold shutdown condition can be adequately met by the operation of one RHRSW pump, if non-essential loads are valved out. The EECW system is not required for normal plant shutdown operation because the required cooling water is supplied by the raw cooling water system. The principal immediate need for EECW flow is in the event that a diesel engine should be started. In this case, EECW flow must be established at once. To meet this requirement two RHRSW pumps are assigned to EECW service and are aligned to separate supply headers. When restoration or testing activities require addition of any non-essential EECW loads which could exceed the capacity of one RHRSW pump, an additional pump will be assigned to service on each EECW header. Each of the required pumps will operate continuously (with loss of voltage trips deactivated) or they will be capable of automatic start in their normal diesel generator load sequencing mode of operation. The required RHRSW pumps are assigned to 4.16-kV shutdown boards which have associated operable diesel generators.

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

16

In the unlikely event that all make up capability is lost, water can be supplied to the reactor or fuel pool by certain RHRSW pumps directly from the river. The D1 or D2 RHRSW pumps can pump through the RHRSW header and standby coolant supply line in to RHR loop II on Unit 1, or RHR loop I on Unit 2. From the RHR loop the water can be routed to the reactor through the LPCI injection valves or the fuel pool through the fuel pool system connections on each RHR loop. An alternate path is available which is independent of the RHR and fuel pool cooling systems. The alternate path will only require any one of four RHRSW pumps and manual valve operation to provide make up coolant directly to the fuel pool through a hose connected to either the north or south EECW header hydrant. The RHRSW pump has an on site power source. The make up capability provided by the RHRSW pump far exceeds the amount needed to replace the water lost at the maximum evaporation rate possible with the present decay heat.

3.5.E Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray and RHR system are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. To minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in a functional condition. If a discharge pipe is not filled, the pumps that supply that line must be assumed to be nonfunctional for Technical Specification purposes.

The core spray and RHR system discharge piping high point vent is visually checked for water flow prior to any pump operation to ensure that the lines are filled. The visual checking will avoid starting the core spray or RHR system with a discharge line not filled. In addition to the visual observation and to ensure a filled discharge line other than prior to testing, a head tank located approximately 100 feet above the discharge line high point supplies makeup water for these systems. System discharge pressure indicators are used to determine the water level above the discharge line high point. The indicators will reflect approximately 30 psig for a water level at the high point and approximately 70 psig for a water level at the head tank and are monitored daily to ensure that the discharge lines are filled.

| LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS |
|---|---|
| 3.7 CONTAINMENT SYSTEMS | 4.7 CONTAINMENT SYSTEMS |
| B. Standy Gas Treatment<br><br>When the fuel is stored in the fuel pool and the reactor zone ventilation system is removed from service, one train of the standby gas treatment system shall be in operation on the reactor building zone of the affected unit. | B. Standby Gas Treatment<br><br>When required to be in service, operation of one train of the standby gas treatment system shall be verified and documented once per shift. |
| C. Reactor Building Ventilation<br><br>When fuel is stored in the fuel pool, the reactor building zone for units 1 and 2 shall be ventilated by one supply and one exhaust fan per zone, except as specified in 3.7.B. | C. Reactor Building Ventilation<br><br>When fuel is stored in the fuel pool, operation of the ventilation fans for the reactor building zone shall be verified daily. |

## 3.7 CONTAINMENT SYSTEMS

D. INOPERABLE COMPONENTS

Whenever the requirements of specifications 3.7.B and 3.7.C cannot be met, all fuel handling activities or any activity over irradiated fuel in the vessel or fuel pool shall not be permitted.

## 3.7 BASES: CONTAINMENT SYSTEMS

### A. PRIMARY CONTAINMENT

This specification ensures indication of adequate information regarding status of the drywell pressure and temperature and suppression chamber water level and temperature when fuel is in the reactor. When fuel is removed this requirement is no longer necessary. Monitoring of information concerning these primary containment parameters will ensure that sufficient control of these parameters can be manually initiated in a timely manner.

### B. STANDBY GAS TREATMENT

Before making the normal reactor zone ventilation inoperable, one standby gas treatment train must be operating to provide a means to remove equipment heat and to maintain environmental temperature control in the affected reactor building zone.

### C. REACTOR BUILDING ZONES

Reactor building equipment heat removal and environmental temperature control will be provided by manual operation of the building ventilation systems. One ventilation supply fan and one ventilation exhaust fan in each reactor building zone will maintain ambient temperatures at an acceptable level.

3.10 CORE ALTERATIONS

H. Restoration Work

1. All fuel from both cores shall be stored in their fuel storage pools.

16

2. After all fuel from both cores is stored in its respective fuel storage pool and the fuel pool gates are installed with canal blocks in place, removal of fire damaged equipment may be carried out in accordance with the "Plan for Evaluation, Repair, and Return to Service of Browns Ferry Units 1 and 2" and revisions thereto up to and including Revision 10 as supplemented by licensee's letter dated June 11, 1975 (Gilleland to Rusche, NRC)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 18 TO FACILITY LICENSE NO. DPR-33

AND AMENDMENT NO. 15 TO FACILITY LICENSE NO. DPR-52

(CHANGES NO. 13 TO TECHNICAL SPECIFICATIONS)

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-259 AND 50-260

## 1.0 Introduction

On March 22, 1975, a fire at Browns Ferry Nuclear Plant required shut down of Units 1 and 2. The fire damaged control and power supply cables to much of the equipment and temporary cabling was installed to return certain equipment to operability.

On June 13, 1975, the Nuclear Regulatory Commission (NRC) issued Interim Technical Specifications for Browns Ferry Units 1 and 2. Those specifications took into consideration the condition and disposition of the fuel and specified the required equipment, systems, and administrative procedures to ensure that the two units would remain in a safe and stable posture during the period of defueling and fuel storage in the fuel storage pools. On September 2, 1975, NRC issued Amendments No. 14 and 11 to the operating licenses for Units 1 and 2, respectively, to allow the commencement of certain restoration work at the plant with the fuel from Units 1 and 2 remaining in the fuel storage pools.

At this time, certain equipment and systems that are required by the Interim Technical Specifications issued June 13, 1975, are no longer needed because the present plant and fuel conditions have changed from those considered at the time of issuance of those Technical Specifications. By deleting the requirements for equipment that is not necessary, the licensee can take that equipment out of service in order to install its permanent control and power cables and perform the tests that will be required by the retest program prior to returning the plant to operation. Some equipment also must be taken out of service in order to interconnect it with equipment associated with the construction of Unit 3.

The systems involved in this change request are:

(1) The Residual Heat Removal System (RHR).

(2) The Residual Heat Removal Service Water System (RHRSW).

(3) The Fuel Pool Cooling and Cleanup System (FPCCS).

(4) The Standby Gas Treatment System (SGTS).

These changes only affect the Interim Technical Specifications that cover this period of time during restoration and are not a part of the proposed Technical Specifications dated August 13, 1975, associated with returning the plant to operation following restoration. Those changes are the subject of a separate action.

2.0 Evaluation

2.1 Residual Heat Removal System (RHR)

The Interim Technical Specifications required the RHR system to be operable for fuel cooling when the fuel was in the reactor vessel and as a backup to the FPCCS when the fuel was in the fuel storage pool. The first of these needs does not apply because the fuel is now in the fuel storage pools and this Technical Specification change includes a specification that does not allow fuel to be placed in the reactor vessels. In June 1975, one FPCCS pump and heat exchanger did not have sufficient capacity to ensure that the pool temperature could always be controlled to less than 125°F. Therefore, the second FPCCS pump and heat exchanger was required and in order to ensure backup cooling supply, the RHR system was required to be operable.

Under present conditions, the decay heat load of the fuel has reduced to a point where one FPCCS pump and heat exchanger can maintain the pool temperature less than 125°F. This was confirmed by flow and temperature measurements made at the plant in the FPCCS to determine the present decay heat load of the fuel and assuming 90°F cooling water available from the river, the ultimate heat sink. Therefore, the second FPCCS pump and heat exchanger with separate diesel power supply can provide the required backup for cooling. In addition, if it is desired to take one or both of the FPCCS pumps out of service, the RHR system is required to provide the backup cooling supply, the primary cooling supply, or both. There are four pumps and heat exchangers in the RHR system of each unit. Any two of these can fulfill the requirements for both primary and backup fuel pool cooling through cross connections to the FPCCS. This change does not relax the functional requirements of the Technical Specifications for fuel pool cooling, i.e., independent cooling capability to maintain the pool temperature less than 125°F from both a primary and backup cooling system. This change modifies the designation of what constitutes the primary and backup cooling systems.

## 2.2 Residual Heat Removal Service Water System (RHRSW)

The RHRSW system provides the cooling for the RHR system. The specification for this system has been changed to require that an RHRSW pump must be functional and aligned to RHR header service corresponding to the selected RHR pump when the RHR is required to be operating or as backup for fuel pool cooling. This specification reflects the change in requirements for the RHR system discussed in Section 2.1 and is found acceptable on the same basis.

The requirement for at least two RHRSW pumps to be assigned to separate Emergency Equipment Cooling Water (EECW) headers with both pumps running continuously or capable of automatic start remains unchanged. However, an additional requirement has been added requiring an additional RHRSW pump to be put in service prior to adding any non-essential EECW loads that could result in exceeding the capacity of the one RHRSW pump. This will ensure that the cooling capacity described in the Safety Analysis Report is always maintained without any reduction in safety margin.

## 2.3 Fuel Pool Cooling and Cleanup System (FPCCS)

The specifications issued June 13, 1975, required two FPCCS pumps and heat exchangers be provided as the primary cooling supply for the fuel pool.

As described in Section 2.1, the present heat load of the stored fuel can be adequately cooled by the use of one FPCCS pump and heat exchanger. The requirement to maintain the pool water temperature less than 125°F remains unchanged. Therefore, the margin to pool boiling is not reduced. In fact, with the reduced decay heat load of the stored fuel, the amount of time to reach boiling temperature in the pool after loss of all cooling is now extended to approximately six days. Therefore, the specification for this system has been changed to allow one FPCCS pump and heat exchanger to function as the primary or backup cooling supply for the fuel pool. At this time, this specification provides at least as much margin of safety as the specification issued on June 13, 1975, provided at that time.

## 2.4 Standby Gas Treatment System (SGTS)

The specifications issued June 13, 1975, required that one train of the SGTS be functional with fuel stored in the fuel pool. The SGTS was not needed for airborne radioactivity considerations (see the SER published with the June 13, 1975 amendments). The SGTS was required as backup to the Reactor Building Ventilation System to maintain an air flow in the event of loss of normal ventilation. This was to prevent chloride contamination from the reactor building from spreading to the fuel pool area and to exhaust the water vapors generated from the fuel pool in the event of loss of pool cooling. Under the present conditions, all burned cabling has been removed from the plant and soot contamination has been thoroughly removed. The long time (approximately six days until boiling) now available in the event of loss of pool cooling in order to re-establish ventilation obviates the need to maintain the SGTS operable at all times.

Therefore, there is no longer a requirement to maintain this system operable to ensure backup ventilation. The system will be used if the ventilation system is removed from service.

3.0 Conclusions

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 increase 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.

Date: DEC 19 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-259 AND 50-260

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSES

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 1 to Facility Operating License No. DPR-33 and Amendment No. 15 to Facility Operating License No. DPR-52 issued to Tennessee Valley Authority (the licensee) which revised Technical Specifications for operation 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.

The amendments revise the Interim Technical Specifications to remove the requirements for certain cooling and ventilation equipment that are no longer needed. The cooling requirements are reduced since the decay heat of the fuel has been greatly reduced with the elapsed time since reactor operation. The ventilation requirements are reduced for the same reason and because the need to control air movement to prevent the spread of chloride contamination no longer exists with the burned cables and soot having been removed from the plant. These amendments do not allow the licensee to return the plant to operation. These amendments only affect the Interim Technical Specifications that cover this period of time during restoration and are not a part of the proposed Technical Specifications dated August 13, 1975, associated with returning the plant to operation following restoration. Those changes are the subject of a separate licensing action.

This change is required in order to allow the installation of the permanent control and power supplies to this equipment and in the case of the Standby Gas Treatment System to allow the connection of the third train of the system to accommodate the requirements of Unit 3. This equipment and their associated systems also are involved in the retest program that is required prior to return to operation. The licensee informed us that this work must be started at this time so as not to adversely impact the restoration schedule. The Interim Technical Specifications, as amended, continue to ensure that the two units will remain in a safe and stable posture during the period of the remaining restoration work with the fuel stored in the fuel storage pools.

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 is not required since the amendments do not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendments dated November 7, 1975, (2) Amendment No. 15 to License No. DPR-33 and Amendment No. 15 to License No. DPR-52 with Changes No. 16, 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, NW., Washington, D.C., 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 Reactor Licensing.

Dated at Bethesda, Maryland, this DEC 19 1975

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple

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

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