JUNE 2 3 1978

Distribution
Docket
ORB #3
Local PDR
NRC PDR
VStello
BGrimes
SSheppard
RClark
TIppolito
Attorney, OELD
OI&E (5)
BJones (12)
BScharf (10)
JMcGough
DEisenhut
ACRS (16)
OPA (CMiles)
DRoss
TBAbernathy
JRBuchanan

Docket Nos. 50-259
50-260
and 50-296

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

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 39, 37 and 13 to Facility Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. These amendments consist of changes to the Technical Specifications in response to your request of May 17, 1978 (BFNP TS 109) regarding implant electrical system modifications as described in your letter of May 2, 1978. With your concurrence, we have modified the Technical Specifications to more specifically describe the equipment affected by the modifications.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original signed by

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendment No. 39 to DPR-33
2. Amendment No. 37 to DPR-52
3. Amendment No. 13 to DPR-68
4. Safety Evaluation
5. Notice

cc w/enclosures: See page 2

*SEE PREVIOUS YELLOW FOR CONCURRENCES

Const I

OFFICE➤	ORB #3	ORB #3	OELD	ORB #3		
SURNAME➤	SSheppard*	*RClark		TIppolito		
DATE➤	6/ /78	6/ /78	6/ /78	6/ /78		

cc: H. S. Sanger, Jr., Esquire
General Counsel
Tennessee Valley Authority
400 Commerce Avenue
E 11B 33 C
Knoxville, Tennessee 37902

Mr. D. McCloud
Tennessee Valley Authority
303 Power Building
Chattanooga, Tennessee 37401

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

Mr. Charles R. Christopher
Chairman, Limestone County Commission
Post Office Box 188
Athens, Alabama 35611

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

Mr. C. S. Walker
Tennessee Valley Authority
400 Commerce Avenue
W 9D199 C
Knoxville, Tennessee 37902

Athens Public Library
South and Forrest
Athens, Alabama 35611

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U.S. Environmental Protection Agency
Room 645, East Tower
401 M Street, SW
Washington, D.C. 20460

U. S. Environmental Protection
Agency
Region IV Office
ATTN: EIS Coordinator
345 Courtland Street
Atlanta, Georgia 30308

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendments by Tennessee Valley Authority (the licensee) dated May 17, 1978, 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. 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 amended by changes 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) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 39, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

for Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 23, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 39

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages:

292/293
294/295
296/297
298/299

Marginal lines indicate revised area. Overleaf pages are provided for convenience.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the auxiliary electrical power system.

Objective

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification

A. Auxiliary Electrical Equipment

A reactor shall not be started up (made critical) from the cold condition unless four units 1 and 2 diesel generators are operable, both 161-kV transmission lines, two common station service transformers and one cooling tower transformer are operable, and the requirements of 3.9.A.4 through 3.9.A.7 are met.

A reactor shall not be started up (made critical) from the Hot Standby Condition unless all of the following conditions are satisfied:

1. At least one off-site 161-kV transmission line and its common transformer are available and capable of automatically supplying auxiliary power to the shutdown boards.

2. Three units 1 and 2 diesel generators shall be operable.

3. An additional source of power consisting of one of the following:

   a. A second 161-kV transmission line and its

4.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective

Verify the operability of the auxiliary electrical system.

Specification

A. Auxiliary Electrical Equipment

1. Diesel Generators

   a. Each diesel generator shall be manually started and loaded once each month to demonstrate operational readiness. The test shall continue for at least a one-hour period at 75% of rated load or greater.

      During the monthly generator test the diesel generator starting air compressor shall be checked for operation and its ability to recharge air receivers. The operation of the diesel fuel oil transfer pumps shall be demonstrated, and the diesel starting time to reach rated voltage and speed shall be logged.

   b. Once per operating cycle a test will be conducted to demonstrate the emergency diesel generators will start and accept emergency load within

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.A Auxiliary Electrical Equipment	**4.9.A Auxiliary Electrical Equipment**
common transformer and cooling tower transformer capable of supplying power to the shutdown boards.	**the specified time sequence.**
b. A fourth operable units 1 and 2 diesel generator.	**c. Once a month the quantity of diesel fuel available shall be logged.**
4. Buses and Boards Available	**d. Each diesel generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.**
a. Start buses 1A and 1B are energized.	**e. Once a month a sample of diesel fuel shall be checked for quality. The quality shall be within the acceptable limits specified in Table 1 of ASTM D975-68 and logged.**
b. The units 1 and 2 4-kV shutdown boards are energized.	**2. D.C. Power System - Unit Batteries (250-Volt) Diesel Generator Batteries (125-Volt) and Shutdown Board Batteries (250-Volt)**
c. The 480-V shutdown boards associated with the unit are energized.	**a. Every week the specific gravity and the voltage of the pilot cell, and temperature of an adjacent cell and overall battery voltage shall be measured and logged.**
d. Undervoltage relays operable on start buses 1A and 1B and 4-kV shutdown boards, A, B, C, and D.	**b. Every three months the measurements shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.**
5. The 250-Volt unit and shutdown board batteries and a battery charger for each battery and associated battery boards are operable.	c. A battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged at intervals not to exceed 24 months.
6. Logic Systems	
a. Common accident signal logic system is operable.	
b. 480-V load shedding logic system is operable.	
7. There shall be a minimum of 103,300 gallons of diesel fuel in the standby diesel generator fuel tanks.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.A Auxiliary Electrical Equipment	4.9.A Auxiliary Electrical Equipment
	3. Logic Systems a. Both divisions of the common accident signal logic system shall be tested every 6 months to demonstrate that it will function on actuation of the core spray system of each reactor to provide an automatic start signal to all 4 units 1 and 2 diesel generators. b. Once every 6 months, the condition under which the 480-Volt load shedding logic system is required shall be simulated using pendant test switches and/or pushbutton test switches to demonstrate that the load shedding logic system would initiate load shedding signals on the diesel auxiliary boards, reactor MOV boards, and the 480-Volt shutdown boards.
	4. Undervoltage Relays a. Once every 6 months, the condition under which the undervoltage relays are required shall be simulated with an undervoltage on start buses 1A and 1B to demonstrate that the diesel generators will start. b. Once every 6 months, the conditions under which the undervoltage relays are required shall be simulated with an undervoltage on each shutdown board to demonstrate that the associated diesel generator will start. c. The undervoltage relays which start the diesel generators from start buses 1A and 1B and the 4-kV shutdown boards, shall be calibrated annually for trip and reset and the measurements logged.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.B Operation with Inoperable Equipment **Whenever a reactor is in Startup mode or Run mode and not in a cold condition, the availability of electric power shall be as specified in 3.9.A, except as specified herein.**	**4.9.B Operation with Inoperable Equipment**
1. From and after the date that one 161-kV line or one common station transformer and its parallel cooling tower transformer and 4 kV bus tie board or one start bus becomes inoperable, reactor operation is permissible under this condition for seven days.	1. When one 161-kV line or one commom station transformer and its parallel cooling tower transformer and 4 kv bus tie board or one start bus is found to be inoperable, all units 1 and 2 diesel generators and associated boards must be demonstrated to be operable immediately and daily thereafter.
2. When one of the units 1 and 2 diesel generator is inoperable, continued reactor operation is permissible during the succeeding 7 days, provided that both offsite 161-kV transmission lines and both common station transformers or one common transformer and one cooling tower transformer (not parallel with the energized common transformer) are available, and all of the CS, RHR (LPCI and Containment Cooling) Systems, and the remaining three units 1 and 2 diesel generators are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and both reactors shall be shutdown and in the cold condition within 24 hours.	**2. When one of the units 1 and 2 diesel generator is found to be inoperable, all of the CS, RHR (LPCI and Containment Cooling) Systems and the remaining diesel generators and associated boards shall be demonstrated to be operable immediately and daily thereafter.**

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.B Operation with Inoperable Equipment	4.9.B Operation with Inoperable Equipment
3. When one units 1 and 2 4-kV shutdown board is inoperable, continued reactor operation is permissible for a period not to exceed 5 days, provided that both off-site 161-kV transmission lines and both common station transformers or one common transformer and one cooling tower transformer and 4-kV bus tie board are available and the remaining 4-kV shutdown boards and associated diesel generators, CS, RHR (LPCI and Containment Cooling) Systems, and all 480 V emergency power boards are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and both reactors shall be shutdown and in the cold condition within 24 hours.	3. When one 4-kV shutdown board is found to be inoperable, all remaining 4-kV shutdown boards and associated diesel generators, CS and RHR (LPCI and Containment Cooling) Systems supplies by the remaining 4-kV shutdown boards shall be demonstrated to be operable, immediately and daily thereafter.
4. From and after the date that one of the three 250-Volt unit batteries and/or its associated battery board is found to be inoperable for any reason, continued reactor operation is permissible during the succeeding seven days. Except for routine surveillance testing the NRC shall be notified within 24 hours of the situation, the precautions to be taken during this period and the plans to return the failed component to an operable state.	
5. From and after the date that one of the four 250-volt shutdown	

3.9.B Operation with Inoperable Equipment

board batteries and/or its associated battery board is found to be inoperable for any reason, continued reactor operation is permissible during the succeeding five days in accordance with 3.9.B.4.

6. When one division of the Logic System is inoperable, continued reactor operation is permissible under this condition for seven days, provided the CSCS requirements listed in specification 3.9.B.2 are satisfied. The NRC shall be notified within 24 hours of the situation, the precautions to be taken during this period and the plans to return the failed component to an operable state.

4.9.B Operation with Inoperable Equipment

3.9.C Operation in Cold Shutdown

Whenever both reactors are in cold shutdown condition with irradiated fuel in either reactor, the availability of electric power shall be as specified in section 3.9.A except as specified herein.

1. At least two units 1 and 2 diesel generators and their associated 4-kV shutdown boards shall be operable.

2. An additional source of power consisting of at least one of the following:

   a. One 161-kV transmission line and its associated common station transformer either cooling tower transformer and a 4 V bus tie board capable of supplying power to the Units 1 and 2 shutdown boards.

   b. A third operable diesel generator.

3. At least one 480-V shutdown board for each unit must be operable.

3.9 BASES

The objective of this specification is to assure an adequate source of electrical power to operate facilities to cool the plant during shutdown and to operate the engineered safeguards following an accident. There are three sources of alternating current electrical energy available, namely, the 161-kV transmission system, the nuclear generating units, and the diesel generators.

The 161-kV offsite power supply consists of two lines which are fed from different sections of the TVA 161-kV grid. In the normal mode of operation, the 161-kV system is operating and four diesel generators are operational. If one diesel generator is out of service, there normally remain the 161-kV sources, the nuclear generating units, and the other three diesel generators. For a diesel generator to be considered operable its associated 125 V battery must be operable.

The minimum fuel oil requirement of 103,300 gallons is sufficient for 7 days of full load operation of 3 diesels and is conservatively based on availability of a replenishment supply.

Auxiliary power for Browns Ferry Nuclear Plant is supplied from two sources; either the unit station transformers or from the 161-kV transmission system through the common station transformers or the cooling tower transformers. If a common station transformer is lost, the units can continue to operate since the unit station transformers are in service, the other common station transformer and the cooling tower transformers are available, and four diesel generators are operational.

A 4-kV shutdown board is allowed to be out of operation for a brief period to allow for maintenance and testing, providing all remaining 4-kV shutdown boards and associated diesel generators CS, RHR, (LPCI and Containment Cooling) Systems supplied by the remaining 4-kV shutdown boards, and all emergency 480 V power boards are operable.

There are eight 250-volt d-c battery systems each of which consists of a battery, battery charger, and distribution equipment. Three of these systems provide power for unit control functions, operative power for unit motor loads, and alternative drive power for a 115-volt a-c unit preferred motor-generator set. One 250-volt d-c system provides power for common plant and transmission system control functions, drive power for a 115-volt a-c plant preferred motor-generator set, and emergency drive power for certain unit large motor loads. The four remaining systems deliver control power to the 4160-volt shutdown boards.

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 37
License No. DPR-52

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendments by Tennessee Valley Authority (the licensee) dated May 17, 1978, 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. 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 amended by changes 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) Technical Specifications

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

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

FOR THE NUCLEAR REGULATORY COMMISSION

Brian Grimes

for Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 23, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 37

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages:

1/2
291/292
293/294
295/296
297/298

Marginal lines indicate revised area. Overleaf pages are provided for convenience.

INTRODUCTION

This document presents the technical specifications for the Browns Ferry Nuclear Plant Unit 2 only.

1.0 DEFINITIONS

The succeeding frequently used terms are explicitly defined so that a uniform interpretation of the specifications may be achieved.

A. Safety Limit - The safety limits are limits below which the reasonable maintenance of the cladding and primary systems are assured. Exceeding such a limit requires unit shutdown and review by the Atomic Energy Commission before resumption of unit operation. Operation beyond such a limit may not in itself result in serious consequences but it indicates an operational deficiency subject to regulatory review.

B. Limiting Safety System Setting (LSSS) - The limiting safety system setting are settings on instrumentation which initiate the automatic protective action at a level such that the safety limits will not be exceeded. The region between the safety limit and these settings represent margin with normal operation lying below these settings. The margin has been establishd so that with proper operation of the instrumentation the safety limits will never be exceeded.

C. Limiting Conditions for Operation (LCO) - The limiting conditions for operation specify the minimum acceptable levels of system performance necessary to assure safe startup and operation of the facility. When these conditions are met, the plant can be operated safely and abnormal situations can be safely controlled.

D. DELETED

3.8.C/4.8.C Mechanical cuum Pump

The purpose of isolating the mechanical vacuum pump line is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

4.8.A and 4.8.B BASES

The surveillance requirements given under Specification 4.8.A and 4.8.B provide assurance that liquid and gaseous wastes are properly controlled and monitored during any release of radioactive materials in the liquid and gaseous effluents. These surveillance requirements provide the data for the licensee and the Commission to evaluate the station's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in effluents shall be furnished to the Commission on the basis of Section 6 of these technical specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such actions as the Commission deems appropriate.

3.8.D and 4.8.D BASES

The objective of this specification is to assure that leakage from byproduct, source, and special nuclear radioactive material sources does not exceed allowable limits.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the auxiliary electrical power system.

Objective

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification

A. Auxiliary Electrical Equipment

A reactor shall not be started up (made critical) from the cold condition unless four units 1 and 2 diesel generators are operable, both 161-kV transmission lines, two common station service transformers and one cooling tower transformer are operable, and the requirements of 3.9.A.4 through 3.9.A.7 are met.

A reactor shall not be started up (made critical) from the Hot Standby Condition unless all of the following conditions are satisfied:

1. At least one off-site 161-kV transmission line and its common transformer are available and capable of automatically supplying auxiliary power to the shutdown boards.
2. Three units 1 and 2 diesel generators shall be operable.
3. An additional source of power consisting of one of the following:
   a. A second 161-kV transmission line and its

4.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective

Verify the operability of the auxiliary electrical system.

Specification

A. Auxiliary Electrical Equipment

1. Diesel Generators
   a. Each diesel generator shall be manually started and loaded once each month to demonstrate operational readiness. The test shall continue for at least a one-hour period at 75% of rated load or greater.

      During the monthly generator test the diesel generator starting air compressor shall be checked for operation and its ability to recharge air receivers. The operation of the diesel fuel oil transfer pumps shall be demonstrated, and the diesel starting time to reach rated voltage and speed shall be logged.

   b. Once per operating cycl a test will be conducted to demonstrate the emergency diesel generators will start and accept emergency load within

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.A Auxiliary Electrical Equipment	**4.9.A Auxiliary Electrical Equipment**
common transformer and cooling tower transformer capable of supplying power to the shutdown boards.	**the specified time sequence.**
b. A fourth operable units 1 and 2 diesel generator.	**c. Once a month the quantity of diesel fuel available shall be logged.**
4. Buses and Boards Available	**d. Each diesel generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.**
a. Start buses 1A and 1B are energized.	**e. Once a month a sample of diesel fuel shall be checked for quality. The quality shall be within the acceptable limits specified in Table 1 of ASTM D975-68 and logged.**
b. The units 1 and 2 4-kV shutdown boards are energized.	**2. D.C. Power System - Unit Batteries (250-Volt) Diesel Generator Batteries (125-Volt) and Shutdown Board Batteries (250-Volt)**
c. The 480-V shutdown boards associated with the unit are energized.	**a. Every week the specific gravity and the voltage of the pilot cell, and temperature of an adjacent cell and overall battery voltage shall be measured and logged.**
d. Undervoltage relays operable on start buses 1A and 1B and 4-kV shutdown boards, A, B, C, and D.	**b. Every three months the measurements shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.**
5. The 250-Volt unit and shutdown board batteries and a battery charger for each battery and associated battery boards are operable.	c. A battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged at intervals not to exceed 24 months.
6. Logic Systems	
a. Common accident signal logic system is operable.	
b. 480-V load shedding logic system is operable.	
7. There shall be a minimum of 103,300 gallons of diesel fuel in the standby diesel generator fuel tanks.	

3.9.A Auxiliary Electrical Equipment

4.9.A Auxiliary Electrical Equipment

3. Logic Systems

   a. Both divisions of the common accident signal logic system shall be tested every 6 months to demonstrate that it will function on actuation of the core spray system of each reactor to provide an automatic start signal to all 4 units 1 and 2 diesel generators.

   b. Once every 6 months, the condition under which the 480-Volt load shedding logic system is required shall be simulated using pendant test switches and/or pushbutton test switches to demonstrate that the load shedding logic system would initiate load shedding signals on the diesel auxiliary boards, reactor MOV boards, and the 480-Volt shutdown boards.

4. Undervoltage Relays

   a. Once every 6 months, the condition under which the undervoltage relays are required shall be simulated with an undervoltage on start buses 1A and 1B to demonstrate that the diesel generators will start.

   b. Once every 6 months, the conditions under which the undervoltage relays are required shall be simulated with an undervoltage on each shutdown board to demonstrate that the associated diesel generator will start.

   c. The undervoltage relays which start the diesel generators from start buses 1A and 1B and the 4-kV shutdown boards, shall be calibrated annually for trip and reset and the measurements logged.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.B Operation with Inoperable Equipment	**4.9.B Operation with Inoperable Equipment**
Whenever a reactor is in Startup mode or Run mode and not in a cold condition, the availability of electric power shall be as specified in 3.9.A, except as specified herein.	
1. From and after the date that one 161-kV line or one common station transformer and its parallel cooling tower transformer and 4 kV bus tie board or one start bus becomes inoperable, reactor operation is permissible under this condition for seven days.	1. When one 161-kV line or one commom station transformer and its parallel cooling tower transformer and 4 kV bus tie board or one start bus is found to be inoperable, all units 1 and 2 diesel generators and associated boards must be demonstrated to be operable immediately and daily thereafter.
2. When one of the units 1 and 2 diesel generator is inoperable, continued reactor operation is permissible during the succeeding 7 days, provided that both offsite 161-kV transmission lines and both common station transformers or one common transformer and one cooling tower transformer (not parallel with the energized common transformer) are available, and all of the CS, RHR (LPCI and Containment Cooling) Systems, and the remaining three units 1 and 2 diesel generators are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and both reactors shall be shutdown and in the cold condition within 24 hours.	**2. When one of the units 1 and 2 diesel generator is found to be inoperable, all of the CS, RHR (LPCI and Containment Cooling) Systems and the remaining diesel generators and associated boards shall be demonstrated to be operable immediately and daily thereafter.**

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.B Operation with Inoperable Equipment	4.9.B Operation with Inoperable Equipment
3. When one units 1 and 2 4-kV shutdown board is inoperable, continued reactor operation is permissible for a period not to exceed 5 days, provided that both off-site 161-kV transmission lines and both common station transformers or one common transformer and one cooling tower transformer and 4-kV bus tie board are available and the remaining 4-kV shutdown boards and associated diesel generators, CS, RHR (LPCI and Containment Cooling) Systems, and all 480 V emergency power boards are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and both reactors shall be shutdown and in the cold condition within 24 hours.	3. When one 4-kV shutdown board is found to be inoperable, all remaining 4-kV shutdown boards and associated diesel generators, CS and RHR (LPCI and Containment Cooling) Systems supplies by the remaining 4-kV shutdown boards shall be demonstrated to be operable, immediately and daily thereafter.
4. From and after the date that one of the three 250-Volt unit batteries and/or its associated battery board is found to be inoperable for any reason, continued reactor operation is permissible during the succeeding seven days. Except for routine surveillance testing the NRC shall be notified within 24 hours of the situation, the precautions to be taken during this period and the plans to return the failed component to an operable state.	
5. From and after the date that one of the four 250-volt shutdown	

LIMITING CONDITIONS FOR OPE TION	SURVEILLANCE REQ EMENTS
3.9.B Operation with Inoperable Equipment	4.9.B Operation with Inoperable Equipment
board batteries and/or its associated battery board is found to be inoperable for any reason, continued reactor operation is permissible during the succeeding five days in accordance with 3.9.B.4.	
6. When one division of the Logic System is inoperable, continued reactor operation is permissible under this condition for seven days, provided the CSCS requirements listed in specification 3.9.B.2 are satisfied. The NRC shall be notified within 24 hours of the situation, the precautions to be taken during this period and the plans to return the failed component to an operable state.	

3.9.C Operation in Cold Shutdown

Whenever both reactors are in cold shutdown condition with irradiated fuel in either reactor, the availability of electric power shall be as specified in section 3.9.A except as specified herein.

1. At least two units 1 and 2 diesel generators and their associated 4-kV shutdown boards shall be operable.

2. An additional source of power consisting of at least one of the following:

   a. One 161-kV transmission line and its associated common station transformer either cooling tower transformer and a 4 kV bus tie board capable of supplying power to the Units 1 and 2 shutdown boards.

   b. A third operable diesel generator

3. At least one 480-V shutdown board for each unit must be operable.

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 13
License No. DPR-68

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendments by Tennessee Valley Authority (the licensee) dated May 17, 1978, 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. 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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C(2) of Facility License No. DPR-68 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 13, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

for Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 23, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 13

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages:

316
317
319
321
322
323
324
326
327

Marginal lines indicate changed areas.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the auxiliary electrical power system.

Objective

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification

A. Auxiliary Electrical Equipment

The reactor shall not be started up (made critical from the cold condition) unless four unit 3 diesel generators (3A, 3B, 3C, and 3D) are operable and both 161-kV transmission lines and both cooling tower transformers are operable, and the requirements of 3.9.A.4 through 3.9.A.7 are met. The reactor shall not be started up (made critical from the hot Standby Condition) unless all of the following conditions are satisfied:

1. At least one off-site 161-kV transmission line and its cooling tower transformer are available and capable of automatically supplying auxiliary power to the shutdown boards.

4.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective

Verify the operability of the auxiliary electrical system.

Specification

A. Auxiliary Electrical Equipment

1. Diesel Generators

   a. Each unit 3 diesel generator shall be manually started and loaded once each month to demonstrate operational readiness. The test shall continue for at least a one-hour period at 75% of rated load or greater.

3.9 AUXILIARY ELECTRICAL SYSTEM

4.9 AUXILIARY ELECTRICAL SYSTEM

During the monthly generator test the diesel generator starting air compressor shall be checked for operation and its ability to recharge air receivers. The operation of the diesel fuel oil transfer pumps shall be demonstrated, and the diesel starting time to reach rated voltage and speed shall be logged.

b. Once per Unit 3 operating cycle a test will be conducted to demonstrate the unit 3 emergency diesel generators will start and accept emergency load within the specified time sequence.

c. Once a month the quantity of diesel fuel available shall be logged.

3.9 AUXILIARY ELECTRICAL SYSTEM

3. An additional source of power consisting of one of the following:

   a. A second 161-kV transmission line and its cooling tower transformer are capable of automatically supplying power to the shutdown boards.

4.9 AUXILIARY ELECTRICAL SYSTEM

   b. Every three months the measurements shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.

   c. A battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged at intervals not to exceed 24 months.

3. Logic Systems

   a. Both divisions of the accident signal logic system shall be tested every 6 months to demonstrate that it will function on actuation of the core spray system of the reactor to provide an automatic start signal to all 4 diesel generators.

3.9 AUXILIARY ELECTRICAL SYSTEM

5. The 250-Volt unit batteries and a battery charger for each battery and associated battery boards are operable.

6. Logic Systems

a. Accident signal logic system is operable.

7. There shall be a minimum of 103,300 gallons of diesel fuel in the unit 3 standby diesel generator fuel tanks.

4.9 AUXILIARY ELECTRICAL SYSTEM

c. The undervoltage relays which start the diesel generators from start buses 1A and 1B and the 4-kV shutdown boards, shall be calibrated annually for trip and reset and the measurements logged.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9 AUXILIARY ELECTRICAL SYSTEM	4.9 AUXILIARY ELECTRICAL SYSTEM
B. Operation with Inoperable Equipment	B. Operation with Inoperable Equipment
Whenever the reactor is in Startup mode or Run mode and not in a cold condition, the availability of electric power shall be as specified in 3.9.A, except as specified herein.	
1. From and after the date that one cooling tower transformer or one 161-kV line becomes inoperable, reactor operation is permissible under this condition for seven days.	1. When one cooling tower transformer or one 161 kV line is found to be inoperable, all unit 3 diesel generators and associated boards must be demonstrated to be operable immediately and daily thereafter.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9 AUXILIARY ELECTRICAL SYSTEM	4.9 AUXILIARY ELECTRICAL SYSTEM
2. When one unit 3 diesel generator (3A, 3B, 3C, or 3D) is inoperable, continued reactor operation is permissible during the succeeding 7 days, provided that both offsite 161-kV transmission lines, and both cooling tower transformer are available and capable of supplying power to the Unit 3 shutdown boards, and all of the CS, RHR (LPCI and Containment Cooling Systems, and the regaining three unit 3 diesel generators are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be shutdown and in the cold condition within 24 hours.	2. When one unit 3 diesel generator is found to be inoperable, all of the CS, RHR (LPCI and Containment Cooling) Systems and the remaining unit 3 diesel generators and associated boards shall be demonstrated to be operable immediately and daily thereafter.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9 AUXILIARY ELECTRICAL SYSTEM	**4.9 AUXILIARY ELECTRICAL SYSTEM**
3. When one unit 3 4-kV shutdown board is inoperable, continued reactor operation is permissible for a period not to exceed 5 days, provided that both offsite 161-kV transmission lines and both cooling tower transformers are available and the remaining unit 3 4-kV shutdown boards and associated diesel generators, CS, RHR (LPCI and Containment Cooling) Systems, and all unit 3 480-V emergency power boards are operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be shutdown and in the cold condition within 24 hours.	3. When one unit 3 4-kV shutdown board is found to be inoperable, all remaining unit 3 4-kV shutdown boards and associated diesel generators, CS and RHR (LPCI and Containment Cooling) Systems supplied by the remaining 4-kV shutdown boards shall be demonstrated to be operable, immediately and daily thereafter.

3.9 AUXILIARY ELECTRICAL SYSTEM

C. Operation in Cold Shutdown Condition

Whenever the reactor is in the cold shutdown condition with irradiated fuel in the reactor, the availability of electric power shall be as specified in Section 3.9.A except as specified herein.

1. At least two unit 3 diesel generators and their associated 4-kV shutdown boards shall be operable.

2. An additional source of power consisting of one of the following:

   a. One 161-kV transmission line and its associated cooling tower transformer capable of supplying power to the unit 3 shutdown boards.

   b. A third operable diesel generator.

3. At least one unit 3 480-V shutdown board must be operable.

4.9 AUXILIARY ELECTRICAL SYSTEM

3.9 BASES

The objective of this specification is to assure an adequate source of electrical power to operate facilities to cool the unit during shutdown and to operate the engineered safeguards following an accident. There are three sources of alternating current electrical energy available, namely, the 161-kV transmission system, the nuclear generating units, and the diesel generators.

The 161-kV offsite power supply consists of two lines which are fed from different sections of the TVA 161-kV grid. In the normal mode of operation, the 161-kV system is operating and four diesel generators are operational. If one diesel generator is out of service, there normally remain the 161-kV sources, and the other three diesel generators. For a diesel generator to be considered operable its associated 125 V battery must be operable.

The minimum fuel oil requirement of 103,300 gallons is sufficient for 7 days of full load operation of 3 diesels and is conservatively based on availability of a replenishment supply.

Offsite auxiliary power for Browns Ferry Nuclear Plant Unit 3 is supplied from two sources: the unit station transformers from the main generator or the 161-kV transmission system through the cooling tower transformers. If a cooling tower transformer is lost, the unit can continue to operate since the station transformer is in service, the other cooling tower transformer is available, and four diesel generators are operational.

A 4-kV shutdown board is allowed to be out of operation for a brief period to allow for maintenance and testing, providing all remaining 4-kV shutdown boards and associated diesel generators CS, RHR, (LPCI and Containment Cooling) Systems supplied by the remaining 4-kV shutdown boards, and all emergency 480 V power boards are operable.

There are four 250-volt d-c battery systems each of which consists of a battery, battery charger, and distribution equipment. Three of these systems provide power for unit control functions, operative power for unit motor loads, and alternative drive power for a 115-volt a-c unit preferred motor-generator set. One 250-volt d-c system provides power for common plant and transmission system control functions, drive power for a 115-volt a-c plant preferred motor-generator set, and emergency drive power for certain unit large motor loads.

The 250-volt d-c system is so arranged, and the batteries sized such, that the loss of any one unit battery will not prevent the safe shutdown and cooldown of all three units in the event of the loss of offsite power and a design basis accident in any one unit. Loss of control power to any engineered safeguards control

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 39 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 37 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 13 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS NOS. 1, 2 AND 3

DOCKET NOS. 50-259, 50-260 AND 50-296

1.0 Introduction

By letter dated May 17, 1978, the Tennessee Valley Authority (the licensee or TVA) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. The proposed amendments and revised Technical Specifications would incorporate modifications to the inplant electrical systems to maintain adequate inplant electrical system voltages for three unit operation under all required postulated transient and accident conditions.

2.0 Discussion

On March 19, 1978, TVA advised the NRC staff that based on revised calculations and inplant measurements of actual real and reactive loads, under certain postulated conditions, there was the potential for degraded voltage conditions on the 4160 volt emergency buses that satisfy the minimum voltage conditions as defined in ANSI Standard C84.1-1970. These postulated conditions, which have a very low probability of occuring, involved the simultaneous trip of all three Browns Ferry Units, coupled with the loss of one of the 161 kV offsite power sources or a common station service transformer. To insure adequate inplant voltages while Unit No. 2 was shutdown for refueling, TVA submitted proposed changes to the Technical Specifications for Units Nos. 1, 2 and 3 on March 22, 1978 to provide a third offsite power supply from the 500 kV transmission system to "backfeeding" through the Unit No. 2 main generator transformers and the Unit No. 2 station service transformer. This proposed temporary arrangement, while Unit No. 2 was down for refueling, was approved by Amendments Nos. 37, 34 and 11 to DPR-33, DPR-52 and DPR-68, respectively, dated March 29, 1978. The related safety evaluation to these amendments provides the background information on the action proposed in TVA's letters of May 2, 1978 and May 17, 1978 and is incorporated in this safety evaluation by reference.

TVA has concluded that acceptable minimum voltage (3950 volts), as defined in "ANSI Std. C84.1-1970, on the inplant buses in the Browns Ferry Nuclear Power Plant could not be maintained for an assumed three unit simultaneous trip with degraded conditions in the offsite power supply. TVA found that an inplant undervoltage condition was induced from the high voltage drop in the high impedence of the common station service transformers during a postulated accident or multiple unit trip that imposed a heavy load on the "X" windings of the common station service transformers.

The licensee proposed in its letters of May 2 and May 17, 1978 modifications to the system design and changes to the Technical Specifications to correct this plant undervoltage condition. These changes will permit satisfactory three-unit operation for all the postulated conditions.

3.0 Evaluation

The system modifications to correct the inplant system undervoltage consist of: (a) installation of capacitor banks at the Browns Ferry terminal ends of the two 161 kV transmission lines to improve the power factor and (b) rearranging the 4160 volt loads of Unit 3 to reduce the voltage drop due to high impedance in common station service transformers.

A. Capacitor Installation

We have reviewed the installation of the two 161 kV switchable shunt capacitor banks in parallel at Browns Ferry on the Athens-Browns Ferry 161 kV line to improve the power factor. Either or both banks will be connected to the Trinity-Browns Ferry 161 kV line through a switching operation when the Athens line is out of service. The capacities of the two shunt capacitor banks are 39 Mvar and 42 Mvar.

Each capacitor bank will improve the receiving voltage of the 161 kV line by approximately 5.7 percent with the Trinity-Browns Ferry 161 kV line out of service, and improve the receiving voltage of the 161 kV lines by approximately 1.4 percent with two 161 kV transmission lines in service.

Our review confirmed that under minimum plant load conditions with the Trinity-Browns Ferry 161 kV line out, the two 161 kV capacitor banks could result in overvoltage at the Browns Ferry offsite power source. On such a condition of overvoltage on the 161 kV offsite power source, the automatic voltage control device, which consists of voltage sensing relays and timers, would trip the capacitor banks off for any per unit voltages in excess of 1.07 on the 161 kV bus. This same voltage control would also have a lower voltage setting to switch the capacitor banks on in the event the 161 kV bus voltage dropped below 1.01 per unit. In addition to the automatic controls, the operator at Browns Ferry will be able to monitor the voltage and manually switch the capacitor bank on or off.

B. Rearrangement of 4160 Volt System

We reviewed the rearrangement of 4160 volt loads presently connected to the common station service transformers and reconnection of some of these loads to the cooling tower transformers to reduce the excessive voltage drop due to high impedence in the common station service transformers.

Unit 3 boards 3A, 3B, and 3C will be cut off the start bus 1A and 1B and will be supplied from cooling tower transformers 1 and 2 as shown in the cross-hatched portion of Figure 1. The offsite supplies for shutdown boards 3EA and 3EB, and for shutdown boards 3EC and 3ED are fed through board 3A and 3B, respectively. The 4kV bus tie board can be supplied power by either of the cooling tower transformers and remains unchanged from the original design.

The feeder cables for these offsite power supplies are routed in separate cable trenches to the cooling tower transformers. The system modifications also improve the power factor on the offsite power source by installing the capacitor banks on 161 kV line, and reduce the voltage drop on the inplant system by rearranging the 4160 volt loads to common station service transformers and cooling tower transformers. The modified configuration would result in a voltage of 3950 volts on 4160-volt inplant system for the postulated events.

The staff has reviewed the licensee's proposed modifications to the plant system - the installation of two capacitor banks and the rearrangement of the Unit No. 3 4160 volt loads to improve the inplant system voltage. The staff also reviewed the associated changes to the Technical Specifications resulting from these modifications. Based on the evaluation of the information provided by the licensee, the staff concludes that the proposed system modifications are an acceptable method of assuring that the inplant system voltages satisfy the requirements of General Design Criterion 17 with regard to system capacity and operability. With the changes we have proposed and which the licensee has accepted, the staff finds the changes to the Technical Specifications to be acceptable.

4.0 Environmental Considerations

We have determined that these 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 these 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 impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

5.0 Conclusion

We have concluded that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, (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.

Dated: June 23, 1978

IV. REFERENCES

1. ANSI Standard C84.1-1970, "Voltage Ratings for Electric Power Systems and Equipment ($60H_3$)"

2. 10 CFR Part 50, Code of Federal Regulations, General Design Criterion 17.

3. Letter from George Lear, (NRC) to N. B. Hughes (TVA) re: Amendments for Browns Ferry Nuclear Plant, Technical Specifications, dated March 29, 1978.

4. Letter from J. E. Gilleland (TVA) to E. G. Case (NRC), dated May 2, 1978.

5. Memorandum:-Browns Ferry Nuclear Plant - Installation of Capacitor Banks, dated June 2, 1978.

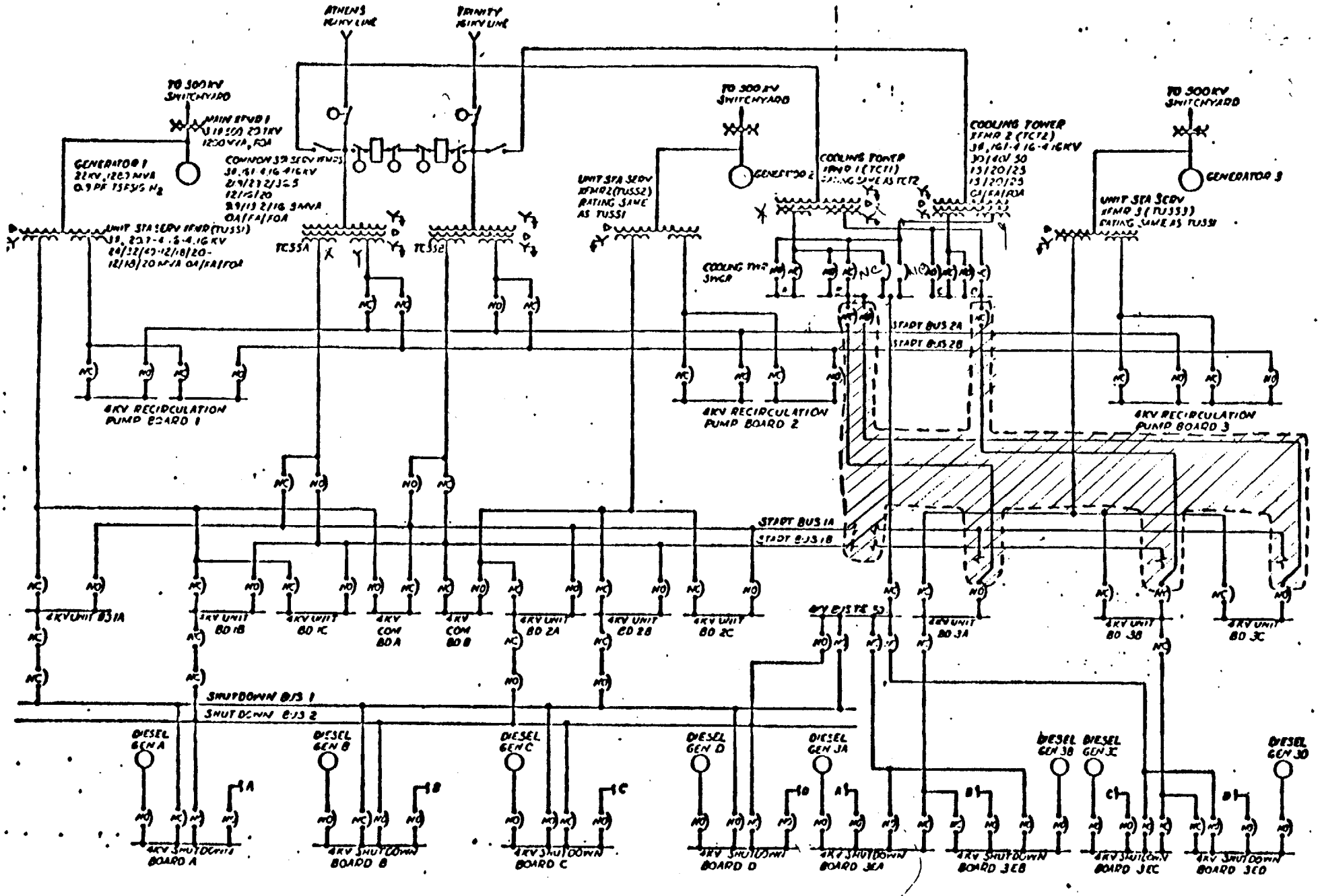

Figure 1

Modified Configuration

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-259, 50-260 AND 50-296

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 39 to Facility Operating License No. DPR-33, Amendment No. 37 to Facility Operating License No. DPR-52, and Amendment No. 13 to Facility Operating License No. DPR-68 issued to Tennessee Valley Authority (the licensee), which revised Technical Specifications for operation of the Browns Ferry Nuclear Plant, Unit Nos. 1, 2 and 3, (the Facility) located in Limestone County, Alabama. The amendments are effective as of the date of issuance.

These amendments change the Technical Specifications to reflect modifications to the inplant electrical system to provide adequate inplant voltages for three unit operation under all required postulated transient and accident conditions.

The application for the 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 impact statement, or negative declaration and 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 May 17, 1978, (2) Amendment No. 39 to License No. DPR-33, Amendment No. 37 to License No. DPR-52, and Amendment No. 13 to License No. DPR-68, 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, 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 23rd day of June. 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Brian K. Grimes, Assistant Director
for Engineering and Projects
Division of Operating Reactors