Docket Nos. 50-259
and 50-260

June 3, 1976

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. 22 and 19 to Facility Licenses No. DPR-33 and DPR-52, respectively, for the Browns Ferry Nuclear Plant, Units 1 and 2. These amendments are in response to your request of November 7, 1975.

These amendments revise the provisions in the Technical Specifications to require annual reporting of the nonradiological environmental monitoring program.

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

Since the amendments apply only to administrative details they do not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. They do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin and, therefore, do not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by these actions.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

A copy of the related Federal Register Notice is enclosed.

Sincerely,

Original Signed by

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

Enclosures:
1. Amendment No. 22 to DPR-33
2. Amendment No. 19 to DPR-52
3. Federal Register Notice

cc w/enclosures:
See next page

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Mr. William E. Garner
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Mr. Thomas Lee Hammons
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Athens, Alabama 35611

cc w/enclosures and incoming:
Ira L. Myers, M.D.
State Health Officer
State Department of Public Health
State Office Building
Montgomery, Alabama 36104

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 22
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;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Change to the Technical
Specifications

Date of Issuance: June 3, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 22 TO DPR-33
AND LICENSE AMENDMENT NO. 19 TO DPR-52

DOCKET NOS. 50-259 AND 50-260

Revise Appendix B as follows:

Remove pages 14, 16, 17, 18, 19, 21, and 22, and insert revised identically numbered pages.

4.0 ENVIRONMENTAL SURVEILLANCE

The program elements described below are designed to detect and measure the impact of plant operation on the environment. If on the basis of this program it is established that no significant adverse environmental impact has resulted or is likely to result from operation of the Browns Ferry Nuclear Plant, elements of the environmental surveillance program may be modified or terminated.

4.1 Ecological Surveillance

4.1.1 Abiotic

(a) Water Quality Surveys

Objective

Water quality surveys are performed quarterly in Wheeler Reservoir. Baseline levels for water quality parameters in Wheeler Reservoir were established by previous sampling and will be compared to that data received once the plant is in operation. Significant variations in compared numbers will be utilized to define potential water quality problem, and provide solution to these problems.

Specification

Water quality data in Wheeler Reservoir are determined quarterly at the locations shown in Table 4.1-1. Parameters monitored include dissolved oxygen, temperature, biochemical oxygen demand (5 day, 20° C.), chemical oxygen demand, pH, alkalinity, specific conductance, sodium, sulphates, chlorides, nitrogens (NH_3, NO_2 + NO_3, and organic), and solids (dissolved, suspended, and total). All field and laboratory analysis associated with the reservoir monitoring program will be performed by the Division of Environmental Planning's Water Quality and Ecology Branch. All analyses will be performed using standard documented analytical procedures for water quality analysis. Details of the analytical procedures are on file in the Water Quality and Ecology Branch, Chattanooga, Tennessee.

Reporting Requirement

Water quality data are stored on the STORET computerized data handling system that is operated by the U.S. Environmental Protection Agency and are also kept on file in the Water Quality and Ecology Branch office. These data are used for identifying existing water quality conditions in the plant area. The results will be summarized in annual reports of the nonradiological monitoring program.

Bases

The reservoir monitoring program will, at a minimum, evaluate the parameters directly associated with the "added" waste discharges originating from Browns Ferry. Maintenance of these parameters at or within the standards will help to assure satisfactory water quality conditions within Wheeler Reservoir. In conjunction with other TVA program interests, additional water quality parameters and locations

Reporting Requirement

The results will be summarized in annual reports of the nonradiological monitoring program. | Revised

Bases

The four benthic macroinvertebrates selected for study represent the predominant benthic fauna in Wheeler Reservoir. Normally currents in a reservoir do not affect the location and movement of benthic populations. Thus, these organisms can be studied at a specific location over an extended period to determine significant population changes.

(b) Phytoplankton Monitoring

Objective

Quarterly monitoring of phytoplankton will be conducted at the locations shown in Table 4.1-1 to assess changes in phytoplankton populations. Since algal growth and photosynthesis vary with changes in water temperature, light intensity, and nutrient concentrations, the data will have some natural variability.

Specification

All phytoplankton monitoring will be performed by the Division of Environmental Planning's Water Quality and Ecology Branch using standard accepted procedures for phytoplankton sampling, enumeration, and biomass and productivity determinations. These procedures are on file in the office of the Water Quality and Ecology Branch, Muscle Shoals, Alabama.

Reporting Requirement

The results will be summarized in annual reports of the nonradiological monitoring program. |

Bases

Changes to populations of phytoplankters, either in numbers or species, may indicate effects from the plant, particularly from heat introduction. Changes may occur that are not detectable because of the high variability associated with sampling on a quarterly frequency. Additionally, prolonged exposure to high temperatures during late summer or fall enhances the growth of blue-green algae. In algal communities exposed to these conditions, dominance usually shifts successively from diatoms to green algae and eventually to blue-green algae.

Enumeration and biomass estimates are used to assess the standing crop of phytoplankton. Productivity measurements are used to determine the vitality of phytoplankton cells. The procedure is based on the amount of carbon-14 assimilated by viable cells over a measured period of time in a water sample of known volume.

(c) Zooplankton Monitoring

Objective

The objective of the zooplankton monitoring is to assess population changes and movement within the areas monitored and provide a basis for determining the effect of the plant on the zooplankton population.

Specification

Quarterly zooplankton samples will be collected at the locations shown in Table 4.1-1. All zooplankton monitoring will be performed by the Division of Environmental Planning's Water Quality and Ecology Branch using standard accepted zooplankton sampling and enumeration procedures. These procedures are on file in the office of the Water Quality and Ecology Branch, Muscle Shoals, Alabama.

Reporting Requirement

The results will be summarized in annual reports of the nonradiological monitoring program.

Bases

Because zooplankton are important links in the aquatic food chain, taxonomy and population changes will be important indices in evaluating the effects of plant operation on reservoir ecology. However, since zooplankters are capable of limited movement and do change their vertical distribution during the daily cycle, data derived from sampling specified depths at discrete times may not present a complete picture. Since a relatively high degree of variability due to sampling procedures is expected, these studies are limited to providing a historical record for use in assessing such factors as gross population changes, percentage changes in groups (Copepoda, Cladocera, Rotifera), and the deletion or addition of any species after Browns Ferry Nuclear Plant becomes operational.

(d) Fish Population and Distribution Studies

Objective

Studies are to assess plant impact on movement of fish, relative abundance, creel harvest, species composition, and growth of fish.

Specification

Net sampling will be conducted quarterly at four of the locations shown in Table 4.1-1. All fisheries monitoring will be conducted by the Division of Forestry, Fisheries, and Wildlife Development using standard

accepted sampling and evaluation procedures. These procedures are on file with the Fisheries and Waterfowl Resources Branch in Norris, Tennessee.

To determine normal movement in the reservoir, selected species of fish collected by trap nets will be tagged. Gill net catches will also supplement information on species composition, relative abundance, distribution, and movement. Electrofishing will be used to supplement the tagging of species not obtained in sufficient numbers by trap netting. Trap nets also furnish fish for routine growth studies.

Rotenone sampling in selected areas during late August and early September of each year serves as a basis for determining standing stocks, species composition, and reproductive success.

Creel census studies are conducted each month to establish catch per hour and per trip, species and weights of fish taken, and hours fished per trip in each of six areas of the reservoir. Previously recorded data will be the basis for determining the location and magnitude of the sport fishery before operation of the Browns Ferry Nuclear Plant.

Larval fish are also being investigated. Information on species, numbers, and distribution of larval fishes present in four areas of the reservoir during the sampling period before operation begins will be compared with data collected after the plant becomes operational to assess effects of plant operation.

Reporting Requirement

The results will be summarized in annual reports of the nonradiological monitoring program.

Bases

The most important interaction of Browns Ferry Nuclear Plant with the environment will be the heat dissipated from the plant in Wheeler Reservoir. The effect of the added heat on fish resources is to be determined.

(e) Entrainment of Fish Eggs and Larvae

Objective

To quantify the entrainment of fish eggs and larvae in the cooling water system.

Specification

The entrainment of fish eggs and larvae in the cooling water system shall be monitored weekly during the major spawning period of March through July and an estimate made of the total number of fish eggs and larvae entrained.

Monitoring will be performed by the Division of Forestry, Fisheries, and Wildlife Development using standard accepted sampling procedures on file in this division's office, Norris, Tennessee.

Reporting Requirement

The results will be summarized annually in the annual reports of the non-radiological monitoring programs.

Bases

A significant proportion of the river flow will be routed through the plant for cooling purposes, and during periods when larval fishes are abundant there is the potential for entrainment of large numbers of fishes. The specified study will determine the numbers of fish eggs and larvae entrained in the cooling water system resulting from plant operation and identify the need for possible corrective action.

(f) Fish Impingement on Intake Screens

Objective

To detect and quantify fish impingement upon the intake screens.

Specification

Fish impinged on intake screens shall be estimated three times per week with no longer than three days elapsing between observations. Those fish impinged on one selected screen which has been in operation over the preceding 24 hours shall be collected during screen washing and classified as: 1) shad and herring, 2) catfish, 3) bass (largemouth, smallmouth and spotted bass), 4) crappie, 5) sunfish, 6) drum and 7) other species. Total daily impingement will be estimated for all screens in operation by applying an appropriate "weighting factor" to the data from the selected screen.

The screen selection and "weighting factor" shall be evaluated bimonthly; the evaluation program shall consist of counting the impinged fish on each of the twelve screens for two days and differentiation by species and by 25mm length-class intervals. The two-day evaluation may be substituted for the regular weekly monitoring.

Reporting Requirements

Five copies of a monthly report to be prepared by TVA's Division of Power Production in coordination with the Division of Power Resource Planning shall be submitted to the USNRC Division of Operating Reactors within 15 days following the end of each calendar month. The report shall include tabulated impingement data, bimonthly evaluation of screen "weighting factor" when applicable, and summary of any specific studies or investigations which TVA is conducting to evaluate the significance of impingement losses or techniques for reducing significant losses. A copy will be sent to TVA's Division of Forestry, Fisheries, and Wildlife Development for review and assessment. Results of FFWD's review and assessment will be sent to the Division of Environmental Planning for inclusion in the annual operating report.

Bases

Quantification of impinged fish upon the intake screens will provide an assessment of fish losses from normal plant operation and identify the need for possible corrective action.

d. Proposed written procedures, as described in 5.5, and proposed changes thereto which affect the plant's environmental impact.

e. Proposed changes or modifications to plant systems or equipment which could affect the plant's environmental impact and the evaluated impact of the changes.

f. Results of the environmental monitoring programs prior to their submittal in each Annual Operating Report. See Sections 5.6.1 and 5.6.2.

g. Investigation of all reported instances of violations of environmental technical specifications. Where investigation indicates, evaluation and formulation of recommendations to prevent recurrence.

5.4 Action to be Taken if an Environmental LCO is Exceeded

5.4.1 Follow any remedial action permitted by the technical specifications until the condition can be met.

5.4.2 The DPP shall promptly report the violation to the Assistant to the Manager of Power and the Director, DEP.

5.4.3 DEP will then conduct an independent investigation of the incident. DEP will report the results of its investigation to the Manager of Power, the Quality Assurance Manager, the Director, DPP, and the Director, DPRP.

5.4.4 The plant superintendent shall initiate an investigation of reported or suspected incidents involving violation. This investigation shall consist of the circumstances leading to and resulting from the situation together with recommendations to prevent a recurrence. The results shall be submitted to the Manager of Power, the Quality Assurance Manager, the Director, DPP, the Director, DPRP, and the Director, DEP.

5.4.5 The plant superintendent shall notify the Director of the Regional Regulatory Operations Office, Region II of AEC within 24 hours as specified in Section 5.6.3. A written report shall follow within 10 days (see Section 5.6.3(b)).

5.5 Procedures

5.5.1 Detailed written procedures for the in-plant nonradiological monitoring program, including check-off lists, where applicable, shall be prepared by DPP and approved by the plant superintendent and adhered to.

5.5.2 Detailed written procedures for the nonradiological monitoring program outside the plant, including check-off lists, where applicable, shall be prepared, approved by Director, DEP, and adhered to.

5.5.3 All procedures described in 5.5.1 and all changes thereto shall be reviewed and approved prior to implementation and periodically thereafter by the plant management. Temporary changes to procedures which do not change the intent of the original procedure may be made, provided such changes are documented and are approved by two of the following plant personnel:

Superintendent
Assistant Superintendent
Operations Supervisor
Assistant Operations Supervisor
Shift Engineer

5.6 Reporting Requirements

5.6.1 A report shall be prepared by DEP and submitted to DPP within 45 days following the end of each 12-month period of operation, which shall summarize the results of the environmental monitoring program.

5.6.2 A summary report shall be prepared by the DPP for both the in-plant monitoring and the environmental monitoring programs and submitted by the Manager of Power to DOL as part of the Annual Operating Report within 90 days of December 31. This report shall summarize the environmental monitoring performed during the calendar year and the results thereof.

5.6.3 Non-Routine Reports

a. Radiological

Non-routine reports of radiological materials in the environment are covered in Section 6.7 of the Technical Specifications.

b. Nonradiological

In the event a limiting condition for operation is exceeded or an unusual event involving a significant environmental impact occurs, a report shall be made within 24 hours by telephone or telegraph to the Director of the Regional Regulatory Operations Office, Region II, followed by a written report summarizing the results of investigations by DEP and DPP within 10 days from the Office of Power to the Directorate of the Regional Regulatory Operations Office, Region II (copy to the Director of Licensing).

c. Changes

1. Where a change to the plant design, the plant operation, or to procedures is planned which could have a significant adverse effect on the environment or which involves an environmental matter or question not previously reviewed and evaluated by the AEC, a request for the change shall be made to the AEC before implementation.

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. 19
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;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Change to the Technical
Specifications

Date of Issuance: June 3, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-259 AND 50-260

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 22 to Facility Operating License No. DPR-33 and Amendment No. 19 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.

These amendments revise the provisions in the Technical Specifications to require annual reporting of the nonradiological environmental monitoring program.

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

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant

to 10 CFR § 51.5(d)(4) an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated November 7, 1975, and (2) Amendment No. 22 to License No. DPR-33 and Amendment No. 19 to License No. DPR-52. These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. 20555, and at the Athens Public Library, South and Forrest, Athens, Alabama 35611.

A copy of item (2) 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 3rd day of June, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

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