3/28/78

Dockets 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. 36, 33 and 10 to Facility Licenses Nos. DPR-33, DPR-52 and DPR-68, respectively, for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. These amendments consist of changes to the Appendix B Environmental Technical Specifications in response to your request dated October 28, 1977.

These amendments revise the provisions in the Environmental Technical Specifications with respect to reporting requirements on transmission line right-of-way maintenance and fish impingement, clarifies minor administrative details and deletes reference to the internal divisions within TVA responsible for implementation of the Technical Specifications.

These amendments involve only changes in the reporting and administrative requirements and 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.

These changes in the reporting requirements 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,

OFFICE ➤						
SURNAME ➤						
DATE ➤						

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.

A copy of the related Notice of Issuance is also enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendment No. 36 to DPR-33
2. Amendment No. 33 to DPR-52
3. Amendment No. 10 to DPR-68
4. Notice

cc w/enclosures:
see next page

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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 NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 36
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 October 28, 1977, 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 applications, 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. 36, 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

George Lear

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 36

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise Appendix B as follows:

1. Remove the following pages and replace with identically numbered pages:

   9/10
   11/12
   17/18
   19/20
   23/24
   25/26
   27/28

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

3.1.2 Other Chemicals - Table 3.1.2-1 summarizes the uses of other chemicals used in plant processes, and the expected maximum quantity of chemical end products.

Table 3.1.2-2 shows the expected chemical concentrations of the effluent in the river after mixing.

3.2 Land Management

3.2.1 Power Plant Site - The site shall be appropriately landscaped as allowed by completion of construction. All areas which are either unpaved or not committed for specific purposes will be provided with appropriate vegetative cover.

3.2.2 Transmission Line Right-of-Way Maintenance

Objective

The sole purpose of this section is to provide reporting requirements (to USNRC) on herbicide usage, if any, for purposes of right-of-way maintenance regarding only those transmission lines under USNRC's jurisdiction for the Browns Ferry Nuclear Plant.

Specification

A statement as to whether or not herbicides have been used in maintaining rights of way for those transmission lines associated with the Browns Ferry Nuclear Plant shall be provided. If herbicides have been used, a description of the types, volumes, concentrations, manners and frequencies of application, and miles of right of way that have been treated shall be included.

Reporting Requirements

Information as specified above shall be provided in the annual environmental operating report.

Bases

Vegetation growth on a transmission line right of way must be controlled in such a manner that it will neither interfere with safe and reliable operation of the line nor impede restoration of service when outages occur. Vegetation growth is controlled by mechanical cutting and the limited use of herbicides. Selected chemicals approved by EPA for use as herbicides are assigned (by EPA) label instructions which provide guidance on and procedures for their use.

3.3 Onsite Meteorological Monitoring

The onsite meteorological monitoring program measures and documents meteorological conditions at the site, specifically at heights above ground that allow reasonable estimates of atmospheric dispersion conditions for airborne plant effluents. The onsite program shall conform to the recommendations and intent of Regulatory Guide 1.23, Onsite Meteorological Programs (February 1972), and include instruments to sense wind speed and direction at 10m, 46m, and 91m; to allow calculation of vertical temperature gradient between 10m and 46m and between 10m and 91m; and to measure ambient temperature and dew point at 10m. The location of the meteorological tower is as specified in Section 2.3.7 of the Browns Ferry Nuclear Plant Final Safety Analysis Report (see Amendment 63). A quality assurance program shall be in effect for all meteorological measurements and observations.

Meteorological data shall be summarized and reported consistent with the recommendations of Regulatory Guide 1.21 (June 1974) and Regulatory Guide 1.23 (February 1972), and meteorological observations shall be recorded in a form consistent with National Weather Service procedures.

If the outage of any meteorological instrument(s) required by Regulatory Guide 1.23 (February 1972) exceeds seven consecutive days, the total outage time, the dates of outage, the cause of the outage, and the instrument(s) involved shall be reported within 30 days of the initiation of the outage to the USNRC, Office of Inspection and Enforcement, with a copy to the Office of Nuclear Reactor Regulation, Division of Operating Reactors. Elements of this program may be modified or terminated in accordance with Subsection 5.6.3(c).

The collection of meteorological data at the plant site provides information for use in developing atmospheric diffusion parameters for estimating potential radiation doses to the public resulting from actual routine or abnormal releases of radioactive materials to the atmosphere, and for assessing the actual impact of the plant cooling system on the atmospheric environment of the site area. A meteorological data collection program as described above is necessary to meet the requirements of subparagraph 50.36a(a)(2) of 10 CFR Part 50, Appendix D to 10 CFR Part 50, and Appendix E to 10 CFR Part 50.

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, in accordance with Subsection 5.6.3(c).

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 problems and provide solutions 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 and suspended). All analyses will be performed using standard documented analytical procedures for water quality analysis. Details of the analytical procedures are on file in the office of 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 environmental 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 applicable standards will help to assure satisfactory water quality conditions within Wheeler Reservoir.

Monitoring will be performed using standard accepted sampling procedures which are on file in the office of the Division of Forestry, Fisheries, and Wildlife Development, Norris, Tennessee.

Reporting Requirement

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

Bases

A significant proportion of the river flow will be routed through the plant for cooling purposes, and during periods when larval fish 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

Once each week, fish which have been impinged on operating intake screens over the preceding 24 hours shall be estimated. The impinged fish 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.

During extended periods of extremely cold weather it may be impossible to estimate the impingement of fish on some or all of the plant intake screens due to icing. When such a situation occurs, the fish impingement reports (quarterly and annual) shall state which data have not been obtained. The 24-hour and 10-day non-routine reporting requirements of Section 5.6.3.b shall not apply for this condition.

Reporting Requirements

Five copies of a quarterly 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 Director of Division of Operating Reactors within 30 days following the end of each calendar quarter. The report shall include tabulated impingement data by screen and a summary of any specific studies or investigations which TVA is conducting to evaluate the significance of impingement losses or techniques for reducing these losses. A copy will be sent to TVA's Division of Forestry, Fisheries, and Wildlife Development for review and assessment. A summary of the impingement data (with the estimated total annual impingement per unit for each of the seven specified fish groups) shall be included in the annual nonradiological environmental 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.

4.1.3 Special Studies

Objective

To demonstrate the adequacy of weekly sampling of chlorine residual during chlorination of the auxiliary raw cooling water systems by demonstrating that chlorine residual in auxiliary raw cooling water (RCW) systems remains relatively constant during chlorination.

Specification

TVA will perform special studies during the first two periods (including a spring and a fall period) of chlorination of the RCW systems after September 1975, which are of at least 3 weeks' duration. During the special studies period when the RCW systems are being chlorinated, samples will be taken daily from the RCW systems and analyzed for chlorine residual. Records of the daily sampling and analyses will be maintained and submitted to the NRC staff for their review following the end of the special study period. Chlorine feed rate and equivalent RCW concentration will be reported for the special studies period.

Sampling during the special study period will be considered to satisfy the monitoring requirements of Section 2.2.2 of the environmental technical specifications.

4.2 Radiological Environmental Monitoring Program

Objective

An environmental radiological monitoring program is conducted to verify projected or anticipated radioactivity concentrations and related public exposures.

Specification

An environmental monitoring program shall be conducted as described below at locations indicated in Figures 4.2-1, 4.2-2, and 4.2-3 and Tables 4.2-1, 4.2-2, 4.2-3, and 4.2-4, with sampling and analysis frequencies given in Table 4.2-1. Analytical techniques used shall be such that the detection capabilities in Table 4.2-5 are achieved.

1. Atmospheric Monitoring

   a. The atmospheric monitoring network is divided into three subgroups consisting of 11 monitoring stations. Five local monitors are located on or adjacent to the plant site, as shown in Figure 4.2-1. The four perimeter and two remote monitoring stations are shown on Figure 4.2-2. Atmospheric and terrestrial monitoring station locations for Browns Ferry Nuclear Plant are listed in Table 4.2-2.

      Each monitor shall be capable of continuously sampling air at regulated flow of approximately three cubic feet per minute through a particulate filter. In series with, but downstream of, the particulate filter is a charcoal filter used to collect iodine.

Each monitor has a collection apparatus to obtain rainwater on a continuous basis and a horizontal platform that is covered with gummed acetate to catch and hold heavy particulate fallout.

Each local monitor shall be equipped with a G-M tube located next to the particulate filter. The data from this detector are recorded on stripchart recorders located at the station and in the plant control room.

Thermoluminescent dosimeters shall be used to record gamma radiation levels at each remote and perimeter station (Figure 4.2-2) and at nine stations near the site boundary as shown in Figure 4.2-1. The TLD's shall be processed quarterly.

b. The particulate filters shall be removed weekly from each monitoring station and analyzed for gross beta activity. In addition, the filters for each station shall be composited monthly and quantitatively and qualitatively analyzed for at least 10 specific gamma-emitting radionuclides.*

The charcoal filters shall be removed weekly from each station and analyzed for ^{131}I.

Rainwater shall be collected monthly when available from each station and each sample is analyzed for at least 10 specific gamma-emitting radionuclides*, and tritium.

Gummed paper shall be changed monthly, ashed and the gross beta activity shall be determined.

2. Reservoir Monitoring

a. River water shall be sampled automatically from the locations shown in Table 4.2-3 and Figure 4.2-3.

b. Samples shall be collected automatically and analyzed monthly from three points on the Tennessee River. The samples shall be analyzed for at least 10 specific gamma-emitting radionuclides*, and shall be composited quarterly for tritium, ^{89}Sr and ^{90}Sr analyses.

Samples of sediment, clams, and a representative commercial and a representative game species of fish shall be collected at least semiannually from the locations noted in Table 4.2-3 and Figure 4.2-3. Plankton is collected in at least one of the two quarters of greatest plankton abundance during the year at the locations noted in Table 4.2-3 and Figure 4.2-3. Sediment, clam shells, fish, and when quantities are sufficient, plankton and clam flesh will be analyzed for at least 10 gamma-emitting radionuclides*. Strontium 89 and 90 content shall be determined in sediment and clam shells.

*The laboratory is presently gamma scanning a sample both quantitatively and qualitatively for the following radionuclides: ^{137}Cs, ^{134}Cs, $^{103,106}Ru$, $^{141,144}Ce$, ^{95}Zr, ^{95}Nb, ^{140}Ba-^{140}La, ^{131}I, ^{40}K, ^{60}Co, ^{58}Co, ^{54}Mn, ^{51}Cr, and ^{65}Zn.

3. Terrestrial Monitoring

a. Soil shall be collected at least once every three years from an area near the atmospheric monitors mentioned in paragraph 4.2.1.a, as indicated in Table 4.2-1 and Figures 4.2-1 and 4.2-2. Each sample shall be analyzed for at least 10 gamma-emitting radionuclides, ^{89}Sr and ^{90}Sr.

b. Milk shall be collected monthly when animals are off pasture, from at least four farms in the vicinity of the plant and analyzed as indicated in Table 4.2-1 and Figure 4.2-1.

During the seasons that animals producing milk for human consumption are on pasture, samples of fresh milk will be obtained* from these animals at representative locations that may be significantly affected by emissions from the Browns Ferry Nuclear Plant, and analyzed for their radioiodine content, calculated as iodine-131. Analysis will be carried out within eight days (one I-131 half life) of sampling. Suitable analytical procedures will be used to determine the radioiodine concentration to a sensitivity of 1.5 picocurie per liter of milk at the time of sampling. For activity levels at or above 1.5 picocurie per liter, overall error of the analysis will be within ±25%. Results will be reported as picocuries of I-131 per liter of milk at the time of sampling, in accordance with Reporting Requirements for Environmental Radiological Monitoring.

If the census of animals producing milk for human consumption indicates that an animal exists in an area where the calculated dose is ≥45 mrem/yr (for the site) and the owner of the animal will not sell the milk to TVA for analysis, green leafy vegetables or other vegetation will be obtained from that location for analysis for I-131. The analysis and subsequent calculations will determine the dose to the individuals consuming the milk.

A census of animals producing milk for human consumption shall be conducted at the beginning and at the middle of the grazing season to determine their locations and number with respect to the site. The census shall be conducted under the following conditions:

1. Within a 1-mile radius from the plant site or within the 45 mrem/yr isodose line (for the three reactors onsite), whichever is larger, enumeration by a door-to-door or equivalent counting technique.

2. Within a 5-mile radius for cows and for goats, enumeration by using referenced information from county agricultural agents or other reliable sources.

*Milk samples will be collected and analyzed weekly in areas where the calculated dose to a child's thyroid exceeds 15 mrem/year/reactor. Sampling and analysis will be conducted semimonthly in areas where the dose is calculated to be ≤15 mrem/year reactor. The calculational model as published in Regulatory Guide 1.109 and Regulatory Guide 1.111 shall be used.

5.0 ADMINISTRATIVE CONTROLS

Objective

This section describes the administrative and management controls established to provide continuing protection to the environment and to implement the environmental technical specifications. Measures to be specified in this section include the assignment of responsibilities, organizational structure, operating procedures, review and audit functions, and reporting requirements.

Specifications

5.1 Responsibility

5.1.1 The power plant superintendent has responsibility for operating the plant within the limiting conditions for operation (LCO).

5.1.2 The Director, Division of Environmental Planning, is responsible for the environmental monitoring program outside the plant.

5.2 Organization

5.2.1 The organization of TVA management which directly relates to operation of the plant is shown on Figure 5.2-1.

5.2.2 The principal divisions within TVA which are concerned with environmental matters related to nuclear power plant operation are the Division of Power Production (DPP), Division of Forestry, Fisheries, and Wildlife Development (FFWD), Division of Power Resource Planning (DPRP), and the Division of Environmental Planning (DEP). The DPP and DPRP are in the Office of Power. The Office of Power Quality Assurance and Audit Staff is a special staff within the Office of Power. The Office of Power, DEP, and FFWD report to the General Manager. This is depicted in Figure 5.2-2.

5.3 Review and Audit

5.3.1 The Director, DEP, is responsible for review of plant operation related to LCO to insure that plant operation is being conducted within the limits defined in Section 2 of this document.

5.3.2 The Office of Power Quality Assurance and Audit Staff shall conduct a periodic audit of the environmental monitoring program at least once per calendar year.

5.3.3 The DPRP and/or DEP shall review and contribute to the following items:

a. Preparation of the proposed environmental technical specifications.

b. Coordination of environmental technical specification development with the safety technical specifications to avoid conflicts and maintain consistency.

c. Proposed changes to the environmental technical specifications and the evaluated impact of the change.

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

e. Proposed changes or modifications to plant systems or equipment which could significantly 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. 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 DEP will conduct an independent investigation of the incident. This investigation shall consist of the circumstances leading to and resulting from the situation together with recommendations to prevent a recurrence. The results of the investigation shall be reported to the Director, DPP.

5.4.3 Notification of the Director of the Regional Regulatory Operations Office, Region II of NRC within 24 hours shall be made as specified in Section 5.6.3. Reporting requirements for this paragraph are described in Section 5.6.3.

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 (or his designee) and adhered to.

5.5.2 Detailed written procedures for the environmental monitoring program outside the plant, including check-off lists, where applicable, shall be prepared, receive appropriate administrative approval and be adhered to.

A quality control program for the radiological environmental monitoring program has been established with the Alabama Department of Public Health Administration Laboratory and the Environmental Protection Agency, Montgomery, Alabama. Samples of air, water, milk, and vegetation collected around the BFNP are forwarded to these laboratories for analysis; and results are exchanged for comparison.

An internal quality control program for the radiological environmental monitoring program is being conducted whereby roughly one tenth of all samples are analyzed in duplicate. A quality control program is conducted with the Environmental Protection Agency in Las Vegas in which spiked samples are analyzed and the results compared.

5.5.3 All procedures described in Section 5.5.1 and all changes thereto shall be reviewed and approved prior to implementation and on an annual basis 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 following the end of each 12-month period of operation, which shall summarize the results of the nonradiological environmental monitoring program.

5.6.2 Routine Reporting

a. A summary report shall be prepared for both the inplant monitoring program and the nonradiological monitoring programs and submitted to the Director of Division of Operating Reactors, NRC, as part of the Annual Operating Report within 120 days after December 31 of each year.

b. Radiological Environmental Monitoring

Routine Reporting

Reporting Requirements:

1. TVA shall prepare a report entitled "Environmental Radioactivity Levels - Browns Ferry Nuclear Plant - Annual Report." The report shall cover the previous 12 months of operation and shall be submitted to the Director of the NRC Region II Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 120 days after January 1 of each year. The report format shown in Regulatory Guide 4.8 Title 1 shall be used. The report shall include summaries, interpretations, and evaluations of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies and/or operational controls (as appropriate), and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

2. Results of all radiological environmental samples taken shall be summarized and tabulated on an annual basis. In the event that some results are not available within the 120-day period, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

5.6.3 Non-Routine Reports

a. Radiological

Anomalous Measurements

1. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds ten times the control station value, a written notification will be submitted within one week advising the NRC of this condition.* This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

2. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds four times the control station value, a written notification will be submitted within 30 days advising the NRC of this condition. This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

3. If individual milk samples show I-131 concentrations of 10 picocuries per liter or greater, a plan shall be submitted within 10 days advising the NRC of the proposed action to ensure the plant related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

4. If milk samples collected over a calendar quarter show average concentrations of 6.0 picocuries per liter or greater, a plan shall be submitted within 30 days advising the NRC of the proposed action to ensure the plant-related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

*In the case of a tentatively anomalous value for radiostrontium, a confirmatory reanalysis of the original, a duplicate or a new sample may be desirable. In this instance the results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, and if the high value is real, the report to the NRC shall be submitted within one week following this analysis.

5. If such levels as discussed in 5.6.3(a)3 and 5.6.3(a)4 can be definitely shown to result from sources other than the Browns Ferry Nuclear Plant, the reporting action called for in 5.6.3(a)3 and 5.6.3(a)4 need not be taken. Justification for assigning high levels of radioactivity to sources other than the Browns Ferry Nuclear Plant must be provided in the annual report.

b. Nonradiological

In the event a limiting condition for operation is exceeded or an unusual event with a potential for a significant environmental impact occurs, a report shall be made within 24 hours by telephone or telegraph to the Director of the Regional Office of Inspection and Enforcement, Region II, followed by a written report within 10 days to the Director of the Regional Office of Inspection and Enforcement, Region II (copy to the Director of Division of Operating Reactors).

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 NRC, a request for the change shall be made to the NRC before implementation.

2. Changes or additions to permits and certificates required for the protection of the environment shall be reported. When the required changes are submitted to the concerned agency for approval, they shall also be submitted to the Director, Division of Operating Reactors, USNRC, for information.

3. Requests for changes in environmental technical specifications shall be submitted to the Director, Division of Operating Reactors, USNRC, for prior review and authorization.

5.7 Environmental Records

5.7.1 Operational information concerning the inplant portion of the environmental technical specifications shall be kept by DPP in a manner convenient for review. This includes plant records and/or logs as indicated below:

a. Related plant operations

b. Related maintenance activities

c. LCO violation

d. Updated, corrected, and as-built drawings of the plant

Item (a) through (c) above shall be retained for a period of at least six years and item (d) shall be retained for the life of the plant.

5.7.2 Records and/or logs shall be maintained by DEP and/or DWM in a manner convenient for review. This information concerning the environmental monitoring program is indicated below:

a. Checks, inspections, tests, and calibration of components and systems.

b. Principal maintenance activities associated with environmental monitoring equipment and systems.

c. Results of environmental monitoring surveys related to BFNP.

Items (a) and (b) shall be retained for a period of at least six years and item (c) shall be retained for the life of the plant.

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. 33
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 October 28, 1977, 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 applications, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurnace (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. 33, 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

George Lear

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 33

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revice Appendix B as follows:

Remove the following pages and replace with identically numbered pages:

9/10
11/12
17/18
19/20
23/24
25/26
27/28

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

3.1.2 Other Chemicals - Table 3.1.2-1 summarizes the uses of other chemicals used in plant processes, and the expected maximum quantity of chemical end products.

Table 3.1.2-2 shows the expected chemical concentrations of the effluent in the river after mixing.

3.2 Land Management

3.2.1 Power Plant Site - The site shall be appropriately landscaped as allowed by completion of construction. All areas which are either unpaved or not committed for specific purposes will be provided with appropriate vegetative cover.

3.2.2 Transmission Line Right-of-Way Maintenance

Objective

The sole purpose of this section is to provide reporting requirements (to USNRC) on herbicide usage, if any, for purposes of right-of-way maintenance regarding only those transmission lines under USNRC's jurisdiction for the Browns Ferry Nuclear Plant.

Specification

A statement as to whether or not herbicides have been used in maintaining rights of way for those transmission lines associated with the Browns Ferry Nuclear Plant shall be provided. If herbicides have been used, a description of the types, volumes, concentrations, manners and frequencies of application, and miles of right of way that have been treated shall be included.

Reporting Requirements

Information as specified above shall be provided in the annual environmental operating report.

Bases

Vegetation growth on a transmission line right of way must be controlled in such a manner that it will neither interfere with safe and reliable operation of the line nor impede restoration of service when outages occur. Vegetation growth is controlled by mechanical cutting and the limited use of herbicides. Selected chemicals approved by EPA for use as herbicides are assigned (by EPA) label instructions which provide guidance on and procedures for their use.

3.3 Onsite Meteorological Monitoring

The onsite meteorological monitoring program measures and documents meteorological conditions at the site, specifically at heights above ground that allow reasonable estimates of atmospheric dispersion conditions for airborne plant effluents. The onsite program shall conform to the recommendations and intent of Regulatory Guide 1.23, Onsite Meteorological Programs (February 1972), and include instruments to sense wind speed and direction at 10m, 46m, and 91m; to allow calculation of vertical temperature gradient between 10m and 46m and between 10m and 91m; and to measure ambient temperature and dew point at 10m. The location of the meteorological tower is as specified in Section 2.3.7 of the Browns Ferry Nuclear Plant Final Safety Analysis Report (see Amendment 63). A quality assurance program shall be in effect for all meteorological measurements and observations.

Meteorological data shall be summarized and reported consistent with the recommendations of Regulatory Guide 1.21 (June 1974) and Regulatory Guide 1.23 (February 1972), and meteorological observations shall be recorded in a form consistent with National Weather Service procedures.

If the outage of any meteorological instrument(s) required by Regulatory Guide 1.23 (February 1972) exceeds seven consecutive days, the total outage time, the dates of outage, the cause of the outage, and the instrument(s) involved shall be reported within 30 days of the initiation of the outage to the USNRC, Office of Inspection and Enforcement, with a copy to the Office of Nuclear Reactor Regulation, Division of Operating Reactors. Elements of this program may be modified or terminated in accordance with Subsection 5.6.3(c).

The collection of meteorological data at the plant site provides information for use in developing atmospheric diffusion parameters for estimating potential radiation doses to the public resulting from actual routine or abnormal releases of radioactive materials to the atmosphere, and for assessing the actual impact of the plant cooling system on the atmospheric environment of the site area. A meteorological data collection program as described above is necessary to meet the requirements of subparagraph 50.36a(a)(2) of 10 CFR Part 50, Appendix D to 10 CFR Part 50, and Appendix E to 10 CFR Part 50.

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, in accordance with Subsection 5.6.3(c).

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 problems and provide solutions 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 and suspended). All analyses will be performed using standard documented analytical procedures for water quality analysis. Details of the analytical procedures are on file in the office of 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 environmental 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 applicable standards will help to assure satisfactory water quality conditions within Wheeler Reservoir.

Monitoring will be performed using standard accepted sampling procedures which are on file in the office of the Division of Forestry, Fisheries, and Wildlife Development, Norris, Tennessee.

Reporting Requirement

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

Bases

A significant proportion of the river flow will be routed through the plant for cooling purposes, and during periods when larval fish 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

Once each week, fish which have been impinged on operating intake screens over the preceding 24 hours shall be estimated. The impinged fish 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.

During extended periods of extremely cold weather it may be impossible to estimate the impingement of fish on some or all of the plant intake screens due to icing. When such a situation occurs, the fish impingement reports (quarterly and annual) shall state which data have not been obtained. The 24-hour and 10-day non-routine reporting requirements of Section 5.6.3.b shall not apply for this condition.

Reporting Requirements

Five copies of a quarterly 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 Director of Division of Operating Reactors within 30 days following the end of each calendar quarter. The report shall include tabulated impingement data by screen and a summary of any specific studies or investigations which TVA is conducting to evaluate the significance of impingement losses or techniques for reducing these losses. A copy will be sent to TVA's Division of Forestry, Fisheries, and Wildlife Development for review and assessment. A summary of the impingement data (with the estimated total annual impingement per unit for each of the seven specified fish groups) shall be included in the annual nonradiological environmental 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.

4.1.3 Special Studies

Objective

To demonstrate the adequacy of weekly sampling of chlorine residual during chlorination of the auxiliary raw cooling water systems by demonstrating that chlorine residual in auxiliary raw cooling water (RCW) systems remains relatively constant during chlorination.

Specification

TVA will perform special studies during the first two periods (including a spring and a fall period) of chlorination of the RCW systems after September 1975, which are of at least 3 weeks' duration. During the special studies period when the RCW systems are being chlorinated, samples will be taken daily from the RCW systems and analyzed for chlorine residual. Records of the daily sampling and analyses will be maintained and submitted to the NRC staff for their review following the end of the special study period. Chlorine feed rate and equivalent RCW concentration will be reported for the special studies period.

Sampling during the special study period will be considered to satisfy the monitoring requirements of Section 2.2.2 of the environmental technical specifications.

4.2 Radiological Environmental Monitoring Program

Objective

An environmental radiological monitoring program is conducted to verify projected or anticipated radioactivity concentrations and related public exposures.

Specification

An environmental monitoring program shall be conducted as described below at locations indicated in Figures 4.2-1, 4.2-2, and 4.2-3 and Tables 4.2-1, 4.2-2, 4.2-3, and 4.2-4, with sampling and analysis frequencies given in Table 4.2-1. Analytical techniques used shall be such that the detection capabilities in Table 4.2-5 are achieved.

1. Atmospheric Monitoring

   a. The atmospheric monitoring network is divided into three subgroups consisting of 11 monitoring stations. Five local monitors are located on or adjacent to the plant site, as shown in Figure 4.2-1. The four perimeter and two remote monitoring stations are shown on Figure 4.2-2. Atmospheric and terrestrial monitoring station locations for Browns Ferry Nuclear Plant are listed in Table 4.2-2.

      Each monitor shall be capable of continuously sampling air at regulated flow of approximately three cubic feet per minute through a particulate filter. In series with, but downstream of, the particulate filter is a charcoal filter used to collect iodine.

Each monitor has a collection apparatus to obtain rainwater on a continuous basis and a horizontal platform that is covered with gummed acetate to catch and hold heavy particulate fallout.

Each local monitor shall be equipped with a G-M tube located next to the particulate filter. The data from this detector are recorded on stripchart recorders located at the station and in the plant control room.

Thermoluminescent dosimeters shall be used to record gamma radiation levels at each remote and perimeter station (Figure 4.2-2) and at nine stations near the site boundary as shown in Figure 4.2-1. The TLD's shall be processed quarterly.

b. The particulate filters shall be removed weekly from each monitoring station and analyzed for gross beta activity. In addition, the filters for each station shall be composited monthly and quantitatively and qualitatively analyzed for at least 10 specific gamma-emitting radionuclides.*

The charcoal filters shall be removed weekly from each station and analyzed for ^{131}I.

Rainwater shall be collected monthly when available from each station and each sample is analyzed for at least 10 specific gamma-emitting radionuclides*, and tritium.

Gummed paper shall be changed monthly, ashed and the gross beta activity shall be determined.

2. Reservoir Monitoring

a. River water shall be sampled automatically from the locations shown in Table 4.2-3 and Figure 4.2-3.

b. Samples shall be collected automatically and analyzed monthly from three points on the Tennessee River. The samples shall be analyzed for at least 10 specific gamma-emitting radionuclides*, and shall be composited quarterly for tritium, ^{89}Sr and ^{90}Sr analyses.

Samples of sediment, clams, and a representative commercial and a representative game species of fish shall be collected at least semiannually from the locations noted in Table 4.2-3 and Figure 4.2-3. Plankton is collected in at least one of the two quarters of greatest plankton abundance during the year at the locations noted in Table 4.2-3 and Figure 4.2-3. Sediment, clam shells, fish, and when quantities are sufficient, plankton and clam flesh will be analyzed for at least 10 gamma-emitting radionuclides*. Strontium 89 and 90 content shall be determined in sediment and clam shells.

*The laboratory is presently gamma scanning a sample both quantitatively and qualitatively for the following radionuclides: ^{137}Cs, ^{134}Cs, $^{103,106}Ru$, $^{141,144}Ce$, ^{95}Zr, ^{95}Nb, ^{140}Ba-^{140}La, ^{131}I, ^{40}K, ^{60}Co, ^{58}Co, ^{54}Mn, ^{51}Cr, and ^{65}Zn.

3. Terrestrial Monitoring

a. Soil shall be collected at least once every three years from an area near the atmospheric monitors mentioned in paragraph 4.2.1.a, as indicated in Table 4.2-1 and Figures 4.2-1 and 4.2-2. Each sample shall be analyzed for at least 10 gamma-emitting radionuclides, ^{89}Sr and ^{90}Sr.

b. Milk shall be collected monthly when animals are off pasture, from at least four farms in the vicinity of the plant and analyzed as indicated in Table 4.2-1 and Figure 4.2-1.

During the seasons that animals producing milk for human consumption are on pasture, samples of fresh milk will be obtained* from these animals at representative locations that may be significantly affected by emissions from the Browns Ferry Nuclear Plant, and analyzed for their radioiodine content, calculated as iodine-131. Analysis will be carried out within eight days (one I-131 half life) of sampling. Suitable analytical procedures will be used to determine the radioiodine concentration to a sensitivity of 1.5 picocurie per liter of milk at the time of sampling. For activity levels at or above 1.5 picocurie per liter, overall error of the analysis will be within ±25%. Results will be reported as picocuries of I-131 per liter of milk at the time of sampling, in accordance with Reporting Requirements for Environmental Radiological Monitoring.

If the census of animals producing milk for human consumption indicates that an animal exists in an area where the calculated dose is ≥45 mrem/yr (for the site) and the owner of the animal will not sell the milk to TVA for analysis, green leafy vegetables or other vegetation will be obtained from that location for analysis for I-131. The analysis and subsequent calculations will determine the dose to the individuals consuming the milk.

A census of animals producing milk for human consumption shall be conducted at the beginning and at the middle of the grazing season to determine their locations and number with respect to the site. The census shall be conducted under the following conditions:

1. Within a 1-mile radius from the plant site or within the 45 mrem/yr isodose line (for the three reactors onsite), whichever is larger, enumeration by a door-to-door or equivalent counting technique.

2. Within a 5-mile radius for cows and for goats, enumeration by using referenced information from county agricultural agents or other reliable sources.

*Milk samples will be collected and analyzed weekly in areas where the calculated dose to a child's thyroid exceeds 15 mrem/year/reactor. Sampling and analysis will be conducted semimonthly in areas where the dose is calculated to be ≤15 mrem/year reactor. The calculational model as published in Regulatory Guide 1.109 and Regulatory Guide 1.111 shall be used.

5.0 ADMINISTRATIVE CONTROLS

Objective

This section describes the administrative and management controls established to provide continuing protection to the environment and to implement the environmental technical specifications. Measures to be specified in this section include the assignment of responsibilities, organizational structure, operating procedures, review and audit functions, and reporting requirements.

Specifications

5.1 Responsibility

5.1.1 The power plant superintendent has responsibility for operating the plant within the limiting conditions for operation (LCO).

5.1.2 The Director, Division of Environmental Planning, is responsible for the environmental monitoring program outside the plant.

5.2 Organization

5.2.1 The organization of TVA management which directly relates to operation of the plant is shown on Figure 5.2-1.

5.2.2 The principal divisions within TVA which are concerned with environmental matters related to nuclear power plant operation are the Division of Power Production (DPP), Division of Forestry, Fisheries, and Wildlife Development (FFWD), Division of Power Resource Planning (DPRP), and the Division of Environmental Planning (DEP). The DPP and DPRP are in the Office of Power. The Office of Power Quality Assurance and Audit Staff is a special staff within the Office of Power. The Office of Power, DEP, and FFWD report to the General Manager. This is depicted in Figure 5.2-2.

5.3 Review and Audit

5.3.1 The Director, DEP, is responsible for review of plant operation related to LCO to insure that plant operation is being conducted within the limits defined in Section 2 of this document.

5.3.2 The Office of Power Quality Assurance and Audit Staff shall conduct a periodic audit of the environmental monitoring program at least once per calendar year.

5.3.3 The DPRP and/or DEP shall review and contribute to the following items:

a. Preparation of the proposed environmental technical specifications.

b. Coordination of environmental technical specification development with the safety technical specifications to avoid conflicts and maintain consistency.

c. Proposed changes to the environmental technical specifications and the evaluated impact of the change.

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

e. Proposed changes or modifications to plant systems or equipment which could significantly 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. 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 DEP will conduct an independent investigation of the incident. This investigation shall consist of the circumstances leading to and resulting from the situation together with recommendations to prevent a recurrence. The results of the investigation shall be reported to the Director, DPP.

5.4.3 Notification of the Director of the Regional Regulatory Operations Office, Region II of NRC within 24 hours shall be made as specified in Section 5.6.3. Reporting requirements for this paragraph are described in Section 5.6.3.

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 (or his designee) and adhered to.

5.5.2 Detailed written procedures for the environmental monitoring program outside the plant, including check-off lists, where applicable, shall be prepared, receive appropriate administrative approval and be adhered to.

A quality control program for the radiological environmental monitoring program has been established with the Alabama Department of Public Health Administration Laboratory and the Environmental Protection Agency, Montgomery, Alabama. Samples of air, water, milk, and vegetation collected around the BFNP are forwarded to these laboratories for analysis; and results are exchanged for comparison.

An internal quality control program for the radiological environmental monitoring program is being conducted whereby roughly one tenth of all samples are analyzed in duplicate. A quality control program is conducted with the Environmental Protection Agency in Las Vegas in which spiked samples are analyzed and the results compared.

5.5.3 All procedures described in Section 5.5.1 and all changes thereto shall be reviewed and approved prior to implementation and on an annual basis 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 following the end of each 12-month period of operation, which shall summarize the results of the nonradiological environmental monitoring program.

5.6.2 Routine Reporting

a. A summary report shall be prepared for both the inplant monitoring program and the nonradiological monitoring programs and submitted to the Director of Division of Operating Reactors, NRC, as part of the Annual Operating Report within 120 days after December 31 of each year.

b. Radiological Environmental Monitoring

Routine Reporting

Reporting Requirements:

1. TVA shall prepare a report entitled "Environmental Radioactivity Levels - Browns Ferry Nuclear Plant - Annual Report." The report shall cover the previous 12 months of operation and shall be submitted to the Director of the NRC Region II Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 120 days after January 1 of each year. The report format shown in Regulatory Guide 4.8 Title 1 shall be used. The report shall include summaries, interpretations, and evaluations of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies and/or operational controls (as appropriate), and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

2. Results of all radiological environmental samples taken shall be summarized and tabulated on an annual basis. In the event that some results are not available within the 120-day period, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

5.6.3 Non-Routine Reports

a. Radiological

Anomalous Measurements

1. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds ten times the control station value, a written notification will be submitted within one week advising the NRC of this condition.* This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

2. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds four times the control station value, a written notification will be submitted within 30 days advising the NRC of this condition. This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

3. If individual milk samples show I-131 concentrations of 10 picocuries per liter or greater, a plan shall be submitted within 10 days advising the NRC of the proposed action to ensure the plant related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

4. If milk samples collected over a calendar quarter show average concentrations of 6.0 picocuries per liter or greater, a plan shall be submitted within 30 days advising the NRC of the proposed action to ensure the plant-related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

*In the case of a tentatively anomalous value for radiostrontium, a confirmatory reanalysis of the original, a duplicate or a new sample may be desirable. In this instance the results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, and if the high value is real, the report to the NRC shall be submitted within one week following this analysis.

5. If such levels as discussed in 5.6.3(a)3 and 5.6.3(a)4 can be definitely shown to result from sources other than the Browns Ferry Nuclear Plant, the reporting action called for in 5.6.3(a)3 and 5.6.3(a)4 need not be taken. Justification for assigning high levels of radioactivity to sources other than the Browns Ferry Nuclear Plant must be provided in the annual report.

b. Nonradiological

In the event a limiting condition for operation is exceeded or an unusual event with a potential for a significant environmental impact occurs, a report shall be made within 24 hours by telephone or telegraph to the Director of the Regional Office of Inspection and Enforcement, Region II, followed by a written report within 10 days to the Director of the Regional Office of Inspection and Enforcement, Region II (copy to the Director of Division of Operating Reactors).

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 NRC, a request for the change shall be made to the NRC before implementation.

2. Changes or additions to permits and certificates required for the protection of the environment shall be reported. When the required changes are submitted to the concerned agency for approval, they shall also be submitted to the Director, Division of Operating Reactors, USNRC, for information.

3. Requests for changes in environmental technical specifications shall be submitted to the Director, Division of Operating Reactors, USNRC, for prior review and authorization.

5.7 Environmental Records

5.7.1 Operational information concerning the inplant portion of the environmental technical specifications shall be kept by DPP in a manner convenient for review. This includes plant records and/or logs as indicated below:

a. Related plant operations

b. Related maintenance activities

c. LCO violation

d. Updated, corrected, and as-built drawings of the plant

Item (a) through (c) above shall be retained for a period of at least six years and item (d) shall be retained for the life of the plant.

5.7.2 Records and/or logs shall be maintained by DEP and/or DWM in a manner convenient for review. This information concerning the environmental monitoring program is indicated below:

a. Checks, inspections, tests, and calibration of components and systems.

b. Principal maintenance activities associated with environmental monitoring equipment and systems.

c. Results of environmental monitoring surveys related to BFNP.

Items (a) and (b) shall be retained for a period of at least six years and item (c) shall be retained for the life of the plant.

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. 10
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 October 28, 1977, 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 applications, 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. 10, 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

George Lear

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 10

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise Appendix B as follows:

Remove the following pages and replace with identically numbered pages:

9/10
11/12
17/18
19/20
23/24
25/26
27/28

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

3.1.2 Other Chemicals - Table 3.1.2-1 summarizes the uses of other chemicals used in plant processes, and the expected maximum quantity of chemical end products.

Table 3.1.2-2 shows the expected chemical concentrations of the effluent in the river after mixing.

3.2 Land Management

3.2.1 Power Plant Site - The site shall be appropriately landscaped as allowed by completion of construction. All areas which are either unpaved or not committed for specific purposes will be provided with appropriate vegetative cover.

3.2.2 Transmission Line Right-of-Way Maintenance

Objective

The sole purpose of this section is to provide reporting requirements (to USNRC) on herbicide usage, if any, for purposes of right-of-way maintenance regarding only those transmission lines under USNRC's jurisdiction for the Browns Ferry Nuclear Plant.

Specification

A statement as to whether or not herbicides have been used in maintaining rights of way for those transmission lines associated with the Browns Ferry Nuclear Plant shall be provided. If herbicides have been used, a description of the types, volumes, concentrations, manners and frequencies of application, and miles of right of way that have been treated shall be included.

Reporting Requirements

Information as specified above shall be provided in the annual environmental operating report.

Bases

Vegetation growth on a transmission line right of way must be controlled in such a manner that it will neither interfere with safe and reliable operation of the line nor impede restoration of service when outages occur. Vegetation growth is controlled by mechanical cutting and the limited use of herbicides. Selected chemicals approved by EPA for use as herbicides are assigned (by EPA) label instructions which provide guidance on and procedures for their use.

3.3 Onsite Meteorological Monitoring

The onsite meteorological monitoring program measures and documents meteorological conditions at the site, specifically at heights above ground that allow reasonable estimates of atmospheric dispersion conditions for airborne plant effluents. The onsite program shall conform to the recommendations and intent of Regulatory Guide 1.23, Onsite Meteorological Programs (February 1972), and include instruments to sense wind speed and direction at 10m, 46m, and 91m; to allow calculation of vertical temperature gradient between 10m and 46m and between 10m and 91m; and to measure ambient temperature and dew point at 10m. The location of the meteorological tower is as specified in Section 2.3.7 of the Browns Ferry Nuclear Plant Final Safety Analysis Report (see Amendment 63). A quality assurance program shall be in effect for all meteorological measurements and observations.

Meteorological data shall be summarized and reported consistent with the recommendations of Regulatory Guide 1.21 (June 1974) and Regulatory Guide 1.23 (February 1972), and meteorological observations shall be recorded in a form consistent with National Weather Service procedures.

If the outage of any meteorological instrument(s) required by Regulatory Guide 1.23 (February 1972) exceeds seven consecutive days, the total outage time, the dates of outage, the cause of the outage, and the instrument(s) involved shall be reported within 30 days of the initiation of the outage to the USNRC, Office of Inspection and Enforcement, with a copy to the Office of Nuclear Reactor Regulation, Division of Operating Reactors. Elements of this program may be modified or terminated in accordance with Subsection 5.6.3(c).

The collection of meteorological data at the plant site provides information for use in developing atmospheric diffusion parameters for estimating potential radiation doses to the public resulting from actual routine or abnormal releases of radioactive materials to the atmosphere, and for assessing the actual impact of the plant cooling system on the atmospheric environment of the site area. A meteorological data collection program as described above is necessary to meet the requirements of subparagraph 50.36a(a)(2) of 10 CFR Part 50, Appendix D to 10 CFR Part 50, and Appendix E to 10 CFR Part 50.

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, in accordance with Subsection 5.6.3(c).

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 problems and provide solutions 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 and suspended). All analyses will be performed using standard documented analytical procedures for water quality analysis. Details of the analytical procedures are on file in the office of 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 environmental 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 applicable standards will help to assure satisfactory water quality conditions within Wheeler Reservoir.

Monitoring will be performed using standard accepted sampling procedures which are on file in the office of the Division of Forestry, Fisheries, and Wildlife Development, Norris, Tennessee.

Reporting Requirement

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

Bases

A significant proportion of the river flow will be routed through the plant for cooling purposes, and during periods when larval fish 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

Once each week, fish which have been impinged on operating intake screens over the preceding 24 hours shall be estimated. The impinged fish 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.

During extended periods of extremely cold weather it may be impossible to estimate the impingement of fish on some or all of the plant intake screens due to icing. When such a situation occurs, the fish impingement reports (quarterly and annual) shall state which data have not been obtained. The 24-hour and 10-day non-routine reporting requirements of Section 5.6.3.b shall not apply for this condition.

Reporting Requirements

Five copies of a quarterly 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 Director of Division of Operating Reactors within 30 days following the end of each calendar quarter. The report shall include tabulated impingement data by screen and a summary of any specific studies or investigations which TVA is conducting to evaluate the significance of impingement losses or techniques for reducing these losses. A copy will be sent to TVA's Division of Forestry, Fisheries, and Wildlife Development for review and assessment. A summary of the impingement data (with the estimated total annual impingement per unit for each of the seven specified fish groups) shall be included in the annual nonradiological environmental 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.

4.1.3 Special Studies

Objective

To demonstrate the adequacy of weekly sampling of chlorine residual during chlorination of the auxiliary raw cooling water systems by demonstrating that chlorine residual in auxiliary raw cooling water (RCW) systems remains relatively constant during chlorination.

Specification

TVA will perform special studies during the first two periods (including a spring and a fall period) of chlorination of the RCW systems after September 1975, which are of at least 3 weeks' duration. During the special studies period when the RCW systems are being chlorinated, samples will be taken daily from the RCW systems and analyzed for chlorine residual. Records of the daily sampling and analyses will be maintained and submitted to the NRC staff for their review following the end of the special study period. Chlorine feed rate and equivalent RCW concentration will be reported for the special studies period.

Sampling during the special study period will be considered to satisfy the monitoring requirements of Section 2.2.2 of the environmental technical specifications.

4.2 Radiological Environmental Monitoring Program

Objective

An environmental radiological monitoring program is conducted to verify projected or anticipated radioactivity concentrations and related public exposures.

Specification

An environmental monitoring program shall be conducted as described below at locations indicated in Figures 4.2-1, 4.2-2, and 4.2-3 and Tables 4.2-1, 4.2-2, 4.2-3, and 4.2-4, with sampling and analysis frequencies given in Table 4.2-1. Analytical techniques used shall be such that the detection capabilities in Table 4.2-5 are achieved.

1. Atmospheric Monitoring

   a. The atmospheric monitoring network is divided into three subgroups consisting of 11 monitoring stations. Five local monitors are located on or adjacent to the plant site, as shown in Figure 4.2-1. The four perimeter and two remote monitoring stations are shown on Figure 4.2-2. Atmospheric and terrestrial monitoring station locations for Browns Ferry Nuclear Plant are listed in Table 4.2-2.

      Each monitor shall be capable of continuously sampling air at regulated flow of approximately three cubic feet per minute through a particulate filter. In series with, but downstream of, the particulate filter is a charcoal filter used to collect iodine.

Each monitor has a collection apparatus to obtain rainwater on a continuous basis and a horizontal platform that is covered with gummed acetate to catch and hold heavy particulate fallout.

Each local monitor shall be equipped with a G-M tube located next to the particulate filter. The data from this detector are recorded on stripchart recorders located at the station and in the plant control room.

Thermoluminescent dosimeters shall be used to record gamma radiation levels at each remote and perimeter station (Figure 4.2-2) and at nine stations near the site boundary as shown in Figure 4.2-1. The TLD's shall be processed quarterly.

b. The particulate filters shall be removed weekly from each monitoring station and analyzed for gross beta activity. In addition, the filters for each station shall be composited monthly and quantitatively and qualitatively analyzed for at least 10 specific gamma-emitting radionuclides.*

The charcoal filters shall be removed weekly from each station and analyzed for ^{131}I.

Rainwater shall be collected monthly when available from each station and each sample is analyzed for at least 10 specific gamma-emitting radionuclides*, and tritium.

Gummed paper shall be changed monthly, ashed and the gross beta activity shall be determined.

2. Reservoir Monitoring

a. River water shall be sampled automatically from the locations shown in Table 4.2-3 and Figure 4.2-3.

b. Samples shall be collected automatically and analyzed monthly from three points on the Tennessee River. The samples shall be analyzed for at least 10 specific gamma-emitting radionuclides*, and shall be composited quarterly for tritium, ^{89}Sr and ^{90}Sr analyses.

Samples of sediment, clams, and a representative commercial and a representative game species of fish shall be collected at least semiannually from the locations noted in Table 4.2-3 and Figure 4.2-3. Plankton is collected in at least one of the two quarters of greatest plankton abundance during the year at the locations noted in Table 4.2-3 and Figure 4.2-3. Sediment, clam shells, fish, and when quantities are sufficient, plankton and clam flesh will be analyzed for at least 10 gamma-emitting radionuclides*. Strontium 89 and 90 content shall be determined in sediment and clam shells.

*The laboratory is presently gamma scanning a sample both quantitatively and qualitatively for the following radionuclides: ^{137}Cs, ^{134}Cs, $^{103,106}Ru$, $^{141,144}Ce$, ^{95}Zr, ^{95}Nb, ^{140}Ba-^{140}La, ^{131}I, ^{40}K, ^{60}Co, ^{58}Co, ^{54}Mn, ^{51}Cr, and ^{65}Zn.

3. Terrestrial Monitoring

a. Soil shall be collected at least once every three years from an area near the atmospheric monitors mentioned in paragraph 4.2.1.a, as indicated in Table 4.2-1 and Figures 4.2-1 and 4.2-2. Each sample shall be analyzed for at least 10 gamma-emitting radionuclides, ^{89}Sr and ^{90}Sr.

b. Milk shall be collected monthly when animals are off pasture, from at least four farms in the vicinity of the plant and analyzed as indicated in Table 4.2-1 and Figure 4.2-1.

During the seasons that animals producing milk for human consumption are on pasture, samples of fresh milk will be obtained* from these animals at representative locations that may be significantly affected by emissions from the Browns Ferry Nuclear Plant, and analyzed for their radioiodine content, calculated as iodine-131. Analysis will be carried out within eight days (one I-131 half life) of sampling. Suitable analytical procedures will be used to determine the radioiodine concentration to a sensitivity of 1.5 picocurie per liter of milk at the time of sampling. For activity levels at or above 1.5 picocurie per liter, overall error of the analysis will be within ±25%. Results will be reported as picocuries of I-131 per liter of milk at the time of sampling, in accordance with Reporting Requirements for Environmental Radiological Monitoring.

If the census of animals producing milk for human consumption indicates that an animal exists in an area where the calculated dose is ≥45 mrem/yr (for the site) and the owner of the animal will not sell the milk to TVA for analysis, green leafy vegetables or other vegetation will be obtained from that location for analysis for I-131. The analysis and subsequent calculations will determine the dose to the individuals consuming the milk.

A census of animals producing milk for human consumption shall be conducted at the beginning and at the middle of the grazing season to determine their locations and number with respect to the site. The census shall be conducted under the following conditions:

1. Within a 1-mile radius from the plant site or within the 45 mrem/yr isodose line (for the three reactors onsite), whichever is larger, enumeration by a door-to-door or equivalent counting technique.

2. Within a 5-mile radius for cows and for goats, enumeration by using referenced information from county agricultural agents or other reliable sources.

*Milk samples will be collected and analyzed weekly in areas where the calculated dose to a child's thyroid exceeds 15 mrem/year/reactor. Sampling and analysis will be conducted semimonthly in areas where the dose is calculated to be ≤15 mrem/year reactor. The calculational model as published in Regulatory Guide 1.109 and Regulatory Guide 1.111 shall be used.

5.0 ADMINISTRATIVE CONTROLS

Objective

This section describes the administrative and management controls established to provide continuing protection to the environment and to implement the environmental technical specifications. Measures to be specified in this section include the assignment of responsibilities, organizational structure, operating procedures, review and audit functions, and reporting requirements.

Specifications

5.1 Responsibility

5.1.1 The power plant superintendent has responsibility for operating the plant within the limiting conditions for operation (LCO).

5.1.2 The Director, Division of Environmental Planning, is responsible for the environmental monitoring program outside the plant.

5.2 Organization

5.2.1 The organization of TVA management which directly relates to operation of the plant is shown on Figure 5.2-1.

5.2.2 The principal divisions within TVA which are concerned with environmental matters related to nuclear power plant operation are the Division of Power Production (DPP), Division of Forestry, Fisheries, and Wildlife Development (FFWD), Division of Power Resource Planning (DPRP), and the Division of Environmental Planning (DEP). The DPP and DPRP are in the Office of Power. The Office of Power Quality Assurance and Audit Staff is a special staff within the Office of Power. The Office of Power, DEP, and FFWD report to the General Manager. This is depicted in Figure 5.2-2.

5.3 Review and Audit

5.3.1 The Director, DEP, is responsible for review of plant operation related to LCO to insure that plant operation is being conducted within the limits defined in Section 2 of this document.

5.3.2 The Office of Power Quality Assurance and Audit Staff shall conduct a periodic audit of the environmental monitoring program at least once per calendar year.

5.3.3 The DPRP and/or DEP shall review and contribute to the following items:

a. Preparation of the proposed environmental technical specifications.

b. Coordination of environmental technical specification development with the safety technical specifications to avoid conflicts and maintain consistency.

c. Proposed changes to the environmental technical specifications and the evaluated impact of the change.

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

e. Proposed changes or modifications to plant systems or equipment which could significantly 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. 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 DEP will conduct an independent investigation of the incident. This investigation shall consist of the circumstances leading to and resulting from the situation together with recommendations to prevent a recurrence. The results of the investigation shall be reported to the Director, DPP.

5.4.3 Notification of the Director of the Regional Regulatory Operations Office, Region II of NRC within 24 hours shall be made as specified in Section 5.6.3. Reporting requirements for this paragraph are described in Section 5.6.3.

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 (or his designee) and adhered to.

5.5.2 Detailed written procedures for the environmental monitoring program outside the plant, including check-off lists, where applicable, shall be prepared, receive appropriate administrative approval and be adhered to.

A quality control program for the radiological environmental monitoring program has been established with the Alabama Department of Public Health Administration Laboratory and the Environmental Protection Agency, Montgomery, Alabama. Samples of air, water, milk, and vegetation collected around the BFNP are forwarded to these laboratories for analysis; and results are exchanged for comparison.

An internal quality control program for the radiological environmental monitoring program is being conducted whereby roughly one tenth of all samples are analyzed in duplicate. A quality control program is conducted with the Environmental Protection Agency in Las Vegas in which spiked samples are analyzed and the results compared.

5.5.3 All procedures described in Section 5.5.1 and all changes thereto shall be reviewed and approved prior to implementation and on an annual basis 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 following the end of each 12-month period of operation, which shall summarize the results of the nonradiological environmental monitoring program.

5.6.2 Routine Reporting

a. A summary report shall be prepared for both the inplant monitoring program and the nonradiological monitoring programs and submitted to the Director of Division of Operating Reactors, NRC, as part of the Annual Operating Report within 120 days after December 31 of each year.

b. Radiological Environmental Monitoring

Routine Reporting

Reporting Requirements:

1. TVA shall prepare a report entitled "Environmental Radioactivity Levels - Browns Ferry Nuclear Plant - Annual Report." The report shall cover the previous 12 months of operation and shall be submitted to the Director of the NRC Region II Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 120 days after January 1 of each year. The report format shown in Regulatory Guide 4.8 Title 1 shall be used. The report shall include summaries, interpretations, and evaluations of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies and/or operational controls (as appropriate), and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

2. Results of all radiological environmental samples taken shall be summarized and tabulated on an annual basis. In the event that some results are not available within the 120-day period, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

5.6.3 Non-Routine Reports

a. Radiological

Anomalous Measurements

1. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds ten times the control station value, a written notification will be submitted within one week advising the NRC of this condition.* This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

2. If, during any 12-month report period, a measured level of radioactivity in any environmental medium other than those associated with gaseous radioiodine releases exceeds four times the control station value, a written notification will be submitted within 30 days advising the NRC of this condition. This notification should include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

3. If individual milk samples show I-131 concentrations of 10 picocuries per liter or greater, a plan shall be submitted within 10 days advising the NRC of the proposed action to ensure the plant related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

4. If milk samples collected over a calendar quarter show average concentrations of 6.0 picocuries per liter or greater, a plan shall be submitted within 30 days advising the NRC of the proposed action to ensure the plant-related annual doses will be within the design objective of 15 mrem/yr/reactor to the thyroid of any individual.

*In the case of a tentatively anomalous value for radiostrontium, a confirmatory reanalysis of the original, a duplicate or a new sample may be desirable. In this instance the results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, and if the high value is real, the report to the NRC shall be submitted within one week following this analysis.

5. If such levels as discussed in 5.6.3(a)3 and 5.6.3(a)4 can be definitely shown to result from sources other than the Browns Ferry Nuclear Plant, the reporting action called for in 5.6.3(a)3 and 5.6.3(a)4 need not be taken. Justification for assigning high levels of radioactivity to sources other than the Browns Ferry Nuclear Plant must be provided in the annual report.

b. Nonradiological

In the event a limiting condition for operation is exceeded or an unusual event with a potential for a significant environmental impact occurs, a report shall be made within 24 hours by telephone or telegraph to the Director of the Regional Office of Inspection and Enforcement, Region II, followed by a written report within 10 days to the Director of the Regional Office of Inspection and Enforcement, Region II (copy to the Director of Division of Operating Reactors).

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 NRC, a request for the change shall be made to the NRC before implementation.

2. Changes or additions to permits and certificates required for the protection of the environment shall be reported. When the required changes are submitted to the concerned agency for approval, they shall also be submitted to the Director, Division of Operating Reactors, USNRC, for information.

3. Requests for changes in environmental technical specifications shall be submitted to the Director, Division of Operating Reactors, USNRC, for prior review and authorization.

5.7 Environmental Records

5.7.1 Operational information concerning the inplant portion of the environmental technical specifications shall be kept by DPP in a manner convenient for review. This includes plant records and/or logs as indicated below:

a. Related plant operations

b. Related maintenance activities

c. LCO violation

d. Updated, corrected, and as-built drawings of the plant

Item (a) through (c) above shall be retained for a period of at least six years and item (d) shall be retained for the life of the plant.

5.7.2 Records and/or logs shall be maintained by DEP and/or DWM in a manner convenient for review. This information concerning the environmental monitoring program is indicated below:

a. Checks, inspections, tests, and calibration of components and systems.

b. Principal maintenance activities associated with environmental monitoring equipment and systems.

c. Results of environmental monitoring surveys related to BFNP.

Items (a) and (b) shall be retained for a period of at least six years and item (c) shall be retained for the life of the plant.

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. 36 to Facility Operating License No. DPR-33, Amendment No. 33 to Facility Operating License No. DPR-52 and Amendment No. 10 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, Units Nos. 1, 2 and 3, (the facility) located in Limestone County, Alabama. The amendments are effective as of the date of issuance.

These amendments revise the provisions in the Environmental Technical Specifications with respect to reporting requirements on transmission line right-of-way maintenance and fish impingement, clarifies minor administrative details and deletes reference to the internal divisions within TVA responsible for implementation of the Technical Specifications.

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 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 October 28, 1977, (2) Amendment No. 36 to License No. DPR-33, Amendment No. 33 to License No. DPR-52, and Amendment No. 10 to License No. DPR-68, and (3) the Commission's letter to the licensee dated March 28, 1978. 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 28 day of March 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors