

Docket Nos. 50-259
and 50-260

NOV 14 1975

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

Gentlemen:

The Commission has issued the enclosed Amendments No. 17 and 14 to Facility Licenses No. DPR-33 and DPR-52 for the Browns Ferry Nuclear Plant, Units 1 and 2. These amendments are in response to your request of November 5, 1975, for authorization to plug the bypass flow holes in the lower core support plate and drill holes in the fuel assembly lower tie plates.

The amendments authorize the plugging modification but do not authorize the drilling of the fuel assembly lower tie plates nor operation under any condition. These latter items are still under review and will be the subject of another licensing action..

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

Sincerely,

Original signed by
R. A. Purple

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

Enclosures:

1. Amendment No. 17 to DPR-33
2. Amendment No. 14 to DPR-52
3. Safety Evaluation
4. Federal Register Notice

cc w/enclosures:
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Tennessee Valley Authority

NOV 14 1975

cc w/enclosures:

Robert H. Marquis
General Counsel
629 New Sprankle Building
Knoxville, Tennessee 37919

Athens Public Library
South and Forrest
Athens, Alabama 35611

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

cc w/enclosures and incoming:

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

Mr. Dave Hopkins
Environmental Protection Agency
1421 Peachtree Street, NE.
Atlanta, Georgia 30309

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 17
License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated November 5, 1975, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.
2. Accordingly, add Paragraph 2.C.(5) to Facility License No. DPR-33 to read as follows:

"2.C.(5) The facility may be modified by plugging the bypass flow holes in the lower core support plate as described in Browns Ferry Nuclear Plant Units 1 and 2 Safety Analysis Report

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for Plant Modifications to Eliminate Significant In-Core Vibrations (NEEC-21091), October 1975. The reactor shall not be operated with the plugs installed in the lower core support plate bypass flow holes without further authorization by the NRC."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple

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

Date of Issuance: NOV 14 1975

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 14
License No. DPR-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated November 5, 1975, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.
2. Accordingly, add Paragraph 2.C.(5) to Facility License No. DPR-52 to read as follows:

"2.C.(5) The facility may be modified by plugging the bypass flow holes in the lower core support plate as described in Browns Ferry Nuclear Plant Units 1 and 2 Safety Analysis Report

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for Plant Modifications to Eliminate Significant In-Core Vibrations (NEEC-21091), October 1975. The reactor shall not be operated with the plugs installed in the lower core support plate bypass flow holes without further authorization by the NRC."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple

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

Date of Issuance: NOV 14 1975

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 1⁷ TO FACILITY OPERATING LICENSE NO. DPR-33
AND AMENDMENT NO. 1⁴ TO FACILITY OPERATING LICENSE NO. DPR-52

BROWNS FERRY NUCLEAR PLANT UNITS 1 AND 2

TENNESSEE VALLEY AUTHORITY

DOCKET NOS. 50-259 AND 50-260

Introduction

By letter dated November 5, 1975, Tennessee Valley Authority (TVA) submitted a safety analysis in support of proposed plant modifications to eliminate in-core vibrations at Browns Ferry Nuclear Plant (BFNP) Units 1 and 2. Although TVA concluded that the proposed modifications did not involve an unreviewed safety question, they requested that, if the Nuclear Regulatory Commission (NRC) disagreed, the submittal be considered as an application for amendment to Facility Operating License Nos. DPR-33 and DPR-52 for the BFNP Units 1 and 2.

Discussion

The submittal proposed plant modifications which consisted of plugging the bypass flow holes in the lower core support plate and drilling holes in the fuel assembly lower tie plates. However, due to a delay in the availability of the required drilling equipment, full implementation of the proposed modifications has also been delayed. Since the plugging modification is scheduled for November 15, 1975, this amendment to authorize plugging only is being taken at this time. The drilling of holes in the fuel assembly lower tie plates, and operating of the facility with plugged holes in the lower core support plate and drilled holes in the fuel assembly lower tie plates, is still under review.

Evaluation

The plug consists of five basic parts, as shown in Figure 1. Identical plugs have previously been installed at Vermont Yankee, Pilgrim, Cooper, and Duane Arnold. The body provides a means of guiding the device into the bypass flow holes as well as a shoulder to support the plug and form a seal against water flow. The shaft extends through the body. A knob

is provided at the top of the shaft to provide a means of grabbing the plug during installation and extraction. At the bottom, the latch is attached to the shaft by a pin. The latch is free to rotate during installation. The spring acts against the body and shaft during normal operation to provide the force necessary to offset the pressure differential acting on the body.

During installation, the plug has its latch rotated 90 degrees from its installed position and withdrawn and locked in the body. The shaft is gripped by the installation tool, and the plug is inserted into the bypass flow holes. The body engages the rim of the hole. The shaft is pushed to its full extension, thus lowering and unlocking the latch below the underside of the core plate. The latch then rotates 90 degrees and bears on the bottom of the core plate. After insertion, the plug is pulled with about 30-pound force to test the placement. All fuel has been removed from Units 1 and 2. Therefore, the plugging operation involves no risk of fuel assembly damage and fission product release.

The plug can be removed by gripping the top of the shaft with an extracting tool and applying a force of about 500 pounds. The latch's legs will be plastically deformed and the entire plug withdrawn. The plugs previously installed at Vermont Yankee were removed with no abnormalities or loose pieces reported. The force required for removal varied from 500 to 1300 pounds.

Based on a review of the design, the installation methods and the previously successful operating experience at Vermont Yankee, Pilgrim, and Duane Arnold, we conclude that the plugs can be installed without damage to core components, that they will not fail during operation so as to result in loose parts in the core or result in unplugging of the bypass flow holes, and that they can be removed, if necessary, without damage to core components. The modification is thus reversible.

Accordingly, we conclude that the installation of the plugs is acceptable. The present license amendments, which authorize plugging of the core lower support plate bypass holes, do not authorize operation of the facility with these holes plugged. Such operation is not presently intended by the licensee and would be the subject of a separate licensing action if such operation is proposed. It is presently TVA's intention to complete the drilling modification, subsequent to our approval, prior to return to operation. This modification also will be the subject of a separate licensing action.

Conclusion

We have concluded, based on the considerations discussed above, that:
(1) because the modification does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the modification does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by modification of the facility in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: NOV 14 1975

Safety Evaluation
Supporting Amendments
No. 17 and 14 to Facility
Operating Licenses DPR-33
and DPR-52

Date: NOV 14 1975

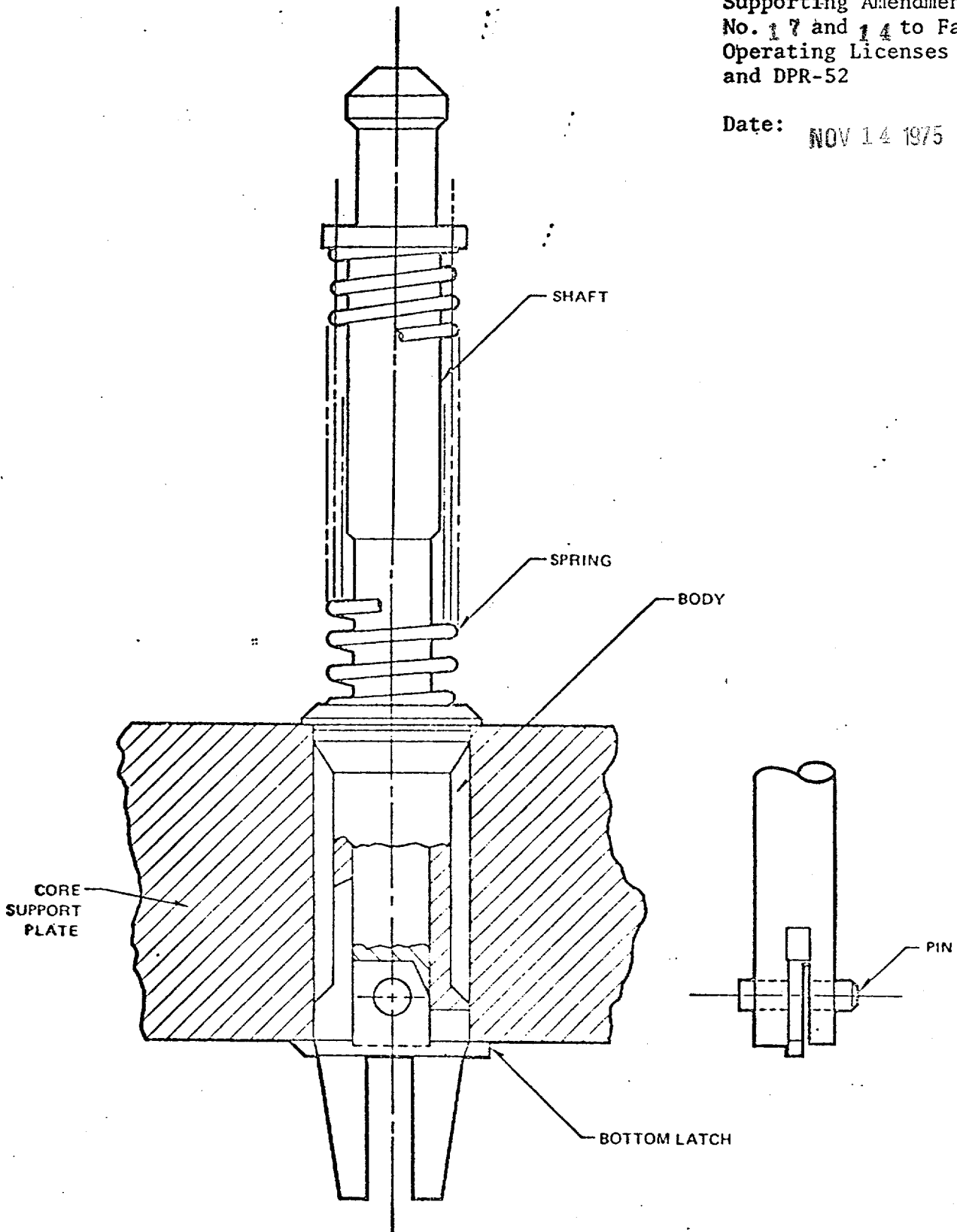


FIGURE 1 Plug Installed in Core Support Plate

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-259 AND 50-260

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 17 to Facility Operating License No. DPR-33 and Amendment No. 14 to Facility Operating License No. DPR-52 issued to Tennessee Valley Authority for operation of the Browns Ferry Nuclear Plant, Units 1 and 2, located in Limestone County, Alabama. The amendments are effective as of the date of issuance.

The amendments authorize the plugging of the bypass flow holes in the lower core support plate. The amendments do not authorize operation of the plant which will be the subject of another licensing action.

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

For further details with respect to this action, see (1) the application for amendments dated November 5, 1975, (2) Amendment No. 17 to License No. DPR-33 and Amendment No. 14 to License No. DPR-52, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Athens Public Library, South and Forrest, Athens, Alabama 35611.

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

Dated at Bethesda, Maryland, this **NOV 14 1975**

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by

R. A. Purple

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

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