APRIL 4 1978

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BHarless
JMcGough
JSaltzman

Docket Nos. 50-280
and 50-281

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
Post Office Box 26666
Richmond, Virginia 23261

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 39 and 38 to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications in response to your application dated March 15, 1978, as supplemented April 4, 1978.

These amendments revise the Technical Specifications to reduce the axial flux difference to within ±5% of its target value and provide a revised set of Design Condition I Axial Peaking Factors, Table TS 3.12-1B for Surry Unit 2.

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

Sincerely,

Original signed by

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 39 to DPR-32
2. Amendment No. 38 to DPR-37
3. Safety Evaluation
4. Notice

cc w/encl:
See next page

Const I

OFFICE	DOR:ORB#1	OELD	DOR:ORB#1	DOR/BS		
SURNAME	DNeighbors:lb		ASchwencer	R. BAER		
DATE	4/4/78	4/5/78	4/6/78	4/4/78		

NRC FORM 318 (9-76) NRCM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

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

April 4, 1978

Docket Nos. 50-280
and 50-281

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
Post Office Box 26666
Richmond, Virginia 23261

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 39 and 38 to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications in response to your application dated March 15, 1978, as supplemented April 4, 1978.

These amendments revise the Technical Specifications to reduce the axial flux difference to within ±5% of its target value and provide a revised set of Design Condition I Axial Peaking Factors, Table TS 3.12-1B for Surry Unit 2.

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

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 39 to DPR-32
2. Amendment No. 38 to DPR-37
3. Safety Evaluation
4. Notice

cc w/encl:
See next page

cc: Mr. Michael W. Maupin
Hunton & Williams
Post Office Box 1535
Richmond, Virginia 23213

Swem Library
College of William & Mary
Williamsburg, Virginia 23185

Mr. Sherlock Holmes, Chairman
Board of Supervisors of Surry
County
Surry County Courthouse, Virginia 23683

Commonwealth of Virginia
Council on the Environment
903 Ninth Street Office Building
Richmond, Virginia 23219

Mr. James R. Wittine
Commonwealth of Virginia
State Corporation Commission
Post Office Box 1197
Richmond, Virginia 23209

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

U.S. Environmental Protection Agency
Region III Office
ATTN: EIS COORDINATOR
Curtis Building - 6th Floor
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-32

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

   A. The application for amendment by Virginia Electric & Power Company (the licensee) dated March 15, 1978, as supplemented April 4, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

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

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

"B. Technical Specifications

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

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

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 4, 1978

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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-37

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

   A. The application for amendment by Virginia Electric & Power Company (the licensee) dated March 15, 1978, as supplemented April 4, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authrized 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 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

"B. Technical Specifications

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

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

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 4, 1978

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 39 TO DPR-32

AMENDMENT NO. 38 TO DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove pages 3.12-5, 3.12-20 and Table 3.12-1B and insert revised identical pages.

3. The reference equilibrium indicated axial flux difference (called the target flux difference) at a given power level P_o, is that indicated axial flux difference with the core in equilibrium xenon conditions (small or no oscillation) and the control rods more than 190 steps withdrawn. The target flux difference at any other power level, P, is equal to the target value of P multiplied by the ratio, P/P_o. The target flux difference shall be measured at least once per equivalent full power quarter. The target flux difference must be updated during each effective full power month of operation either by actual measurement, or by linear interpolation using the most recent value and the value predicted for the end of the cycle life.

4. Except during physics tests, during excore detector calibration and except as modified by 3.12.B.4.a, b, or c below, the indicated axial flux difference shall be maintained within a +6 to -9% band about the target flux difference (defines the target band on axial flux difference) for Unit 1 and within ±5% band for Unit 2.

   a. At a power level greater than 90 percent of rated power, if the indicated axial flux difference deviates from its target band, the flux difference shall be returned to the target band, or the reactor power shall immediately be reduced to a level no greater than 90 percent of rated power.

   b. At a power level no greater than 90 percent of rated power,

      (1) The indicated axial flux difference may deviate from its target band for a maximum of one hour (cumulative) in any 24 hour period provided the flux difference does not exceed an envelope bounded

The technical specifications on power distribution control given in 3.12.B.4 together with the surveillance requirements given in 3.12.B.2.b assure that the Limiting Condition for Operation for the heat flux hot channel factor is met.

The target (or reference) value of flux difference is determined as follows. At any time that equilibrium xenon conditions have been established, the indicated flux difference is noted with the full length rod control bank more than 190 steps withdrawn (i.e. normal full power operating position appropriate for the time in life, usually withdrawn farther as burnup proceeds). This value, divided by the fraction of full power at which the core was operating is the full power value of the target flux difference. Values for all other core power levels are obtained by multiplying the full power value by the fractional power. Since the indicated equilibrium value was noted, no allowances for excore detector error are necessary and indicated deviation of +6 to -9% ΔI for Unit 1 and ±5% ΔI for Unit 2 are permitted from the indicated reference value. During periods where extensive load following is required, it may be impractical to establish the required core conditions for measuring the target flux differences every month. For this reason, the specification provides two methods for updating the target flux difference.

Strict control of the flux difference (and rod position) is not as necessary during part power operation. This is because xenon distribution control at part power is not as significant as the control at full

SURRY UNIT 2

CYCLE 4

CORE HEIGHT (FEET)	$F_Z(Z)$
1.5	1.236
2.0	1.266
2.5	1.269
3.0	1.307
3.5	1.338
4.0	1.356
4.5	1.364
5.0	1.362
5.5	1.354
6.0	1.338
6.5	1.324
7.0	1.302
7.5	1.269
8.0	1.225
8.5	1.175
9.0	1.201
9.5	1.219
10.0	1.214
10.5	1.163

TABLE 3.12-1B: DESIGN CONDITION I AXIAL PEAKING FACTORS, $F_Z(Z)$ VS. CORE HEIGHT FOR SURRY 2

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 39 AND 38 TO

FACILITY OPERATING LICENSE NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC & POWER COMPANY

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-280 AND 50-281

Introduction

By letter dated March 15, 1978, as supplemented April 4, 1978, Virginia Electric & Power Company (the licensee) proposed to amend Facility Operating License Nos. DPR-32 and DPR-37 to change the Surry Power Station Technical Specifications. This proposed change would reduce the allowable axial flux difference operating band from +6 to -9% to ±5% and provide a revised set of Design Condition I Axial Peaking Factors, $F_Z(Z)$ vs. Core Height, Table TS 3.12-1B for Surry Unit 2. These peaking factors are used in Technical Specification 3.12.B.2.b to determine the threshold power level at which movable incore detector surveillance of the core peaking factor is initiated.

Evaluation

The licensee has provided the results of an analysis of 18 cases of load follow measures performed with the ±5% axial flux difference operating band. This analysis produces a bounding value of the axial peaking factor as a function of core height for the conditions assumed in the analysis. The present analysis used the same assumptions as used for the analysis approved for cycle 4 during the reload analysis except for the reduction in axial flux difference operating band to ±5%. The reason the axial peaking factors produced by the analysis are considered bounding is that the types of load following maneuvers covered by the 18 cases are more severe in terms of producing Xenon transients and consequent peaking factor increases than would be encountered in actual operation of the power plant.

The licensee has performed an analysis specifically approved in Standard Review Plan,Core Performance Branch Position 4.3, 1975, to allow changes in the axial flux difference operating band or peaking factor. Also, in this particular case, reduction of the axial flux difference operating band is more restrictive to the licensee in terms of operating convenience. This reduction in the axial flux difference operating band allows a reduction in the axial peaking factor which in turn produces a slightly higher threshold power level for initiation of axial peaking factor surveillance. The fact that axial peaking factor surveillance or the approved constant axial offset control monitoring procedures will be in effect assures peaking factor limits assumed as initial conditions for the LOCA analysis remain protected. Thus this Technical Specification change results in no reduction of safety margin.

Based on our review of the proposed change, we find it acceptable.

Environmental Consideration

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level, and will not result in any significant environmental impact. Having made this determination, we have further concluded that 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 impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

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

Date: April 4, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC & POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 39 and 38 to Facility Operating License Nos. DPR-32 and DPR-37, issued to Virginia Electric & Power Company (the licensee), which revised Technical Specifications for operation of the Surry Power Station, Unit Nos. 1 and 2 (the facilities) located in Surry County, Virginia. The amendments are effective as of the date of issuance.

These amendments revise the Technical Specifications to reduce the axial flux difference to within ±5% of its target value and provide a revised set of Design Condition I Axial Peaking Factors, Table TS 3.12-1B for Surry Unit 2.

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 §515.(d)(4) an environmental impact statement, or negative

declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated March 15, 1978, as supplemented April 4, 1978, (2) Amendment Nos. 39 and 38 to License Nos. DPR-32 and DPR-37, 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 Swem Library, College of William and Mary, Williamsburg, Virginia. 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 4th day of April 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

NRC PDR

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

April 4, 1978

Docket Nos. 50-280
and 50-281

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
Post Office Box 26666
Richmond, Virginia 23261

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 39 and 38 to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications in response to your application dated March 15, 1978, as supplemented April 4, 1978.

These amendments revise the Technical Specifications to reduce the axial flux difference to within ±5% of its target value and provide a revised set of Design Condition I Axial Peaking Factors, Table TS 3.12-1B for Surry Unit 2.

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

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 39 to DPR-32
2. Amendment No. 38 to DPR-37
3. Safety Evaluation
4. Notice

cc w/encl:
See next page

cc: Mr. Michael W. Maupin
Hunton & Williams
Post Office Box 1535
Richmond, Virginia 23213

Swem Library
College of William & Mary
Williamsburg, Virginia 23185

Mr. Sherlock Holmes, Chairman
Board of Supervisors of Surry
County
Surry County Courthouse, Virginia 23683

Commonwealth of Virginia
Council on the Environment
903 Ninth Street Office Building
Richmond, Virginia 23219

Mr. James R. Wittine
Commonwealth of Virginia
State Corporation Commission
Post Office Box 1197
Richmond, Virginia 23209

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

U.S. Environmental Protection Agency
Region III Office
ATTN: EIS COORDINATOR
Curtis Building - 6th Floor
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-32

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

   A. The application for amendment by Virginia Electric & Power Company (the licensee) dated March 15, 1978, as supplemented April 4, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

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

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

"B. Technical Specifications

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

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

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 4, 1978

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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-37

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

   A. The application for amendment by Virginia Electric & Power Company (the licensee) dated March 15, 1978, as supplemented April 4, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authrized 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 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

"B. Technical Specifications

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

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

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 4, 1978

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 39 TO DPR-32

AMENDMENT NO. 38 TO DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove pages 3.12-5, 3.12-20 and Table 3.12-1B and insert revised identical pages.

3. The reference equilibrium indicated axial flux difference (called the target flux difference) at a given power level P_o, is that indicated axial flux difference with the core in equilibrium xenon conditions (small or no oscillation) and the control rods more than 190 steps withdrawn. The target flux difference at any other power level, P, is equal to the target value of P multiplied by the ratio, P/P_o. The target flux difference shall be measured at least once per equivalent full power quarter. The target flux difference must be updated during each effective full power month of operation either by actual measurement, or by linear interpolation using the most recent value and the value predicted for the end of the cycle life.

4. Except during physics tests, during excore detector calibration and except as modified by 3.12.B.4.a, b, or c below, the indicated axial flux difference shall be maintained within a +6 to -9% band about the target flux difference (defines the target band on axial flux difference) for Unit 1 and within ±5% band for Unit 2.

   a. At a power level greater than 90 percent of rated power, if the indicated axial flux difference deviates from its target band, the flux difference shall be returned to the target band, or the reactor power shall immediately be reduced to a level no greater than 90 percent of rated power.

   b. At a power level no greater than 90 percent of rated power,

      (1) The indicated axial flux difference may deviate from its target band for a maximum of one hour (cumulative) in any 24 hour period provided the flux difference does not exceed an envelope bounded

The technical specifications on power distribution control given in 3.12.B.4 together with the surveillance requirements given in 3.12.B.2.b assure that the Limiting Condition for Operation for the heat flux hot channel factor is met.

The target (or reference) value of flux difference is determined as follows. At any time that equilibrium xenon conditions have been established, the indicated flux difference is noted with the full length rod control bank more than 190 steps withdrawn (i.e. normal full power operating position appropriate for the time in life, usually withdrawn farther as burnup proceeds). This value, divided by the fraction of full power at which the core was operating is the full power value of the target flux difference. Values for all other core power levels are obtained by multiplying the full power value by the fractional power. Since the indicated equilibrium value was noted, no allowances for excore detector error are necessary and indicated deviation of +6 to -9% ΔI for Unit 1 and ±5% ΔI for Unit 2 are permitted from the indicated reference value. During periods where extensive load following is required, it may be impractical to establish the required core conditions for measuring the target flux differences every month. For this reason, the specification provides two methods for updating the target flux difference.

Strict control of the flux difference (and rod position) is not as necessary during part power operation. This is because xenon distribution control at part power is not as significant as the control at full

SURRY UNIT 2

CYCLE 4

CORE HEIGHT (FEET)	$F_Z(Z)$
1.5	1.236
2.0	1.266
2.5	1.269
3.0	1.307
3.5	1.338
4.0	1.356
4.5	1.364
5.0	1.362
5.5	1.354
6.0	1.338
6.5	1.324
7.0	1.302
7.5	1.269
8.0	1.225
8.5	1.175
9.0	1.201
9.5	1.219
10.0	1.214
10.5	1.163

TABLE 3.12-1B: DESIGN CONDITION I AXIAL PEAKING FACTORS, $F_Z(Z)$ VS. CORE HEIGHT FOR SURRY 2

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 39 AND 38 TO

FACILITY OPERATING LICENSE NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC & POWER COMPANY

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-280 AND 50-281

Introduction

By letter dated March 15, 1978, as supplemented April 4, 1978, Virginia Electric & Power Company (the licensee) proposed to amend Facility Operating License Nos. DPR-32 and DPR-37 to change the Surry Power Station Technical Specifications. This proposed change would reduce the allowable axial flux difference operating band from +6 to -9% to ±5% and provide a revised set of Design Condition I Axial Peaking Factors, $F_Z(Z)$ vs. Core Height, Table TS 3.12-1B for Surry Unit 2. These peaking factors are used in Technical Specification 3.12.B.2.b to determine the threshold power level at which movable incore detector surveillance of the core peaking factor is initiated.

Evaluation

The licensee has provided the results of an analysis of 18 cases of load follow measures performed with the ±5% axial flux difference operating band. This analysis produces a bounding value of the axial peaking factor as a function of core height for the conditions assumed in the analysis. The present analysis used the same assumptions as used for the analysis approved for cycle 4 during the reload analysis except for the reduction in axial flux difference operating band to ±5%. The reason the axial peaking factors produced by the analysis are considered bounding is that the types of load following maneuvers covered by the 18 cases are more severe in terms of producing Xenon transients and consequent peaking factor increases than would be encountered in actual operation of the power plant.

The licensee has performed an analysis specifically approved in Standard Review Plan,Core Performance Branch Position 4.3, 1975, to allow changes in the axial flux difference operating band or peaking factor. Also, in this particular case, reduction of the axial flux difference operating band is more restrictive to the licensee in terms of operating convenience. This reduction in the axial flux difference operating band allows a reduction in the axial peaking factor which in turn produces a slightly higher threshold power level for initiation of axial peaking factor surveillance. The fact that axial peaking factor surveillance or the approved constant axial offset control monitoring procedures will be in effect assures peaking factor limits assumed as initial conditions for the LOCA analysis remain protected. Thus this Technical Specification change results in no reduction of safety margin.

Based on our review of the proposed change, we find it acceptable.

Environmental Consideration

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that 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 impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

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

Date: April 4, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC & POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 39 and 38 to Facility Operating License Nos. DPR-32 and DPR-37, issued to Virginia Electric & Power Company (the licensee), which revised Technical Specifications for operation of the Surry Power Station, Unit Nos. 1 and 2 (the facilities) located in Surry County, Virginia. The amendments are effective as of the date of issuance.

These amendments revise the Technical Specifications to reduce the axial flux difference to within ±5% of its target value and provide a revised set of Design Condition I Axial Peaking Factors, Table TS 3.12-1B for Surry Unit 2.

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 §515.(d)(4) an environmental impact statement, or negative

declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated March 15, 1978, as supplemented April 4, 1978, (2) Amendment Nos. 39 and 38 to License Nos. DPR-32 and DPR-37, 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 Swem Library, College of William and Mary, Williamsburg, Virginia. 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 4th day of April 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors