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

July 26, 1977

DO NOT REMOVE

Posted
Am-31 to
DPR-37

Dockets Nos. 50-280
and 50-281

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

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 32 and 31 to Facility Operating Licenses Nos. DPR-32 and DPR-37 for the Surry Power Station, Units Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications for each license in response to your application dated March 23, 1977.

These amendments permit a brief outage period for the Boron Injection Tank recirculation flow path, while the reactors are operating, during which time the flow path may be serviced or repaired.

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

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:

1. Amendments Nos. 32 and 31
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

Virginia Electric & Power Company

cc w/enclosure(s):
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Mr. Sherlock Holmes, Chairman
Board of Supervisors of Surry County
Surry County Courthouse
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Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S.W.
Washington, D.C. 20460

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

Mr. James C. Dunstan
State Corporation Commission
Commonwealth of Virginia
Blandon Building
Richmond, Virginia 23209

cc w/enclosures and incoming
dtd: 3/23/77
Commonwealth of Virginia
Council on the Environment
903 9th Street. Office Building
Richmond, Virginia 23219



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.32
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 23, 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 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.

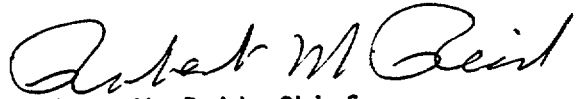
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.32 , 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



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 26, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 32

FACILITY OPERATING LICENSE NO. DPR-32

DOCKET NO. 50-280

Revise the Technical Specifications as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
3.2-2	3.2-2
3.2-3	3.2-3
3.2-5	3.2-5
3.3-1	3.3-1
3.3-2	3.3-2
3.3-5	3.3-5
3.3-9	3.3-9

Changes on the revised pages are shown by marginal lines.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.
5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

C. For two unit operation the reactor shall not be critical unless the following Chemical and Volume Control System conditions are met:

1. Two charging pumps shall be operable per unit.
2. Three boric acid transfer pumps shall be operable.
3. When the common tank is in service, it shall be assigned to only one unit at a time. For that unit which has usage of the common tank, the boric acid tanks (unit's tank plus common tank) together shall contain a minimum of 4200 gallons of at least 11.5% (but not greater than 13%) by weight boric acid solution at a temperature of at least 145°F.

For that unit which does not have usage of the common tank, the unit's own tank shall contain a minimum of 4200 gallons of at least 11.5% (but not greater than 13%) by weight boric acid solution at a temperature of at least 145°F.

When the common tank is assigned to one unit, valves shall be positioned to establish a flow path to that unit and prevent flow to the other unit.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.
5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

D. The requirements of Specifications B and C above may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored within the time period specified, the reactor shall be placed in the hot shutdown conditions. If the requirements of Specification 3.2.B and C are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.

1. One of the stipulated boric acid transfer pumps may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.
2. Two charging pumps may be inoperable subject to the provisions of Specification 3.3-B.
3. One heat tracing circuit may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.

tank is specified to maintain solution solubility at the specified low temperature limit of 145°F. For redundancy, two channels of heat tracing are installed on lines normally containing concentrated boric acid solution.

The Boric Acid Tank(s), which are located above the Boron Injection Tank(s), are supplied with level alarms, which would annunciate if a leak in the system occurred.

References

FSAR Section 9.1 Chemical and Volume Control System

3.3 SAFETY INJECTION SYSTEM

Applicability

Applies to the operating status of the Safety Injection System.

Objective

To define those limiting conditions for operation that are necessary to provide sufficient borated cooling water to remove decay heat from the core in emergency situations.

Specifications

A. A reactor shall not be made critical unless the following conditions are met:

1. The refueling water tank contains not less than 350,000 gal. of borated water with a boron concentration of at least 2000 ppm.
2. Each accumulator system is pressurized to at least 600 psia and contains a minimum of 1075 ft³ and a maximum of 1089 ft³ of borated water with a boron concentration of at least 1950 ppm.
3. The boron injection tank and isolated portion of the inlet and outlet piping contains no less than 900 gallons of water with a boron concentration equivalent to at least 11.5% to 13% weight boric acid solution at a temperature of at least 145°F. Additionally, recirculation between a unit's Boron Injection Tank and the Boric Acid Tank(s) assigned to the unit shall be maintained.

4. Two channels of heat tracing shall be available for the flow paths.
5. Two charging pumps are operable.
6. Two low head safety injection pumps are operable.
7. All valves, piping, and interlocks associated with the above components which are required to operate under accident conditions are operable.
8. The Charging Pump Cooling Water Subsystem shall be operating as follows:
 - a. Make-up water from the Component Cooling Water Subsystem shall be available.
 - b. Two charging pump component cooling water pumps and two charging pump service water pumps shall be operable.
 - c. Two charging pump intermediate seal coolers shall be operable.

24 hours. Prior to initiating repairs, all automatic valves in the redundant system shall be tested to demonstrate operability.

5. One channel of heat tracing may be inoperable for a period not to exceed 24 hours, provided immediate attention is directed to making repairs.
6. One charging pump component cooling water pumps or one charging pump service water pump may be out of service provided the pump is restored to operable status within 24 hours.
7. One charging pump intermediate seal cooler or other passive component may be out of service provided the system may still operate at 100 percent capacity and repairs are completed within 48 hours.
8. Power may be restored to any valve referenced in 3.3.A.9 and 3.3.A.10 for the purpose of valve testing or maintenance providing no more than one valve has power restored and provided that testing and maintenance is completed and power removed within 24 hours.
9. Power may be restored to any valve referenced in 3.3.A.11 for the purpose of valve testing or maintenance providing no more than one valve has power restored and provided that testing or maintenance is completed and power removed within 4 hours.
10. Recirculation between a unit's Boron Injection Tank and the Boric Acid Tank(s) assigned to the unit may be terminated for a period not to exceed two hours, provided all other parameters (temperatures, boron concentration, volume) of the Boron Injection Tank are within Specifications 3.3.A.3 and immediate attention is directed to making repairs.

Basis Cont.

The accumulators (one for each loop) discharge into the cold legs of the reactor coolant piping when Reactor Coolant System pressure decreases below accumulator pressure, thus assuring rapid core cooling for large breaks. The line from each accumulator is provided with a motorized valve to isolate the accumulator during reactor start-up and shutdown to preclude the discharge of the contents of the accumulator when not required. These valves receive a signal to open when safety injection is initiated.

To assure that the accumulator valves satisfy the single failure criterion, they will be blocked open by de-energizing the valve motor operators when the reactor coolant pressure exceeds 1000 psig. The operating pressure of the Reactor Coolant System is 2235 psig and safety injection is initiated when this pressure drops to 600 psig. De-energizing the motor operator when the pressure exceeds 1000 psig allows sufficient time during normal startup operation to perform the actions required to de-energize the valve. This procedure will assure that there is an operable flow path from each accumulator to the Reactor Coolant System during power operation and that safety injection can be accomplished.

The removal of power from the valves listed in the specification will assure that the systems of which they are a part satisfy the single failure criterion.

Continuous recirculation between the Boron Injection Tank and the Boric Acid Tank(s) ensures that a unit's Boron Injection Tank is full of concentrated boric acid at all times.



UNITED STATES
NUCLEAR REGULATORY COMM ON
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. 31
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 23, 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 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.

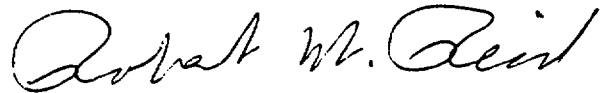
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 31, 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



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 26, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 31

FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NO. 50-281

Revise the Technical Specifications as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
3.2-2	3.2-2
3.2-3	3.2-3
3.2-5	3.2-5
3.3-1	3.3-1
3.3-2	3.3-2
3.3-5	3.3-5
3.3-9	3.3-9

Changes on the revised pages are shown by marginal lines.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.
5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

C. For two unit operation the reactor shall not be critical unless the following Chemical and Volume Control System conditions are met:

1. Two charging pumps shall be operable per unit.
2. Three boric acid transfer pumps shall be operable.
3. When the common tank is in service, it shall be assigned to only one unit at a time. For that unit which has usage of the common tank, the boric acid tanks (unit's tank plus common tank) together shall contain a minimum of 4200 gallons of at least 11.5% (but not greater than 13%) by weight boric acid solution at a temperature of at least 145°F.

For that unit which does not have usage of the common tank, the unit's own tank shall contain a minimum of 4200 gallons of at least 11.5% (but not greater than 13%) by weight boric acid solution at a temperature of at least 145°F.

When the common tank is assigned to one unit, valves shall be positioned to establish a flow path to that unit and prevent flow to the other unit.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.
5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

D. The requirements of Specifications B and C above may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored within the time period specified, the reactor shall be placed in the hot shutdown conditions. If the requirements of Specification 3.2.B and C are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.

1. One of the stipulated boric acid transfer pumps may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.
2. Two charging pumps may be inoperable subject to the provisions of Specification 3.3-B.
3. One heat tracing circuit may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.

tank is specified to maintain solution solubility at the specified low temperature limit of 145°F. For redundancy, two channels of heat tracing are installed on lines normally containing concentrated boric acid solution.

The Boric Acid Tank(s), which are located above the Boron Injection Tank(s), are supplied with level alarms, which would annunciate if a leak in the system occurred.

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FSAR Section 9.1 Chemical and Volume Control System

3.3 SAFETY INJECTION SYSTEM

Applicability

Applies to the operating status of the Safety Injection System.

Objective

To define those limiting conditions for operation that are necessary to provide sufficient borated cooling water to remove decay heat from the core in emergency situations.

Specifications

A. A reactor shall not be made critical unless the following conditions are met:

1. The refueling water tank contains not less than 350,000 gal. of borated water with a boron concentration of at least 2000 ppm.
2. Each accumulator system is pressurized to at least 600 psia and contains a minimum of 1075 ft³ and a maximum of 1089 ft³ of borated water with a boron concentration of at least 1950 ppm.
3. The boron injection tank and isolated portion of the inlet and outlet piping contains no less than 900 gallons of water with a boron concentration equivalent to at least 11.5% to 13% weight boric acid solution at a temperature of at least 145°F. Additionally, recirculation between a unit's Boron Injection Tank and the Boric Acid Tank(s) assigned to the unit shall be maintained.

4. Two channels of heat tracing shall be available for the flow paths.
5. Two charging pumps are operable.
6. Two low head safety injection pumps are operable.
7. All valves, piping, and interlocks associated with the above components which are required to operate under accident conditions are operable.
8. The Charging Pump Cooling Water Subsystem shall be operating as follows:
 - a. Make-up water from the Component Cooling Water Subsystem shall be available.
 - b. Two charging pump component cooling water pumps and two charging pump service water pumps shall be operable.
 - c. Two charging pump intermediate seal coolers shall be operable.

24 hours. Prior to initiating repairs, all automatic valves in the redundant system shall be tested to demonstrate operability.

5. One channel of heat tracing may be inoperable for a period not to exceed 24 hours, provided immediate attention is directed to making repairs.
6. One charging pump component cooling water pumps or one charging pump service water pump may be out of service provided the pump is restored to operable status within 24 hours.
7. One charging pump intermediate seal cooler or other passive component may be out of service provided the system may still operate at 100 percent capacity and repairs are completed within 48 hours.
8. Power may be restored to any valve referenced in 3.3.A.9 and 3.3.A.10 for the purpose of valve testing or maintenance providing no more than one valve has power restored and provided that testing and maintenance is completed and power removed within 24 hours.
9. Power may be restored to any valve referenced in 3.3.A.11 for the purpose of valve testing or maintenance providing no more than one valve has power restored and provided that testing or maintenance is completed and power removed within 4 hours.
10. Recirculation between a unit's Boron Injection Tank and the Boric Acid Tank(s) assigned to the unit may be terminated for a period not to exceed two hours, provided all other parameters (temperatures, boron concentration, volume) of the Boron Injection Tank are within Specifications 3.3.A.3 and immediate attention is directed to making repairs.

Basis Cont.

The accumulators (one for each loop) discharge into the cold legs of the reactor coolant piping when Reactor Coolant System pressure decreases below accumulator pressure, thus assuring rapid core cooling for large breaks. The line from each accumulator is provided with a motorized valve to isolate the accumulator during reactor start-up and shutdown to preclude the discharge of the contents of the accumulator when not required. These valves receive a signal to open when safety injection is initiated.

To assure that the accumulator valves satisfy the single failure criterion, they will be blocked open by de-energizing the valve motor operators when the reactor coolant pressure exceeds 1000 psig. The operating pressure of the Reactor Coolant System is 2235 psig and safety injection is initiated when this pressure drops to 600 psig. De-energizing the motor operator when the pressure exceeds 1000 psig allows sufficient time during normal startup operation to perform the actions required to de-energize the valve. This procedure will assure that there is an operable flow path from each accumulator to the Reactor Coolant System during power operation and that safety injection can be accomplished.

The removal of power from the valves listed in the specification will assure that the systems of which they are a part satisfy the single failure criterion.

Continuous recirculation between the Boron Injection Tank and the Boric Acid Tank(s) ensures that a unit's Boron Injection Tank is full of concentrated boric acid at all times.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENTS NOS. 32 AND 31 TO LICENSES NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC & POWER COMPANY
SURRY POWER STATION UNITS NOS. 1 AND 2

DOCKETS NOS. 50-280 AND 50-281

Introduction

By letter dated March 23, 1977, Virginia Electric and Power Company, (VEPCO) requested amendments to Facility Operating Licenses Nos. DPR-32 and DPR-37. The purpose of the request is to permit a brief outage period for the Boron Injection Tank (BIT) recirculation flow path, during reactor operation, so that the flow path may be serviced or repaired. The outage period requested is two hours.

Evaluation

VEPCO has proposed Technical Specifications to permit termination of the recirculation flow between the BIT and the Boric Acid Mixing Tank for a period not to exceed two hours. If repairs cannot be effected within the two-hour period, the reactor shall initially be placed in the hot shutdown condition; if the repairs are not effected in the following 48 hours, the reactor shall be placed in the cold shutdown condition.

The function of the recirculation flow path between the BIT and Mixing Tank is to maintain a constant boric acid solution concentration and temperature between the BIT and the Mixing Tank during normal operation. Over an interval of time in excess of two hours shutdown of the flow path could result in a boric acid concentration decrease in the BIT due to precipitation. VEPCO has determined through extensive operating experience that during a two-hour shutdown the system boron concentration and temperature remain within the limits of T.S.3.2.B and 3.2.C. In the 48-hour interval while the reactor is in the hot shutdown condition the control rods are inserted into the core thus removing any need for boric acid injection.

We conclude that the loss of two hours of operation of the flow path does not result in a decrease in the needed concentration of boric acid in the BIT.

Environmental Conclusions

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental 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.

Dated: July 26, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC AND POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 32 and 31 to Facility Operating Licenses Nos. DPR-32 and DPR-37, issued to Virginia Electric & Power Company (the licensee), which revised Technical Specifications for operation of the Surry Power Stations, Units Nos. 1 and 2 (the facilities) located in Surry County, Virginia. The amendments are effective as of the date of issuance.

These amendments permit a brief outage period for the Boron Injection Tank recirculation flow path, while the reactors are operating, during which time the flow path may be serviced or repaired.

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

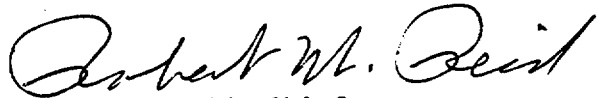
The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, negative

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

For further details with respect to this action, see (1) the application for amendments dated March 23, 1977, (2) Amendments Nos. 32 and 31 to Licenses 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, N.W., 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 26th day of July 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors