

March 24, 1997

Mr. John K. Wood  
Vice President - Nuclear, Davis-Besse  
Centerior Service Company  
c/o Toledo Edison  
Davis-Besse Nuclear Power Station  
5501 North State Route 2  
Oak Harbor, Ohio 43449-9760

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SUBJECT: AMENDMENT NO. 215 TO FACILITY OPERATING LICENSE NO. NPF-3 -  
DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1 (TAC NO. M97959)

Dear Mr. Wood:

The Commission has issued the enclosed Amendment No. 215 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station (DBNPS), Unit No. 1. The amendment revises the Technical Specifications in response to your application dated February 14, 1997. This amendment is a followup action to Notice of Enforcement Discretion No. 97-6-003 issued on March 5, 1997, for Davis-Besse.

This amendment revises Technical Specification (TS) Section 3/4.5.2, "Emergency Core Cooling Systems, ECCS Subsystems -  $T_{avg} \geq 280^{\circ}F$ ." Surveillance requirement (SR) 4.5.2.f is modified to state that opening and closing of the inspection port on the watertight enclosure for the decay heat valve pit will not require this surveillance procedure to be performed. This amendment also revises the applicable TS bases.

A copy of the Safety Evaluation is also enclosed. Notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original signed by:

Allen G. Hansen, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosures: 1. Amendment No. 215 to  
License No. NPF-3  
2. Safety Evaluation

cc w/encs: See next page

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| NAME   | EBarnhill <i>EB</i> |                                     | AHansen <i>AH</i> |                                     | <i>WLong</i>   | GMarcus <i>GM</i> |
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| NAME   | EBarnhill <i>EB</i> |   | AHansen <i>(B1)</i> |   | <i>WLong</i>     | GMarcus <i>GM</i> |  |
| DATE   | 3/11/97             |   | 3/11/97             |   | 3/18/97          | 3/24/97           |  |

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 24, 1997

Mr. John K. Wood  
Vice President - Nuclear, Davis-Besse  
Centerior Service Company  
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Sincerely,

A handwritten signature in black ink, appearing to read "Allen G. Hansen".

Allen G. Hansen, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosures: 1. Amendment No. 215 to  
License No. NPF-3  
2. Safety Evaluation

cc w/encls: See next page

Mr. John K. Wood  
Toledo Edison Company

cc:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

TOLEDO EDISON COMPANY

CENTERIOR SERVICE COMPANY

AND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 215  
License No. NPF-3

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Toledo Edison Company, Centerior Service Company, and The Cleveland Electric Illuminating Company (the licensees) dated February 14, 1997, 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 2.C.(2) of Facility Operating License No. NPF-3 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 215, are hereby incorporated in the license. The Toledo Edison Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance, and shall be implemented no later than 120 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Allen G. Hansen, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of issuance: March 24, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 215

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove

3/4 5-5  
B 3/4 5-2  
B 3/4 5-2a  
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Insert

3/4 5-5  
B 3/4 5-2  
B 3/4 5-2a  
B 3/4 5-2b

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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4. Verifying that a minimum of 290 cubic feet of trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.
  5. Deleted
  6. Deleted
- e. At least once per 18 months, during shutdown, by
1. Verifying that each automatic valve in the flow path actuates to its correct position on a safety injection test signal.
  2. Verifying that each HPI and LPI pump starts automatically upon receipt of a SFAS test signal.
- f. By performing a vacuum leakage rate test of the watertight enclosure for valves DH-11 and DH-12 that assures the motor operators on valves DH-11 and DH-12 will not be flooded for at least 7 days following a LOCA:
1. At least once per 18 months.
  2. After each opening of the watertight enclosure.
  3. After any maintenance on or modification to the watertight enclosure which could affect its integrity.
- The inspection port on the watertight enclosure may be opened without requiring performance of the vacuum leakage rate test, to perform inspections. After use, the inspection port must be verified as closed in its correct position. Provisions of TS 3.0.3 are not applicable during these inspections.
- g. By verifying the correct position of each mechanical position stop for valves DH-14A and DH-14B.
1. Within 4 hours following completion of the opening of the valves to their mechanical position stop or following completion of maintenance on the valve when the LPI system is required to be OPERABLE.
  2. At least once per 18 months.

## EMERGENCY CORE COOLING SYSTEMS

### BASES

With the RCS temperature below 280°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained.

The function of the trisodium phosphate dodecahydrate (TSP) contained in baskets located in the containment normal sump or on the 565' elevation of containment adjacent to the normal sump, is to neutralize the acidity of the post-LOCA borated water mixture during containment emergency sump recirculation. The borated water storage tank (BWST) borated water has a nominal pH value of approximately 5. Raising the borated water mixture to a pH value of 7 will ensure that chloride stress corrosion does not occur in austenitic stainless steels in the event that chloride levels increase as a result of contamination on the surfaces of the reactor containment building. Also, a pH of 7 is assumed for the containment emergency sump for iodine retention and removal post-LOCA by the containment spray system.

The Surveillance Requirement (SR) associated with TSP ensures that the minimum required volume of TSP is stored in the baskets. The minimum required volume of TSP is the volume that will achieve a post-LOCA borated water mixture pH of  $\geq 7.0$ , conservatively considering the maximum possible sump water volume and the maximum possible boron concentration. The amount of TSP required is based on the mass of TSP needed to achieve the required pH. However, a required volume is verified by the SR, rather than the mass, since it is not feasible to weigh the entire amount of TSP in containment. The minimum required volume is based on the manufactured density of TSP (53 lb/ft<sup>3</sup>). Since TSP can have a tendency to agglomerate from high humidity in the containment, the density may increase and the volume decrease during normal plant operation, however, solubility characteristics are not expected to change. Therefore, considering possible agglomeration and increase in density, verifying the minimum volume of TSP in containment is conservative with respect to ensuring the capability to achieve the minimum required pH. The minimum required volume of TSP to meet all analytical requirements is 250 ft<sup>3</sup>. The surveillance requirement of 290 ft<sup>3</sup> includes 40 ft<sup>3</sup> of spare TSP as margin. Total basket capacity is 325 ft<sup>3</sup>.

Decay Heat Removal System valves DH-11 and DH-12 are located in an area that would be flooded following a LOCA. These valves are located in a watertight enclosure to ensure their operability up to seven days following a LOCA. Surveillance Requirements are provided to verify the acceptable leak tightness of this enclosure. An inspection port is located on this watertight enclosure, which is typically used for performing inspections inside the enclosure. During the vacuum leakage rate test, the inspection port is in a closed position and subject to the test. This inspection port may be subsequently opened for use in viewing inside the enclosure. Opening this inspection port will not require performance of the vacuum leakage rate test because of the design of the closure fitting, which will preclude leakage under LOCA conditions, when properly installed. Proper installation includes independent verification.

## EMERGENCY CORE COOLING SYSTEMS

### BASES (Continued)

Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Containment Emergency Sump Recirculation Valves DH-9A and DH-9B are de-energized during MODES 1, 2, 3 and 4 to preclude postulated inadvertent opening of the valves in the event of a Control Room fire, which could result in draining the Borated Water Storage Tank to the Containment Emergency Sump and the loss of this water source for normal plant shutdown. Re-energization of DH-9A and DH-9B is permitted on an intermittent basis during MODES 1, 2, 3 and 4 under administrative controls. Station procedures identify the precautions which must be taken when re-energizing these valves under such controls.

Borated Water Storage Tank (BWST) outlet isolation valves DH-7A and DH-7B are de-energized during MODES 1, 2, 3, and 4 to preclude postulated inadvertent closure of the valves in the event of a fire, which could result in a loss of the availability of the BWST. Re-energization of valves DH-7A and DH-7B is permitted on an intermittent basis during MODES 1, 2, 3, and 4 under administrative controls. Station procedures identify the precautions which must be taken when re-energizing these valves under such controls.

#### 3/4.5.4 BORATED WATER STORAGE TANK

The OPERABILITY of the borated water storage tank (BWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on the BWST minimum volume and boron concentration ensure that:

- 1) sufficient water is available within containment to permit recirculation cooling flow to the core following manual switchover to the recirculation mode, and
- 2) The reactor will remain at least 1%  $\Delta k/k$  subcritical in the cold condition at 70 F, xenon free, while only crediting 50% of the control rods' worth following mixing of the BWST and the RCS water volumes.

These assumptions ensure that the reactor remains subcritical in the cold condition following mixing of the BWST and the RCS water volumes.

With either the BWST boron concentration or BWST borated water temperature not within limits, the condition must be corrected in eight hours. The eight hour limit to restore the temperature or boron concentration to within limits was developed considering the time required to change boron concentration or temperature and assuming that the contents of the BWST are still available for injection.

## EMERGENCY CORE COOLING SYSTEMS

### BASES (Continued)

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The bottom 4 inches of the BWST are not available, and the instrumentation is calibrated to reflect the available volume. The limits on water volume, and boron concentration ensure a pH value of between 7.0 and 11.0 of the solution sprayed within the containment after a design basis accident. The pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion cracking on mechanical systems and components.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 215 TO FACILITY OPERATING LICENSE NO. NPF-3

TOLEDO EDISON COMPANY

CENTERIOR SERVICE COMPANY

AND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-346

1.0 INTRODUCTION

By letter dated February 14, 1997, Toledo Edison Company, Centerior Service Company, and The Cleveland Electric Illuminating Company (the licensees) submitted a license amendment request to revise the Davis-Besse Nuclear Power Station Technical Specifications (TSs). This amendment would revise TS Section 3/4.5.2, "Emergency Core Cooling Systems, ECCS Subsystems -  $T_{avg} \geq 280^{\circ}\text{F.}$ " Surveillance requirement (SR) 4.5.2.f would be modified to state that opening and closing of the inspection port on the watertight enclosure for the decay heat valve pit would not require this surveillance procedure to be performed. This amendment would also revise the applicable TS bases.

2.0 BACKGROUND

By letter dated February 13, 1997, the licensees requested that the NRC exercise discretion not to enforce compliance with the actions required in TS Surveillance Requirement 4.5.2.f. This surveillance requirement requires each Emergency Core Cooling System subsystem to be demonstrated operable by performing a vacuum leakage rate test of the valve pit leaktight enclosure for valves DH-11 and DH-12 to assure that the motor operators on these valves will not be flooded for at least 7 days following a loss-of-coolant accident.

The February 13, 1997, letter documented information previously discussed with the NRC in telephone conversations on February 12, 1997. The licensees stated during those conversations that Davis-Besse was not in compliance with surveillance requirement 4.5.2.f, and that TS 3.0.3, which requires a plant shutdown to begin in 1 hour, had been entered that morning. They further stated that TS 4.0.3 had also been entered, which allows Davis-Besse to delay the actions of TS 3.0.3 for 24 hours so the surveillance requirement can be completed. That afternoon, the licensees determined that the surveillance requirement could not be performed at power. This determination was based on

the fact that the surveillance includes a test which draws a vacuum on the leaktight enclosure, and if a loss-of-coolant accident were to occur during the test, the pressure in the area of the enclosure combined with the vacuum inside the enclosure would fail the pit cover, potentially flooding the valve operators. Therefore, they exited TS 4.0.3, and a plant shutdown was begun in accordance with TS 3.0.3.

The licensees requested that a Notice of Enforcement Discretion (NOED) be issued pursuant to the NRC's policy regarding exercise of discretion for an operating facility, set out in Section VII.c of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. They requested that the NOED be effective immediately and remain in force until the NRC approves this license amendment request, or until Davis-Besse enters Mode 4 in an outage of sufficient duration to perform the required test.

In the February 13 letter, the licensees stated that a plant modification was completed in 1986 on the decay heat valve pit to install level switches and to add an inspection port to the pit leaktight enclosure. One use of the inspection port is for insertion of a camera during performance of American Society of Mechanical Engineers Boiler and Pressure Vessel Code-required visual inspections, which, at Davis-Besse, must be performed in Mode 3. They previously had concluded that the port could be opened and closed without the need to perform surveillance requirement 4.5.2.f after closure. On February 11, 1997, Davis-Besse staff identified the concern regarding whether opening and subsequent closure of the decay heat valve pit port constituted a breach in the leaktight enclosure, hence requiring performance of surveillance requirement 4.5.2.f. Followup by plant staff discovered that the port had been opened and closed since the last performance of surveillance requirement 4.5.2.f. At that time, TS 3.0.3 was entered, as discussed above. On March 5, 1997, the staff issued an NOED (No. 97-6-003) which remains in effect until the processing of the proposed amendment evaluated below.

### 3.0 DISCUSSION AND EVALUATION

#### 3.1 VALVE PIT FLOODING SAFETY CONCERN

The Valve Pit serves as a leaktight enclosure for motor-operated valves (DH-11 and DH-12) in the "drop" line that connects the reactor coolant system (RCS) Loop 1 hot leg to the decay heat pump suction connections. These valves are motor-operated and normally-closed. They must be opened in order to establish the shutdown cooling mode of operation. They would also be opened under loss-of-coolant accident (LOCA) recovery procedures, for the boron dilution mode of operation, an action that would be taken to reduce the possibility of boron precipitation in the core region. If the decay heat pit enclosure is not leaktight, the high water level in containment that results from a LOCA could flood the DH-11/12 electric motor operators and thereby preclude their opening.

The watertight integrity of the enclosure is verified by vacuum testing periodically and after any action that could affect leaktightness. The enclosure is provided with non-safety high and high-high level switches. An

alternate method of boron dilution is available by use of auxiliary spray as described in the Final Safety Analysis Report (FSAR) Section 6.3.3.1.2.

### 3.2 VALVE PIT INSPECTION PORT

The valve pit is provided with an inspection port that was installed as a modification to permit RCS piping inspection for leakage during RCS hydrostatic testing without having to remove the large (19'x7') valve pit cover plate. The valve pit cover is difficult to reinstall and reseal following removal. The inspection port is normally sealed-closed with a "Kamlok" cap. It was the discovery that a leak test had not been performed following the last closure of the Kamlok cap that led to the shutdown action. The licensees had conservatively assumed that if valve pit enclosure is not leak-tested following replacement of the Kamlok fitting, leak-tightness is not ensured. However, it is the licensees' position that the design of the Kamlok fitting is such that its design precludes the possibility of inspection port leakage.

### 3.3 LEAKTIGHT DESIGN OF KAMLOK CAP

The Kamlok closure device consists of an adapter that is welded to the 4-inch pipe that rises from the pit cover, and a cap and gasket assembly that clamps over the adapter. To seal the cap in place, it is placed on the adapter and two levers are positioned such that cams on the levers engage a groove in the adapter while compressing the gasket in the cap. If the gasket is in place and the levers properly positioned, gasket compression, and thus tight sealing, is assured. The licensees have implemented administrative procedures to verify that the cap is properly installed following reinstallation.

### 3.4 PROPOSED TS CHANGE

The licensees have requested an amendment to the facility Technical Specifications that would add the following statement to TS 4.5.2.f:

*The inspection port on the water tight enclosure may be opened without requiring performance of the vacuum leakage rate test, to perform inspections. After use, the inspection port must be verified as closed in its correct position. Provisions of TS 3.0.3 are not applicable during these inspections.*

### 3.5 EVALUATION

The Kamlok cap is a robust design that can withstand temperatures and pressures much higher than expected post-LOCA at Davis-Besse. In addition, the test history of the cap since installation confirms that it has consistently maintained integrity through many opening/closing cycles. Because of the robust design and test history of the Kamlok cap, the staff has concluded that the cap provides a high degree of assurance of proper sealing.

The staff also considered the consequences of failure of the cap to seal under post-LOCA conditions. Any failure of leaktightness would not affect the ability of the plant systems to respond during the first seven days of the event because the valve operators are not needed during this stage of a LOCA.

In addition, for the longer-term boron dilution capability, an alternate method of boron dilution is available by use of auxiliary spray as described above. Therefore, the current design provides a diverse method for dilution.

Finally, the staff noted that the licensees have implemented administrative procedures to verify that the cap is properly installed following reinstallation. This verification process adds assurance that the potential for a human performance problem will be minimized.

Because of the robust cap design, acceptable test history, existence of a diverse boron dilution method, and minimized potential for a human performance problem, the staff has determined that the proposed changes to the TSs are acceptable. In addition, the licensees' proposed changes to the TS bases are consistent with the proposed changes to the TSs and are therefore acceptable.

#### 4.0 EXIGENT CIRCUMSTANCES

The Commission's regulation, 10 CFR 50.91, contains provisions for issuance of amendments when the usual 30-day public notice period cannot be met. One type of special exception is an exigency. An exigency is a case where the staff and licensee need to act quickly (that is, before the usual 30 day comment period), and the staff determines that the amendment involves no significant hazards considerations (NSHCs).

Under such circumstances, the Commission notifies the public in one of two ways: by issuing a Federal Register notice providing an opportunity for hearing and allowing at least 2 weeks for prior public comments, or by issuing a press release discussing the proposed changes, using the local media. In this case the Commission used the former approach.

The licensees submitted the request for amendment on February 14, 1997. It was noticed in the Federal Register on February 26, 1997 (62 FR 8783), at which time the staff proposed a NSHC determination. In the request, the licensees asked that the amendment be issued on an emergency basis pursuant to 10 CFR 50.91(a)(5), unless enforcement discretion was granted. They stated that prompt processing was being requested to avoid a plant shutdown.

Since the NOED was issued by NRC on March 5, 1997, the staff is issuing this request on an exigent basis pursuant to 10 CFR 50.91(a)(6), and consistent with the NRC's policy regarding exercise of discretion to minimize, for example, the potential safety consequences of unnecessary plant transients, as set out in Section VII.c of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. Further, the Commission has determined that the licensee promptly requested the amendment within days of identification of the concern regarding the surveillance requirement.

There were no public comments in response to the notice published in the Federal Register.

## 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

This amendment has been evaluated against the standards in 10 CFR 50.92. The Commission has made a final determination that the amendment does not involve a significant hazards consideration because:

There is no significant increase in the probability of an accident because the special coupling is passive and cannot interact with any of the systems which have been analyzed for failures which lead to accidents. There is no significant increase in the consequences of an accident because of the design of the coupling, the verification of proper installation of the coupling, and the alternative means to provide boron dilution in the event that the coupling does fail and affect valve operability.

The possibility of a new or different kind of accident from any accident previously evaluated is not created because the coupling is passive and cannot interact with any system important to safety, and hence cannot initiate an accident.

There is not a significant reduction in a margin of safety because the design of the coupling, the plant procedures that verify proper closure of the coupling, and the alternative methods for boron dilution ensure that the capability for boron dilution will be available post-accident.

Based on the above considerations, the staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

## 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 7.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a

proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (61 FR 52970). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 8.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Long

Date: March 24, 1997