August 14, 1991

Docket No. 50-346

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Mr. Donald C. Shelton, Vice President
Nuclear - Davis-Besse
c/o Toledo Edison Company
300 Madison Avenue
Toledo, Ohio 43652

Dear Mr. Shelton:

SUBJECT: AMENDMENT NO.159 TO FACILITY OPERATING LICENSE NO. NPF-3 (TAC NO. 80329)

The Commission has issued Amendment No. 159 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. The amendment revises the Technical Specifications in response to your application dated June 4, 1991.

This amendment removes the operability requirements for decay heat isolation valve interlock channels and pressurizer heater interlock channels in Mode 4 (hot shutdown) and 5 (cold shutdown).

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:
J. B. Hopkins

Jon B. Hopkins, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.159 to License No. NPF-3
2. Safety Evaluation

cc: See next page

| LA/PDIII-3 | PM/PDIII-3 | BC/SRXB | D/PDIII-3 | OGC-WF1 |
|---|---|---|---|---|
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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.159
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 June 4, 1991, 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:

(a) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 159, 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 not later than 45 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jon B. Hopkins

Jon B. Hopkins, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of issuance: August 14, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 159

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. The corresponding overleaf pages are also provided to maintain document completeness.

| Remove | Insert |
|---|---|
| 3/4 3-11 | 3/4 3-11 |
| 3/4 3-12 | 3/4 3-12 |
| 3/4 3-22 | 3/4 3-22 |

TABLE 3.3-3 (Continued)

SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

| FUNCTIONAL UNIT | TOTAL NO. OF UNITS | UNITS TO TRIP | MINIMUM UNITS OPERABLE | APPLICABLE MODES | ACTION |
|---|---|---|---|---|---|
| 3. MANUAL ACTUATION | | | | | |
| a. SFAS (except Containment Spray and Emergency Sump Recirculation) | 2 | 2 | 2 | 1,2,3,4,6**** | 12 |
| b. Containment Spray | 2 | 2 | 2 | 1,2,3,4 | 12 |
| 4. SEQUENCE LOGIC CHANNELS | | | | | |
| a. Sequencer | 4 | 2*** | 3 | 1,2,3,4 | 10# |
| b. Essential Bus Feeder Breaker Trip (90%) | 2 | 1 | 2***** | 1,2,3,4 | 15# |
| c. Diesel Generator Start, Load Shed on Essential Bus (59%) | 2 | 1 | 2 | 1,2,3,4 | 15# |
| 5. INTERLOCK CHANNELS | | | | | |
| a. Decay Heat Isolation Valve | 1 | 1 | 1 | 1,2,3 | 13# |
| b. Pressurizer Heaters | 2 | 2 | 2 | 3****** | 14 |



Amendment No. 28, 37, 52, 102, 133, 159

TABLE 3.3-3 (Continued)
TABLE NOTATION

* Trip function may be bypassed in this MODE with RCS pressure below 1800 psig. Bypass shall be automatically removed when RCS pressure exceeds 1800 psig.

** Trip function may be bypassed in this MODE with RCS pressure below 600 psig. Bypass shall be automatically removed when RCS pressure exceeds 600 psig.

*** One must be in SFAS Channels #1 or #3, the other must be in Channels #2 or #4.

**** This instrumentation must be OPERABLE during CORE ALTERATIONS or movement of irradiated fuel within the containment to meet the requirements of Tech. Spec 3.9.4.

***** All functional units may be bypassed for up to one minute when starting each Reactor Coolant Pump or Circulating Water Pump.

****** When either Decay Heat Isolation Valve is open.

\# The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

ACTION 10 - With the number of OPERABLE functional units one less than the Total Number of Units, STARTUP and/or POWER OPERATION may proceed provided both of the following conditions are satisfied:

a. The inoperable functional unit is placed in the tripped condition within one hour. For functional unit 4a the sequencer channel shall be placed in the tripped condition by physical removal of the sequencer module.

b. The Minimum Units OPERABLE requirement is met; however, one additional functional unit may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 11 - With any component in the Output Logic inoperable, trip the associated components within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 12 - With the number of OPERABLE Units one less than the Total Number of Units, restore the inoperable functional unit to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 13 - a. With less than the Minimum Units OPERABLE and reactor coolant pressure $\geq$ 438 psig, both Decay Heat Isolation Valves (DH11 and $\overline{\text{DH12}}$) shall be verified closed.

TABLE 4.3-2

SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| FUNCTIONAL UNIT | CHANNEL CHECK | CHANNEL CALIBRATION | CHANNEL FUNCTIONAL TEST | MODES IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| 1. INSTRUMENT STRINGS | | | | |
| a. Containment Radiation - High | S | R | M | 1,2,3,4,6# |
| b. Containment Pressure - High | S | R | M(2) | 1, 2, 3 |
| c. Containment Pressure - High-High | S | R | M(2) | 1, 2, 3 |
| d. RCS Pressure - Low | S | R | M | 1, 2, 3 |
| e. RCS Pressure - Low-Low | S | R | M | 1, 2, 3 |
| f. BWST Level - Low-Low | S | R | M | 1, 2, 3 |
| 2. OUTPUT LOGIC | | | | |
| a. Incident Level #1: Containment Isolation | S | R | M | 1,2,3,4,6# |
| b. Incident Level #2: High Pressure Injection and Starting Diesel Generators | S | R | M | 1, 2, 3, 4 |
| c. Incident Level #3: Low Pressure Injection | S | R | M | 1, 2, 3, 4 |
| d. Incident Level #4: Containment Spray | S | R | M | 1, 2, 3, 4 |
| e. Incident Level #5: Containment Sump Recirculation Permissive | S | R | M | 1, 2, 3, 4 |
| 3. MANUAL ACTUATION | | | | |
| a. SFAS (Except Containment Spray and Emergency Sump Recirculation) | NA | NA | M(1) | 1,2,3,4,6# |
| b. Containment Spray | NA | NA | M(1) | 1, 2, 3 |
| 4. SEQUENCE LOGIC CHANNELS | S | NA | M | 1, 2, 3, 4 |

TABLE 4.3-2 (Continued)

SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| FUNCTIONAL UNIT | CHANNEL CHECK | CHANNEL CALIBRATION | CHANNEL FUNCTIONAL TEST | MODES IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| 5. INTERLOCK CHANNELS | | | | |
| a. Decay Heat Isolation Valve | S | R | ** | 1, 2, 3 |
| b. Pressurizer Heater | S | R | ** | 3 ## |

**See Specification 4.5.2.d.1

TABLE NOTATION

(1) Manual actuation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual safeguards actuation shall receive a CHANNEL FUNCTIONAL TEST at least once per 31 days.

(2) The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either vacuum or pressure to the appropriate side of the transmitter.

# The surveillance requirements of Section 4.9.4 apply during core alterations or movement of irradiated fuel within the containment.

## When either Decay Heat Isolation Valve is open.



Amendment No. 28, 38, 57, 139, 159

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 159 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 June 4, 1991, Toledo Edison Company (the licensee) proposed changes to the Technical Specifications for the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS). The proposed changes involve Technical Specification (TS) Table 3.3-3, "Safety Features Actuation System Instrumentation," and TS table 4.3-2, "Safety Features Actuation System Instrumentation Surveillance Requirements." The proposed changes would remove operability requirements for decay heat isolation valve interlock channels and pressurizer heater interlock channels in Modes 4 (hot shutdown) and 5 (cold shutdown).

## 2.0 EVALUATION

During Modes 4 and 5 operation, the reactor coolant system (RCS) is directly connected to the decay heat removal (DHR) system via isolation valves DH-11 and DH-12. In these Modes, the low temperature overpressure (LTOP) protection of the RCS is provided by the decay heat removal system relief valve (DH-4849). While the RCS is above the DHR system design pressure, diverse interlocks prevent DHR overpressurization by closing and preventing opening DH-11 and DH-12 when the RCS pressure exceeds the allowable setpoint.

While in Modes 4 and 5, closure of DH-11 or DH-12 would leave the plant without LTOP protection and would isolate the suction to the DHR pumps. To prevent this, TS 3.4.2 requires, in part, that control power be removed from DH-11 and DH-12 after they are opened in Modes 4 and 5. The licensee has evaluated the various scenarios which could cause a pressure transient while in Modes 4 or 5. The relief valve, DH-4849, was sized to accommodate

the flow from two High Pressure Injection Pumps, which the licensee determined to be the largest overpressure source. Because DH-11 and DH-12 must remain open in Modes 4 and 5 to provide LTOP protection, valve isolation interlocks are not required. Therefore, the NRC staff finds deleting this requirement for Modes 4 and 5 acceptable.

In order to ensure that double valve protection is established between the RCS and the DHR/Low Pressure Injection (LPI) system prior to raising the RCS pressure above the DHR system design pressure, interlock channels with the pressurizer (PZR) heaters have been included. These interlock channels prevent PZR heater operation if either DH-11 or DH-12 is off its closed seat while the RCS pressure is above the interlock's setpoint. These interlock channels prompt plant operators to properly position the valves and enable the valve isolation interlock prior to raising RCS pressure. The PZR heater interlock channels need only be operable in Mode 3 while either of the Decay Heat Isolation Valves is open. Once both valves are closed, the valve isolation interlock provides redundant, diverse overpressure protection.

When cooling down the plant, the valve isolation interlock prevents opening DH-11 or DH-12 until RCS pressure has been reduced below the allowable setpoint. Once one of the DHR isolation valves is open, the PZR heater interlock channels prevent pressure from being raised until both DH-11 and DH-12 are open placing relief valve DH-4849 in operation. Therefore, the NRC staff finds that the PZR heater interlock needs only to be operable in Mode 3 while either of the DHR isolation valves is open and deleting the requirement to have this interlock operable in Modes 4 and 5 is acceptable.

Finally, to ensure that the PZR heater interlock is operable when it needs to be, the licensee proposes to remove the waiver of TS 3.0.4 for this interlock. This results in a requirement to have the interlock operable prior to Mode 3 operation with one DHR isolation valve open. The NRC staff has reviewed this issue and finds it acceptable.

## 3.0 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.

## 4.0 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 effluents 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 (56 FR 29282). 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.

## 5.0 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: Jon Hopkins, NRR

Date: August 14, 1991