

March 2, 1988

Docket No. 50-346
Serial No. DB-87-022

Mr. Donald C. Shelton
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Dear Mr. Shelton:

SUBJECT: AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. NPF-3:
SHUNT AND UNDERVOLTAGE TRIP DEVICES (TAC NO. 55352)

The Commission has issued the enclosed Amendment No. 108 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. This amendment consists of changes to the Appendix A Technical Specifications (TS's) in response to your application dated March 27, 1987 (No. 1312).

This amendment revises TS section 3/4.3.1, Tables 3.3-1 and 4.3-1, to address Action and Surveillance Requirements relating to reactor trip breaker diverse trip devices.

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

Sincerely,

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Albert W. De Agazio, Project Manager
Project Directorate III-3
Division of Reactor Projects - III, IV
V & Special Projects

Enclosures:

- 1. Amendment No. 108 to License No. NPF-3
- 2. Safety Evaluation

cc w/enclosures:
See next page

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Davis-Besse Nuclear Power Station
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

TOLEDO EDISON 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. 108
License No. NPF-3

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Toledo Edison Company and The Cleveland Electric Illuminating Company (the licensees) dated March 27, 1987, 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:

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Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.108 , 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 April 1, 1988 .

FOR THE NUCLEAR REGULATORY COMMISSION



Kenneth E. Perkins, Director
Project Directorate III-3
Division of Reactor Projects - III, IV, V
& Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 2, 1988

ATTACHMENT TO LICENSE AMENDMENT NO.108

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 page(s) are also provided to maintain document completeness.

Remove

3/4 3-2
3/4 3-5

3/4 3-7
3/4 3-8

Insert

3/4 3-2
3/4 3-5
3/4 3-5a
3/4 3-7
3/4 3-8

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the Reactor Protection System instrumentation channels and bypasses of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each Reactor Protection System instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.1.2 The total bypass function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.1.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

TABLE 3.3-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Manual Reactor Trip	2	1	2	1, 2 and *	1
2. High Flux	4	2	3	1, 2	2#
3. RC High Temperature	4	2	3	1, 2	3#
4. Flux - Δ Flux - Flow	4	2(a)(b)	3	1, 2	2#
5. RC Low Pressure	4	2(a)	3	1, 2	3#
6. RC High Pressure	4	2	3	1, 2	3#
7. RC Pressure-Temperature	4	2(a)	3	1, 2	3#
8. High Flux/Number of Reactor Coolant Pumps On	4	2(a)(b)	3	1, 2	3#
9. Containment High Pressure	4	2	3	1, 2	3#
10. Intermediate Range, Neutron Flux and Rate	2	0	2(c)	1, 2 and *	4
11. Source Range, Neutron Flux and Rate					
A. Startup	2	0	2	2## and *	5
B. Shutdown	2	0	1	3, 4 and 5	6
12. Control Rod Drive Trip Breakers	2 per trip system	1 per trip system	2 per trip system	1, 2 and *	7#,9#
13. Reactor Trip Module	2 per trip system	1 per trip system	2 per trip system	1, 2 and *	7#
14. Shutdown Bypass High Pressure	4	2	3	2**, 3** 4**, 5**	6#
15. SCR Relays	2	2	2	1,2 and *	10#

DAVIS-BESSE, UNIT 1

3/4 3-2

Amendment No. 108

TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

- ACTION 5 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:
- a. $< 10^{-10}$ amps on the Intermediate Range (IR) instrumentation, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 10^{-10} amps on the IR instrumentation.
 - b. $> 10^{-10}$ amps on the IR instrumentation, operation may continue.
- ACTION 6 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, verify compliance with the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 within one hour and at least once per 12 hours thereafter.
- ACTION 7 - With the number of OPERABLE channels one less than the Total Number of Channels STARTUP and/or POWER OPERATION may proceed provided all of the following conditions are satisfied:
- a. Within 1 hour:
 1. Place the inoperable channel in the tripped condition, or
 2. Remove power supplied to the control rod trip device associated with the inoperative channel.
 - b. One additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.1, and the inoperable channel above may be bypassed for up to 30 minutes in any 24-hour period when necessary to test the trip breaker associated with the logic of the channel being tested per Specification 4.3.1.1.1. The inoperable channel above may not be bypassed to test the logic of a channel of the trip system associated with the inoperable channel.
- ACTION 8 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours.

TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

- ACTION 9 - With one of the Reactor Trip Breaker diverse trip features (undervoltage or shunt trip devices) inoperable, restore it to OPERABLE status in 48 hours or place the breaker in trip in the next hour.
- ACTION 10 - With one or both channels of SCR Relays inoperable, restore the channels to OPERABLE status during the next COLD SHUTDOWN exceeding 24 hours.

TABLE 3.3-2

REACTOR PROTECTION SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIMES**</u> (seconds)
1. Manual Reactor Trip	Not Applicable
2. High Flux*	≤ 0.266
3. RC High Temperature	Not Applicable
4. Flux - Δ Flux - Flow* - Variable Flow	≤ 1.77
- Constant Flow	≤ 0.266
5. RC Low Pressure	≤ 0.341
6. RC High Pressure	≤ 0.341
7. RC Pressure - Temperature - Constant Temperature	Not Applicable
8. High Flux/Number of Reactor Coolant Pumps On*	$\leq 0.451^{***}$
9. Containment High Pressure	Not Applicable

* Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input of first electronic component in channel.

** Including sensor (except as noted), RPS instrument delay and the breaker delay.

*** A 0.24 sec delay time has been assumed for pump contact monitor.

TABLE 4.3-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Manual Reactor Trip	N.A.	N.A.	S/U(1)	N.A.
2. High Flux	S	D(2), and Q(7)	M	1, 2
3. RC High Temperature	S	R	M	1, 2
4. Flux - ΔFlux - Flow	S(4)	M(3) and Q(7,8)	M	1, 2
5. RC Low Pressure	S	R	M	1, 2
6. RC High Pressure	S	R	M	1, 2
7. RC Pressure-Temperature	S	R	M	1, 2
8. High Flux/Number of Reactor Coolant Pumps On	S	R	M	1, 2
9. Containment High Pressure	S	R	M	1, 2
10. Intermediate Range, Neutron Flux and Rate	S	R(7)	S/U(5)(1)	1, 2 and*
11. Source Range, Neutron Flux and Rate	S	R(7)	M and S/U(1)(5)	2, 3, 4 and 5
12. Control Rod Drive Trip Breakers	N.A.	N.A.	M(9) and S/U(1)(9)	1, 2 and*
13. Reactor Trip Module Logic	N.A.	N.A.	M	1, 2 and*
14. Shutdown Bypass High Pressure	S	R	M	2**, 3**, 4**, 5**
15. SCR Relays	N.A.	N.A.	R	1, 2 and *

TABLE 4.3-1 (Continued)

NOTATION

- (1) - If not performed in previous 7 days.
- (2) - Heat balance only, above 15% of RATED THERMAL POWER.
- (3) - When THERMAL POWER [TP] is above 30% of RATED THERMAL POWER [RTP], compare out-of-core measured AXIAL POWER IMBALANCE [API_O] to incore measured AXIAL POWER IMBALANCE [API_I].
Recalibrate if:
$$\frac{RTP}{TP} [API_O - API_I] \geq 3.5\%$$
- (4) - AXIAL POWER IMBALANCE and loop flow indications only.
- (5) - Verify at least one decade overlap if not verified in previous 7 days.
- (6) - Each train tested every other month.
- (7) - Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (8) - Flow rate measurement sensors may be excluded from CHANNEL CALIBRATION. However, each flow measurement sensor shall be calibrated at least once per 18 months.
- (9) - The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of both the undervoltage and shunt trip devices of the Reactor Trip Breakers.
 - * - With any control rod drive trip breaker closed.
 - ** - When Shutdown Bypass is actuated.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. NPF-3

TOLEDO EDISON 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 March 27, 1987, Toledo Edison Company proposed changes to the Appendix A Technical Specifications (TS's) pertaining to the Reactor Protection System (RPS) instrumentation. The proposed changes were in response to Generic Letter 85-10 (GL 85-10), dated May 23, 1985. GL 85-10 recommended Action(s) to be taken when one of the control rod drive trip diverse-trip features is inoperable, or when one of the Silicon Controlled Rectifier (SCR) relay channels is inoperable. The letter also recommended Surveillance Requirements for the SCR relay channels and control rod drive trip breakers. The surveillances would include channel functional tests for the SCR relay channels and the control rod drive trip breakers, and independent verification of the undervoltage and shunt trip attachments of the breakers.

2.0 BACKGROUND AND EVALUATION

Toledo Edison Company has proposed the following changes:

- A. The addition of an Action to TS section 3/4.3.1, Table 3.3-1, applicable to Functional Unit 12, Control Rod Drive Trip Breakers, which would require the return to operable status of an inoperable Reactor Trip Breaker diverse trip device within 48 hours or otherwise trip the breaker within the next hour. The provisions of TS section 3.0.4 would not be applicable.
- B. The addition of Functional Unit 15 (SCR relays) to TS section 3/4.3.1, Table 3.3-1, which would specify the number of SCR relay channels required to be operable, mode applicability, and Action required. The Action required in the event of the inoperable status of one or both SCR channels would be to restore each channel to operable status during the next cold shutdown which lasts for more than 24 hours. The provisions of TS section 3.0.4 would not be applicable.

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- C. The addition of a notation to TS section 3/4.3.1, Table 4.3-1, that the operable status of Functional Unit 12 undervoltage and shunt trip devices shall be verified independently through startup and monthly channel functional tests.
- D. A requirement for a channel functional test at least every 18 months for Functional Unit 15 would be added to TS section 3/4.3.1, Table 4.3-1.

The staff has compared the proposed changes to the recommendations in GL 85-10 and finds that they are consistent with the generic letter. Further, the staff has found that the proposed changes will improve reliability of the RPS, and, therefore, improve safety. The indication that TS section 3.0.4 is not applicable for changes A and B above is acceptable because the Limiting Condition for Operation and associated Action applies to all modes.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to a surveillance requirement. We have 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 this amendment involves no significant hazards consideration, and there has been no public comment on such finding. Accordingly, this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and 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: A. Toalston

Dated: March 2, 1988