

September 30, 1988

Docket No. 50-346
Serial No. DB-88-052

Mr. Donald C. Shelton
Vice President, Nuclear
Toledo Edison Company
Edison Plaza - Stop 712
300 Madison Avenue
Toledo, Ohio 43652

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Dear Mr. Shelton:

SUBJECT: AMENDMENT NO. 122 TO FACILITY OPERATING LICENSE NO. NPF-3:
STARTUP FEEDWATER PUMP LICENSE CONDITION (TAC 67391)

The Commission has issued Amendment No. 122 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. This amendment consists of changes to the license and to Appendix A Technical Specifications (TS's) in response to your application dated July 15, 1988 (Serial No. 1489).

This amendment deletes License Condition 2.C.(3)(t) and incorporates Item 2 of that condition into TS Surveillance Requirement 4.7.1.2. This amendment also modifies TS Section 3/4.7.1.2 to clarify the applicability of Section 4.0.4 and Bases 3/4.7.1.2.

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,

1s/

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

Enclosures:

1. Amendment No.122 to License No. NPF-3
2. Safety Evaluation

cc w/enclosures:
See next page

Office:	LA/PDIII-3	PM/PDIII-3
Surname:	PKreutzer	ADeAgazio
Date:	9/27/88	9/28/88

for
 PD/PDIII-3
 JHannon
 09/28/88

OGC-WF1
 9/28/88

DFOI
1/1
APPH
Please make change made and reflect in SE.
APPH

CIP1



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. 122
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 July 15, 1988, 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. Facility Operating License No. NPF-3 is hereby amended by changes to the Technical Specifications as indicated in the attachment to this license amendment; by deleting paragraph 2.C.(3)(t); and by revising paragraph 2.C.(2) to read as follows:

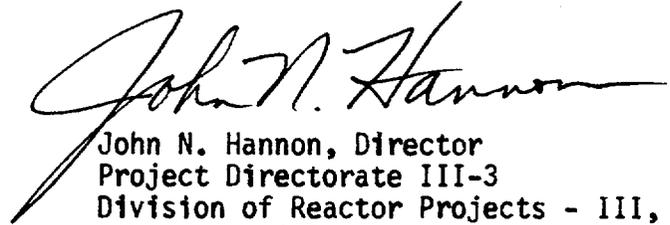
8810130287 880930
PDR ADDCK 05000346
PDC

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 122, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III, IV,
V, & Special Projects

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 30, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 122

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

3/4 7-4

3/4 7-5

B3/4 7-1a

B3/4 7-2

Insert

3/4 7-4

3/4 7-5

B3/4 7-1a

B3/4 7-2

Table 4.7-1MAIN STEAM LINE SAFETY VALVE LIFT SETTINGS

<u>NUMBER PER STEAM GENERATOR</u>	<u>LIFT SETTING ($\pm 1\%$)*</u>
a. 2	1050 psig
b. 7	1100 psig

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With one Auxiliary Feedwater System inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each Auxiliary Feedwater System shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
 1. Verifying that each steam turbine driven pump develops a differential pressure of ≥ 1070 psid on recirculation flow when the secondary steam supply pressure is greater than 800 psia, as measured on PI SP 12B for pump 1-1 and PI SP 12A for pump 1-2. The provisions of Specification 4.0.4 are not applicable for entry into Mode 3.
 2. Verifying that each valve (power operated or automatic) in the flow path is in its correct position.
 3. Verifying that all manual valves in the auxiliary feedwater pump suction and discharge lines that affect the system's capacity to deliver water to the steam generator are locked in their proper position.
 4. Verifying that valves CW 196, CW 197, FW 32, FW 91 and FW 106 are closed.
- b. At least once per 18 months by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position on an auxiliary feedwater actuation test signal.
 2. Verifying that each pump starts automatically upon receipt of an auxiliary feedwater actuation test signal. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that there is a flow path between each auxiliary feedwater pump and each steam generator by pumping water from the Condensate Storage Tank to the steam generator.

The flow path to the steam generator shall be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. Verification of the Auxiliary Feedwater System's flow capacity is not required.

- c. The Auxiliary Feed Pump Turbine Steam Generator Level Control System shall be demonstrated OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days, and a CHANNEL CALIBRATION at least once per 18 months.
- d. The Auxiliary Feed Pump Suction Pressure Interlocks, and Auxiliary Feed Pump Turbine Inlet Steam Pressure Interlocks shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and a CHANNEL CALIBRATION at least once per 18 months.
- e. After any modification or repair to the Auxiliary Feedwater System that could affect the system's capability to deliver water to the steam generator, the affected flow path shall be demonstrated available as follows:
 1. If the modification or repair is downstream of the test flow line, the auxiliary feed pump shall pump water from the Condensate Storage Tank to the steam generator; and the flow path availability will be verified by steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication.
 2. If the modification or repair is upstream of the test flow line, the auxiliary feed pump shall pump water through the Auxiliary Feedwater System to the test flow line; and the flow path availability will be verified by flow indication in the test flow line. (see note below)

This Surveillance Testing shall be performed prior to entering MODE 3 if the modification is made in MODES 4, 5 or 6. Verification of the Auxiliary Feedwater System's flow capacity is not required.

Note: When conducting tests of the Auxiliary Feedwater System in MODES 1, 2, and 3 which require local manual realignment of valves that make the system inoperable, a dedicated individual shall be stationed at the valves (in communication with the control room) able to restore the valves to normal system OPERABLE status.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- f. Following each extended cold shutdown (> 30 days in MODE 5), by:
1. Verifying that there is a flow path between each auxiliary feedwater pump and each steam generator by pumping Condensate Storage Tank water to the steam generator. The flow path to the steam generator shall be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication.

Verification of the Auxiliary Feedwater System's flow capacity is not required.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line code safety valves ensures that the secondary system pressure will be limited to within 110% its design pressure of 1050 psig during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser).

The safety valve set pressures and relieving capacities are in accordance with Section III of ASME Boiler and Pressure Vessel Code, 1971 Edition. The Code requires the following:

1. At least two pressure-relief valves are required to provide relieving capacity for steam systems.
2. The capacity of the smallest pressure-relief valve shall not be less than 50 percent of that of the largest pressure-relief device.
3. The set pressure of one of the pressure-relief devices shall not be greater than the maximum allowable working pressure of the system at design temperature.
4. Total rated relieving capacity of the pressure-relief devices shall prevent a rise of more than 10 percent above system design pressure at design temperature under any pressure transients anticipated to arise.

These requirements are, respectively, met as follows:

1. Nine safety valves are installed per steam generator.
2. The relief capacity of two of the nine safety valves per steam generator is 583,574 lbs/hr each, and the capacity of the remaining seven is 845,759 lbs/hr each.
3. A minimum of two OPERABLE safety valves per steam generator, with a combined total relief capacity of at least 1,167,148 lbs/hr, one with a setpoint not greater than 1050 psig (+/-1%), and one with a setpoint not greater than 1100 psig (+/-1%).
4. The total relieving capacity of all safety valves on both main steam lines is 14,175,000 lbs/hr which is 120 percent of the total secondary system flow of 11,760,000 lbs/hr at 100 percent of rated thermal power. A maximum safety valve setpoint pressure of 1100 psig (+/-1%) assures main steam system pressure remains below 110 percent, or 1155 psig.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1.1 SAFETY VALVES (Continued)

STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in secondary system steam flow and THERMAL POWER required by the reduced reactor trip settings of the High Flux channels. The reactor trip setpoint reductions are derived on the following bases:

$$SP = \frac{(X) - (Y)(V)}{Z} \times W$$

where:

SP = reduced Trip Setpoint in percent of RATED THERMAL POWER
(Not to Exceed W)

V = maximum number of inoperable safety valves per steam generator

W = High Flux Trip Setpoint for four pump operation as specified in
Table 2.2-1

X = Total relieving capacity of all safety valves per steam
generator in lbs/hour, 7,087,500 lbs/hour

Y = Maximum relieving capacity of any one safety valve in lbs/hour,
845,759 lbs/hour

Z = Required relieving capacity per steam generator in lbs/hr,
6,585,600 lbs/hr.

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEMS

The OPERABILITY of the Auxiliary Feedwater Systems ensures that the Reactor Coolant System can be cooled down to less than 280°F from normal operating conditions in the event of a total loss of offsite power.

Each steam driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 600 gpm at a pressure of 1050 psig to the entrance of the steam generators. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 280°F where the Decay Heat Removal System may be placed in operation.

Next page is B 3/4 7-2

PLANT SYSTEMS

BASES

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEMS (Continued)

Following any modifications or repairs to the Auxiliary Feedwater System piping from the Condensate Storage Tank through auxiliary feed pumps to the steam generators that could affect the system's capability to deliver water to the steam generators, following extended cold shutdown, a flow path verification test shall be performed. This test may be conducted in MODES 4, 5 or 6 using auxiliary steam to drive the auxiliary feed pumps turbine to demonstrate that the flow path exists from the Condensate Storage Tank to the steam generators via auxiliary feed pumps.

Verification of the turbine plant cooling water valves (CW 196 and CW 197), the startup feedwater pump suction valves (FW 32 and FW 91), and the startup feedwater pump discharge valve (FW 106) in the closed position is required to address the concerns associated with potential pipe failures in the auxiliary feedwater pump rooms, that could occur during operation of the startup feedwater pump.

3/4.7.1.3 CONDENSATE STORAGE FACILITIES

The OPERABILITY of the Condensate Storage Tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for 13 hours with steam discharge to atmosphere and to cooldown the Reactor Coolant System to less than 280°F in the event of a total loss of offsite power or of the main feedwater system. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose includes the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 122 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

On January 8, 1985, the Commission issued Amendment No. 83 which imposed License Condition 2.C.(3)(t) relating to the Startup Feedwater Pump (SUF). The License Condition was imposed following the discovery that operation of the SUFP potentially could jeopardize the Auxiliary Feedwater Pumps (AFWP) in the event of failure of a non-seismic Turbine Plant Cooling Water (TPCW) line or a moderate/high energy feedwater line. The License Condition imposed operational restrictions which included 1) stationing an operator in the SUFP/AFWP area during SUFP operation, 2) isolating the TPCW and SUFP piping from outside the AFW room when the AFW system is required to be operable and the SUFP is not in operation, and 3) installing a new SUFP prior to the start of Cycle 6.

On July 15, 1988, Toledo Edison Company submitted an application proposing to remove the License Condition and incorporating Item 2 of the License Condition as a Technical Specification (TS) Surveillance Requirement. Additionally, a clarification of the applicability of the provisions of TS Section 4.0.4 was proposed.

2.0 DISCUSSION AND EVALUATION

In late 1986, the function of the SUFP was replaced with a new Motor Driven Feedpump (MDFP) located in the turbine building. The installation of the MDFP is discussed in the Davis-Besse restart safety evaluation, NUREG-1177. The design features of the MDFP system were reviewed and accepted by the staff prior to approving restart of the facility following the event of June 9, 1988. Therefore, Item 3 of the License Condition has been satisfied.

To expedite the installation and operability of the MDFP, certain electrical equipment which had provided power to the SUFP was used to power the MDFP, thereby rendering the SUFP temporarily inoperable. Prior to the end of the

fifth refueling outage, the SUIP will be repowered providing an additional means to remove decay heat through the steam generators. Item 2 of the License Condition is proposed to be replaced by the addition of Surveillance Requirement 4.7.1.2.a.4.

This added surveillance requirement would specify the specific valves (two valves in the SUIP suction piping, one valve in the discharge piping, and one each in the TPCW supply and return lines) which are to be verified closed at least every 31 days. By maintaining these valves closed, the non-seismic and high/moderate energy lines associated with the SUIP are isolated from outside the AFW room. Thus, the concerns associated with these lines when the unit is in Modes 1, 2, or 3 are eliminated. The new surveillance requirement meets the intent of Item 2 of the License Condition. Toledo Edison Company also has proposed to change Basis 3/4.7.1.2 by adding an explanation for the purpose of the new surveillance requirement.

Toledo Edison Company has stated that the SUIP will not be used while the facility is in operational Modes 1, 2, or 3 (these are the modes when AFW is required), unless all other efforts have failed to re-establish feedwater using the AFW's, Main Feed Pumps (MFP's), or the MDFP. Toledo Edison Company further has stated that plant procedures will be provided for use of the SUIP in the event both MFP's, both AFW's, and the MDFP fail. Under such extreme conditions, there would not be a concern for TPCW or SUIP piping failures with respect to the AFW's. Inasmuch as: 1) the SUIP will not be used in Modes 1, 2, or 3 except under the conditions discussed above; 2) the proposed Surveillance Requirement 4.7.1.2.a.4 would prohibit the use of the SUIP in normal operation; and 3) the licensee committed to establish plant procedures for the use of the SUIP under extreme emergency conditions, the staff concludes that Item 1 of the License Condition is no longer required. The staff has reviewed the proposed deletion of License Condition 2.C.(3)(t) and proposed Surveillance Requirement 4.7.1.2.a.4. Based on the discussion above, the staff finds the proposed changes acceptable.

Toledo Edison Company also proposed to clarify the applicability of TS Section 4.0.4. Currently, a footnote to the Applicability portion of TS Limiting Condition for Operation 3.7.1.2 indicates that the provision of Section 3.0.4 is not applicable for entry into Mode 3. The intent of this footnote is to permit entry into Mode 3 upon unit restart to permit the performance of surveillance requirements necessary to declare the AFW systems operable. This is necessary when starting up because Mode 3 must be entered to generate steam to operate the AFW turbines in order to perform the surveillance.

The proposed change would 1) delete the footnote and include a sentence in Surveillance Requirements 4.7.1.2.a.1 and 4.7.1.2.b.2 to specify that the provisions of Section 4.0.4 are not applicable for entry into Mode 3, and 2) delete the requirement to perform the AFW flow path verification prior to entering Mode 3 from Surveillance Requirement 4.7.1.2.b.3.

Section 4.0.4 states:

Entry into an operational mode or other specified applicability condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the stated surveillance interval or as otherwise specified.

This change clarifies the meaning of the exemption since Section 3.0.4 applies to Limiting Conditions for Operation, whereas 4.0.4 applies to surveillance requirements. Since it is the surveillance requirement that cannot be accomplished without the exemption, Section 4.0.4 is the correct section to cite. The staff agrees with this clarification.

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 a change to 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 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: Albert W. De Agazio

Dated: September 30, 1988