

September 9, 1993

Docket No. 50-346

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

Dear Mr. Storz:

SUBJECT: AMENDMENT NO. 180 TO FACILITY OPERATING LICENSE NO. NPF-3
(TAC NO. M83382)

The Commission has issued the enclosed Amendment No. 180 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 May 1, 1992.

This amendment allows usage of the containment atmosphere gaseous radioactivity monitoring system as an alternate method of determining the presence of reactor coolant system leakage, and clarifies the applicability of Technical Specification (TS) 4.0.4 exceptions to the TS for reactor coolant system operational leakage.

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 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

Enclosures:

1. Amendment No. 180 to License No. NPF-3

2. Safety Evaluation

cc w/enclosures:

See next page

LA/PM/DRPW
MRushbrook

7/20/93

JBH
PM/PM/DRPW
JHopkins/sw

8/2/93
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JH
D/PM/DRPW
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8/2/93

JMM 8/26/93
BC/PRPB
LCunningham

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EHowler

9/3/93

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

September 9, 1993

Docket No. 50-346

Mr. Louis F. Storz
Vice President, Nuclear - Davis-Besse
Centerior Service Company
c/o Toledo Edison Company
300 Madison Avenue
Toledo, Ohio 43652

Dear Mr. Storz:

SUBJECT: AMENDMENT NO. 180 TO FACILITY OPERATING LICENSE NO. NPF-3
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Sincerely,

A handwritten signature in cursive script that reads "Jon B. Hopkins, Sr.".

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. 180 to License No. NPF-3
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Louis F. Storz
Toledo Edison Company

Davis-Besse Nuclear Power Station
Unit No. 1

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. 180
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 May 1, 1992, 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:

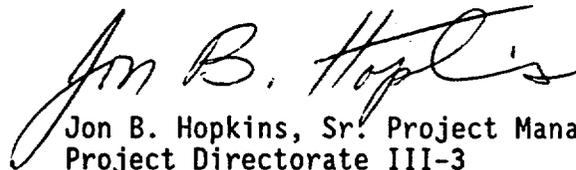


(a) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 180, 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 90 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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: September 9, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 180

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 4-15

3/4 4-16

B 3/4 4-4

Insert

3/4 4-15

3/4 4-16

B 3/4 4-4

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 GPM UNIDENTIFIED LEAKAGE,
- c. 1 GPM total primary-to-secondary leakage through steam generators,
- d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System,
- e. 10 GPM CONTROLLED LEAKAGE, and
- f. 5 GPM leakage from any Reactor Coolant System Pressure Isolation Valve as specified in Table 3.4-2.

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours except as permitted by paragraph c below.
- c. In the event that integrity of any pressure isolation valve specified in Table 3.4-2 cannot be demonstrated, POWER OPERATION may continue, provided that at least two valves in each high pressure line having a non-functional valve are in and remain in, the mode corresponding to the isolated condition.(a)
- d. The provisions of Section 3.0.4 are not applicable for entry into MODES 3 and 4 for the purpose of testing the isolation valves in Table 3.4-2.

(a) Motor operated valves shall be placed in the closed position and power supplies deenergized.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

- a. Monitoring the containment atmosphere gaseous or particulate radioactivity at least once per 12 hours.
- b. Monitoring the containment sump level and flow indication at least once per 12 hours.
- c. Measurement of the CONTROLLED LEAKAGE from the reactor coolant pump seals to the makeup system when the Reactor Coolant System pressure is 2185 ± 20 psig at least once per 31 days.
- d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation.

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-2 shall be individually demonstrated OPERABLE by verifying leakage testing (or the equivalent) to be within its limit prior to entering MODE 2:

- a. After each refueling outage,
- b. Whenever the plant has been in COLD SHUTDOWN for 72 hours, or more, and if leakage testing has not been performed in the previous 9 months, and
- c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.
- d. The provisions of Specification 4.0.4 are not applicable for entry into Modes 3 and 4.

4.4.6.2.3 Whenever the integrity of a pressure isolation valve listed in Table 3.4-2 cannot be demonstrated, determine and record the integrity of the high pressure flowpath on a daily basis. Integrity shall be determined by performing either a leakage test of the remaining pressure isolation valve, or a combined leakage test of the remaining pressure isolation valve in series with the closed motor operated containment isolation valve. In addition, record the position of the closed motor-operated containment isolation valve located in the high pressure piping on a daily basis.

REACTOR COOLANT SYSTEM

BASES (Continued)

operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 1 GPM can be detected by monitoring the secondary coolant. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged or repaired by sleeving in the affected areas.

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. As described in Topical Report BAW-2120P, degradation as small as 20% through wall can be detected in all areas of a tube sleeve except for the roll expanded areas and the sleeve end, where the limit of detectability is 40% through wall. Tubes with imperfections exceeding the repair limit of 40% of the nominal wall thickness will be plugged or repaired by sleeving the affected areas. Davis-Besse will evaluate, and as appropriate implement, better testing methods which are developed and validated for commercial use so as to enable detection of degradation as small as 20% through wall without exception. Until such time as 20% penetration can be detected in the roll expanded areas and the sleeve end, inspection results will be compared to those obtained during the baseline sleeved tube inspection.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be promptly reported to the Commission pursuant to Specification 6.9.1 prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

The steam generator water level limits are consistent with the initial assumptions in the FSAR.

REACTOR COOLANT SYSTEM

BASES

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.6.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to detect and monitor leakage from the Reactor Coolant Pressure Boundary. These detection systems are consistent with the recommendation of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973.

3/4.4.6.2 OPERATIONAL LEAKAGE

PRESSURE BOUNDARY LEAKAGE of any magnitude is unacceptable since it may be indicative of an impending gross failure of the pressure boundary. Therefore, the presence of any PRESSURE BOUNDARY LEAKAGE requires the unit to be promptly placed in COLD SHUTDOWN.

Industry experience has shown that, while a limited amount of leakage is expected from the RCS, the UNIDENTIFIED LEAKAGE portion of this can be reduced to a threshold value of less than 1 GPM. This threshold value is sufficiently low to ensure early detection of additional leakage.

The total steam generator tube leakage limit of 1 GPM for all steam generators ensures that the dosage contribution from tube leakage will be limited to a small fraction of 10 CFR Part 100 limits in the event of either a steam generator tube rupture or steam line break. The 1 GPM limit is consistent with the assumptions used in the analysis of these accidents.

The 10 GPM IDENTIFIED LEAKAGE limitation provides allowance for a limited amount of leakage from known sources whose presence will not interfere with the detection of UNIDENTIFIED LEAKAGE by the leakage detection systems.

The CONTROLLED LEAKAGE limit of 10 GPM restricts operation with a total RCS leakage from all RC pump seals in excess of 10 GPM.

The surveillance requirements for RCS Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS Pressure Isolation Valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 180 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 May 1, 1992, Toledo Edison Company requested a revision to the Technical Specifications for the Davis-Besse Nuclear Power Station. The proposed amendment would revise Technical Specification (TS) 3/4.4.6.2, "Reactor Coolant System-Operational Leakage," and its Bases. The changes would clarify the applicability of TS 4.0.4 exceptions, specify the allowed usage of the containment atmosphere gaseous radioactivity monitoring system as an alternate method of determining the presence of reactor coolant system (RCS) leakage, and clarify other existing wording. The proposed revisions to the Bases clarify that leakage from the RCS pressure isolation valves is "identified leakage" under TS 3/4.4.6.2 and is considered a portion of the allowed limit.

2.0 EVALUATION

The reactor coolant leakage detection system includes the containment atmosphere particulate radioactivity monitoring system, the containment gaseous radioactivity monitoring system, and the containment sump level and flow monitoring system. The containment atmosphere particulate and gaseous radioactivity monitoring systems incorporate monitors which are seismic, redundant, and supplied with essential power. Both were designed to detect an increase in RCS pressure boundary leakage of one gallon per minute in less than one hour, and are capable of monitoring the containment atmosphere under normal and accident conditions. The RCS is tested for leakage by surveillance tests which monitor the containment atmosphere gaseous and particulate radioactivity, monitor the containment sump level, measure and record the controlled leakage from the reactor coolant pump seals, and perform the RCS water inventory balance. The water inventory balance determines the amount of RCS leakage and provides guidance for the type, location and classification of

the system leak. The containment vessel normal sump level alarms on the plant computer, and the annunciator and level indicator are located in the control room.

TS 4.0.4 states that entry into an operational mode or other specified applicability condition shall not be made unless the associated Surveillance Requirements (SRs) have been performed within the stated surveillance interval or as otherwise specified. An exception to TS 4.0.4 for the purpose of testing the RCS pressure isolation valves in Modes 3 and 4 is currently written in Action statement "d" of TS 3.4.6.2. The proposed change relocates the exception to TS 4.0.4 to the text of SR 4.4.6.2.2. The NRC staff finds this relocation in the TS to be acceptable.

Another proposed change adds the containment gaseous radioactivity monitoring system as an alternate method of detecting RCS leakage in containment. As stated above, the design of the gaseous monitor is commensurate with the particulate monitor. Therefore, the NRC staff finds the proposed change to be acceptable.

Rewording of TS 4.4.6.2.3 for clarity and editorial changes for clarity are also proposed by the licensee. The NRC staff has reviewed these proposed changes and finds them to be acceptable.

Finally, the licensee proposes adding a paragraph to the TS Bases discussing the purpose of the SRs for the RCS pressure isolation valves. The NRC staff has reviewed the proposed paragraph and finds it to be acceptable.

The NRC staff has reviewed the proposed amendment. Based on the above, the NRC staff finds the changes to be 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 (57 FR 40222). 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: J. Hopkins

Date: September 9, 1993