

June 11, 1998

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

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Docket File GHill (2)  
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PD3-3 Reading ACRS  
EGA1 OGC  
GGrant, RIII RBellamy  
JPulsipher THarris (TLH3-SE)  
CBerlinger

SUBJECT: AMENDMENT NO. 223 TO FACILITY OPERATING LICENSE NO. NPF-3 -  
DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1 (TAC NO. M99556)

Dear Mr. Wood:

The Commission has issued the enclosed Amendment No. 223 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. The amendment revises the Technical Specifications (TSs) in response to your application dated August 26, 1997.

This amendment revises Technical Specification (TS) Section 3/4.6.1.3, "Containment Systems - Containment Air Locks," and the associated bases. The limiting condition for operation and the surveillance requirements were modified. Your application also proposed a change to TS Bases 3/4.9.4, "Refueling Operations - Containment Penetrations." That bases change was approved by letter dated March 19, 1998.

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

cc w/encls: See next page

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DATE	5/29/98	<input checked="" type="checkbox"/>	5/29/98	<input checked="" type="checkbox"/>	5/29/98	<input checked="" type="checkbox"/>	6/1/98	<input type="checkbox"/>

*subject to changes noted*

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Division of Reactor Projects III/IV  
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*subject to changes noted*

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

June 11, 1998

Mr. John K. Wood  
Vice President - Nuclear, Davis-Besse  
Centerior Service Company  
c/o Toledo Edison Company  
Davis-Besse Nuclear Power Station  
5501 North State Route 2  
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This amendment revises Technical Specification (TS) Section 3/4.6.1.3, "Containment Systems - Containment Air Locks," and the associated bases. The limiting condition for operation and the surveillance requirements were modified. Your application also proposed a change to TS Bases 3/4.9.4, "Refueling Operations - Containment Penetrations." That bases change was approved by letter dated March 19, 1998.

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,

A handwritten signature in black ink, appearing to read "A. 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. 223 to  
License No. NPF-3  
2. Safety Evaluation

cc w/encls: See next page

John K. Wood  
Toledo Edison Company

Davis-Besse Nuclear Power Station, Unit 1

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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. 223  
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 August 26, 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:

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PDR ADOCK 05000346  
P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 223, 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 120 days after issuance.

FOR THE U.S. 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: June 11, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 223

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

TS 3/4 6-6  
TS 3/4 6-6a  
TS B 3/4 6-1

Insert

TS 3/4 6-6  
TS 3/4 6-6a  
TS B 3/4 6-1

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### LIMITING CONDITION FOR OPERATION

---

3.6.1.3 Each containment air lock shall be OPERABLE with:

- a. Both doors closed except when the air lock is being used for entry and exit, then at least one air lock door shall be closed, and
- b. An overall air lock leakage rate of  $\leq 0.002 L_a$  at  $P_a$ , 38 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

- \*a. With one air lock door inoperable in one or more containment air locks, or with the containment air lock interlock mechanism inoperable in one or more containment air locks:
  1. Verify an OPERABLE door in each affected air lock is closed within one hour, and
  2. Lock an OPERABLE door closed in each affected air lock within 24 hours, and
  3. Operation may then continue provided that an OPERABLE door in each affected air lock is maintained closed and is verified to be locked closed at least once per 31 days, and provided that the containment air lock passes each scheduled performance of SR 4.6.1.3b.
  4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- \*b. With one or more containment air locks inoperable except as a result of an inoperable air lock door or air lock interlock mechanism:
  1. Verify at least one door in each affected air lock is closed within one hour, and
  2. Restore air lock(s) to OPERABLE status within 24 hours.
  3. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

\*Entry and exit through the OPERABLE door is permissible if necessary to perform repairs of the affected air lock components. After each entry and exit, the OPERABLE door must be closed without delay.

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### SURVEILLANCE REQUIREMENTS

---

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

- a. By verifying either no detectable seal leakage when the volume between the door seals is pressurized to 10 psig, or by verifying a seal leakage rate of  $\leq 0.0015 L_a$  when the volume between the door seals is pressurized to  $P_a$ , 38 psig, and the air lock door holddowns are installed:
  1. #Within 72 hours after each opening, (in MODES 1, 2, 3 and 4) except when the air lock is being used for multiple entries, then at least once per 72 hours, and
  2. \*Prior to establishing CONTAINMENT INTEGRITY when maintenance has not been performed on the air lock that could affect the air lock sealing capability. Reperformance of this test is not required prior to entering MODE 4 if the air lock has not been opened since the previous test.
- b. By conducting an overall air lock leakage test at  $P_a$ , 38 psig, and by verifying that the overall air lock leakage rate is within its limit:
  1. #At least once per 6 months, and
  2. \*Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.
- c. At least once per REFUELING INTERVAL by verifying that only one door in each air lock can be opened at a time. |

\*Exemption to Appendix "J" of 10 CFR 50.

#The provisions of Specification 4.0.2 are not applicable.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

---

#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation and air lock door requirements, will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions.

##### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure of 38 psig,  $P_a$ . As an added conservatism, the measured overall as-left integrated leakage rate is further limited to  $\leq 0.75 L_a$ , during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The special test for the containment purge and exhaust isolation valves is intended to detect gross degradation of seals on the valve seats. The special test is performed in addition to the Appendix J requirements.

USAR 6.2.4 identifies all penetrations that are secondary containment bypass leakage paths.

##### 3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

The air lock interlock allows only one air lock door of an air lock to be opened at a time. This provision ensures that a gross breach of containment does not exist when CONTAINMENT INTEGRITY is required. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, in MODES 1 through 4, both doors are kept closed when the air lock is not being used for entry and exit, i.e., containment entries/exits, air lock maintenance, or air lock testing.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 223 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 August 26, 1997, Toledo Edison Company, Centerior Service Company, and The Cleveland Electric Illuminating Company (the licensees), submitted a request for changes to the Davis-Besse Nuclear Power Station, Unit No. 1, Technical Specifications (TSs).

The proposed amendment would revise Technical Specification (TS) Section 3/4.6.1.3, "Containment Systems - Containment Air Locks," and the associated bases. The limiting condition for operation and the surveillance requirements would be modified. The application also proposed a change to TS Bases 3/4.9.4, "Refueling Operations - Containment Penetrations." That bases change was approved by NRC letter dated March 19, 1998.

2.0 EVALUATION

The licensees have proposed changes to TS 3.6.1.3, TS 4.6.1.3 and TS Bases 3/4.6.1.3. Each proposed change is evaluated below.

2.1 TS 3.6.1.3, "Containment Systems - Containment Air Locks - Limiting Condition for Operation"

TS 3.6.1.3 currently reads:

3.6.1.3 Each containment air lock shall be OPERABLE with:

- a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

- b. An overall air lock leakage rate of  $\leq 0.002 L_a$  at  $P_a$ , 38 psig.

The licensees are proposing to delete the words "normal transit" and "through the containment," so the TS would read:

3.6.1.3 Each containment air lock shall be OPERABLE with:

- a. Both doors closed except when the air lock is being used for entry and exit, then at least one air lock door shall be closed, and
- b. An overall air lock leakage rate of  $\leq 0.002 L_a$  at  $P_a$ , 38 psig.

Each containment air lock forms part of the containment pressure boundary. The air lock safety function is to provide part of the control of containment leakage resulting from a design basis accident. Therefore, the structural integrity and leak tightness of each air lock are essential to the successful mitigation of such an event. The doors of each air lock are interlocked to prevent simultaneous opening.

Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. However, both doors are normally kept closed except when the air lock is being used for entry into and exit from containment, for maintenance or for testing.

Removal of the words "normal transit" eliminates a possible source of confusion in the TSs without changing the meaning. Therefore, the change is administrative only and is acceptable. Removal of the words "through the containment" clarifies the intent of the TS that air lock maintenance and testing (that is, tasks that do not necessarily require entry into and exit from the containment) can be performed without entering the associated action statement. This clarification does not change the meaning of the TSs. Therefore, it is also administrative only and is acceptable.

## 2.2 TS 4.6.1.3, "Containment Systems - Containment Air Locks - Surveillance Requirements [SRs]"

TS SR 4.6.1.3.c currently reads:

Each containment air lock shall be demonstrated OPERABLE:

- c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

The licensees are proposing to delete the words "6 months" and replace them with the words "REFUELING INTERVAL." The proposed SR would read:

Each containment air lock shall be demonstrated OPERABLE:

- c. At least once per REFUELING INTERVAL by verifying that only one door in each air lock can be opened at a time.

Satisfactory performance of this SR ensures that each interlock is able to

Satisfactory performance of this SR ensures that each interlock is able to prevent simultaneous opening of the doors. The proposed revision would extend the surveillance interval from once per 6 months to once per refueling interval (defined at Davis-Besse as less than or equal to 730 days).

Currently, each interlock is installed after each refueling outage and verified operable with this SR. Then, every 6 months the SR is conducted. This requires that the interlocks be challenged during plant operation. If the proposed change is approved, the test would be conducted with the plant shut down, when the interlocks are not required to be operable, so that they would not be challenged during plant operation.

If the need for interlock maintenance arises when an interlock is in service, the performance of the interlock SR would be required following the maintenance. When an air lock is opened when the interlock is required, the operator first verifies that one door is completely shut before attempting to open the other door. Therefore, an interlock is not challenged except during the actual testing of the interlock.

Testing of the interlock mechanism is accomplished through having one door not completely engaged in the closed position, while attempting to open the second door. Failure of this test effectively results in a loss of containment integrity.

A door interlock mechanism cannot be readily bypassed since, as part of bypassing, linkages would have to be removed which are under the control of station processes such as temporary modifications, containment closure procedures and out of service practices.

The licensees reviewed the surveillance records and maintenance history for the previous 10 years. No surveillance test failures were identified. In addition, no equipment problems occurred that would have rendered an interlock mechanism inoperable.

There is reasonable assurance that each interlock will perform its safety function for the extended surveillance interval based on the fact that this change would eliminate interlock challenges at power due to regular performance of SR 4.6.1.3.c (as each interlock is only challenged during interlock testing), the mechanical design of the interlock is difficult to defeat, historical data confirm the reliability of the interlocks, and air lock doors are operated under specific administrative controls. Therefore, the staff concludes that the extension of the SR testing interval from 6 months to each refueling interval (730 days) is acceptable.

### 2.3 TS Bases 3/4.6.1.3, "Containment Air Locks"

The licensees are proposing to add the following text to TS Bases 3/4.6.1.3:

The air lock interlock allows only one air lock door of an air lock to be opened at a time. This provision ensures that a gross breach of containment does not exist when CONTAINMENT INTEGRITY is required. Closure of a single door in each air lock is sufficient to provide a

leak tight barrier following postulated events. Nevertheless, in MODES 1 through 4, both doors are kept closed when the air lock is not being used for entry and exit, i.e., containment entries/exits, air lock maintenance, or air lock testing.

This addition will add clarifying information consistent with the current TSs and operations at Davis-Besse. Therefore, it is 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 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 (62 FR 54876). 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: A. Hansen

Date: June 11, 1998