

January 16, 1992

Docket No. 50-346

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

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Dear Mr. Shelton:

SUBJECT: AMENDMENT NO. 168 TO FACILITY OPERATING LICENSE NO. NPF-3  
(TAC NO. M76184)

The Commission has issued Amendment No. 168 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 31, 1990.

This amendment revises TS 3/4.6.4.1, Combustible Gas Control Hydrogen Analyzers, by adding an additional action statement which would apply when both hydrogen analyzers are inoperable, and allow 72 hours to return one of the two inoperable hydrogen analyzers to operable status or be in at least Hot Standby within the next 6 hours. 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,

*JSI*

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

Enclosures:

- Amendment No. 168 to License No. NPF-3
  - Safety Evaluation
- cc: See next page

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Unit No. 1

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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. 168  
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 31, 1990, 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. 168, 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, 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: January 16, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 168

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf page are also provided to maintain document completeness.

Remove

3/4 6-23

Insert

3/4 6-23

## CONTAINMENT SYSTEMS

### 3/4.6.4 COMBUSTIBLE GAS CONTROL

#### HYDROGEN ANALYZERS

#### LIMITING CONDITION FOR OPERATION

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3.6.4.1 Two independent containment hydrogen analyzers shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTION:

- a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.
- b. With both hydrogen analyzers inoperable, restore at least one analyzer to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 31 days by performance of a CHANNEL CHECK.

4.6.4.2 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gases containing:

- a. Zero volume percent hydrogen, balance nitrogen, and
- b.  $2.5 \pm 0.5$  volume percent hydrogen, balance nitrogen.

DELETED

DAVIS-BESSE, UNIT 1

3/4 6-24

Amendment No. 43, 66



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 168 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 31, 1990, the Toledo Edison Company (the licensee), requested changes to Technical Specifications (TS) 3/4.6.4.1, Combustible Gas Control Hydrogen Analyzers, by adding an additional action statement which would apply when both hydrogen analyzers are inoperable, and allow 72 hours to return one of the two inoperable hydrogen analyzers to operable status, or be in at least hot standby within the next 6 hours. This request is consistent with the NRC's Generic Letter (GL) 83-37, dated November 1, 1983, NUREG-0737, item II.F.1.6, which, in the situation of both hydrogen analyzers being inoperable, allows for 72 hours to repair one of the analyzers prior to having to shut down the plant.

2.0 EVALUATION

In the present TS, if both hydrogen analyzers were to become inoperable, TS 3.0.3 would be entered which requires action to be initiated within 1 hour to place the plant in a MODE in which the TS does not apply. The function of the hydrogen analyzers is to provide the control room with indication of containment vessel hydrogen concentration, following a loss of coolant accident (LOCA). Based on the hydrogen concentration, the reactor operator can initiate the Combustible Gas Control System (CGCS) to ensure that the concentration does not exceed the conservative value of three volume percent. The proposed revision to TS 3.6.4.1 would add an additional action statement which requires that, with both hydrogen analyzers inoperable, one analyzer must be restored to operable status within 72 hours, or be in at least HOT STANDBY within the next 6 hours.

The hydrogen analyzers are designed to monitor containment vessel atmosphere. Following a LOCA, hydrogen gas may accumulate within the vessel from various sources. When hydrogen is generated, it may react with oxygen present in the vessel, leading to high temperatures and overpressurization. The Updated Safety Analysis Report (USAR) assumes that the lower flammability limit for hydrogen in air saturated with water vapor at room temperature and atmospheric pressure to be four volume percent. In the NRC's Safety Evaluation Report for the Operating License, section 6.2.5 cites that the analysis of hydrogen generation following a LOCA is consistent with Regulatory Guide 1.7, "Control of Combustible Gas Concentrations," which indicates that the concentration within the vessel would reach four volume percent in 37 days after the accident. The USAR assumes a concentration of three percent is reached at approximately 21 days after the LOCA, and assumes no operator action was taken to initiate the hydrogen dilution system.

The CGCS is designed to control the concentration of hydrogen which may be released into the containment vessel atmosphere following a LOCA. The system was originally comprised of the Containment Hydrogen Dilution System (CHDS), the Hydrogen Purge System (HPS), and the Containment Recirculation System (CRS). The CRS is no longer required and was removed from the TS by Amendment 66, dated January 20, 1984. As a backup to the CHDS and HPS, the licensee has the capability to install an external Hydrogen Recombiner System. The CGCS components are designed to be operated as necessary to maintain hydrogen concentration in the vessel at or below three volume percent following a LOCA.

The proposed change to TS 3.6.4.1 would allow both hydrogen analyzers to be inoperable for a 72-hour period. If, during this time, a LOCA should occur, the containment hydrogen concentration would be determined using the Post Accident Sampling System (PASS). The PASS containment air portion has the capability of obtaining samples from the containment via the containment radiation monitoring system. Based on the hydrogen content determined by analysis of the PASS samples, the reactor operator can then initiate the CGCS as necessary. Under the present TS, in the event that both analyzers are inoperable, TS 3.0.3 must be entered requiring plant shutdown within 1 hour. The imposition of a shutdown solely for this purpose would be undesirable from an equipment cycling standpoint and is not consistent with NRC guidance. Generic Letter 83-37, "NUREG-0737 Technical Specifications", states that with both hydrogen monitors inoperable, restore at least one monitor to operable status within 72 hours or be in at least hot standby within the next 6 hours. The licensee has stated that no hardware changes are being made and no testing is being degraded. There exists an alternate method for obtaining and analyzing containment air samples so that the reactor operator may initiate corrective action as necessary. Based on the above, the staff has determined that the proposed change to allow both hydrogen analyzers to be inoperable for 72 hours would have no effect on the safety of the plant and is therefore 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. 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 13670). 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. Lombardo

Date: January 16, 1992