

September 30, 1983

Docket No. 50-346

Mr. Richard P. Crouse  
Vice President, Nuclear  
Toledo Edison Company  
Edison Plaza - Stop 712  
300 Madison Avenue  
Toledo, Ohio 43652

Dear Mr. Crouse:

SUBJECT: AMENDMENT NO.62 TO FACILITY OPERATING LICENSE NO.  
NPF-3; STEAM GENERATOR INSERVICE INSPECTION

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The Commission has issued the enclosed Amendment No.62 to Facility Operating License NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. The amendment consists of the addition of Surveillance Requirements 4.4.5.7 and 4.4.5.8 to the Appendix A Technical Specifications in response to your application dated January 12, 1983 (No. 893).

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's Monthly Notice.

Original signed by

Albert W. De Agazio, Project Manager  
Operating Reactors Branch #4  
Division of Licensing

Enclosures:

1. Amendment No. 62 to NPF-3
2. Safety Evaluation

*Check for Crouse & DeAgazio  
immediately before to sign  
if any. Ranc. to de Agazio*

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PDR AD0CK 05000346  
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*No legal  
objection.*

OFFICE	SURNAME	DATE
ORB#4:DL	ORB#4:DL	ORB#4:DL
RIngram	ADeAgazio	JStolz
9/15/83	9/16/83	9/16/83

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Toledo Edison Company

cc w/enclosure(s):

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

THE 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. 62  
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 January 12, 1983, 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, Facility Operating License No. NPF-3 is hereby amended as indicated below and by changes to the Technical Specifications as indicated in the attachment to this license amendment:

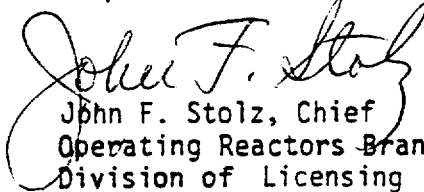
Revise paragraph 2.C.(2) to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.62 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of issuance: September 30, 1983

ATTACHMENT TO LICENSE AMENDMENT NO. 62

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. 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.

Pages

3/4 4-10

3/4 4/10a (new)

2. A seismic occurrence greater than the Operating Basis Earthquake.
3. A loss-of-coolant accident requiring actuation of the engineered safeguards.
4. A main steam line or feedwater line break.
- d. The provisions of Specification 4.0.2 are not applicable.

#### 4.4.5.4 Acceptance Criteria

- a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.
2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.
3. Degraded Tube means a tube containing imperfections  $\geq 20\%$  of the nominal wall thickness caused by degradation.
4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.
5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.
6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40% of the nominal tube wall thickness.
7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.5.3.c, above.
8. Tube Inspection means an inspection of the steam generator tube from the point of entry completely to the point of exit.

9. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.

#### 4.4.5.5 Reports

a. Following each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission within 15 days.

b. The complete results of the steam generator tube inservice inspection shall be submitted on an annual basis in a report for the period in which this inspection was completed. This report shall include:

1. Number and extent of tubes inspected.
2. Location and percent of wall-thickness penetration for each indication of an imperfection.
3. Identification of tubes plugged.

c. Results of steam generator tube inspections which fall into Category C-3 and require prompt notification of the Commission shall be reported pursuant to Specification 6.9.1 prior to resumption of plant operation. The written followup of this report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

4.4.5.6 The steam generator shall be demonstrated OPERABLE by verifying steam generator level to be within limits at least once per 12 hours.

4.4.5.7 When steam generator tube inspection is performed as per Section 4.4.5.2., an additional but totally separate inspection shall be performed on special interest peripheral tubes in the vicinity of the secured internal auxiliary feedwater header. This testing shall only be required on the steam generator selected for inspection, and the test shall require inspection only between

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

the upper tube sheet and the 15th tube support plate. The tubes selected for inspection shall represent the entire circumference of the steam generator and shall total at least 150 peripheral tubes.

4.4.5.8 Visual inspections of the secured internal auxiliary feedwater header, header to shroud attachment welds, and the external header thermal sleeves shall be performed on each steam generator through the auxiliary feedwater injection penetrations.

These inspections shall be performed during the third and fourth refueling outages and at the ten-year ISI.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO.62 TO FACILITY OPERATING LICENSE NPF-3

TOLEDO EDISON COMPANY

AND

CLEVELAND ELECTRIC ILLUMINATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-346

1.0 Introduction

During the 1982 refueling outage, the licensee discovered the auxiliary feedwater flow distributor (also referred to as a header) in each steam generator had become dislodged and was severely deformed. The licensee determined that the original design of the distributors was faulty and installed external headers with eight injection nozzles each to provide auxiliary feedwater distribution and retired the damaged internal distributors from service. The damaged distributors were stabilized and secured in place because the construction features of the steam generator made removal of the damaged distributors extremely difficult.

The NRC reviewed and evaluated the licensee's modifications to the steam generators, the method for stabilizing the retired distributors and the analyses prepared to substantiate the structural adequacy of the stabilized distributors. The Safety Evaluation presenting the conclusions of the NRC staff with regard to these and other considerations was issued by letter dated August 20, 1982.

2.0 Discussion and Evaluation

The original internal auxiliary feedwater flow distributor consisted of a flow channel, rectangular in cross-section, which completely encircled the steam generator tube bundle. The distributor is located at and is supported from the top of the steam shroud between the 15th tube support plate and the upper tube sheet. Access to the internal flow distributor is limited. One 16-inch access port and one 6-inch nozzle were the only openings initially available through which to inspect the extent of damage. Fiberoptic devices and remotely operated video cameras were used to supplement the limited direct visual observation. Later, as part of the repair and modification, eight small diameter holes were bored through the steam generator shell and steam shroud. These holes afforded additional inspection of the inner circumference of the flow distributor.

Several methods of inspection of critical areas were used and with the exception of the lower inner corner welds and upper inner corner welds of the distributor, all critical areas related to the damaged distributor were examined. Only about 25% and 13% of the lower and upper inner corner welds could be inspected. As stated in the August 20, 1982 Safety Evaluation, these inspections did not

uncover any conditions that could cause degradation of the structural integrity of the distributor structure once it is securely fastened to the shroud. However, because of the extreme difficulty in conducting the inspections and the inability to totally inspect the damaged component, the NRC staff asked for and the licensee agreed to certain inservice inspections at the next two refueling outages and at each ten-year inservice inspection interval to confirm that no deterioration of the distributor structural welds or attachment welds had occurred and that the thermal sleeves have not developed cracks.

The licensee's proposed amendment would require visual inspections of the secured auxiliary feedwater flow distributor, the attachment welds to the shroud and the external header thermal sleeves on each steam generator. These inspections would be conducted during the third and fourth refueling outages and at the ten-year inservice inspection interval. This proposed inspection is in conformance with the licensee's commitment to the NRC staff made at the time the staff was reviewing the steam generator repairs and modifications, and as referred to in our August 20, 1982 Safety Evaluation. We find that these inspections will permit verification that no gross degradation of the distributor or its attachment welds has occurred.

The damage to the internal AFW flow distributor was discovered because the licensee noted that some eddy current indications obtained on an inspection of the peripheral tubes in the steam generator appeared to correspond to the locations of some of the support locations of the AFW distributor. Other indications corresponding to the elevation of the distributor were also noted. These indications were caused by the loosened and distorted flow distributor contacting the peripheral steam tubes. The licensee's repairs of the steam generators included recentering the internal flow distributors prior to securing them to the steam shrouds. However, because of distortion, the clearance between the distributors and some peripheral tubes is small. Therefore, to detect any potential adverse effects produced by interaction of the distributors upon the outer tubes, the licensee has also proposed an additional inspection to be performed on the steam generator selected for inservice inspection of tubes. This inspection will consist of examination of the portion of the peripheral tubes between the 15th tube support plate and the upper tube sheet. At least 150 tubes representative of the entire circumference will be inspected.

We find that this proposed inspection should provide additional assurance that no undue vibration or motion of the secured flow distributors is occurring and that there has been no impact, rubbing, or other interference with the outer tubes in the inspected region.

Based on the above considerations, we find the licensee's proposed Technical Specification changes acceptable.

### 3.0 Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

### 4.0 Conclusion

We have 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.

Dated: September 30, 1983

This Safety Evaluation was prepared by Albert W. De Agazio