March 12, 1987

Docket No. 50-346

Mr. Joe Williams, Jr.
Senior Vice President, Nuclear
Toledo Edison Company
Edison Plaza - Stop 712
300 Madison Avenue
Toledo, Ohio 43652

Dear Mr. Williams:

SUBJECT: AMENDMENT NO. 100 TO FACILITY OPERATING LICENSE NO. NPF-3; ELECTRICAL POWER SYSTEMS - D.C. DISTRIBUTION

The Commission has issued the enclosed Amendment No.100 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. This amendment consists of changes to the Appendix A Technical Specifications (TSs) in response to your application dated January 21, 1987 (No. 1344).

This amendment revises the surveillance requirements of the D. C. distribution system, including the batteries and battery chargers for both operating and shutdown modes. These changes are consistent with the NRC guidance provided by model TSs for station batteries (NRC letter July 16, 1986). In addition, certain of the nomenclature used in the TSs has been changed to the specific equipment designations used at Davis-Besse. The amendment involves TS Sections 3.8.2.3, 4.8.2.3.1, 4.8.2.3.2, 4.8.2.4.1, and Basis Section 3/4 8. The amendment also adds new Table 4.8-1.

On February 25, 1987, your staff brought to our attention a potential problem with interpretation with regard to certain surveillance requirements of Section 4.8.2.3.2. Specifically, the potential problem could arise with regard to the verification of the battery float voltage during a seven-day surveillance when the surveillance occurs while the battery is being given an equalizing charge. The battery manufacturer's vendor manual recommends an equalizing charge at 2.33 volts per cell, following recharge after a deep discharge, to be continued until there is no increase in cell voltage observed over a three-hour period (typically 148 hours). Equalizing charges also could be required, for example, to equalize cell parameters, to agitate electrolyte following water addition, etc.

It was stated that Toledo Edison Company believes that it could be interpreted incorrectly that the minimum terminal and cell voltage could not be verified as required by the TSs while on equalize charge. We agree that such an interpretation would not be correct and that equalizing charges had not been considered in the model TSs. The cell parameters are intended to provide guidance as to the condition of the batteries. The inability to observe a true

float voltage while an equalizing charge is being applied does not result in a violation of the Surveillance Requirements nor does it result in an INOPERABLE battery.

Your staff also stated that although the proposed TSs match the NRC model TSs with respect to this issue, they plan to propose an amendment for clarification.

A copy of the Safety Evaluation supporting this amendment is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

Albert W. De Agazio, Project Manager
PWR Project Directorate #6
Division of PWR Licensing-B

Enclosures:
1. Amendment No.100 to NPF-3
2. Safety Evaluation

cc w/enclosures:
See next page

Distribution:
JCalvo
Docket File
JPartlow
NRC &LPDRs
TBarnhart-4
WJones
PBD-6 Files
WRegan
FMiraglia
ACRS-10
OGC-MNBB 9604
CMiles
LHarmon
RDiggs
EJordan
RIngram
BGrimes
EButcher
NThompson
ADeAgazio
GEdison

PBD-6	PBD-6	PBD-6	PEICES	PAD-6	OGC
RIngram	ADeAgazio:jm	GEdison	JCalvo	JStolz	
3/9/87	3/9/87	3/9/87	3/9/87	3/10/87	3/11/87

3/11/87

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Columbus, Ohio 43266-0558

President, Board of
County Commissioners of
Ottawa County
Port Clinton, Ohio 43452

State of Ohio
Public Utilities Commission
180 East Broad Street
Columbus, Ohio 43266-0573

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.100
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 21, 1987, 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.100 , 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 F. Stolz, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Attachment:
Changes to the Technical Specifications

Date of Issuance: March 12, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 100

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 numbers and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove	Insert
3/4 8-8	3/4 8-8
3/4 8-9	3/4 8-9
3/4 8-10	3/4 8-10
--	3/4 8-11
B 3/4 8-1	B3/4 8-1
--	B3/4 8-2

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE:

1 - 4160 volt Essential Bus

1 - 480 volt Essential Bus

3 - 120 volt A.C. Essential Busses

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated power availability.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying total battery terminal voltage is greater than or equal to 129 volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge (battery terminal voltage below 110 volts), or battery overcharge (battery terminal voltage above 150 volts), by:

1. Verifying that the parameters in Table 4.8-1 meet the Category B limits,

2. Verifying that there is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10^{-6} ohms, and

3. Verifying that the average electrolyte temperature of every sixth connected cell is above 60°F.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material,

3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^{-6} ohms, and

4. The battery charger will supply at least 475 amperes at a minimum of 130 volts for at least 8 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval this performance discharge test may be performed in lieu of the battery service test.

f. Every 18 months, during shutdown, performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

1 - 250/125-volt D.C. MCC, and

2 - 125-volt battery banks and chargers supplying the above D.C. MCC.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250/125-volt D.C. MCC shall be determined OPERABLE and energized at least once per 7 days by verifying correct disconnect switch/breaker alignment, indicated power availability from the charger and battery, and voltage on the bus of greater than or equal to 125 volts D.C.

4.8.2.4.2 The above required 125-volt battery banks and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status.

The Surveillance Requirements for demonstrating the OPERABILITY of the station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants", February 1978, and IEEE Std. 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations".

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and .015 below the manufacturer's full charge specific gravity is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than .020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than .010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 100 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

INTRODUCTION

By letter dated January 21, 1987, Toledo Edison Company, the licensee, made application for amendment to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. The proposed amendment would change the Technical Specifications (TSs) for the Davis-Besse Nuclear Power Station, Unit No. 1, relating to the D.C. distribution system during operation and while shutdown (Sections 3/4 8.2.3 and 3/4 8.2.4). The proposed changes are based mostly on the guidance provided in an improved set of standard Technical Specifications (STSs) that was sent to Toledo Edison July 16, 1981 (T.M. Novak to R. P. Crouse). The proposed changes also include some minor rewording of nomenclature for clarification.

EVALUATION

The objective of surveillance of the D.C. distribution system and its associated batteries and battery chargers is to ensure sufficient capacity and capability of the onsite D.C. power to meet its safety function. The existing TS surveillance requirements for this system are less conservative as compared to the requirements of the STSs. The proposed changes follow the same format, include the same words, parameters and their allowable values and limits as do the STSs. The proposed changes include surveillance requirements to verify at least once per seven days that battery electrolyte level and float voltage of the pilot cell and each connected cell are within their allowable values and limits. These requirements also include verification of battery specific gravity in each cell, as corrected for the electrolyte level and temperature, and verification that battery terminal voltage is equal to or greater than 129 volts on float charge. The test parameters, their limits and allowable values, and the action statement for exceeding the requirements are consistent with those of the STSs, and are, therefore, acceptable.

The proposed surveillance requirement of at least once per 91 days and within seven days after a battery discharge or overcharge includes verification of the values of the parameters tested above for a seven-day schedule. This

verification also includes electrolyte temperature of every sixth cell of the battery, and verification of no visible corrosion of connectors or terminals. The proposed allowable values of these parameters are found consistent with those of the STSs, and are, therefore, acceptable.

The proposed changes add the requirements of measuring the resistance of each cell-to-cell and terminal connections at least once per 18 months and verifying it to be less than or equal to 150 x 10-6 ohms. The proposal also includes addition of performance-discharge test of battery capacity after an interval of 18 months during shutdown. This test shall be given to any degraded battery or to one which has reached 85% of its service life expected for the application. These additions to the TSs are conservative and consistent with the STSs, and are, therefore, acceptable.

The current TS requires the battery service test to verify operable status of the actual emergency D.C. loads for one hour when the battery is supplying 600 amps. This requirement was not specific with regard to the duty cycle (short time and long time loads). The proposed change requires the battery to be subjected to the service test for the design duty cycle as required by Regulatory Guide 1.129. This change is consistent with the STSs and is, therefore, acceptable.

The current TS requires that the station batteries be subjected to performance-discharge test at least once every 60 months, subsequent to the satisfactory completion of the battery service test which is conducted every 18 months. The proposed change requires the performance-discharge test to be conducted in lieu of the battery service test. The change is consistent with the STSs and is, therefore, acceptable.

STATE CONSULTATION

In accordance with 10 CFR 50.91(b), we have fulfilled our responsibilities with regard to consultation with the State. The State was contacted on February 12, 1987, and had no comments.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have 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 or environmental assessment need be prepared in connection with the issuance of this amendment.

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: March 12, 1987

Principal Contributor: Iqbal Ahmed