Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

September 2, 1993

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Application for Amendment to Facility Operating Licenses-Electrical Power Systems, D.C. Sources:

Byron Station Units 1 and 2
NPF-37/66; NRC Docket Nos. 50-454/455

Braidwood Station Units 1 and 2
NPF-72/77; NRC Docket Nos. 50-456/457

References: 1. Standardized Technical Specifications for Westinghouse Plants (NUREG-1452 and NUREG-1431)

2. Safety Evaluation Related to Amendment No.5 to Operating License Numbers NPF72 and NPF75 for Braidwood Station Units 1 and 2

3. Safety Evaluation Related to Amendment No.5 to Operating License Numbers NPF37 and NPF60 for Byron Station Units 1 and 2

Dear Dr. Murley:

Pursuant to 10 CFR50.90, Commonwealth Edison Company (CECo) proposes to amend Appendix A, Technical Specifications of Facility Operating Licenses NPF 37, NPF 66, NPF 72 and NPF 77. The proposed amendment requests changes to Technical Specifications Section 3/4.8.2 and the bases for Section 3/4.8.

The proposed amendment request includes: 1) changes to allow for the replacement of the present 125 Volt DC Gould batteries with new 125 Volt DC AT&T batteries; 2) restatement of the design duty cycle; 3) restatement of the crosstie breaker limitation; and 4) revision of the crosstie loading limitation.

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The amendment request is subdivided as follows:

Attachment A: Description and Safety Analysis of Proposed Changes

Attachment B: Proposed Revision to the Technical Specifications

Attachment C: Evaluation of Significant Hazards Considerations

Attachment D: Environmental Assessment

The proposed changes have been reviewed and approved by the On-site and Off-site Review Committees in accordance with CECo procedures. CECo has reviewed this proposed amendment in accordance with 10 CFR 50.92(c) and has determined that no significant hazards consideration exists.

CECo is notifying the State of Illinois of our application for these amendments by transmitting a copy of this letter and the associated attachments to the designated State Official.

CECo request that the review and approval of the proposed amendment to be completed by February 1, 1994, to support replacement of the battery during the Braidwood Unit 1 refueling outage, scheduled to begin on February 26, 1994.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other CECo employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Please address any further comments or questions regarding this matter to this office.

State of Ill. County of Dupage
Signed before me on this 26th day
of October, 1993 by [illegible]

Notary Public [illegible]

Sincerely,

Denise M. Saccomando
Nuclear Licensing Administrator

Attachments

" OFFICIAL SEAL "
SANDRA C. LARA
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 6/25/94

cc: J. B. Hickman, Byron Project Manager - NRR
R. R. Assa, Braidwood Project Manager - NRR
H. Peterson, Senior Resident Inspector - Byron
S. G. Dupont, Senior Resident Inspector - Braidwood
B. Clayton, Branch Chief - Region III
Office of Nuclear Facility Safety - IDNS

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ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF
PROPOSED CHANGES TO APPENDIX A
TECHNICAL SPECIFICATIONS OF
FACILITY OPERATING LICENSES
NPF-37, NPF-66, NPF-72, AND NPF-77

A. DESCRIPTION OF THE PROPOSED CHANGE

Commonwealth Edison proposes to revise Section 3/4.8.2, D.C. Sources, and its Bases Section of the Technical Specifications for Braidwood and Byron Stations. The proposed changes include (1) changes to allow for the replacement of the present 125 Volt DC Gould batteries with new 125 Volt DC AT&T batteries; (2) restatement of the design duty cycle;(3) restatement of the crosstie breaker limitation; and (4) revision of the crosstie loading limitation. The marked up Technical Specification pages for each station are provided in Attachment B.

B. DESCRIPTION AND BASES OF THE CURRENT REQUIREMENT

The DC electrical power system provides the AC emergency power system with control power. During plant operation, the operability of the AC and DC power sources and associated distribution systems ensures 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. These conditions are consistent with the initial condition assumptions of the safety analyses and are based on maintaining at least one division of AC and DC power sources and associated distribution systems operational during accident conditions coincident with an assumed loss of offsite power (LOOP) event and single failure of the redundant division.

During shutdown and refueling, the operability of the AC and DC power sources and associated distribution systems 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 are available for monitoring and maintaining the unit status.

C. DESCRIPTION AND BASES OF THE REQUESTED REVISION

1. Battery Replacement Changes

Commonwealth Edison plans to replace the present 125 Volt DC Gould batteries with new 125 Volt DC AT&T batteries because they are approaching the 85% service life level. Replacement at this time would avoid the need to perform performance discharge tests in the near future. Specification 4.8.2.1.2.f requires such testing every 18 months for batteries that have reached 85% of the service life or that show signs of degradation.

Technical Specification Section 3/4.8.2, D.C. Sources, and its Bases Section need to be revised to reflect that some of the parameters of the AT&T battery differ from those of the Gould battery. The battery manufacturers' specifications for these parameters are as follows:

Parameter	AT&T	Gould
nominal specific gravity	1.300	1.215
number of cells (per battery)	58	58
recommended charger output float voltage range (per cell)	2.25 to 2.27	2.17 to 2.25
normal operational float voltage limit (per cell)	2.18	2.13
allowable operational float voltage limit (per cell)	2.14	2.07

A proposed change to Specification 4.8.2.1.2.a.2 adds a total battery terminal float charge voltage limit of ≥130.5 volts for the AT&T battery. This Specification ensures the effectiveness of the battery charger to float charge the battery. Float charge is the condition in which the charger is energizing the battery to overcome the internal cell losses and to maintain the battery in a fully charged state. The proposed limit for the AT&T battery represents the minimum value of the AT&T recommended total battery float charge voltage range:

(2.25 to 2.27 volts per cell) x (58 cells) = 130.50 to 131.66 volts.

A proposed change to the "*" notation for Specifications 4.8.2.1.2.b.2 and 4.8.2.1.2.c.3 reflects the rack arrangement configuration differences between the Gould battery and the AT&T battery. Both batteries have bi-level racks of cells, but only the Gould battery has cross-room racks (two sets of bi-level racks per battery).

A proposed change splits Table 4.8-2 into two separate tables, one table for the Gould battery and one table for the AT&T battery. The specific gravity limits for the AT&T battery are derived from the manufacturer's specifications using the allowances contained in the Bases Section. The AT&T battery operational float voltage limits are from the manufacturer's specifications. The AT&T battery operational float voltage limits are also being added to the Bases Section.

In addition, the Gould battery allowable cell voltage value in the Bases Section is being changed from 2.05 volts to 2.07 volts for consistency with Table 4.8-2. This change is in the conservative direction, and is consistent with IEEE Standard 450-1980 and the Standard Technical Specifications for Westinghouse Plants (NUREG-0452 and NUREG-1431).

2. Design Duty Cycle

The phrase "240 minutes" in Specification 4.8.2.1.2.d is proposed to be changed to the generic phrase "the design duty cycle" to reflect the format of the Standard Technical Specifications for Westinghouse Plants (NUREG-0452 and NUREG-1431).

A proposed change to the Bases Section adds a discussion of the design duty cycle and includes a reference to UFSAR Subsection 8.3.2.1.1, which addresses the design duty cycle. This discussion is derived from the Bases Section for Surveillance Requirement 3.8.4.7 in NUREG-1431.

3. Crosstie Breaker Limitations

A proposed change to the Limiting Condition for Operation (LCO) statements for Specification 3.8.2.1 adds the phrase "and with one of its associated crosstie breakers in the open position". This change provides a more direct relationship between the LCO and the Action Statements.

Another proposed change to Specification 3.8.2.1 rewords and reformats the Action Statements and incorporates the crosstie loading limitation currently addressed in Specification 4.8.2.1.3. Since the requirements of Specification 4.8.2.1.3 will be included in Action Statement (c), Specification 4.8.2.1.3 is no longer required. Therefore, it is deleted in this proposal. The crosstie load limit will apply when the opposite unit is shutdown with its battery inoperable.

A proposed change to the LCO statement for Specification 3.8.2.2 adds the phrase "and with one of its associated crosstie breakers in the open position". This change provides a more direct relationship between the LCO and the Action Statements.

Another proposed change to Specification 3.8.2.2 rewords and reformats the Action Statement by incorporating the "*" provision of the LCO and the crosstie loading limitation currently addressed in Specification 4.8.2.1.3. This change will allow crosstying the 125 Volt DC buses of two shutdown units under the conditions specified in the Action Statements in addition to crosstie conditions previously allowed. The crosstie load limit will apply when the opposite shutdown unit's battery is inoperable.

The present crosstie breaker limitation statements were added under Amendment 5 (1/27/88) for Braidwood Units 1 and 2, and Amendment 5 (12/16/86) for Byron

Units 1 and 2. The proposed changes are consistent with the Safety Evaluations for those amendments.

4. Crosstie Loading Limitations

Specification 4.8.2.1.3 specifies a crosstie loading limit of 63 amps. This limit is incorporated into the Action Statements for Specifications 3.8.2.1 and 3.8.2.2 as described in # 3 above. In addition, a crosstie loading limit of 100 amps for the AT&T battery is proposed, while retaining the 63 amp crosstie loading limit for the Gould battery. This proposed change is to reflect the larger capacity of the AT&T battery.

A proposed change to the Bases Section adds a discussion of the purpose for the crosstie loading limitations.

D. IMPACT OF THE CHANGES

The proposed changes will not alter the safety functions of the DC system or its equipment:

1. The proposed change allowing for the replacement of the batteries introduces new limits for the AT&T battery because some of its parameters differ from the Gould battery. The limits for the Gould battery are retained to allow for the transition period needed to install the AT&T batteries.

   The AT&T battery will meet or exceed the design, functional, and qualification requirements of the current battery. Replacing the battery will not impact the function of the DC system. The operational performance of the AT&T battery is expected to be an improvement because its service life is 40 years, compared to the 20 year Gould battery service life.

2. Replacing the phrase "240 minutes" with the generic phrase "the design duty cycle" reflects the format of the Standard Technical Specifications NUREG-0452 and NUREG-1431. Because this change is made to standardize terminology with NUREG-0452 and NUREG-1431, it is considered editorial in nature. The parameters of the design duty cycle, including overall duration, are controlled through the UFSAR update process, as described 10 CFR 50.71(e), and by 10 CFR 50.59, Changes, Tests, and Experiments.

3. The crosstie breaker limitation was added to the Technical Specifications under Amendment 5 (1/27/88) to Facility Operating Licenses NPF-72 and NPF-75 (for Braidwood Units 1 and 2), and Amendment 5 (12/16/86) to Facility Operating Licenses NPF-37 and NPF-60 (for Byron Units 1 and 2). Licenses NPF-60 and NPF-75 have been superseded by NPF-66 and NPF-77, respectively.

These amendments allow a required 125-Volt DC bus to be crosstied to the opposite unit's 125-Volt DC bus with one unit operating and with the other unit operating or shutdown, under the following situations and conditions:

Required Bus Battery Status	Required Bus Charger Status	Opposite Bus Battery Charger Status	Opposite Bus Load Restriction Status	Required?
Operable	Inoperable	Operable	Operable	No
Operable	Operable	Operable	Inoperable	No
Operable	Operable	Inoperable	Operable	Yes
Operable	Operable	Inoperable	Inoperable	Yes
Operable	Inoperable	Inoperable	Operable	Yes

With two operable batteries and one operable charger, the Safety Evaluations for these amendments demonstrate that the use of the crosstie does not exceed the design parameters of the DC system with one operable battery charger serving both buses. With an operable bus supplying an inoperable bus due to an inoperable battery, or due to an inoperable battery and an inoperable charger, these Safety Evaluations demonstrate that loading of the inoperable bus must be restricted so as not to exceed the capacity of the operable battery.

The proposed change retains the above allowable crosstie situations and conditions and adds a provision for crosstying a required bus of one shutdown unit with the opposite shutdown unit's inoperable bus. This condition requires a load restriction when the opposite unit's battery is inoperable. This additional provision is not for planning purposes but instead is only to address hypothetical two unit shutdown situations. Since the DC bus load requirements for a shutdown unit is substantially less than that for an operating unit, crosstie conditions involving two shutdown units is more conservative than crosstie conditions involving an operating unit. Therefore, this additional provision is consistent with the Safety Evaluations described above.

4. The proposed change adding a 100 amp crosstie loading limit for the AT&T battery takes credit for the larger capacity of the AT&T battery. A crosstie loading limit of 100 amps was chosen based on recommendations from the operating staff. The AT&T battery sizing was then selected based on having sufficient capacity to energize the design basis DC loads for an operating unit with the IEEE-485 design margin of 15% while maintaining the desired limited DC load of 100 amps for a shutdown unit. The sizing of the AT&T battery is conservative compared to the sizing of the Gould battery because the crosstie load limit of 63 amps for the Gould battery utilizes a portion of the IEEE-485 15% design margin.

   The crosstie loading requirement for the Gould battery is retained to allow for the transition period needed to install the AT&T batteries.

E. SCHEDULE REQUIREMENTS

Commonwealth Edison requests that the review and approval of the proposed amendment to be completed by February 1, 1994, to support replacement of the battery during the Braidwood Unit 1 refueling outage, scheduled to begin on February 26, 1994.

F. IDENTIFICATION AND DISCUSSION OF ANY IRREVERSIBLE CONSEQUENCES

The proposed change does not involve any irreversible consequences.