



**Commonwealth Edison**  
1400 Opus Place  
Downers Grove, Illinois 60515

February 10, 1994

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

Attn: Document Control Desk

Subject: Supplement to Amendment Request to  
Facility Operating Licenses-  
Electrical Power Systems, DC 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. D. Saccomando letter to T. Murley dated  
September 2, 1993, transmitting request for  
Byron and Braidwood's Technical Specifications regarding  
Electrical Power Systems, DC Sources
2. Meeting with Commonwealth Edison Company  
and the Nuclear Regulatory Commission  
on February 1, 1994, regarding the  
proposed Technical Specification Amendment  
for DC Power Sources

Dear Dr. Murley:

Per the reference meeting between Commonwealth Edison Company (CECo) and the Nuclear Regulatory Commission (NRC), CECo is submitting a supplement to the request for revision to the Byron and Braidwood Technical Specifications which was transmitted in Reference 1. This amendment concerns the DC Power Sources, specifically the replacement of the current Gould Batteries with AT&T batteries. This supplement involves changes to Technical Specifications Sections 4.8.2.1.2.e and 4.8.2.1.2.f and the associated bases.

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This supplement includes:

Attachment A: Supplement to Description of and Bases for the Proposed Changes

Attachment B: Supplement to Proposed Revision to the Technical Specifications

The Evaluation of Significant Hazards Considerations and the Environmental Assessment which were transmitted in Reference 1, remain unchanged.

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.

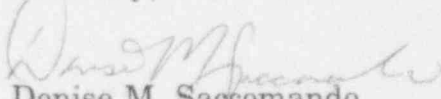
CECo request that the review and approval of the proposed amendment to be completed as soon as possible to support replacement of the battery during the Braidwood Unit 1 refueling outage, scheduled to begin on March 4, 1994.

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.



Sincerely,

  
Denise M. Saccomando  
Nuclear Licensing Administrator

  
Attachments

cc: G. Dick, Byron Project Manager - NRR  
R. Assa, Braidwood Project Manager - NRR  
H. Peterson, Senior Resident Inspector - Byron  
S. Dupont, Senior Resident Inspector - Braidwood  
J. Martin, Regional Administrator - Region III  
Office of Nuclear Facility Safety - IDNS

**ATTACHMENT A**  
**SUPPLEMENT TO DESCRIPTION OF THE**  
**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 Sections 4.8.2.1.2.e and 4.8.2.1.2.f, DC Sources, and its associated Bases Section of the Technical Specifications for Braidwood and Byron Stations. The proposed changes to section e include: (1) the minimum allowable battery capacity for AT&T batteries; (2) a modified performance discharge test may be performed in lieu of the performance discharge test for AT&T batteries; and (3) the modified performance discharge test may be used in lieu of the battery service test for the AT&T battery.

The proposed changes to section f include: (1) the amount of degradation that warrants increased testing for AT&T batteries; and (2) clarification that the last test is used when determining degradation. The marked up Technical Specification pages for each station are provided in Attachment B.

**B. DESCRIPTION AND BASES OF THE CURRENT REQUIREMENT**

Surveillance Section 4.8.2.1.2.e, currently states that the performance discharge test will be performed once per 60 months to verify battery capacity is at least 80% of the manufacturer's rating. This criteria is in agreement with IEEE Std. 450-1987, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," and is applicable to the Gould lead acid battery. This section addresses that a performance discharge test may be performed in lieu of the battery service test, which is in agreement with this standard.

Surveillance Section 4.8.2.1.2.f, states that at least once per 18 months, a performance discharge test will be performed if degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance test or is below 90% of the manufacturer's rating. This criteria is in agreement with IEEE Std. 450-1987 and is applicable to the Gould lead acid battery.

## C. DESCRIPTION AND BASES OF THE REQUESTED REVISION

### Surveillance Section 4.8.2.1.2.e

The proposed changes to section e include: (1) the minimum allowable battery capacity for AT&T batteries; (2) a modified performance discharge test may be performed in lieu of the performance discharge test for AT&T batteries; and (3) the modified performance discharge test may be used in lieu of the battery service test for the AT&T battery.

At least once per 60 months, battery capacity of the AT&T Round Cell battery will be verified to be at least 95% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. A capacity of 95% was selected based on manufacturer's data that indicates that the capacity of the AT&T Round Cell battery increases over the qualified service life of the battery. Therefore, a decrease in capacity below the manufacturer's guaranteed minimum rating (100% capacity) would be indicative of a failure mechanism occurring or about to occur. Adequate ampere-hour capacity margin exists between the battery's rated capacity and the design load requirements such that the battery shall be able to meet the design requirements of the DC system with a battery capacity of 95% of the manufacturer's rating.

The modified performance discharge test is described in the April 24, 1992, Draft Revision to IEEE Std 450, "IEEE Recommended Practice Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications." This test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelop the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery's capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified performance discharge test is a test of the battery's capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

#### Surveillance Section 4.8.2.1.2.f

The proposed changes to section f include the amount of degradation that warrants increased testing. For AT&T batteries, increased testing is necessary if the battery capacity decreases by more than 5% from its previous performance discharge test or modified performance discharge test, or if the capacity is below 100%. Additionally, the proposed revision also clarifies which previous test is used when determining degradation. This revision determines degradation as the drop in capacity from the previous performance test.

Battery degradation has been defined for the AT&T Round Cell battery as a greater than 5% drop in battery capacity from its capacity on the previous performance test or modified performance test, or is below 100% of the manufacturer's rating. Based on the design of the AT&T Round Cell battery and the manufacturer's data, battery capacity is expected to increase over the qualified service life of the battery. A greater than 5% decrease in capacity or a capacity below 100% of the manufacturer's rating may be indicative of a failure mechanism occurring, or about to occur. Either condition requires a performance discharge test or a modified performance discharge test at least once per 18 months during shutdown in order to more closely monitor and trend battery capability.

#### **D. IMPACT OF THE CHANGES**

The proposed changes will not reduce the safety functions of the DC system or its equipment. The proposed changes introduces new limits for the AT&T battery because some of its parameters differ from the Gould battery. As previously discussed, the change in the battery capacity limit for the AT&T battery is conservative. Additionally, changes to the amount of degradation which warrant more frequent testing is also more restrictive than the specification for the Gould battery. Other changes provide clarification as to which type of test applies to each of the batteries.

#### **E. SCHEDULE REQUIREMENTS**

Commonwealth Edison requests that the review and approval of the proposed amendment to be completed as soon as possible, to support replacement of the battery during the Braidwood Unit 1 refueling outage, scheduled to begin on March 4, 1994.

#### **F. IDENTIFICATION AND DISCUSSION OF ANY IRREVERSIBLE CONSEQUENCES**

The proposed change does not involve any irreversible consequences.