



December 15, 1999

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Braidwood Station, Units 1 and 2  
Facility Operating License Nos. NPF-72 and NPF-77  
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2  
Facility Operating License Nos. NPF-37 and NPF-66  
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Editorial Correction to Technical Specification Amendment Request to Support Installation of New Spent Fuel Pool Storage Racks at Byron and Braidwood Stations

Reference: Letter from R. M. Krich (Commonwealth Edison Company) to U.S. NRC, "Request for an Amendment to Technical Specifications to Support Installation of New Spent Fuel Pool Storage Racks at Byron and Braidwood Stations," dated March 23, 1999

In the referenced letter, in accordance with 10 CFR 50.90, Commonwealth Edison (ComEd) Company requested a change to Appendix A, Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37 and NPF-66, for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, respectively.

The proposed changes are to TS Sections 3.7.15, "Spent Fuel Pool Boron Concentration," 3.7.16, "Spent Fuel Assembly Storage," Fuel Storage Design Features Specification 4.3.1, "Criticality," and Fuel Storage Design Features Specification 4.3.3, "Capacity," to support installation of new Boral high-density spent fuel pool storage racks at Byron and Braidwood Stations. This proposed change will involve removing all 23 of the existing spent fuel pool storage racks at each station and replacing them with 24 new spent fuel pool storage racks.

During a subsequent review of the TS change request, an error was identified on page A-15 of Attachment A, "Description and Safety Analysis for Proposed Changes," and on revised TS page 4.0-2 for Braidwood Station and revised TS page 4.0-2 for Byron Station. These pages specify the north-south and east-west center to center distance between fuel assemblies placed in Region 1 of the Holtec spent fuel storage racks. The north-south and east-west distance values were inadvertently switched. The correct applicable statement is, "For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.574 inch east-west center to center distance between fuel assemblies placed in Region 1 racks." The affected pages have been revised to reflect this correction and are attached to this letter.

FOR ADDITIONAL

ADD1

This editorial error does not affect the supporting analysis as described in Attachment E to the referenced letter, "Holtec International Licensing Report, HI-982083," as this report reflected the correct north-south and east-west center to center distances between fuel assemblies placed in the Region 1 racks. No other information submitted with the referenced letter was affected by this error including Attachment C, "Information Supporting a Finding of No Significant Hazards Consideration," and Attachment D, "Information Supporting an Environmental Assessment." Based on the fact that this correction does not alter the previous determination of no significant hazards consideration, we have concluded that the public notice of the proposed change, published in the Federal Register on June 16, 1999, is unaffected by this correction.

This correction to the proposed changes has been reviewed and approved in accordance with the requirements of the ComEd Quality Assurance Program.

ComEd is notifying the State of Illinois of this correction to a request for amendment to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions relative to this submittal, please contact Mr. J. A. Bauer at (630) 663-7287.

Respectfully,



R. M. Krich  
Vice President – Regulatory Services

Attachments: Affidavit  
Attachment A, Description and Safety Analysis for Proposed Changes,  
Corrected Page  
Attachment B-1, Marked-up Corrected Page for Proposed Changes,  
Braidwood Station  
Attachment B-2, Marked-up Corrected Page for Proposed Changes,  
Byron Station  
Attachment B-3, Incorporated Proposed Changes, Typed Corrected Page,  
Braidwood Station  
Attachment B-4, Incorporated Proposed Changes, Typed Corrected Page,  
Byron Station

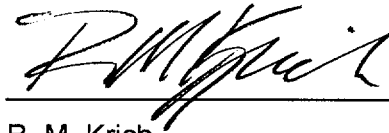
cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Braidwood Station  
NRC Senior Resident Inspector – Byron Station  
Office of Nuclear Facility Safety - IDNS

STATE OF ILLINOIS )  
COUNTY OF DUPAGE )  
IN THE MATTER OF )  
COMMONWEALTH EDISON (COMED) COMPANY ) Docket Numbers  
BRAIDWOOD STATION UNITS 1 AND 2 ) STN 50-456 AND STN 50-457  
BYRON STATION UNITS 1 AND 2 ) STN 50-454 AND STN 50-455

SUBJECT: Correction to Request for an Amendment to Technical Specifications to Support the Installation of New Spent Fuel Pool Storage Racks at Byron and Braidwood Stations

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.



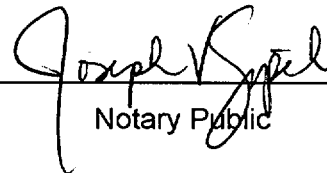
R. M. Krich

Vice President - Regulatory Services

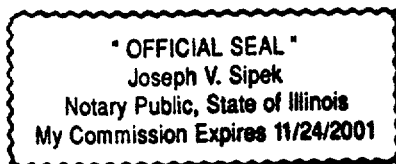
Subscribed and sworn to before me, a Notary Public in and

for the State above named, this 15<sup>th</sup> day of

December, 1999.



Notary Public



**ATTACHMENT A**

**BYRON STATION, UNITS 1 AND 2  
BRAIDWOOD STATION, UNITS 1 AND 2**

**DESCRIPTION AND SAFETY ANALYSIS FOR PROPOSED CHANGES**

CORRECTED PAGE

A-15

storage racks," has been added to this design feature.

TS Section 4.3.1.d. states that the spent fuel storage racks are designed and shall be maintained with: "A nominal 10.32 inch north-south and 10.42 inch east-west center to center distance between fuel assemblies placed in Region 1 racks." This requirement is only applicable to Joseph Oat spent fuel pool storage racks, therefore the statement, "For Joseph Oat spent fuel pool storage racks," has been added to this design feature.

TS Section 4.3.1.e states that the spent fuel storage racks are designed and shall be maintained with: "A nominal 9.03 inch center to center distance between fuel assemblies placed in Region 2 racks." This requirement is only applicable to Joseph Oat spent fuel pool storage racks, therefore the statement, "For Joseph Oat spent fuel pool storage racks," has been added to this design feature.

TS Section 4.3.1.f has been added to address Holtec racks and states that the spent fuel storage racks are designed and shall be maintained with: "For the Holtec spent fuel pool storage racks,  $k_{eff} \leq 0.95$  if fully flooded with unborated water which includes an allowance for uncertainties as described in Holtec International Report, HI-982094, "Criticality Analysis for the Byron/Braidwood Rack Installation Project," Project No. 80944, 1998."

TS Section 4.3.1.g has been added to address Holtec racks and states that the spent fuel storage racks are designed and shall be maintained with: "For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.574 inch east-west center to center distance between fuel assemblies placed in Region 1 racks."

TS Section 4.3.1.h has been added to address Holtec racks and states that the spent fuel storage racks are designed and shall be maintained with: "For Holtec spent fuel pool storage racks, a nominal 8.97 inch center to center distance between fuel assemblies placed in Region 2 racks."

TS Section 4.3.3 states: "The spent fuel pool is designed and shall be maintained with a storage capacity limited to no more than 2870 fuel assemblies." The number of fuel assemblies is being changed to 2984 to reflect the number of storage locations in the new racks once installation is complete. The new limit of 2984 cells bounds the previous limit. The current capacity of 2870 cells consists of 2864 normal fuel cells and six failed fuel cells. The failed fuel cells are special containers found in Rack J1. The failed fuel cells have not been used, nor plan to be used, therefore, failed fuel cells were not included in the new racks.

The removal of the existing Byron and Braidwood Stations spent fuel racks will eliminate the current reliance on soluble boron credit for reactivity control, necessitated by the degradation of Boraflex. Removal of the existing racks from the spent fuel pools has the added benefit of improving water chemistry and clarity which had been adversely affected by the Boraflex degradation.

When installation of the new racks is complete, the Byron and Braidwood Stations spent fuel pools will each contain 24 racks with a total of 2984 fuel storage cells. The storage cells will be divided into two regions based upon rack type. A group of four racks will store the most reactive fuel (i.e., up to 5-weight percent U-235 enrichment) without any burnup limitations. These four racks, which use a flux trap design, will be referred to as Region 1. The remaining 20 racks, which do not have flux traps, will have fuel storage limitations based on a function of enrichment versus burnup. These racks will be collectively referred

**ATTACHMENT B-1**  
**MARKED-UP CORRECTED PAGE FOR PROPOSED CHANGES**  
**BRAIDWOOD STATION**

REVISED TS PAGE

4.0 – 2

DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

as applicable

The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent; *For Joseph Oat spent fuel pool storage racks,*
- b.  $k_{eff} < 1.0$  if fully flooded with unborated water which includes an allowance for uncertainties as described in WCAP-14416-NP-A. "Westinghouse Spent Fuel Rack Criticality Analysis Methodology"; *For Joseph Oat spent fuel storage racks,*
- c.  $k_{eff} \leq 0.95$  if fully flooded with water borated to 550 ppm. which includes an allowance for uncertainties as described in WCAP-14416-NP-A. "Westinghouse Spent Fuel Rack Criticality Analysis Methodology"; *For Joseph Oat spent fuel storage racks,*
- d. A nominal 10.32 inch north-south and 10.42 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; *and For Joseph Oat spent fuel storage racks,*
- e. A nominal 9.03 inch center to center distance between fuel assemblies placed in Region 2 racks.

4.3.2 Drainage

The spent fuel pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 423 ft. 0 inches.

4.3.3 Capacity

The spent fuel pool is designed and shall be maintained with a storage capacity limited to no more than ~~2870~~ *(2984)* fuel assemblies.

- f. *For Holtec spent fuel storage racks,  $k_{eff} \leq 0.95$  if fully flooded with unborated water which includes an allowance for uncertainties as described in Holtec International Report HI-982094, "Criticality Analysis for Byron/Braidwood Rack Installation Project," Project No. 80944, 1998;*
- g. *For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.594 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and*
- h. *For Holtec spent fuel pool storage racks, a nominal 8.97 inch center to center distance between fuel assemblies placed in Region 2 racks.*

**ATTACHMENT B-2**  
**MARKED-UP CORRECTED PAGE FOR PROPOSED CHANGES**  
**BYRON STATION**

REVISED PAGE

4.0 – 2



DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

*, as applicable,*

The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent: *For Joseph Oat spent fuel pool storage racks,*
- b.  $k_{eff} < 1.0$  if fully flooded with unborated water which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology": *For Joseph Oats spent fuel pool storage racks,*
- c.  $k_{eff} \leq 0.95$  if fully flooded with water borated to 550 ppm. which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology": *For Joseph Oat spent fuel pool storage racks,*
- d.  $\times$  A nominal 10.32 inch north-south and 10.42 inch east-west center to center distance between fuel assemblies placed in Region 1 racks: *and For Joseph Oat spent fuel pool storage racks,*
- e.  $\times$  A nominal 9.03 inch center to center distance between fuel assemblies placed in Region 2 racks.

4.3.2 Drainage

The spent fuel pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 423 ft. 2 inches.

4.3.3 Capacity

The spent fuel pool is designed and shall be maintained with a storage capacity limited to no more than ~~2870~~ fuel assemblies.

*2984*

- f. *For Holtec spent fuel pool storage racks,  $k_{eff} \leq 0.95$  if fully flooded with unborated water which includes an allowance for uncertainties as described in Holtec International Report, HI-982094, "Criticality Analysis for Byron/Braidwood Rack Installation Project," Project No. 80944, 1998;*
- g. *For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.574 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and*
- h. *For Holtec spent fuel pool storage racks, a nominal 8.97 inch center to center distance between fuel assemblies placed in Region 2 racks.*

**ATTACHMENT B-3**  
**INCORPORATED PROPOSED CHANGES**  
**TYPED CORRECTED PAGE**  
**BRAIDWOOD STATION**

REVISED PAGE

4.0 - 2

DESIGN FEATURES (continued)

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## 4.3 Fuel Storage

4.3.1 Criticality

The spent fuel storage racks are designed and shall be maintained, as applicable, with:

- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
- b. For Joseph Oat spent fuel pool storage racks,  $k_{\text{eff}} < 1.0$  if fully flooded with unborated water which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology";
- c. For Joseph Oat spent fuel pool storage racks,  $k_{\text{eff}} \leq 0.95$  if fully flooded with water borated to 550 ppm, which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology";
- d. For Joseph Oat spent fuel pool storage racks, a nominal 10.32 inch north-south and 10.42 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and
- e. For Joseph Oat spent fuel pool storage racks, a nominal 9.03 inch center to center distance between fuel assemblies placed in Region 2 racks.
- f. For Holtec spent fuel pool storage racks,  $k_{\text{eff}} \leq 0.95$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in Holtec International Report HI-982094, "Criticality Analysis for Byron/Braidwood Rack Installation Project," Project No. 80944, 1998;
- g. For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.574 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and
- h. For Holtec spent fuel pool storage racks, a nominal 8.97 inch center to center distance between fuel assemblies placed in Region 2 racks.

**ATTACHMENT B-4**  
**INCORPORATED PROPOSED CHANGES**  
**TYPED CORRECTED PAGE**  
**BYRON STATION**

REVISED PAGE

4.0 - 2

DESIGN FEATURES (continued)

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## 4.3 Fuel Storage

4.3.1 Criticality

The spent fuel storage racks are designed and shall be maintained, as applicable, with:

- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
- b. For Joseph Oat spent fuel pool storage racks,  $k_{\text{eff}} < 1.0$  if fully flooded with unborated water which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology";
- c. For Joseph Oat spent fuel pool storage racks,  $k_{\text{eff}} \leq 0.95$  if fully flooded with water borated to 550 ppm, which includes an allowance for uncertainties as described in WCAP-14416-NP-A, "Westinghouse Spent Fuel Rack Criticality Analysis Methodology";
- d. For Joseph Oat spent fuel pool storage racks, a nominal 10.32 inch north-south and 10.42 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and
- e. For Joseph Oat spent fuel pool storage racks, a nominal 9.03 inch center to center distance between fuel assemblies placed in Region 2 racks.
- f. For Holtec spent fuel pool storage racks,  $k_{\text{eff}} \leq 0.95$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in Holtec International Report HI-982094, "Criticality Analysis for Byron/Braidwood Rack Installation Project," Project No. 80944, 1998;
- g. For Holtec spent fuel pool storage racks, a nominal 10.888 inch north-south and 10.574 inch east-west center to center distance between fuel assemblies placed in Region 1 racks; and
- h. For Holtec spent fuel pool storage racks, a nominal 8.97 inch center to center distance between fuel assemblies placed in Region 2 racks.