Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

October 2, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Unit 2
Quad Cities Station Units 1 and 2
Proposed Technical Specification
Change to Allow Hafnium as Control
Rod Absorber Material
NRC Docket Nos. 50-237 & 50-254/265

Reference (a): D. M. Crutchfield letter to D. L. Farrar dated March 9, 1984.

(b): "Safety Evaluation of the General Electric Hybrid I Control Rod Assembly", General Electric Company, September 1983, (NEDE-22290-A, GE Proprietary).

Dear Mr. Denton:

Pursuant to 10 CFR 50.59 Commonwealth Edison proposes Technical Specification changes for Dresden Unit 2 and Quad Cities Units 1 and 2 to allow for the use of hafnium as a control rod absorber material. Dresden Unit 3's Technical Specifications already allows for the use of hafnium. The design features described in the current Technical Specifications for the other three units specify only boron carbide as a rod absorber material and should be changed to accommodate state-of-the-art control rod designs utilizing an alternate control material. Both GE and ASEA-Atom currently offer approved control rod designs which contain some hafnium as a neutron absorber.

Vendors of BWR control rods have recently recognized that use of hafnium metal in high fluence zones can significantly improve the lifetime of these components. Hafnium metal does not swell or produce helium gas during irradiation, thus reducing the susceptibility of the blade wings to stress corrosion cracking. The excessive cost and weight of the metal precludes the production of a control rod consisting solely of hafnium as an absorber; however, its inclusion in crucial blade zones can significantly extend the lifetime of the control rod. The use of hafnium in BWR control rods has been approved by the NRC in both the ASEA-Atom demonstration blades at Dresden 3 [Reference (a)] and General Electric [Reference (b)] control rod designs.

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Control rods containing hafnium will be installed during the upcoming outages for all three units, with Dresden Unit 2 using GE type Hybrid I Control Rod (GE Type I HICR) assemblies this fall. The proposed changes in Attachments 1 and 2 have received On-Site and Off-Site review and approval. We have reviewed these amendment requests and find that no significant hazard consideration exists. Our review is documented in Attachment 3.

Pursuant to 10 CFR 170, a fee remittance in the amount of $150.00 has been enclosed.

Commonwealth Edison is notifying the State of Illinois of our request for these amendments by transmittal of a copy of this letter and its attachments to the designated State Official.

Please address any questions you may have concerning this matter to this office.

Three (3) signed originals and thirty-seven (37) copies of this transmittal are provided for your use.

Very truly yours,

B. Ryb

B. Rybak
Nuclear Licensing Administrator

lm

cc: R. Bevan (NRR)
R. Gilbert (NRR)
Region III Inspectors - D/QC
G. N. Wright (Illinois)

Attachment (1): Proposed Change to DPR-19
(2): Proposed Changes to DPR-29 & 30
(3): Significant Hazards Consideration

SUBSCRIBED AND SWORN to
before me this 2nd day
of October, 1984

Rosalie A. Prieto
Notary Public

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