



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

March 20, 1992

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

Subject: Use of Barrier Fuel in  
Dresden Nuclear Power Station  
Unit 2 Cycle 14 Reload  
NRC Docket No. 50-237

- References: (a) D.E. Garber (SNP) memo to M.E. Wagner (CECo) transmitting Siemens Nuclear Power Corporation Report, "Licensing Evaluation of Barrier Liner Cladding for Commonwealth Edison Company," dated February 21, 1992.
- (b) D.E. Garber (SNP) memo to M.E. Wagner (CECo) transmitting affidavit for "Licensing Evaluation of Barrier Liner Cladding for Commonwealth Edison Company," dated March 4, 1992.

Dear Dr. Murley:

On January 4, 1993, Dresden Unit 2 is scheduled to shutdown for refueling for Cycle 14. The purpose of this letter is to inform you of Commonwealth Edison's (CECo) intention to use barrier-clad fuel manufactured by Siemens Nuclear Power Corporation (SNP) in the Cycle 14 reload. Consistent with discussions between SNP and your staff, Commonwealth Edison has reviewed the SNP barrier design (9x9-2B) and determined the most appropriate course of action is to review and approve the use of barrier-clad fuel under the provisions of 10CFR50.59.

The SNP barrier design incorporates a 3.7 mil thick inner zirconium cladding liner. This is essentially the same design (manufactured using the same methods) as the barrier-clad fuel previously developed and tested under the DOE sponsored program initiated at CECO's Quad Cities Station. Furthermore, Siemens has substantial experience in fabricating this type of fuel for overseas reactors. More information on the SNP design and licensing evaluation may be found in Reference (a) (attached).

Commonwealth Edison's purpose behind acquiring barrier fuel for Dresden Unit 2 represents an ongoing commitment to reducing the likelihood of fuel failures from pellet-clad interaction (PCI). The barrier design provides increased protection from PCI by reducing chemical interactions between fission products and the zircaloy cladding. Since the Zirconium liner is a more compliant interface material between fuel pellets and the zircaloy cladding, it also provides additional protection from potential cracking caused by high stress during transient conditions.

9203300093 920320  
PDR ADOCK 05000237  
PDR

*Handwritten signature/initials*  
1/0

March 20, 1992

The SNP barrier-clad fuel is identical to the currently approved 9x9-2 design with the exception of the thin inner zirconium liner. Siemens has indicated that the presence of the zirconium liner has a negligible effect on the fuel rod neutronic and thermal performance. Siemens has also performed several analyses to assess the thermal mechanical performance under steady state, transient and accident conditions. This information is found in the Reference (a) evaluation. Siemens has concluded that all applicable licensing bases are satisfied.

In addition, Commonwealth Edison has performed a detailed review of the relevant licensing documents (Technical Specifications and Bases) and has concluded that no changes to the Technical Specifications will be required for the 9x9-2B design. In accordance with 10CFR50.59, CECO will complete On-Site and Off-Site Reviews to demonstrate that no unreviewed safety questions exist as part of the normal reload design and licensing process for Cycle 14. CECO's documentation of the results of our 50.59 evaluation for the Cycle 14 reload will accompany the submittal of the Core Operating Limits Report prior to unit startup.

The Reference (a) letter contains information proprietary to Siemens Nuclear Power Corporation. In accordance with the requirements of 10 CFR 2.79(b), an affidavit (Reference (b)) is enclosed to support the withholding of this information from public disclosure.

Very truly yours,



Peter L. Piet  
Nuclear Licensing Administrator

Attachments: Reference (a):Licensing Evaluation of Barrier Liner  
cladding for Commonwealth Edison Company

Reference (b):Affidavit

cc: A.B. Davis - Regional Administrator, Region III  
B.L. Siegel - Dresden/LaSalle Project Mgr., NRR  
R.C. Jones/L.E. Phillips - Reactor Systems Branch, NRR  
W.G. Rogers - Senior Resident Inspector, Dresden