



Duquesne Light

435 Sixth Avenue
Pittsburgh, Pa.
15219

(412) 456-6000

April 7, 1980

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Attn: D. G. Eisenhut, Acting Director
Division of Operating Reactors
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334
Cycle 2 Reload Safety Evaluation

Gentlemen:

Beaver Valley Power Station, Unit No. 1 completed its first cycle of operation on November 30, 1979, after having achieved a core average burnup of 15,570.04 MWD/MTU. The Unit is presently shutdown for refueling and major modifications. We expect to return to power operation for Cycle 2 on July 22, 1980. This letter is to advise you of the basic parameters of the reload design for Cycle 2 and the Duquesne Light Company review of the safety and operational aspects of the design of the reload by Westinghouse Electric Corporation.

The Beaver Valley Unit 1 reload core was designed to perform under current nominal design parameters, Technical Specifications and related bases and current setpoints applicable to this Unit. The reload fuel consists of a total of fifty (50) standard design, Westinghouse 17 x 17 fuel assemblies (identified as Region 4 fuel) and two (2) Westinghouse 17 x 17 fuel assemblies of the optimized design (identified as Region 4A fuel) inserted for demonstration purposes. The mechanical and thermal hydraulic design of the fifty (50) Region 4 fuel assemblies is identical to the Region 3 fuel which operated for Cycle 1. The design and operational characteristics of the two (2) optimized demonstration assemblies are described in the Westinghouse report "Optimized Fuel Assembly Demonstration Program," (WCAP-9286) July, 1978. The optimized fuel assemblies contain fuel cladding of slightly reduced diameter and employ Zircalloy spacer grids for all but the top and bottom spacer grid locations. The nominal feed enrichment for both Regions 4 and 4A fuel is 3.20 w/o. The two (2) optimized fuel assemblies have been placed in core locations in which they will not be lead assemblies during normal operations nor will the use of these optimized fuel assemblies lead to more limiting conditions during transient conditions than analyzed for standard fuel assemblies.

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Duquesne Light Company has performed a detailed review of the Westinghouse Reload Safety Evaluation Report (RSER) for Beaver Valley Power Station, Unit No. 1 - Cycle 2, including all postulated accidents in the FSAR and the fuel densification report. The RSER included a review of the core characteristics to determine those parameters affecting the postulated accident analyses reported in the Beaver Valley FSAR. The incidents whose consequences could potentially be affected by the reload core characteristics were reanalyzed. Duquesne Light Company verified that the reanalyses were performed in accordance with the Westinghouse reload safety methodology as outlined in the March, 1978, Westinghouse topical report entitled "Westinghouse Reload Safety Evaluation Methodology" (WCAP-9272). The results of these reanalyses were verified to be within previously reviewed and accepted limits. Therefore, the conclusions of the BVPS-FSAR remain valid. During the course of our review of the RSER, it was noted that two changes were made to Table 3.3-2, "Nuclear Design Parameters" of the BVPS-FSAR. For Cycle 2 and beyond, the Total Heat Flux Hot Channel Factor should be 2.32 and the Delayed Neutron Fraction (B_{eff}) (EOL) should be 0.0048.

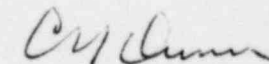
The RSER demonstrated that no changes to the Technical Specification are required for operation of Beaver Valley Unit 1 during Cycle 2. The Beaver Valley On-Site Safety Committee (OSC) and the Duquesne Light Company Off-Site Review Committee (ORC) have concluded that no unreviewed safety questions, as defined by 10 CFR 50.59, are involved with this reload. Additionally, the OSC and ORC have verified that the Cycle 2 design precludes the two (2) optimized demonstration assemblies from becoming more limiting than fuel assemblies of standard design for both normal operation and transient conditions. Therefore, based upon this review, application for amendment to the Beaver Valley Unit No. 1 operating license is not required.

The reload core design will be verified by performing the normal standard startup physics tests for Westinghouse PWR reload cycles. These tests will include:

1. Control rod drive tests and rod droptime
2. Critical boron concentration measurements
3. Control rod bank worth measurement
4. Moderator temperature coefficient measurement
5. Power coefficient measurement
6. Startup power distribution measurements using the incore flux mapping system

Results of these tests will be reported to the NRC as a Startup Test Report submitted within ninety (90) days of startup of Cycle 2. It is planned that Cycle 2 will be operated to achieve a nominal cycle burnup of 10,250 MWD/MTU.

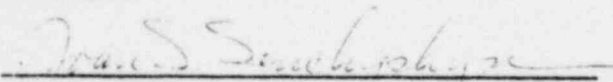
Very truly yours,



C. N. Dunn
Vice President, Operations

(CORPORATE SEAL)

Attest:



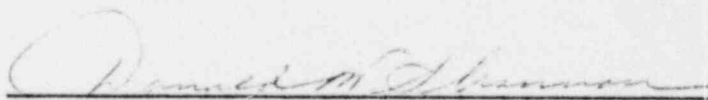
Joan S. Senchyshyn
Asst. Secretary

COMMONWEALTH OF PENNSYLVANIA)

) SS:

COUNTY OF ALLEGHENY)

On this 7TH day of APRIL, 1980,
before me, DONALD W. SHANNON, a Notary Public in and for said
Commonwealth and County, personally appeared C. N. Dunn, who being duly
sworn, deposed, and said that (1) he is Vice President of Duquesne Light,
(2) he is duly authorized to execute and file the foregoing Submittal
on behalf of said Company, and (3) the statements set forth in the
Submittal are true and correct to the best of his knowledge, information
and belief.



DONALD W. SHANNON, NOTARY PUBLIC
PITTSBURGH, ALLEGHENY COUNTY
MY COMMISSION EXPIRES JUNE 7, 1983
Member, Pennsylvania Association of Notaries