September 13, 1996

Mr. J. E. Cross
President-Generation Group
Duquesne Light Company
Post Office Box 4
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NO. 2 (TAC NO. M95319)

Dear Mr. Cross:

The Commission has issued the enclosed Amendment No. 82 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated April 29, 1996, as supplemented September 12, 1996, which submitted Proposed Operating License Change Request No. 106.

This amendment revises TS 5.3.1 to allow the use of ZIRLO as an alternate zirconium-based fuel rod material and removes the word "clad" to be consistent with the text of the NRC's improved Standard Technical Specifications (NUREG-1431). Limited substitution of fuel rods by ZIRLO filler rods is permitted. The proposed revision to Note 2 on TS Table 3.9-1 to specify that the maximum burnup in the peak fuel rod in a fuel assembly stored in Region 2 spent fuel racks should not exceed the NRC-approved limit for WCAP-12610 was withdrawn by your letter dated September 12, 1996.

A copy of our Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,
/S/
Donald S. Brinkman, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-412

Enclosures: 1. Amendment No. 82 to NPF-73
2. Safety Evaluation

cc w/encls: See next page

DF01 1/1

DISTRIBUTION:

Docket File	MO'Brien	CGrimes
PUBLIC	DBrinkman	SWu
PDI-2 Reading	OGC	ACRS
SVarga	GHill(4)	PEselgroth, RGNI
JStolz	RJones	

OFFICE	PDI-2/LA	PDI-2/PM	SRXB/BC	OGC	PDI-2/D
NAME	MO'Brien	DBrinkman:rb	RJones	MYoung	JStolz
DATE	9/13/96	9/13/96	9/13/96	9/13/96	9/13/96

OFFICIAL RECORD COPY
DOCUMENT NAME: BV95319.AMD

CP1

cc:

Jay E. Silberg, Esquire
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW.
Washington, DC 20037

R. K. Brosi, Manager
Nuclear Safety Department (BV-A)
Duquesne Light Company
Beaver Valley Power Station
PO Box 4
Shippingport, PA 15077

Commissioner Roy M. Smith
West Virginia Department of Labor
Building 3, Room 319
Capitol Complex
Charleston, WVA 25305

John D. Borrows
Director, Utilities Department
Public Utilities Commission
180 East Broad Street
Columbus, OH 43266-0573

Director, Pennsylvania Emergency
Management Agency
Post Office Box 3321
Harrisburg, PA 17105-3321

Ohio EPA-DERR
ATTN: Zack A. Clayton
Post Office Box 1049
Columbus, OH 43266-0149

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
433 Orlando Avenue
State College, PA 16803

Bureau of Radiation Protection
Pennsylvania Department of
Environmental Resources
ATTN: R. Barkanic
Post Office Box 2063
Harrisburg, PA 17120

Mayor of the Borrough of
Shippingport
Post Office Box 3
Shippingport, PA 15077

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Resident Inspector
U.S. Nuclear Regulatory Commission
Post Office Box 181
Shippingport, PA 15077

George S. Thomas
Vice President, Nuclear Services
Nuclear Power Division
Duquesne Light Company
P.O. Box 4
Shippingport, PA 15077

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

THE TOLEDO EDISON COMPANY

DOCKET NO. 50-412

BEAVER VALLEY POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 82
License No. NPF-73

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duquesne Light Company, et al. (the licensee) dated April 29, 1996, as supplemented September 12, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-73 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 82 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. DLCO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 13, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 82

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

Replace the following page of the Appendix A Technical Specifications with the enclosed page as indicated. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Remove	Insert
5-6	5-6

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for maximum internal pressure of 45 psig and a temperature of 280.0°F.

PENETRATIONS

5.2.3 Penetrations through the reactor containment building are designed and shall be maintained in accordance with the original design provisions contained in Section 6.2.4 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor shall contain 157 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 48 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 82 TO FACILITY OPERATING LICENSE NO. NPF-73

DUQUESNE LIGHT COMPANY
OHIO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY

BEAVER VALLEY POWER STATION, UNIT 2

DOCKET NO. 50-412

1.0 INTRODUCTION

By letter dated April 29, 1996, as supplemented September 12, 1996, the Duquesne Light Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit 2 (BVPS-2), Technical Specifications (TSs) to allow the use of ZIRLO material for fuel cladding for BVPS-2. The Westinghouse ZIRLO fuel was described in Topical Report WCAP-12610 "VANTAGE+ Fuel Assembly Reference Core Report," and was approved by the NRC staff for irradiation up to 60,000 MWd/MTU rod average burnup. The ZIRLO fuel design has been tested through LTA programs and was selected as reload fuel by other utilities.

2.0 EVALUATION

TS 5.3.1 requires fuel rods to be constructed with Zircaloy. Zircaloy or stainless steel filler rods may be substituted in place of fuel rods in accordance with approved applications of fuel rod configurations. The proposed amendment would modify TS 5.3.1 to also allow fuel rods to be constructed with ZIRLO and allow fuel assembly reconstitution with ZIRLO filler rods. The use of other zirconium alloys would require an exemption from 10 CFR 50.46 in that only Zircaloy and ZIRLO are identified in that regulation.

The staff approved the ZIRLO fuel design in a safety evaluation dated July 1, 1991, to the Westinghouse Topical Report WCAP-12610 "VANTAGE+ Fuel Assembly Reference Core Report." The NRC staff also approved LOCA methodologies in another safety evaluation, dated October 9, 1991, to Westinghouse Topical Reports WCAP-12610, Appendices F, "LOCA NOTRUMP Evaluation Model: ZIRLO Modifications," and G, "LOCA Plant Specific Accident Evaluation." The July 1, 1991, safety evaluation concluded that:

1. The mechanical design bases and limits for the ZIRLO clad fuel assembly design are the same as those for the previously licensed Zircaloy-4 clad fuel assembly design, except those for clad corrosion.

2. The neutronic evaluations have shown that ZIRLO clad fuel nuclear design bases are satisfied and that key safety parameter limits are applicable. The nuclear design models and methods accurately describe the behavior of ZIRLO clad fuel.

3. The thermal and hydraulic design basis for the ZIRLO clad fuel is unchanged.

4. The methods and computer codes used in the analysis of the non-loss of coolant accident licensing basis events are valid for ZIRLO clad fuel, and all licensing basis criteria will be met.

In the October 9, 1991 safety evaluation for WCAP-12610, Appendices F (dealing with large-break-loss-of-coolant-accidents) and G (dealing with small-break-loss-of-coolant-accidents, the NRC staff concluded that the loss-of-coolant-accidents), the NRC staff concluded that the loss-of-coolant-accident analyses and methods used, the same methods applied to BVPS-2, demonstrated conformance with the criteria given in 10 CFR 50.46 and 10 CFR Part 50, Appendix K. That safety evaluation stated that its conclusions were based upon the close similarity between the material properties of the ZIRLO alloy of zirconium to those of other zirconium materials that have been previously licensed for use as cladding material. Based on this similarity, the NRC staff found that it is appropriately conservative to apply the criteria of 10 CFR 50.46 and 10 CFR Part 50, Appendix K, when reviewing VANTAGE+ (ZIRLO) fuel applications, including WCAP-12610, Appendices F and G. Thus, the NRC staff concludes that the use of ZIRLO fuel up to 60,000 MWd/MTU peak rod average is acceptable for BVPS-2.

The licensee proposed to revise NOTE 2 in Table 3.9-1 by the following new sentence:

> The maximum burnup in the peak fuel rod should not exceed the NRC-approved limit for WCAP-12610.

However, by letter dated September 12, 1996, the licensee withdrew the proposed revision to Note 2 in Table 3.9-1.

The licensee has proposed to add "ZIRLO" in the fuel rod design in TS 5.3.1 in the following sentence:

> ... Each assembly shall consist of a matrix of Zircaloy or ZIRLO fuel rods...

Based on the above staff evaluation, the NRC staff concludes that the change is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 25703). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Wu

Date: September 13, 1996