

November 1, 1982

Docket No. 50-334

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Mr. J. J. Carey, Vice President
Duquesne Light Company
Nuclear Division
Post Office Box 4
Shippingport, Pennsylvania 15077

Dear Mr. Carey:

The Commission has issued the enclosed Amendment No. 58 to Facility Operating License No. DPR-66 for the Beaver Valley Power Station, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated February 23, 1982, supplemented by your letter dated August 3, 1982.

The amendment changes the partial power multiplier, $F_{\Delta H}$, from 0.2 to 0.3. In addition, this amendment also corrects an administrative error in Amendment No. 55.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by:

Peter S. Tam, Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. 58 to DPR-66
2. Safety Evaluation
3. Notice of Issuance

cc w/encls:

See next page

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DATE	10/21/82	10/21/82	10/21/82	10/21/82	10/27/82		

Mr. J. J. Carey
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 58
License No. DPR-66

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company (the licensees) dated February 23, 1982, supplemented by letter dated August 3, 1982, 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.

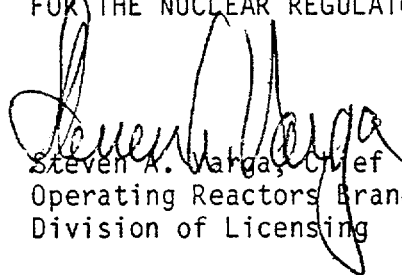
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 58, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Vargas, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 1, 1982

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Revise Appendix A as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
2-9	2-9
B 2-2	B 2-2
3/4 2-7	3/4 2-7
3/4 2-8	3/4 2-8

Revise Appendix B as follows*:

<u>Remove Page</u>	<u>Insert Page</u>
2-2	2-2

*Due to an administrative error, this page change was not included in Amendment #55.

TABLE 2.2-1 (Continued)
REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>NOTATION (Continued)</u>		
Operation with 3 Loops	Operation with 2 Loops (no loops isolated)	Operation with 2 Loops (1 loop isolated)
$K_1 = 1.18$	$K_1 = 0.99$	$K_1 = 1.1$
$K_2 = 0.01655$	$K_2 = 0.01655$	$K_2 = 0.01655$
$K_3 = 0.000801$	$K_3 = 0.000801$	$K_3 = 0.000801$

and $f(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (i) for $q_t - q_b$ between -23 percent and +11 percent, $f(\Delta I) = 0$
 (where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER).
- (ii) for each percent that the magnitude of $(q_t - q_b)$ exceeds -23 percent, the ΔT trip setpoint shall be automatically reduced by 1.54 percent of its value at RATED THERMAL POWER.
- (iii) for each percent that the magnitude of $(q_t - q_b)$ exceeds +11 percent, the ΔT trip setpoint shall be automatically reduced by 1.91 percent of its value at RATED THERMAL POWER.

SAFETY LIMITS

BASES

The curves are based on an enthalpy hot channel factor, $F_{\Delta H}^N$, of 1.55 and a reference cosine with a peak of 1.55 for axial power shape. An allowance is included for an increase in $F_{\Delta H}^N$ at reduced power based on the expression:

$$F_{\Delta H}^N = 1.55 [1 + 0.3 (1-P)]$$

where P is the fraction of RATED THERMAL POWER

These limiting heat flux conditions are higher than those calculated for the range of all control rods fully withdrawn to the maximum allowable control rod insertion assuming the axial power imbalance is within the limits of the $f(\Delta I)$ function of the Overtemperature trip. When the axial power imbalance is not within the tolerance, the axial power imbalance effect on the Overtemperature ΔT trip will reduce the setpoint to provide protection consistent with core safety limits.

2.1.2 REACTOR COOLANT SYSTEM PRESSURE

The restriction of this Safety Limit protects the integrity of the Reactor Coolant System from overpressurization and thereby prevents the release of radionuclides contained in the reactor coolant from reaching the containment atmosphere.

The reactor pressure vessel and pressurizer are designed to Section III of the ASME Code for Nuclear Power Plant which permits a maximum transient pressure of 110% (2735 psig) of design pressure. The Reactor Coolant System piping and fittings are designed to ANSI B 31.1 and the valves are designed to ASA 16.5 which permit a maximum transient pressure of 120% (2985) psig of component design pressure. The Safety Limit of 2735 psig is therefore consistent with the design criteria and associated code requirements.

The entire Reactor Coolant System is hydrotested at 3107 psig to demonstrate integrity prior to initial operation.

K(Z) - NORMALIZED $F_Q(Z)$
 AS A FUNCTION OF CORE HEIGHT
 N-LOOP
 BEAVER VALLEY - UNIT 1

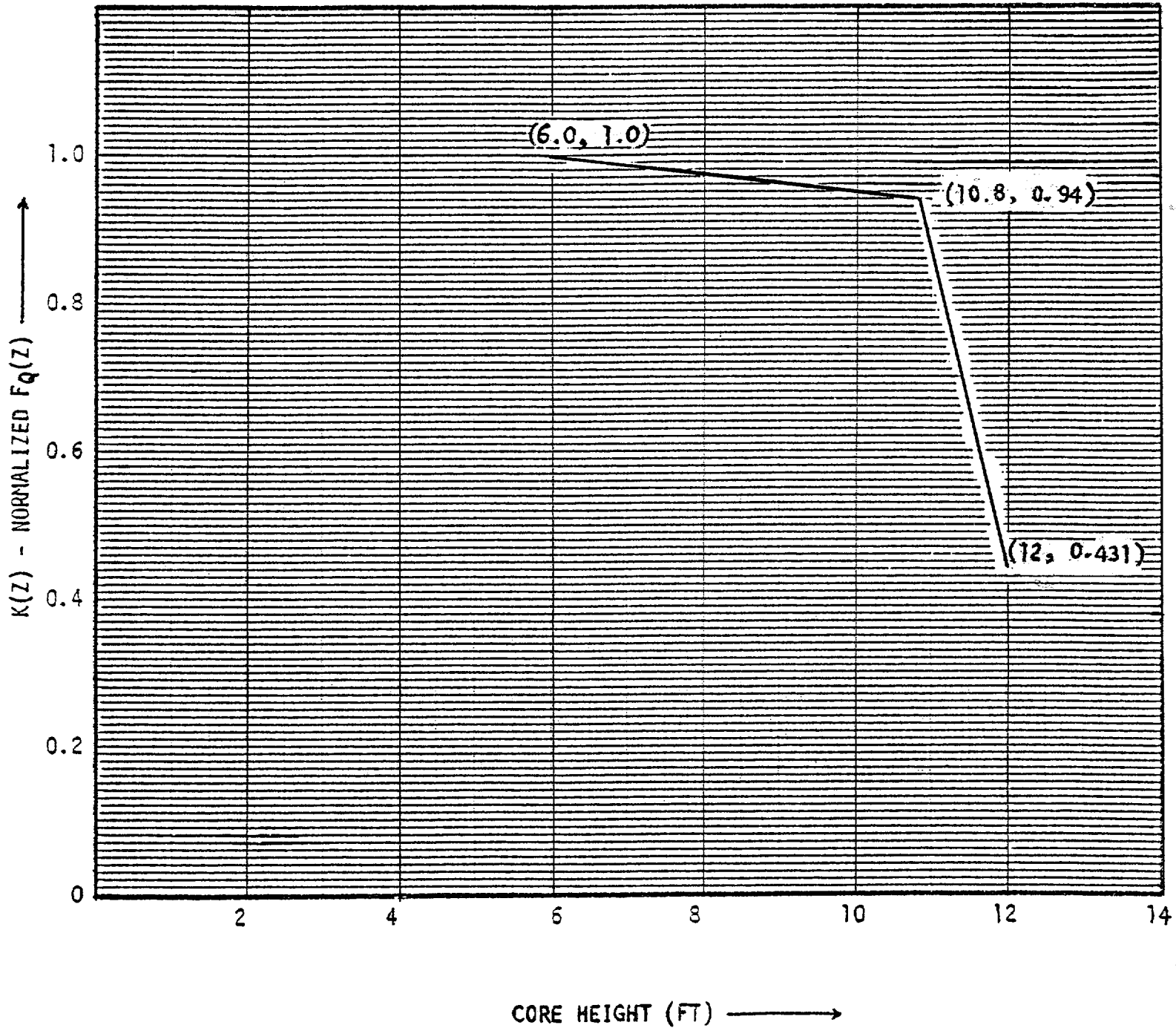


Figure 3.2-2

AMENDMENT NO. 58

POWER DISTRIBUTION LIMITS

NUCLEAR ENTHALPY HOT CHANNEL FACTOR - $F_{\Delta H}^N$

LIMITING CONDITION FOR OPERATION

3.2.3 $F_{\Delta H}^N$ shall be limited by the following relationship:

$$F_{\Delta H}^N \leq 1.55 [1 + 0.3 (1-P)] [1-RBP(BU)]$$

where $P = \frac{\text{THERMAL POWER}}{\text{RATED THERMAL POWER}}$

RBP (BU) = Rod Bow Penalty as a function of region average burnup as shown in Figure 3.2-4, where a region is defined as those assemblies with the same loading date (reloads) or enrichment (first cores).

APPLICABILITY: MODE 1

ACTION:

With $F_{\Delta H}^N$ exceeding its limit:

- a. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to $\leq 55\%$ of RATED THERMAL POWER within the next 4 hours,
- b. Demonstrate thru in-core mapping that $F_{\Delta H}^N$ is within its limit within 24 hours after exceeding the limit or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 2 hours, and
- c. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION may proceed provided that $F_{\Delta H}^N$ is demonstrated through in-core mapping to be within its limit at a nominal 50% of RATED THERMAL POWER prior to exceeding this THERMAL POWER, at a nominal 75% of RATED THERMAL POWER prior to exceeding this THERMAL power and within 24 hours after attaining 95% or greater RATED THERMAL POWER.

2.3.2

Corrosion Inhibitors - (Hexavalent Chromium)

Objective

To limit the maximum concentration of hexavalent chromium at the discharge structure to an incremental value of 0.05 mg/l.

Specification

The concentration of hexavalent chromium shall be limited to a maximum of 15 mg/l as released from the low level waste drain tanks to the cooling tower blowdown discharge as determined by analyses specified below.

Monitoring Requirement

Prior to discharge, the hexavalent chromium concentration in a low level waste drain tank shall be determined by the colormetric method described on page 429 of Standard Methods for the Examination of Water and Waste Water, 13th ed, American Public Health Association. A record shall be maintained of tank concentrations of hexavalent chromium, tank discharge rates and blowdown discharge rates at times of release. An alternative equivalent method for determining the hexavalent chromium concentration may be used with the staff's approval.

Bases

The Ohio River Valley Water Sanitation Commission recommends that the concentration of hexavalent chromium in a discharge shall not exceed 0.05 mg/l. The specified 15 mg/l release concentration with the minimum dilution factor of 300 assures that the concentration of the discharge to the Ohio River does not increase the concentration by more than 0.05 mg/l. Discharge from the low level waste drain tanks is diluted by other plant discharges so that concentration in the tanks will be decreased by a factor of 300.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. DPR-66

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

BEAVER VALLEY POWER STATION, UNIT NO. 1

DOCKET NO. 50-334

Introduction

In a letter dated August 3, 1982, Duquesne Light (the licensee) requested a change in the partial power multiplier (from 0.2 to 0.3) for $F_{\Delta H}$. This change was requested in the licensee's original submittal of Technical Specification change number 66, dated February 23, 1982. However, sufficient justification was not submitted and we were then unable to approve the change in the partial power multiplier.

Evaluation

Historically, increasing the allowable $F_{\Delta H}^N$ with decreasing power has been permitted by the staff for all previously approved Westinghouse designs. The increase is permitted by the DNB protection setpoints and allows for radial power distribution changes with rod insertion to the insertion limit. The change to a larger partial power multiplier is requested for Beaver Valley to allow optimization of the core loading pattern by minimizing restrictions on $F_{\Delta H}^N$ at low power. This change will also minimize the probability of making rod insertion limit changes to satisfy peaking factor criteria at low power with the control rod banks at the insertion limit.

As a result of the multiplier change, the axial offset function is slightly more limiting and this change has been made to Technical Specification Table 2.2-1. No accident reanalysis was required.

We have approved the partial power multiplier change to 0.3 for WCAP 9500 (Reference 1) and for the Trojan plant (Reference 2); Duquesne Light's request for the Beaver Valley Unit 1 change is similar. We thus find the licensee's requested change of the partial power multiplier from 0.2 to 0.3 acceptable.

In addition, due to an administrative error, our Amendment No. 55 (dated 8/2/82) did not revise page 2-2 of Appendix B. This amendment thus includes a revised page 2-2. The revision consists of deletion of all material under 2.3.1 on this page.

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Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that:
(1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration,
(2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 1, 1982

Principal Contributor: M. Chatterton

References

- 1) Safety Evaluation of the Westinghouse Electric Corporation Topical Report, WCAP-9500 "Reference Core Report 17x17 Optimized Fuel Assembly," May 22, 1981.
- 2) Amendment 76 to Facility Operating License NPF-1 for Trojan, 8/13/82.

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-334DUQUESNE LIGHT COMPANYOHIO EDISON COMPANYPENNSYLVANIA POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 58 to Facility Operating License No. DPR-66 issued to Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company (the licensees), which revised Technical Specifications for operation of the Beaver Valley Power Station, Unit No. 1 (the facility) located in Beaver County, Pennsylvania. The amendment is effective as of the date of issuance.

The amendment changes the partial power multiplier from 0.2 to 0.3. In addition, this amendment also corrects an administrative error in Amendment No. 55.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since this amendment does not involve a significant hazards consideration.

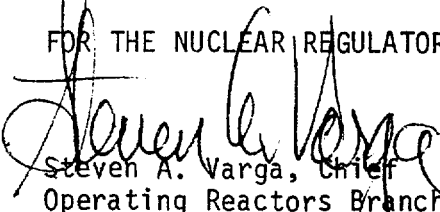
- 2 -

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated February 23, 1982, supplemented by letter dated August 3, 1982, (2) Amendment No. 58 to License No. DPR-66 and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D. C. and at the B. F. Jones Memorial Library, 663 Franklin Avenue, Alquippa, Pennsylvania 15001. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 1st day of November 1982.

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing