April 23, 1992

Docket No. 50-412
Serial No. BV-92-019

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Mr. J. D. Sieber, Vice President
Nuclear Group
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077-0004

Dear Mr. Sieber:

SUBJECT: AMENDMENT NO. 45 : REACTOR COOLANT SYSTEM FLOW UNCERTAINTY - CHANGE REQUEST NO. 62 (TAC NO. M82370)

The Commission has issued the enclosed Amendment No. 45 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit 2, in response to your application dated January 13, 1992.

The amendment would revise Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it would lower the value for the minimum required reactor coolant system total flow rate from 274,800 gpm to 270,850 gpm and lower the flow measurement uncertainty value specified in a footnote on Table 3.2.5 from 3.5% to 2.0%.

We also have included a corrected page 3/4 2-11 which had been issued with Amendment No. 33 on April 26, 1990. The correction deletes the erroneous notation that indicated that a change to that page had been made.

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

Sincerely,

/s/

Albert W. De Agazio, Sr. Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 45 to NPF-73
2. Safety Evaluation

cc w/enclosures:
See next page

CP-1

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*See previous concurrence
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AD:DRPE
JCalvo
4/23/92

Document Name:82370AMD

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

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. 45
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. (licensee) dated January 13, 1992, 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. 45 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

José A. Calvo

Jose A. Calvo, Assistant Director
for Region I Reactors
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 23, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 45

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

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

Remove	Insert
3/4 2-12	3/4 2-12

POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

a. Reactor Coolant System T_{avg}

b. Pressurizer Pressure

c. Reactor Coolant System Total Flow Rate

APPLICABILITY: MODE 1*

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5 percent of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1.1 Each of the parameters of Table 3.2-1 shall be verified to be indicating within their limits at least once per 12 hours.

4.2.5.1.2 The provisions of Specification 4.0.3 and 4.0.4 are not applicable for the reactor startups following the initial fueling for Reactor Coolant System total flow rate to allow a calorimetric flow measurement and the calibration of the Reactor Coolant System total flow rate indicators.

4.2.5.2 The Reactor Coolant System total flow rate shall be determined to be within its limit by measurement at least once per 18 months.

* The provisions of Specification 3.0.2 are not applicable for the reactor startup following the initial fueling for Reactor Coolant System total flow rate to allow a calorimetric flow measurement and the calibration of the Reactor Coolant System total flow rate indicators.

TABLE 3.2-1

DNB PARAMETERS

PARAMETER	3 Loops in Operation
Reactor Coolant System T_{avg}	≤ 580.3°F
Pressurizer Pressure	≥ 2220 psia*
Reactor Coolant System Total Flow Rate	≥ 270,850 gpm**

* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5 percent RATED THERMAL POWER per minute or a THERMAL POWER step increase in excess of 10% RATED THERMAL POWER.

** Includes a 2.0% flow measurement uncertainty.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 45 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 January 13, 1992, the Duquesne Light Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit 2 Technical Specifications (TS). The requested changes would revise Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it would lower the value for the minimum required reactor coolant system (RCS) total flow from 274,800 gpm to 270,850 gpm and lower the flow measurement uncertainty value, specified in the footnote, from 3.5% to 2.0%.

2.0 BACKGROUND

Technical Specification 3.2.5 requires that the RCS flow be maintained greater than or equal to 274,800 gpm, and contains a footnote stating that this flow limit includes an allowance for a 3.5% flow measurement uncertainty. This limit placed on RCS flow along with RCS coolant temperature, and pressurizer pressure ensures that the minimum departure-from-nucleate-boiling ratio will be met for each of the transients analyzed in the safety analyses. The current safety analyses assumes a total RCS thermal design flow of 265,500 gpm.

3.0 EVALUATION

The proposed reduction of the RCS flow measurement uncertainty from 3.5% to 2.0% and the resulting lowering of the required RCS total flow from greater than or equal to 274,800 gpm to greater than or equal to 270,850 gpm is based on a plant specific analysis for Beaver Valley Power Station (BVPS) Unit 2. This plant specific analysis was performed using the same methodology as provided in WCAP 12478 and WCAP 11366 Revision 2, titled "RTD Bypass Elimination Licensing Report for BVPS Unit No. 2" and "Westinghouse Setpoint

Methodology for Protection Systems for BVPS Unit No. 2" respectively. The methodology of WCAP 11366 Revision 2, is essentially the same as that used for V.C. Summer Nuclear Station No. 1 which was approved by the NRC in NUREG-0717 Supplement No. 4. In addition, the test procedure used to conduct the heat balance which determines the RCS total flow rate using thermodynamic equations was also reviewed.

The result of this analysis is a RCS flow measurement uncertainty of 1.9%. A value of 0.1% was then added to account for undetected feedwater venturi fouling. Potential fouling of the feedwater venturi, which might not be detected, could bias the results of the heat balance in a non-conservative manner. DLC has stated that BVPS Unit 2 has not exhibited any evidence of feedwater venturi fouling as shown by the secondary side performance monitoring program. The addition of the 0.1% will provide additional conservatism to the measured RCS total flow.

The change to the RCS flow uncertainty does not affect any safety analyses which require an RCS flow value. The value for RCS total flow used as an initial condition in these safety analyses is 265,500 gpm. The uncertainty factor will ensure that actual RCS total flow is at or above the value assumed in the safety analyses for normal operating conditions and anticipated operational occurrences.

The staff has reviewed the methodology applied to determine the flow uncertainty and has concluded that it is similar to methodologies previously approved. The licensee's analysis shows that the minimum departure-from-nucleate-boiling ratio will be met for each of the transients analyzed and that the plant will remain within the limits prescribed for continued safe operation. Therefore, the changes to the minimum required RCS total flow and flow measurement uncertainty are acceptable.

4.0 EMERGENCY CIRCUMSTANCES

The RCS total coolant flow is measured on a frequency of 18 months in accordance with Surveillance Requirement (SR) 4.2.5.2. The next determination of RCS total flow is scheduled to be performed during the week of May 3, 1992, at the end of the third refueling outage. The SR is conducted when the plant is in Mode 3 during the startup sequence. During the third refueling outage, a number of steam generator tubes have been plugged because of deterioration detected by eddy current testing. When steam generator tubes are plugged, RCS total flow is adversely affected, and the licensee is concerned that the measured flow, including the allowance for measurement uncertainty, might fall below the value currently specified. Therefore, the amendment must be issued prior to the completion of SR 4.2.5.2, otherwise, plant restart might be delayed.

Duquesne Light Company submitted a timely application for this proposed amendment on January 13, 1992, and a notice was published on February 19, 1992, in the Federal Register as required by the Commission's regulations

10 CFR 50.91(a)(2)). However, because of an administrative error, the notice did not correctly identify the unit for which this change was proposed. Furthermore, there is insufficient time to re-notice this action pursuant to 10 CFR 50.91(a).

Accordingly, pursuant to 10 CFR 50.91(a)(5), the staff has determined that emergency circumstances exist warranting prompt approval in that failure to act will cause the plant to delay startup, the emergency exists because of the staff's administrative error, and the licensee made a timely application for the amendment.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has made a final determination that the amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92(c), this means that the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The staff has evaluated the proposed changes against the above standards as required by 10 CFR 50.91(a) and has concluded that:

A. The change does not involve a significant increase in the probability or consequences of an accident previously evaluated (10 CFR 50.92(c)(1)) because the accident analyses are not affected by this proposed change. The RCS thermal design flow of 265,500 gpm remains unchanged, and it will continue to be monitored once per 12 hours in accordance with Surveillance Requirement 4.2.5.1.1. The change does not affect the operation or function of the RCS, does not involve any physical modification to the facility, and does not affect the manner in which the facility is operated.

B. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated (10 CFR 50.92(c)(2)) because it does not change system configurations, plant equipment, or the safety analyses performed for the facility. The proposed change merely changes the RCS flow uncertainty value to the latest value determined from a heat balance.

C. The change does not involve a significant reduction in a margin of safety (10 CFR 50.92(c)(3)) because it does not change the RCS thermal design flow rate of 265,500 gpm which is used in all accident analyses. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

6.0 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.

7.0 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 there is no significant increase in individual or cumulative radiation exposure. The Commission has made a final no significant hazards determination with respect to this amendment. 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.

8.0 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: James Andersen

Date: April 23, 1992