

February 20, 1990

Docket No. 50-412

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

Dear Mr. Sieber:

SUBJECT: BEAVER VALLEY UNIT 2 - ISSUANCE OF AMENDMENT (TAC NO. 74573)

The Commission has issued the enclosed Amendment No. 27 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit 2, in response to your application dated August 25, 1989.

The amendment revises the Technical Specifications to delete all set point, operability and surveillance requirements on the steam/feedwater mismatch trip function.

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

Sincerely,

/s/

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 27 to NPF-73
- 2. Safety Evaluation

cc w/enclosures:  
See next page

OFC	:LA:PDI-4	:PM:PDI-4	:PD:PDI-4	:OGC	:	:
NAME	:S Morris	:PTam:lm	:JStolz	:PStam	:R Bachmann	:
DATE	:2/6/90	:2/6/90	:2/6/90	:2/8/90	:	:

OFFICIAL RECORD COPY  
Document Name: AMEND 74573

9003090008 900220  
PDR ADOCK 05000412  
P PTIC

*DFol*  
*1/1*

*1/1*  
*CP*

February 5, 1990

corrected copy

MEMORANDUM FOR: Sholly Coordinator

DISTRIBUTION  
Docket File SNorris  
PTam PDI-4 R/F  
OGC

FROM: Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

SUBJECT: REQUEST FOR PUBLICATION IN BI-WEEKLY FR NOTICE - NOTICE OF  
ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE  
(TAC NO. 74574)

Duquesne Light Company, Docket No. 50-412, Beaver Valley Power Station,  
Unit No. 2, Shippingport, Pennsylvania

Date of application for amendment: August 29, 1989

Brief description of amendment: The amendment revises the Technical  
Specifications to change the qualification requirements for members of the  
Independent Safety Evaluation Group (ISEG). The revised requirement specifies  
two additional ways to qualify a person as a member of the ISEG.

Date of issuance: February 5, 1990

Effective date: February 5, 1990

Amendment No. 26

Facility Operating License No. NPF-73. Amendment revised the Technical  
Specifications.

Date of initial notice in FEDERAL REGISTER: October 4, 1989 (54 FR 40928)

The Commission's related evaluation of the amendment is contained in a  
Safety Evaluation dated February 5, 1990

No significant hazards consideration comments received: No

Local Public Document Room location: B. F. Jones Memorial Library, 663  
Franklin Avenue, Aliquippa, Pennsylvania 15001.

/s/

9002260156 900205  
CF ADDCK 05000412  
CDC

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

\*See Previous concurrence

\*LA:PDI-4  
SNorris  
1/19/90

\*PM:PDI-4  
PTam:lm *ST*  
1/19/90

\*PD:PDI-4  
JStolz  
2/2/90

\*OGC  
1/23/90

*CP-1*  
*DFx2*  
*1/0*

9002130132 11

February 1990

*Sinda -  
pls get copy  
+ file -  
sorry*

MEMORANDUM FOR: Sholly Coordinator

**DISTRIBUTION**

FROM: Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

Docket File SNorris  
PTam PDI-4 R/F  
OGC

SUBJECT: REQUEST FOR PUBLICATION IN BI-WEEKLY FR NOTICE - NOTICE OF  
ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE  
(TAC NO. 74574)

Duquesne Light Company, Docket No. 50-334, Beaver Valley Power Station,  
Unit No. 2, Shippingport, Pennsylvania

Date of application for amendment: August 29, 1989

Brief description of amendment: The amendment revises the Technical  
Specifications to change the qualification requirements for members of the  
Independent Safety Evaluation Group (ISEG). The revised requirement specifies  
two additional ways to qualify a person as a member of the ISEG.

Date of issuance: February 5, 1990

Effective date: February 5, 1990

Amendment No. 26

Facility Operating License No. ~~OPR-66~~, Amendment revised the Technical  
Specifications.

Date of initial notice in FEDERAL REGISTER: October 4, 1989 (54 FR 40928)

The Commission's related evaluation of the amendment is contained in a  
Safety Evaluation dated February 5, 1990

No significant hazards consideration comments received: No

Local Public Document Room location: B. F. Jones Memorial Library, 663  
Franklin Avenue, Aliquippa, Pennsylvania 15001.

/s/

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

LA:PDI-4  
SNorris  
1/19/90

PM:PDI-4  
PTam: *PST*  
1/19/90

PD:PDI-4  
JStolz  
2/2/90

OGC  
*BMB*  
1/23/90

[S74574]

February 20, 1990

MEMORANDUM FOR: Sholly Coordinator

DISTRIBUTION  
Docket File/SNorris  
PTam PDI-4 R/F  
OGC

FROM: Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

SUBJECT: REQUEST FOR PUBLICATION IN BI-WEEKLY FR NOTICE - NOTICE OF  
ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE  
(TAC NO. 74573)

Duquesne Light Company, Docket No. 50-412, Beaver Valley Power Station,

Unit No. 2, Shippingport, Pennsylvania

Date of application for amendment: August 25, 1989

Brief description of amendment: The amendment revises the Technical Specifications to delete all set point, operability and surveillance requirements on the steam/feedwater mismatch trip function.

Date of issuance: February 20, 1990

Effective date: February 20, 1990

Amendment No. 27

Facility Operating License No. NPF-73. Amendment revised the Technical Specifications.

Date of initial notice in FEDERAL REGISTER: October 4, 1989 (54 FR 40927)

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated

No significant hazards consideration comments received: No

Local Public Document Room location: B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

/s/

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II

LA:PDI-4  
SNorris  
2/16/90

PM:PDI-4  
PTam:lm  
2/16/90 *BT*

PD:PDI-4  
JStolz  
2/16/90 *for*

*OGC*  
*R. Buchmann*  
2/18/90

[S79573]

9002230536 900220  
CF ADOCK 05000412  
CDC

*DFF 110*

*CR1*

February 5, 1990

Docket No. 50-412

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

Dear Mr. Sieber:

SUBJECT: BEAVER VALLEY UNIT 2 - ISSUANCE OF AMENDMENT (TAC NO. 74574)

The Commission has issued the enclosed Amendment No. 26 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit 2, in response to your application dated August 29, 1989.

The amendment revises the Technical Specifications to change the qualification requirements for members of the Independent Safety Evaluation Group (ISEG). The revised requirement specifies two additional ways to qualify a person as a member of the ISEG.

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

Sincerely,

/s/

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No.26 to NPF-73
- 2. Safety Evaluation

Concurrence page 1 of 2

cc w/enclosures:  
See next page

OFC	:LA:PDI-4	:PM:PDI-4	:PD:PDI-4	:OGC	:BC:LHFB	:	:
NAME	:SNorris	:PTam:Im	:JSto	:BMB	:WRegan *	:	:
DATE	:1/19/90	:1/19/90	:2/2/90	:1/23/90	:1/19/90	:	:

OFFICIAL RECORD COPY  
Document Name: AMEND 74574

\* See page 2 of 2

9002140138 900205  
PDR ADICK 05000412  
P PIC

RF01  
11  
CP-1

Docket No. 50-412

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

Dear Mr. Sieber:

SUBJECT: BEAVER VALLEY UNIT 2 - ISSUANCE OF AMENDMENT (TAC NO. 74574)

The Commission has issued the enclosed Amendment No. 26 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit 2, in response to your application dated August 29, 1989.

The amendment revises the Technical Specifications to change the qualification requirements for members of the Independent Safety Evaluation Group (ISEG). The revised requirement specifies two additional ways to qualify a person as a member of the ISEG.

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

Sincerely,

Peter S. Tam, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No.26 to NPF-73
- 2. Safety Evaluation

Concurrence page 2 of 2

cc w/enclosures:  
See next page

OFC	:LA:PDI-4	:PM:PDI-4	:PD:PDI-4**	:OGC**	:BC:POEB	:	:
NAME	:SNorris	:PTam:TA	:JStolz	:	:AGody	:	:
DATE	:1/19/90	1/19/90	1/19/90	:1/19/90	:2/1/1990	:	:

OFFICIAL RECORD COPY  
Document Name: AMEND 74574

\*\* See page 1 of 2

Mr. J. Sieber  
Duquesne Light Company

Beaver Valley Power Station  
Units 1 & 2

cc:

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

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

Kenny Grada, Manager  
Nuclear Safety  
Duquesne Light Company  
P. O. Box 4  
Shippingport, Pennsylvania 15077

Mayor of the Borough of  
Shippingport  
Post Office Box 3  
Shippingport, Pennsylvania 15077

John A. Lee, Esquire  
Duquesne Light Company  
One Oxford Centre  
301 Grant Street  
Pittsburgh, Pennsylvania 15279

Ashley C. Schannauer  
Assistant City Solicitor  
City of Pittsburgh  
313 City-County Building  
Pittsburgh, Pennsylvania 15219

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

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

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

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

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

DATED: February 5, 1990

AMENDMENT NO. 26 TO FACILITY OPERATING LICENSE NO. DPR-66

DISTRIBUTION

Docket File

NRC & Local PDR

Plant File

S. Varga (14E4)

B. Boger (14A2)

J. Stolz

S. Norris

P. Tam

OGC

D. Hagan (MNBB 3302)

E. Jordan (MNBB 3302)

G. Hill(4) (P1-137)

W. Jones (P-130A)

J. Calvo (11F23)

ACRS (10)

GPA/PA

ARM/LFMB



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 NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 26  
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 August 29, 1989 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.

9002140141 900205  
PDR ADOCK 05000412 POC  
PDR

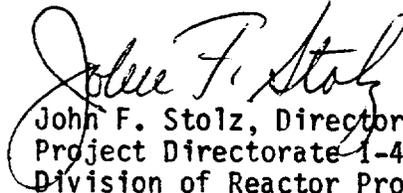
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-73 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 26, 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 on issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate 1-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 5, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 26

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 contain vertical lines indicating the areas of change.

Remove

6-3

Insert

6-3

## ADMINISTRATIVE CONTROLS

---

### COMPOSITION

6.2.3.2 The ISEG shall be composed of at least five, dedicated, full-time engineers located on site. Each shall have either:

- (1) A bachelor's degree in engineering or related science and at least 2 years professional level experience in his field, at least 1 year of which experience shall be in the nuclear field, or
- (2) At least 5 years of nuclear experience and hold or have held a Senior Reactor Operator license, or
- (3) At least 10 years of professional level experience in his field, at least 5 years of which experience shall be in the nuclear field.

A minimum of 50% of these personnel shall have the qualifications specified in (1) above.

### RESPONSIBILITIES

6.2.3.3 The ISEG shall be responsible for maintaining surveillance of unit activities to provide independent verification\* that these activities are performed correctly and that human errors are reduced as much as practical.

### RECORDS

6.2.3.4 Records of activities performed by the ISEG shall be prepared, maintained, and a summary report shall be forwarded each calendar month to the Vice President, Nuclear Group.

---

\*Not responsible for sign-off function.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 26 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 NO. 2

DOCKET NO. 50-412

INTRODUCTION

By letter dated August 29, 1989, Duquesne Light Company (the licensee, acting as agent for the above utilities) submitted a request to change the Technical Specifications where they are concerned with the qualification requirements of members of the Independent Safety Evaluation Group (ISEG). Our evaluation of that request follows.

DISCUSSION AND EVALUATION

NUREG-0737, Section I.B.1.2 instructs all applicants for operating licenses to implement an ISEG. Thus Beaver Valley Unit 2, with the issuance of its operating license in 1987, established an ISEG. As per NUREG-0737, the principal function of the ISEG is to examine plant operating characteristics, NRC issuances, industry advisories and other appropriate sources of plant design and operating experience information that may indicate areas for improving plant safety. The ISEG is also to perform independent problems and operational analysis. Where useful improvements can be achieved, it is expected that this group will develop and present detailed recommendations to corporate management.

However, NUREG-0737 (nor its listed references of NUREG-0660 and NUREG-0694) did not specify any minimum qualification requirements for the ISEG. It only called for an "increase in the available technical expertise located onsite" and to "provide continuing, systematic, and independent assessment of plant activities."

In the spirit of this concept, a more knowledgeable and experienced ISEG group would produce higher quality and useful recommendations for improvement as envisioned by NUREG-0737. The previous section 6.2.3.2 of the Technical

Specifications prohibited highly trained and experienced personnel in the Operations or Operations Support Departments who do not possess a bachelor's degree from being eligible for ISEG consideration even though a significant portion of ISEG evaluations review plant activities involving operations, maintenance and instrumentation and control. Hence the licensee proposed to revise Section 6.2.3.2 to allow three ways (instead of only one) whereby a person can be qualified to serve as a member of the ISEG. Specifically, in addition to the option requiring a degree (option 1), two new options are added: option 2, a current or previously held Beaver Valley Power Station Senior Reactor Operator's license and 5 years of experience in the nuclear field or, option 3, at least 10 years of professional level experience in his field with at least 5 years of nuclear field experience to be substituted in lieu of a bachelor's degree. The ability to add such an experienced operations or operation support person to the ISEG staff would be valuable by enhancing the ISEG's knowledge level and insight into its evaluations.

The criteria requiring a bachelor's degree stemmed from Section II.B.2.b of NUREG-0731 which stated "Qualification requirements for these individuals should be at a level generally comparable to that described in Section 4.2 of ANSI/ANS 3.1 (December 1979 draft), i.e., a bachelor's degree in engineering with 2 to 4 years experience in their field, or equivalent as described in Section 4.1 of ANSI/ANS 3.1." However, Section 4.1 of ANSI/ANS 3.1 (December 1979 draft) also states that "Individuals who do not possess the formal education requirements specified in this section shall not be automatically eliminated where other factors provide sufficient demonstration of their abilities. These other factors should be evaluated on a case-by-case basis."

The level of training and knowledge needed to obtain a Senior Reactor Operator's license is well documented and known. The two new options would enable the ISEG to broaden its expertise with direct first-hand operations experience. In addition, both new options would require 5 years of professional level experience in the nuclear field which is above the experience requirement of option 1, and is in accordance with Section 4.7.2 of ANS 3.1-1981. We specifically note that option 3 conforms with our current position as is expressed in the Millstone Unit 3 Technical Specifications.

Finally, the licensee proposed to limit the number of non-degreed persons to a maximum of two in the ISEG.

We find the above changes acceptable on the basis that they comply with our position, with industry standards, and that they would broaden the technical expertise of the ISEG.

#### ENVIRONMENTAL CONSIDERATION

The amendment changes administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). 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.

CONCLUSION

We have 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, and (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.

Dated: February 5, 1990

Principal Contributor: Peter S. Tam



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 27 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 NO. 2

DOCKET NO. 50-412

1.0 INTRODUCTION

By letter dated August 25, 1989, Duquesne Light Company (the licensee, acting as agent for the above utilities) requested an amendment to the Technical Specifications (TS) for Beaver Valley Power Station, Unit 2. The proposed amendment would revise the Technical Specifications by deleting the trip function associated with steam/feedwater flow mismatch coupled with low steam generator water level.

The steam/feedwater flow mismatch and low steam generator water level reactor trip is an anticipatory trip that protects the reactor from the sudden loss of heat sink.

We held several conference calls with the licensee to discuss the median signal selector design that is related to the proposed amendment. The following evaluation details our review findings and provides justifications for the requested amendment.

2.0 DISCUSSION AND EVALUATION

Each of the three steam generators at Beaver Valley Power Station, Unit 2 has three independent water level instrument channels which provide input to the reactor trip system (RTS) for a reactor trip on two-out-of-three low-low water levels. This low-low steam generator water level reactor trip function is designed to protect the reactor from the loss of heat sink in the event of a sustained steam/feedwater mismatch or a low feedwater flow resulting from a loss of normal feedwater. In the event of a loss of feedwater, the water level in the steam generator falls to the low-low level setpoint in the reactor trip circuitry, which in turn trips the reactor. The Beaver Valley Unit 2 FSAR

9003090012 900220  
PDR ADCK 05000412  
P PDC

accident analysis does not include the steam/feedwater flow mismatch in mitigating the consequences of any analyzed accidents. No credit was taken for the steam/feedwater flow mismatch because it is more conservative to use the direct low-low water level trip function. In an event such as loss of main feedwater or loss of offsite power, credit is only taken for the low-low steam generator water level trip function to ensure safe shutdown of the reactor, and not the steam/feedwater flow mismatch trip.

One of the steam generator water level instrument channels also supplies an input to the feedwater control system (FWCS). The FWCS controls the feedwater regulating valve which in turn regulates the feedwater flow into the steam generator. As a result, common instrument channels are used for both the RTS and the FWCS, separated electrically by qualified isolation devices. The steam/feedwater flow mismatch and low steam generator level reactor trip was installed to satisfy the requirements of the Institute of Electric and Electronics Engineers Standard 279, 1971 (IEEE 279), "Criteria For Protection Systems For Nuclear Power Generating Station," specifically, Section 4.7.3 which is endorsed by the Code of Federal Regulation 10 CFR Part 50.55a. IEEE 279, Section 4.7.3, Single Random Failure, states in part "where a single random failure can cause a control system action that results in a generating station condition requiring protective action and can also prevent proper action of a protection system channel designed to protect against the condition, the remaining redundant protection channels shall be capable of providing the protective action even when degraded by a second random failure." Without the steam/feedwater flow mismatch reactor trip, the criterion of Section 4.7.3 is not met by the FWCS design. For example, a failure (high) in one of the steam generator water level instrument channels that also provides input to the FWCS could cause the feedwater regulating valve to close and reduce the feedwater flow into the steam generator. Subsequently, a low steam generator water level trip protection would be required. For such a case, IEEE 279 Section 4.7.3 imposes the requirement for degradation by a second failure. As such, an additional protection failure (high) must be postulated to occur and the reactor protection system must continue to be capable of mitigating the protective action. However, under this two-channel "fail high condition," only one channel remains operational which is insufficient to satisfy the 2/3 logic needed for a low-low steam generator water level reactor trip. Therefore, the steam/feedwater flow mismatch reactor trip was originally installed in order to achieve an adequate substitute for meeting the criteria for Section 4.7.3 of IEEE 279.

A median signal selector (MSS) was added to the FWCS (the design was approved in Supplement 5 of the Safety Evaluation Report, NUREG-1057). This signal selector selects the median of the steam generator water level instrument channel input signals. By selecting the median signal, the control system is prevented from acting on any single, failed protection system instrument channel. Since no adverse control system action may now result from a single, failed protection instrument channel, a second random protection system failure need not be considered. Thus, the MSS will prevent adverse interaction between feedwater control and the RTS. Isolation devices ensure that the low-low water level protective function is not affected; the MSS of the FWCS uses the W 7300 series protection isolators which are qualified and approved.

The signal selector has the capability for on-line testing. The MSS monthly functional test consists of varying the three (one at a time) input voltages and verifying the output voltage to determine whether or not the median signal is being passed. Calibration of the selector will also be performed once every refueling outage.

Based on the discussion above, the licensee stated that the reactor trip initiated by steam/feedwater flow mismatch and low steam generator water level will no longer be necessary or required. Specifically, the licensee proposed to eliminate all requirements in the TS associated with set points, operability and surveillance of the subject trip function:

- (1) Item 14a. and b of Table 2.2.1
- (2) Note 6 of Table 2.2.1
- (3) BASES section on page B2-6
- (4) Item 15 of Table 3.3-1
- (5) Item 15 of Table 3.3-2
- (6) Item 15 of Table 4.3-1

We have reviewed the licensee's justification for the amendment. We agree with the licensee that, since no credit is taken for the steam/feedwater flow mismatch trip function in the FSAR accident analyses, and the MSS provides a sufficient safeguard against an adverse control/protection system interaction, there would be no change nor any adverse effect to any safety analyses addressed in the FSAR upon removal of the flow mismatch trip function. Therefore, we find the proposed changes involving the elimination of the steam/feedwater flow mismatch and low steam generator water level reactor trip to be acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. We have 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. We have previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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.

#### 4.0 CONCLUSION

We have 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, and (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.

Dated February 20, 1990

Principal Contributor: Ms. Linh Tran

Mr. J. Sieber  
Duquesne Light Company

Beaver Valley Power Station  
Units 1 & 2

cc:

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

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

Kenny Grada, Manager  
Nuclear Safety  
Duquesne Light Company  
P. O. Box 4  
Shippingport, Pennsylvania 15077

Mayor of the Borough of  
Shippingport  
Post Office Box 3  
Shippingport, Pennsylvania 15077

John A. Lee, Esquire  
Duquesne Light Company  
One Oxford Centre  
301 Grant Street  
Pittsburgh, Pennsylvania 15279

Ashley C. Schannauer  
Assistant City Solicitor  
City of Pittsburgh  
313 City-County Building  
Pittsburgh, Pennsylvania 15219

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

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

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

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

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

DATED: February 20, 1990

AMENDMENT NO. 27 TO FACILITY OPERATING LICENSE NO. NPF-73

DISTRIBUTION

Docket File

NRC & Local PDR

Plant File

S. Varga (14E4)

B. Boger (14A2)

J. Stolz

S. Norris

P. Tam

OGC

D. Hagan (MNBB 3302)

E. Jordan (MNBB 3302)

G. Hill(4) (P1-137)

W. Jones (P-130A)

J. Calvo (11F23)

Linh Tran(7E12)

ACRS (10)

GPA/PA

ARM/LFMB

ATTACHMENT TO LICENSE AMENDMENT NO. 27

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

Replace the following pages of the Appendix A (Technical Specifications) with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
2-5	2-5
2-10	2-10
B2-6	B2-6
3/4 3-3	3/4 3-3
3/4 3-8	3/4 3-8
3/4 3-11	3/4 3-11

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	ALLOWANCE (TA)	Z	S	TRIP SETPOINT	ALLOWABLE VALUE
13. Steam Generator Water Level-Low-Low	11.5	10.18	1.67	≥ 11.5% of narrow range instrument span-each steam generator	≥ 10.7% of narrow range instrument span-each steam generator
14. DELETED.					
15. Undervoltage - Reactor Coolant Pumps	27.7	1.39	0	>75% of BUS Voltage-each bus	≥73% of BUS Voltage - each bus
16. Underfrequency-Reactor Coolant Pumps	10.0	0.20	0	≥57.5 Hz-each bus	≥57.4 Hz-each bus
17. Turbine Trip					
a. Emergency Trip Header Low Pressure	N.A.	N.A.	N.A.	≥1000 psig	≥958 psig
b. Turbine Stop Valve Closure	N.A.	N.A.	N.A.	≥1% open	≥1% open
18. Safety Injection Input from ESF	N.A.	N.A.	N.A.	N.A.	N.A.
19. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	N.A.	N.A.	N.A.
20. Reactor Trip Breakers	N.A.	N.A.	N.A.	N.A.	N.A.

BEAVER VALLEY - UNIT 2

2-5

Amendment No. 3, 27



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 NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 27  
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 August 25, 1989 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.

9003090011 900220  
PDR ADCK 05000412  
F DIC

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. 27, 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 on issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 20, 1990

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS  
NOTATION (Continued)

$\frac{1}{1 + \tau_6 s}$	=	Lag compensator on measured $T_{avg}$ ;
$\tau_6$	=	Time constant utilized in the measured $T_{avg}$ lag compensator, $\tau_6 = 0$ s;
$K_6$	=	0.0012/°F for $T > T''$ and $K_6 = 0$ for $T \leq T''$ ;
$T$	=	Average Temperature, °F;
$T''$	=	Indicated $T_{avg}$ at RATED THERMAL POWER (Calibration temperature for $\Delta T$ instrumentation, $\leq 576.2^\circ\text{F}$ );
$S$	=	Laplace transform operator, $s^{-1}$ ; and
$f_2(\Delta I)$	=	0 for all $\Delta I$ .

NOTE 4: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 2.6% of  $\Delta T$  span.

NOTE 5: The sensor error for temperature is 1.72% and 0.73% of span for pressure.

## LIMITING SAFETY SYSTEM SETTINGS

### BASES

---

#### Undervoltage and Underfrequency - Reactor Coolant Pump Busses

The Undervoltage and Underfrequency Reactor Coolant Pump bus trips provide reactor core protection against DNB as a result of loss of voltage or underfrequency to more than one reactor coolant pump. The specified setpoints assure a reactor trip signal is generated before the low flow trip setpoint is reached. Time delays are incorporated in the underfrequency and undervoltage trips to prevent spurious reactor trips from momentary electrical power transients. For undervoltage, the delay is set so that the time required for a signal to reach the reactor trip breakers following the simultaneous trip of two or more reactor coolant pump bus circuit breakers shall not exceed 1.2 seconds. For underfrequency, the delay is set so that the time required for a signal to reach the reactor trip breakers after the underfrequency trip setpoint is reached shall not exceed 0.6 seconds.

On decreasing power, the Undervoltage and Underfrequency Reactor Coolant Pump Bus trips are automatically blocked by P-7 (a power level of approximately 10 percent of RATED THERMAL POWER with a turbine impulse chamber pressure at approximately 10 percent of full power equivalent); and on increasing power, reinstated automatically by P-7.

#### Turbine Trip

A Turbine Trip causes a direct reactor trip when operating above P-9. Each of the turbine trips provide turbine protection and reduce the severity of the ensuing transient. No credit was taken in the accident analyses for operation of these trips. Their functional capability at the specified trip settings is required to enhance the overall reliability of the Reactor Protection System.

TABLE 3.3-1 (Continued)  
REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
11. Pressurizer Water Level-High (Above P-7)	3	2	2	1, 2	7
12. Loss of Flow - Single Loop (Above P-8)	3/loop	2/loop in any operating loop	2/loop in each operating loop	1	7
13. Loss of Flow - Two Loop (Above P-7 and below P-8)	3/loop	2/loop in two operating loops	2/loop in each operating loop	1	7
14. Steam Generator Water Level-Low-Low	3/loop	2/loop	2/loop	1, 2	7
15. DELETED.					
16. Undervoltage-Reactor Coolant Pumps (Above P-7)	3-1/bus	2	2	1	7
17. Underfrequency-Reactor Coolant Pumps (Above P-7)	3-1/bus	2	2	1	7
18. Turbine Trip (Above P-9)					
a. Emergency Trip Header Low Pressure	3	2	2	1	7
b. Turbine Stop Valve Closure	4	4	4	1	8

TABLE 3.3-2

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
1. Manual Reactor Trip	NOT APPLICABLE
2. Power Range, Neutron Flux	≤ 0.5 seconds*
3. Power Range, Neutron Flux, High Positive Rate	NOT APPLICABLE
4. Power Range, Neutron Flux, High Negative Rate	≤ 0.5 seconds*
5. Intermediate Range, Neutron Flux	NOT APPLICABLE
6. Source Range, Neutron Flux (Below P-10)	NOT APPLICABLE
7. Overtemperature ΔT	≤ 5.5 seconds*
8. Overpower ΔT	≤ 5.5 seconds*
9. Pressurizer Pressure--Low (Above P-7)	≤ 2.0 seconds
10. Pressurizer Pressure--High	≤ 2.0 seconds
11. Pressurizer Water Level--High (Above P-7)	NOT APPLICABLE
12. Loss of Flow - Single Loop (Above P-8)	≤ 1.0 seconds
13. Loss of Flow - Two Loop (Above P-7 and below P-8)	≤ 1.0 seconds
14. Steam Generator Water Level--Low-Low (Loop Stop Valves Open)	≤ 2.0 seconds
15. DELETED.	
16. Undervoltage-Reactor Coolant Pumps (Above P-7)	≤ 1.5 seconds
17. Underfrequency-Reactor Coolant Pumps (Above P-7)	≤ 0.9 seconds

---

\*Neutron detectors are exempt from response time testing. Response time shall be measured from detector output or input of first electronic component in channel.

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

BEAVER VALLEY - UNIT 2

3/4 3-11

Amendment No. 27

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
11. Pressurizer Water Level-High (Above P-7)	S	R	M	1, 2
12. Loss of Flow - Single Loop (Above P-8)	S	R	M	1
13. Loss of Flow - Two Loop (Above P-7 and below P-8)	S	R	See 12 above	1
14. Steam/Generator Water Level-Low-Low	S	R	M	1, 2
15. DELETED.				
16. Undervoltage - Reactor Coolant Pumps (Above P-7)	N.A.	R	M	1
17. Underfrequency - Reactor Coolant Pumps (Above P-7)	N.A.	R	M	1
18. Turbine Trip (Above P-9)				
A. Emergency Trip Header Low Pressure	N.A.	R	S/U(1)	1, 2
B. Turbine Stop Valve Closure	N.A.	R	S/U(1)	1, 2
19. Safety Injection Input from ESF	N.A.	N.A.	R	1, 2
20. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.	N.A.	R	N.A.
21. Reactor Trip Breaker	N.A.	N.A.	M(5, 11) and S/U(1)	1, 2, 3*, 4*, 5*
22. Automatic Trip Logic	N.A.	N.A.	M(5)	1, 2, 3*, 4*, 5*