Docket File

November 16, 1990

Docket No. 50-334
Serial No. BV-90-024

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

Dear Mr. Sieber:

SUBJECT: AMENDMENT NO.156 TO FACILITY OPERATING LICENSE DPR-66: CONTAINMENT SYSTEMS INTERNAL PRESSURE - CHANGE REQUEST NO. 1A-183 (TAC NO. 77830)

The Commission has issued the enclosed Amendment No. 156to Facility Operating License No. DPR-66 for the Beaver Valley Power Station, Unit 1, in response to your application dated October 25, 1990 (Change Request No. 1A-183).

The amendment modifies the Appendix A Technical Specifications (TSs) relating to the required river water flow through the Recirculation Spray (RSS) heat exchangers and the allowable containment internal air partial pressure. Specifically, the amendment modifies Surveillance Requirement 4.6.2.2.e.3 by the addition of a footnote indicating that the minimum RSS heat exchanger flow may be 6000 gpm vice 8000 gpm provided additional operating restrictions are applied to containment internal air partial pressure. Limiting Condition for Operation 3.6.1.4 and Figure 3.6-1 are modified to incorporate an additional limit line applicable to the containment internal air partial pressure. This additional limit line is applicable when river water flow through the RSS heat exchangers is 6000 GPM or more but less than 8000 GPM.

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

Enclosures:
1. Amendment No.156to DPR-66
2. Safety Evaluation

cc w/enclosures:
See next page

| LA/PD1-4:DRP | PM/PD1-4:DRP | PD/PD1-4:DRP | OGC | ADR1 |
|---|---|---|---|---|
| SNorris | ADeAgazio/Bah | JStolz | | EGreenman |
| 11/9/90 | 11/9/90 | 11/9/90 | 11/9/90 | 11/16/90 |

Reg I W. ROLAND BY TELEPHONE
11/9/90

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November 16, 1990

AMENDMENT NO. 156

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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. 156
License No. DPR-66

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

   A. The application for amendment by Duquesne Light Company, et al. (the licensee) dated October 25, 1990 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.

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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 Appendix A, as revised through Amendment No. 156, 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

Edward G. Greenman

Edward G. Greenman, Acting Assistant Director
for Region I Reactors
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 16, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 156

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Replace the following pages of 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.

| Remove | Insert |
|---|---|
| 3/4 6-6 | 3/4 6-6 |
| 3/4 6-7 | 3/4 6-7 |
| 3/4 6-14 | 3/4 6-14 |

SURVEILLANCE REQUIREMENTS (continued)

e. At least once per 18 months during shutdown, by:

1. Cycling each power operated (excluding automatic) valve in the flow path not testable during plant operation, through at least one complete cycle of full travel.

2. Verifying that each automatic valve in the flow path actuates to its correct position on a test signal.

3. Initiating flow through each River Water subsystem and its two associated recirculation spray heat exchangers, and verifying a flow rate of at least 8000 gpm*.

f. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

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* The value of 8000 gpm may be lowered to 6000 gpm provided the additional operational restrictions imposed by Figure 3.6-1 of L.C.O. 3.6.1.4 are applied. This provision is only applicable until the eight (8th) refueling outage.

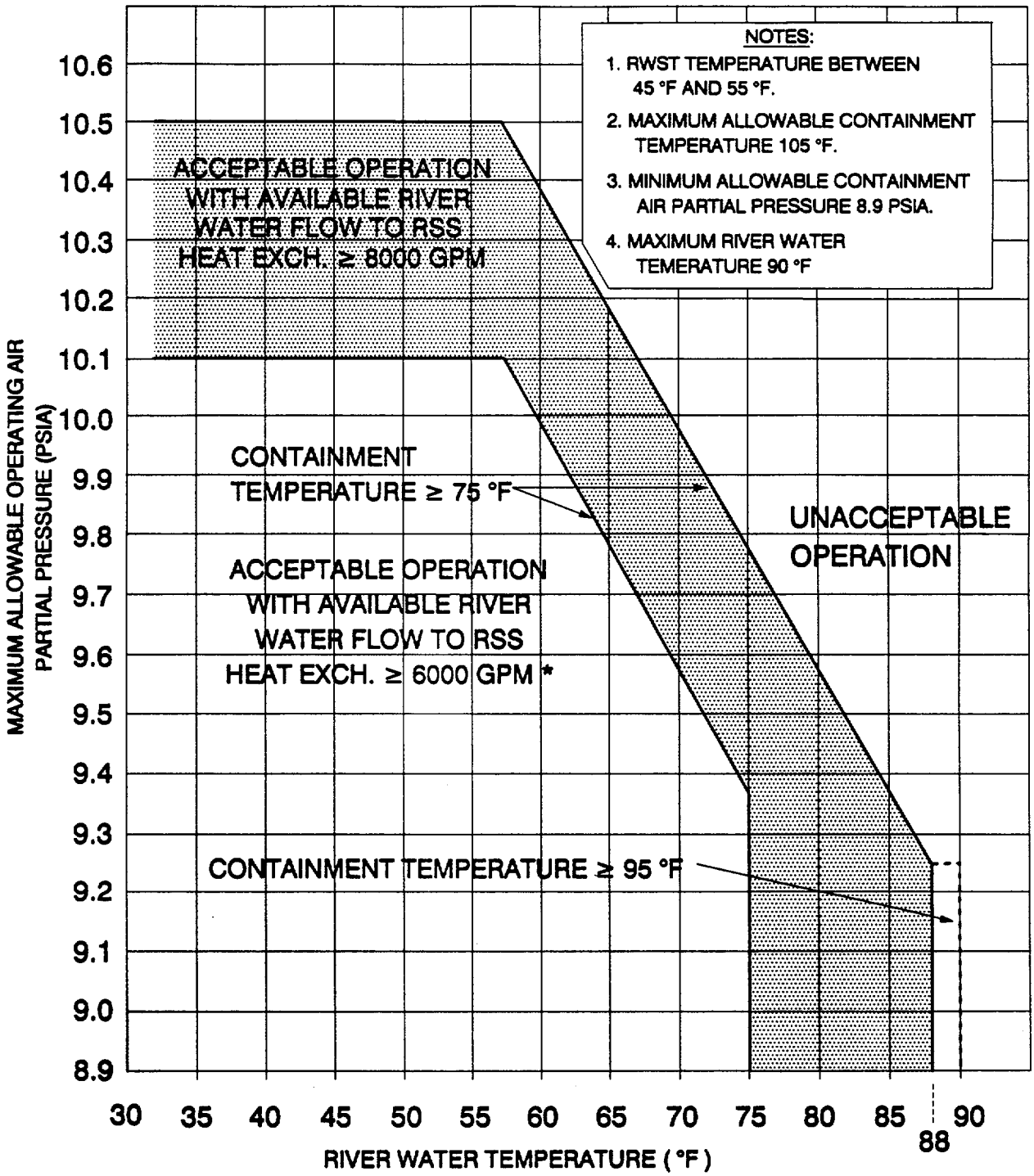


FIGURE 3.6-1

MAXIMUM ALLOWABLE PRIMARY CONTAINMENT AIR PRESSURE VERSUS RIVER WATER TEMPERATURE

* The 6000 GPM is applicable until the eighth refueling outage (8R) only and then reverts to 8000 GPM following 8R.

## INTERNAL PRESSURE

### LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary Containment internal air partial pressure shall be maintained ≥ 8.9 PSIA and within the acceptable operation range (below and to the left of the applicable containment temperature limit line(s)) shown on Figure 3.6-1 as a function of river water temperature.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the containment internal air partial pressure < 8.9 PSIA or above the applicable containment temperature limit line(s) shown on Figure 3.6-1, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits at least once per 12 hours.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 156 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

## 1.0 INTRODUCTION

By letter dated October 25, 1990, Duquesne Light Company (DLC) submitted an application for license amendment for changes to Surveillance Requirement 4.6.2.2.e.3, Limiting Condition for Operation 3.6.1.4, and Figure 3.6-1 of the Beaver Valley Power Station, Unit 1 Appendix A Technical Specifications (TSs). The amendment would reduce the required river water minimum flow through the recirculation spray system (RSS) heat exchangers from 8000 gpm to 6000 gpm.

## 2.0 BACKGROUND AND DISCUSSION

The RSS draws water from the containment sump and delivers it to spray headers. The RSS water is cooled by heat exchangers using river water. The RSS heat exchangers are located inside the containment building. There are two trains of recirculation spray, and each train has two heat exchangers.

During quarterly inservice testing on October 3, 1990, a significant flow reduction in RSS train "A" (1A and 1C heat exchangers) was observed. The "B" train RSS heat exchangers were found with less significant flow degradation. To verify the test results, Duquesne Light Company (DLC) performed an 18-month surveillance test on October 12, 1990. This test provides a more representative alignment of plant equipment for design basis accident (DBA) conditions. Based on the results obtained, the "1C" heat exchanger of the "A" train was declared inoperable and the plant entered the Action Statement of TS 3.6.2.2.

Before the expiration of the seven-day action statement, DLC requested a Temporary Waiver of Compliance (TWOC) to permit continued operation of the plant with less than 8000 gpm river water flow to the RSS heat exchangers. The TWOC dated October 19, 1990, would be effective until the TS could be amended. DLC proposed a TS amendment by letter dated October 25, 1990. This Safety Evaluation documents the results of the staff review of that application.

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## 3.0 EVALUATION

The surveillance requirements in TS 4.6.2.2.e.3 specifies a flow of at least 8000 gpm through each river water subsystem and its two associated RSS heat exchangers. DLC evaluated the design basis requirements of the containment depressurization system for the reduced RSS heat exchanger river water flow and reanalyzed the containment depressurization capability following a LOCA using the LOCTIC computer code. The results showed that with river water flow to one train of RSS heat exchanger reduced to 6000 gpm the containment depressurization system continues to be capable of reducing the containment pressure to subatmospheric pressure within one hour and maintaining the pressure subatmospheric following a LOCA.

DLC has proposed to revise, temporarily, TS Limiting Condition for Operation 3.6.1.4, Figure 3.6-1, and Surveillance Requirement 4.6.2.2.e.3 to allow operation with a minimum flow of 6000 gpm per train until the eighth refueling outage. Figure 3.6-1 would be revised to reflect the new containment depressurization analysis, include additional operating restrictions on the allowable river water temperature, and the allowable operating containment air partial pressure.

Reduction of river water flow rate through the RSS heat exchangers does not affect the containment peak pressure response in a LOCA analysis, but it may affect the capability to depressurize the containment following the accident. DLC's analyses demonstrate that the design basis requirements for the containment depressurization system would still be met with the degraded RSS heat exchanger river water cooling flow. The staff has reviewed DLC's safety analysis and finds that the methodology and computer code used in this analysis are consistent with that discussed in the Final Safety Analysis Report (FSAR). DLC also committed to monitor monthly the river water flow to the RSS heat exchanger trains exhibiting a flow less than 8000 gpm to ensure that the flow does not drop below the required 6000 gpm. This increased surveillance will be applicable until the eighth refueling outage. Based on DLC's safety analysis and the surveillance commitment, the staff has determined the reduced river water flow to the RSS heat exchangers would have a minor impact on the capability of the containment to depressurize to a subatmospheric condition within one hour following a LOCA.

Based on our review and evaluation of the consequences of river water flow to RSS heat exchangers on containment depressurization capability, we find the effects to be minor; therefore, the staff finds that the proposed temporary license amendment is acceptable. However, reduced minimum RSS heat exchanger flow is acceptable only for the remainder of the current operating cycle, and minimum RSS heat exchanger water flow is to be restored to 8000 gpm prior to restart from the eighth refueling outage (about June 1991).

## 4.0 EMERGENCY CIRCUMSTANCES

Surveillance Requirement 4.6.2.2.e.3 is performed once each 18 months to demonstrate that the flow through the RSS heat exchangers is adequate. This surveillance test was last performed during the seventh refueling outage which ended December 25, 1989. That test showed that the flow through each RSS heat exchanger was 8400 gpm. Quarterly Inservice Testing (IST) Program

surveillance tests are conducted to demonstrate pump and valve operability in various systems. Quarterly IST tests performed on and after October 3, 1990, revealed that the "A" Train flows were approaching the limit specified in TS 4.6.2.2.e.3.

Because of the flow degradation revealed by the IST tests, an 18 month surveillance test (which provides a more representative plant equipment alignment for DBA conditions than the IST test) was performed on October 12, 1990. The results of this test established the basis for the declaration of inoperability for the Train "A" of the RSS. This declaration placed the unit in a seven day action statement. Subsequently, DLC attempted to identify the cause for the flow reduction, but these measures were largely inconclusive.

The RSS heat exchangers are located inside the containment building which is maintained at sub-atmospheric pressure. To disassemble and clean the heat exchangers would require a plant shutdown; therefore, prior to the expiration of the 7-day action statement, DLC requested and the NRC granted a TWOC on October 19, 1990, effective until an application for license amendment could be submitted, reviewed, and the amendment issued.

The NRC staff does not believe that DLC has abused the emergency provisions of 10 CFR 50.91 in this instance. Accordingly, the Commission has determined that emergency circumstances existed warranting prompt approval, in that failure to act would have caused the plant to shutdown, and the situation could not have been avoided. The amendment, as discussed in Section 5.0, does not involve a significant hazards consideration.

## 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 Commission 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 design basis requirements of the RSS heat exchangers will still be met even with the reduced river water flow, and the revised TS ensures that the assumed conditions in the revised containment depressurization analyses remain valid.

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 neither plant configuration nor the manner by which the facility is operated is affected.

C. The change does not involve a significant reduction in a margin of safety (10 CFR 50.92(c)(3)) because the same containment depressurization capability assumed in the original design will be retained.

## 6.0 STATE CONSULTATION

In accordance with the Commission's regulations in 10 CFR 50.91(b), the representative of the Commonwealth of Pennsylvania was consulted. The representative had no comments with regard to this action.

## 7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a surveillance requirement. 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. The staff has made a final determination that this amendment involves no significant hazards consideration. 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

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: November 16, 1990

Principal Contributors:

J. S. Guo
Albert W. De Agazio