

August 11, 1986

Docket No. 50-334

DISTRIBUTION

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Dear Mr. Carey:

Subject: Issuance of Amendment (Licensing Action TAC 61350)

The Commission has issued the enclosed Amendment No. 104 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 dated July 11, 1986.

The amendment changes the Technical Specifications for Beaver Valley Unit No. 1 to (1) eliminate the fuel rod weight limitation and (2) permit use of stainless steel or zircaloy rods ("dummy" rods) in place of fuel rods for certain fuel assemblies. Both changes are located in Section 5.3.

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

Sincerely,

/s/

Peter S. Tam, Project Manager  
PWR Project Directorate #2  
Division of PWR Licensing-A

Enclosures:

1. Amendment No. 104 to DPR-66
2. Safety Evaluation

cc w/enclosures:  
See next page

LA:PAD#2  
DMiller  
8/1/86

PM:PAD#2  
PTam:hc  
8/1/86

D:PAD#2  
LRubenstein  
8/1/86

OGC  
8/1/86

Mr. J. J. Carey  
Duquesne Light Company

cc:

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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. 104  
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 July 11, 1986, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.104 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This amendment is effective on issuance, to be implemented no later than 30 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing-A

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 11, 1986

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 104 TO FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Revise Appendix A as follows:

Remove Pages

Insert Pages

5-4

5-4

## DESIGN FEATURES

### DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 45 psig and a temperature of 280°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 5.2.4 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 core shall contain 157 fuel assemblies with each fuel assembly containing 264 fuel rods clad with zircaloy-4, except for fuel assemblies which may be reconstituted to replace fuel rods with non-fueled rods (e.g., zircaloy or stainless steel). Each fuel rod shall have a nominal active fuel length of 144 inches. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 3.3 weight percent U-235.

### 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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 104 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

By letter dated July 11, 1986, Duquesne Light Company (the licensee) requested changes to the Beaver Valley Unit 1 Technical Specifications. At present, the Design Features Section 5.3.1, Fuel Assemblies, of the Technical Specifications identifies a maximum total fuel rod weight of 1,766 grams of uranium. Recent changes by Westinghouse to the fuel design, including chamfered pellets with a reduced dish and use of the integrated dry route process, have increased fuel weights slightly. The weight increases have caused the assembly-averaged fuel rod weight for Cycle 6 fuel to exceed the 1,766 limit by as much as 10 grams. The proposed change will delete the weight limits from the Technical Specifications to allow use of the slightly heavier fuel and the replacement of fuel rods with non-fuel rods ( see licensee's letter dated July 18, 1986 for details).

DISCUSSION AND EVALUATION

The important safety-related parameters which are indirectly affected by fuel weight, such as reactor criticality, power level, power distribution and the rate of decay heat production, are all regulated by requirements in the Limiting Condition for Operation sections of the Technical Specifications. In addition, the fuel weight is implicitly included in the nuclear design analysis performed for each reactor operating cycle and used to evaluate conformance with established limits for design basis events. For the slight weight increases reported by the licensee for Cycle 6 and the replacement of seven fuel rods with seven non-fuel rods (in peripheral assembly E-37 in core location D-13), and any similar possible small future fuel weight increases without a significant change in fuel design, there is no impact on the safety analysis. A significant change in the fuel design would be the subject of review and changes to the other governing technical specifications, or may be an unreviewed safety question as defined in 10 CFR 50.59.

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We therefore conclude that there will be no significant safety impact in deleting the maximum fuel weight from Technical Specification 5.3.1 and allowing for replacement of fuel rods with non-fuel rods (reconstituted assembly) in that specification. We also find this action preferable to changing the specification each cycle to accommodate the applicable weight, or to specify an artificial upper value of the weight to bound future variations. The proposed change is therefore acceptable.

#### Emergency Circumstances

The licensee informed the staff, by phone, of the overweight fuel at the end of fuel cycle 5 and followed up by letter dated April 29, 1986. The amendment request was submitted as a preliminary document on July 2, 1986, and was formally submitted on July 11, 1986 after review by Duquesne Light Company's committees. We have been aware of the facts concerning this request, since some Westinghouse fuel rods have been determined to be overweight, and realized that for the amount of overweight involved, there is no safety concern. While DLC could have submitted an amendment request about two months earlier, this effort was hampered by higher priority issues during the 1986 refueling outage. Without this amendment, the unit could still restart at the end of its refueling since there is no clearly stated limit of operation in the technical specifications in this regard. However, such a startup would have been done knowingly in noncompliance with the technical specification regarding fuel rod weight.

Regarding the use of "dummy" rods, the problem of failed fuel due to baffle jetting was not discovered until the reactor was opened during the 1986 refueling. In the past two months, the licensee has worked with Westinghouse to develop a solution to prevent recurrence of fuel failure due to the same phenomenon. The proposed solution is the use of "dummy" rods.

We have determined that despite the fact the amendment request was not submitted early enough for normal processing of an amendment, the licensee did allow us about a month for this review. We have determined that the licensee has made a timely submittal, that there is no explicit prohibition to plant restart but the licensee would have done so in noncompliance with the technical specifications, and that the licensee did not purposely create this situation to avoid the normal notice period for license amendments.

#### No Significant Hazards Consideration Determination

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the 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.

As stated earlier in this safety evaluation, fuel rod weight plays an insignificant role in the various safety analyses. Similarly, the use of "dummy" rods in one fuel assembly at the outermost periphery of the core would have insignificant effect on various safety analyses. The Commission has considered the licensee's proposed change in light of the above three criteria. First, while an increase in fuel rod weight and use of "dummy" rod may have a small effect on the characteristics of the core, core performance under normal and accident conditions is controlled to much greater extent by other parameters. Thus, the changes will have little effect on the previously evaluated accident consequences and probability. Second, the changes would only cause small, quantitative changes in analysis results of accidents previously evaluated and do not create the possibility of a new or different kind of accident. Third, since core performance is largely determined by other parameters, the two proposed changes would only produce an insignificant change to the margin of safety.

#### State Consultation

In accordance with the Commission's regulation, consultation was held with Mr. R. Janati of the State of Pennsylvania by telephone on July 28, 1986. No comments were made by the State on this amendment.

#### Environmental Consideration

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant increase 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 this 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 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: August 11, 1986

Principal Contributor:  
L. Bell