

DISTRIBUTION FOR BEAVER VALLEY POWER STATION, UNIT NO. 1 AMENDMENT NO. 3
TO FACILITY OPERATING LICENSE NO. DPR-66

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

MAY 28 1976

Docket No. 50-334

Mr. C. N. Dunn
Vice President, Operations Division
Duquesne Light Company
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Nuclear Regulatory Commission has issued Amendment No. 3 to Facility Operating License No. DPR-66 to Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company. The amendment is issued pursuant to the Atomic Safety and Licensing Board's Decision dated May 28, 1976, a copy of which has already been sent to you. The amendment authorizes testing and low power operation of the Beaver Valley Power Station, Unit No. 1 at up to thirty-five percent of the steady state reactor core full power level of 2652 megawatts thermal, for the purpose of start-up testing, including synchronization of the turbine-generator, and "hot" licensing training of the reactor operators, in accordance with the provisions of Amendment No. 3 and the Technical Specifications, as revised. Duquesne Light Company maintains sole responsibility for operation of the facility. The amendment also revises portions of the Technical Specifications relative to limiting conditions for operation and surveillance requirements regarding secondary water chemistry. Facility Operating License No. DPR-66, as amended, will expire following the completion of start-up testing, including synchronization of the turbine-generator, and "hot" licensing training of the reactor operators.

A copy of Amendment No. 3 to DPR-66 and a related notice, which has been forwarded to the Office of the Federal Register for publication, are enclosed for your information.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. C. DeYoung".

R. C. DeYoung, Assistant Director
for Light Water Reactors
Division of Project Management

Enclosures:

1. Amendment No. 3 to DPR-66
2. Federal Register Notice

cc: see page 2

MAY 28 1976

Mr. C. N. Dunn

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Mr. C. N. Dunn

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MAY 28 1976

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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. 3
License No. DPR-66

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for license by Duquesne Light Company, filed on behalf of itself, Ohio Edison Company, and Pennsylvania Power Company, (the licensees) 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraphs 2.C(1) through 2.C(9) and Paragraphs 2.D of Facility Operating License No. DPR-66 is hereby amended to read as follows:

(1) Maximum Power Level

Duquesne Light Company is authorized to perform start-up testing and low power operation of the facility at up to thirty-five percent of the steady state reactor core full power level of 2652 megawatts thermal, for the purpose of start-up testing, including synchronization of the turbine-generator, and "hot" licensing training of the reactor operators, in accordance with the provisions of Amendment No. 3 and the Technical Specifications, as revised.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are incorporated in License No. DPR-66. Duquesne Light Company shall perform tests and operate the facility in accordance with the Technical Specifications as revised.

(3) Auxiliary River Water System

The licensees shall complete the installation of the auxiliary river water system for operation prior to December 31, 1976, or the facility shall not be operated beyond this date.

(4) Main Control Room Ventilation System

The licensees shall, prior to the commencement of the second fuel cycle of operation, modify the control room ventilation system to provide for automatic isolation of the system on detection of chlorine, or the facility shall not be operated beyond the first fuel cycle of operation without prior written authorization from the Commission.

(5) Emergency Core Cooling System

The licensees shall, prior to the commencement of the second fuel cycle of operation, modify the emergency core cooling system to provide for either partial or total automation of the functions to accomplish the transfer of the system from the injection mode of operation to the recirculation mode of operation in a manner satisfactory to the Commission, or the facility shall not be operated beyond the first fuel cycle of operation without prior written authorization from the Commission. The licensees shall submit information describing this modification prior to October 30, 1976.

(6) Less Than Three Loop Operation

Duquesne Light Company shall not operate the reactor at power levels above P-7 (as defined in Table 3.3-1 of Specification 3.3.1.1 of the Technical Specifications, Appendix A) with less

than three (3) reactor coolant loops in operation until safety analyses for less than three loop operation have been submitted by the licensees and approval for less than three loop operation at power levels above P-7 has been granted by the Commission by amendment of this license.

(7) Steam Generator Water Rise Rate

Except for the purpose of performing secondary side flow stability tests, Duquesne Light Company shall, whenever the secondary side water level in a steam generator is below the level of the feed-water sparger, limit the secondary side water level rise rate in each steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes. For the purpose of conducting this test, the limiting condition for operation specified in Specification 3.7.1.2 of the Technical Specifications, Appendix A, shall be modified to allow power lockout of the auxiliary feedwater pumps. This condition shall be removed by amendment of this license when Duquesne Light Company demonstrates to the satisfaction of the Commission that secondary side flow instability (water hammer) does not result in unacceptable consequences.

(8) Rod Bow Penalty on Departure from Nucleate Boiling

The licensees shall, prior to the end of the first fuel cycle of operation, resolve to the satisfaction of the Commission that the effects of rod bowing on the departure from nucleate boiling beyond the first fuel cycle of operation have been adequately accounted for in the design of the reactor core, or the limiting conditions on nuclear enthalpy hot channel factor, specified in Specification 3.2.3 of the Technical Specifications, Appendix A, shall be reduced by one percent during the second fuel cycle of operation and two percent during the third fuel cycle of operation.

(9) Rod Bow Penalty on Total Peaking Factor

The licensees shall, prior to the end of the second fuel cycle of operation, resolve to the satisfaction of the Commission that third cycle fuel will not contain peak power density locations, or the heat flux hot channel factor specified in Specification 3.2.2 and the axial power distribution monitoring relationship specified in Specification 3.2.6 of the Technical Specifications, Appendix A, shall be reduced by the percentage amount which the rod bowing power augmentation factor, calculated for the burnup to the end of the third fuel cycle of operation, exceeds the value of 5.7 percent.

- D. The licensees shall maintain in effect and fully implement all provisions of the physical security plan, including amendments and changes made pursuant to the authority of Section 50.54(p) of 10 CFR Part 50. The security plan consists of proprietary documents, collectively titled, "Beaver Valley Power Station, Unit No. 1 Industrial Security Plan", as follows:

Revision No. 5, submitted with letter dated April 16, 1975
Revision No. 6, submitted with letter dated May 20, 1975
Revision No. 7, submitted with letter dated March 1, 1976

3. Facility Operating License No. DPR-66, as amended, will expire following the completion of start-up testing, including synchronization of the turbine-generator, and "hot" licensing training of the reactor operators.

FOR THE NUCLEAR REGULATORY COMMISSION



R. C. DeYoung, Assistant Director
for Light Water Reactors
Division of Project Management

Attachment:
Changes to the
Technical Specifications

Date of Issuance: MAY 28 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 3

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Replace or revise as indicated the following pages of the Appendix "A" Technical Specifications with the enclosed pages. Revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Corresponding overleaf pages are also provided to maintain document completeness.

Pages

3/4 7-10a
3/4 7-10b
3/4 7-10c (deleted)
B 3/4 7-3
B 3/4 7-4

PLANT SYSTEMS

SECONDARY WATER CHEMISTRY

LIMITING CONDITION FOR OPERATION

3.7.1.6 The secondary water chemistry shall be maintained within the limits of Table 3.7-3.

APPLICABILITY: Modes 1, 2 and 3.

ACTION:

- a. With the condenser condensate total cation conductivity exceeding its Steady State Limit but within its Transient Limit, restore the conductivity to within its Steady State Limit within 7 days; or, be in HOT SHUTDOWN within the next 12 hours.
- b. With the condenser condensate total cation conductivity exceeding its Transient Limit, restore the conductivity to within the Transient Limit within 96 hours or be in HOT SHUTDOWN within the next 12 hours.
- c. With the total cation conductivity of the blowdown from any steam generator exceeding its Steady State Limit but within its Transient Limit, verify at least once per 24 hours that the pH and free hydroxide in the steam generator blowdown are within the limits of Table 3.7-3, and restore the conductivity to within its Steady State Limit within 7 days; or, be in HOT SHUTDOWN within the next 12 hours.
- d. With the pH and/or free hydroxide of the blowdown from any steam generator exceeding its limit(s), restore the out-of-limit parameter(s) to within its limit(s) within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
- e. With the total cation conductivity of the blowdown from any steam generator exceeding its Transient Limit, restore the conductivity to within its limit within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 The secondary water chemistry parameters shall be determined to be within the limits at least once per 24 hours by analyzing the condenser condensate and steam generator blowdown for total cation conductivity.

TABLE 3.7-3

SECONDARY WATER CHEMISTRY LIMITS

<u>Water Sample Location</u>	<u>Total Cation Conductivity μmhos/cm2 @ 25°C</u>		<u>pH @ 25°C</u>	<u>Free Hydroxide ppm CaCO₃</u>
	<u>Steady State Limits</u>	<u>Transient Limits</u>	<u>Limits</u>	<u>Limits</u>
Condenser Condensate	≤0.5	≤2.0	N.A.	N.A.
Steam Generator Blowdown	≤2.0	≤10.0	8.5 - 10.0	≤1.0 (

PLANT SYSTEMS

BASES

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the accident analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

3/4.7.1.6 SECONDARY WATER CHEMISTRY

Contamination of the steam generator secondary coolant can cause potential tube degradation and impair tube integrity. Generally, the most severe contamination results from condenser inleakage of causticforming impurities that may accumulate on the secondary side of the steam generator, or on the high heat flux surfaces of the steam generator tubes can lead to the potential for intergranular stress corrosion cracking.

Monitoring of the condenser condensate by cation conductivity is an effective means of detecting condenser tube inleakage. The leakage rate can then be determined by comparing the cation concentration in the condensate with the cation concentration in the condenser cooling water. The cation conductivity of the steam generator blowdown will indicate when blowdown is required to remove the accumulation of causticforming impurities and the scale forming solids in the steam generator. Monitoring the pH and free hydroxide level in the blowdown provides a means to initiate balance of corrective actions needed to restore the operating secondary coolant.

Controlling the secondary water chemistry within the specified limits will control the potential accumulation of corrosive impurities in the steam generator and minimize tube degradation. These limits provide reasonable assurance that the conditions in the steam generator will minimize

PLANT SYSTEMS

BASES

3/4.7.1.6 SECONDARY WATER CHEMISTRY (Continued)

the potential for tube degradation during all conditions of operation, and postulated accidents. These measures ensure the continued protection of the steam generator tubing which is an essential part of the reactor coolant pressure boundary.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator average impact values taken at 10°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 RIVER WATER SYSTEM

The OPERABILITY of the river water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident conditions.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects or accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30 day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants."

3/4.7.6 FLOOD PROTECTION

The limitation on flood level ensures that facility operation will be terminated in the event of flood conditions. The limit of elevation 695 Mean Sea Level was selected on an arbitrary basis as an appropriate flood level at which to terminate further operation and initiate flood protection measures for safety related equipment.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-334

DUQUESNE LIGHT COMPANY, ET AL

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Notice is hereby given that, pursuant to an Initial Decision by the Atomic Safety and Licensing Board dated May 28, 1976, the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 3 to Facility Operating License No. DPR-66, issued to Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company for the Beaver Valley Power Station, Unit No. 1, located in Beaver County, Pennsylvania. The amendment authorizes testing and low power operation of the facility at up to thirty-five percent of the steady state reactor core full power level of 2652 megawatts thermal, for the purpose of start-up testing, including synchronization of the turbine-generator and "hot" licensing training of the reactor operators. Previously, the facility had been restricted to five percent of the steady state reactor core power level for the purpose of a limited amount of testing.

The amendment also revises portions of the Technical Specifications and relative to limiting conditions for operation and surveillance requirements regarding secondary water chemistry. Facility Operating License No. DPR-66, as amended, will expire following completion of start-up testing, including synchronization of the turbine-generator, and "hot" licensing training of the reactor operators.

The Initial Decision is subject to review by an Atomic Safety and Licensing Appeal Board prior to its becoming final. Any decision or action taken by an Atomic Safety and Licensing Appeal Board in connection with the Initial Decision may be reviewed by the Commission.

The application, including its amendments, 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.

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

For further details with respect to this action, see (1) the Initial Decision dated May 28, 1976, (2) the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 3, dated March 19, 1976, (3) Amendment No. 3 to License No. DPR-66, and (4) the Commission's related "Interim Safety Evaluation Report on Westinghouse Fuel Rod Bowing", dated April 1976. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the Beaver Valley Memorial Library, 100 College Avenue, Beaver, Pennsylvania.

A copy of items (2), (3) and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Dated at Bethesda, Maryland, this ^{28th}28 day of May, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION



D. B. Vassallo, Chief
Light Water Reactors Branch No. 5
Division of Project Management