

Mr. J. D. Sieber, Senior Vice President  
and Chief Nuclear Officer  
Nuclear Power Division  
Duquesne Light Company  
Post Office Box 4  
Shippingport, Pennsylvania 15077-0004

Dear Mr. Sieber:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 175 AND 55 TO FACILITY OPERATING  
LICENSES DPR-66 AND NPF-73, BEAVER VALLEY POWER STATION, UNIT NOS.  
1 & 2, IN RESPONSE TO CHANGE REQUEST NOS. 193/58 (TAC NOS. M85083  
AND 85084)

The Commission has issued the enclosed Amendment Nos. 175 and 55 to  
Facility Operating License Nos. DPR-66 and NPF-73 respectively, for the Beaver  
Valley Power Station, Unit Nos. 1 and 2. The amendments consist of changes to  
the Technical Specifications (TS) in response to your application dated  
December 21, 1992.

These amendments revise the Appendix A TS relating to alternate source range  
neutron flux monitors. The amendments permit the use of alternate source  
range monitors provided the required visual and audible indications are  
available. The amendments also allow installation of the reactor core upper  
internals when only one monitor is available. In addition, the TS are  
expanded to cover the case where both monitors are inoperable.

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,  
Original signed by  
Gordon E. Edison, Senior Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No.175 to DPR-66
- 2. Amendment No. 55 to NPF-73
- 3. Safety Evaluation

cc w/enclosures:  
See next page

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\*See previous concurrence

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 20, 1993

Docket Nos. 50-334  
and 50-412

Mr. J. D. Sieber, Senior Vice President  
and Chief Nuclear Officer  
Nuclear Power Division  
Duquesne Light Company  
Post Office Box 4  
Shippingport, Pennsylvania 15077-0004

Dear Mr. Sieber:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 175 AND 55 TO FACILITY OPERATING  
LICENSES DPR-66 AND NPF-73, BEAVER VALLEY POWER STATION, UNIT NOS.  
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The Commission has issued the enclosed Amendment Nos. 175 and 55 to  
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These amendments revise the Appendix A TS relating to alternate source range  
neutron flux monitors. The amendments permit the use of alternate source  
range monitors provided the required visual and audible indications are  
available. The amendments also allow installation of the reactor core upper  
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expanded to cover the case where both monitors are inoperable.

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,

A handwritten signature in cursive script that reads "Gordon E. Edison".

Gordon E. Edison, Senior Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 175 to DPR-66
2. Amendment No. 55 to NPF-73
3. Safety Evaluation

cc w/enclosures:  
See next page

Mr. J. D. Sieber  
Duquesne Light Company

Beaver Valley Power Station  
Units 1 & 2

cc:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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. 175  
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 December 21, 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. DPR-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 175, 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, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 20, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 175

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

3/4 9-2  
B 3/4 9-1  
B 3/4 9-2  
B 3/4 9-3  
B 3/4 9-4  
B 3/4 9-5

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3/4 9-2  
B 3/4 9-1  
B 3/4 9-2  
B 3/4 9-3  
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B 3/4 9-5

DPR-66  
REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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3.9.2 As a minimum, two source range neutron flux monitors (primary or alternate) shall be operating, each with continuous visual indication in the control room and one with audible indication in the containment and control room, except during upper internals installation when one monitor with continuous visual indication in the control room is required.

APPLICABILITY: MODE 6

ACTION:

- a. With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
- b. With both of the above monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

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4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL FUNCTIONAL TEST at least once per 7 days, and
- b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and
- c. A CHANNEL CHECK at least once per 12 hours during CORE ALTERATIONS.

DPR-66  
3/4.9 REFUELING OPERATIONS

BASES

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3/4.9.1 BORON CONCENTRATION

The limitations on minimum boron concentration (2000 ppm) ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. The Limitation of  $K_{eff}$  of no greater than 0.95 which includes a conservative allowance for uncertainties, is sufficient to prevent reactor criticality during refueling operations.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core when performing those evolutions with the potential to initiate criticality. Suitable detectors used in place of primary source range neutron flux monitors N-31 and N-32 are recognized as alternate detectors. Alternate detectors may be used in place of primary source range neutron flux monitors as long as the required indication is provided. Since installation of the upper internals does not involve movement of fuel or a significant positive reactivity addition to the core, one primary or alternate source range neutron flux monitor with continuous visual indication in the control room provides adequate neutron flux monitoring capability during this evolution.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment penetration closure and operability of the containment purge and exhaust system HEPA filters and charcoal adsorbers ensure that a release of radioactive material within containment will be restricted from leakage to the environment or filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere within 10 CFR 100 limits. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE. Operations of the containment purge and exhaust

DPR-66  
REFUELING OPERATIONS

BASES

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3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

system HEPA filters and charcoal adsorbers and the resulting iodine removal capacity are consistent with the assumptions of the accident analysis.

All containment penetrations, except for the containment purge and exhaust penetrations, that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Penetration closure may be achieved by an isolation valve, blind flange, manual valve, or functional equivalent. Functional equivalent isolation ensures releases from the containment are prevented for credible accident scenarios. The isolation techniques must be approved by an engineering evaluation and may include use of a material that can provide a temporary, pressure tight seal capable of maintaining the integrity of the penetration to restrict the release of radioactive material from a fuel element rupture.

3/4.9.5 COMMUNICATIONS

The requirements for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies; 2) each crane has sufficient load capacity to lift a control rod or fuel assembly; and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the normal weight of a fuel assembly over other fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that 1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE,

DPR-66  
REFUELING OPERATIONS

BASES

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3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION (Continued)

and 2) sufficient coolant circulation is maintained throughout the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

THE OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The integrity of the containment penetrations of this system is required to restrict the release of radioactive material from the containment atmosphere to acceptable levels which are less than those listed in 10 CFR 100. Applicability in MODE 5, although not an NRC safety requirement, will provide additional protection against small releases of radioactive material from the containment during maintenance activities.

3/4.9.10 AND 3/4.9.11 WATER LEVEL - REACTOR VESSEL AND STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 and 3/4.9.13 FUEL BUILDING VENTILATION SYSTEM

The limitations on the storage pool ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the accident analysis. The spent fuel pool area ventilation system is non-safety related and only recirculates air through the fuel building. The SLCRS portion of the ventilation system is safety-related and maintains a negative pressure in the

DPR-66  
REFUELING OPERATIONS

BASES

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3/4.9.12 and 3/4.9.13 FUEL BUILDING VENTILATION SYSTEM (Continued)

fuel building. The SLCRS flow is normally exhausted to the atmosphere without filtering, however, the flow is diverted through the main filter banks by manual actuation or on a high radiation signal.

3/4.9.14 FUEL STORAGE - SPENT FUEL STORAGE POOL

The requirements for fuel storage in the spent fuel pool ensure that: (1) the spent fuel pool will remain subcritical during fuel storage; and (2) a uniform boron concentration is maintained in the water volume in the spent fuel pool to provide negative reactivity for postulated accident conditions under the guidelines of ANSI 16.1-1975. The value of 0.95 or less for keff which includes all uncertainties at the 95/95 probability/confidence level is the acceptance criteria for fuel storage in the spent fuel pool.

The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at  $\geq 1050$  ppm (this includes a 50 ppm conservative allowance for uncertainties) during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) the fuel assemblies satisfy the analyzed U-235 enrichment limits or an analysis has been performed and it was determined that Keff is  $\leq 0.95$ ; and (2) the boron concentration meets the 1050 ppm limit.

The enrichment limitations for storage of fuel in a 3 of 4 array in the spent fuel pool is based on a nominal region average enrichment with individual fuel assembly tolerance of + or - 0.05 w/o U-235.

The results of the spent fuel pool criticality analysis (August 1986) for Westinghouse STD/Vantage 5H and OFA/Vantage 5 fuel in three of four storage locations show that there is more than 0.3% margin to the keff limit of 0.95 with all uncertainties included. Based on the sensitivity study completed with this analysis, an increase in the maximum allowed enrichment for fuel stored in the spent fuel storage racks from 4.00 to 4.05 w/o will increase the maximum rack keff by less than 0.002. Therefore, with Westinghouse 17 x 17 STD/Vantage 5H and OFA/Vantage 5 fuel enriched at 4.05 w/o stored in the spent fuel racks in three of four storage locations and with all of the assumptions and conservatisms presented in the criticality analysis, the maximum rack keff will be less than 0.95.

DPR-66  
REFUELING OPERATIONS

BASES

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3/4.9.15 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

The OPERABILITY of the control room emergency habitability system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The ambient air temperature is controlled to prevent exceeding the allowable equipment qualification temperature for the equipment and instrumentation in the control room. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555-0001

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. 55  
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 December 12, 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.

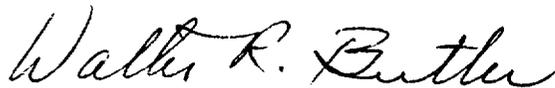
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-73 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 55, 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, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 20, 1993

ATTACHMENT TO LICENSE AMENDMENT NO.55

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

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

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Insert

3/4 9-2

B 3/4 9-1

B 3/4 9-2

B 3/4 9-3

B 3/4 9-4

NPF-73  
REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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3.9.2 As a minimum, two source range neutron flux monitors (primary or alternate) shall be operating, each with continuous visual indication in the control room and one with audible indication in the containment and control room, except during upper internals installation when one monitor with continuous visual indication in the control room is required.

APPLICABILITY: MODE 6

ACTION:

- a. With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
- b. With both of the above monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

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4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL FUNCTIONAL TEST at least once per 7 days, and
- b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and
- c. A CHANNEL CHECK at least once per 12 hours during CORE ALTERATIONS.

3/4.9 REFUELING OPERATIONSBASES3/4.9.1 BORON CONCENTRATION

The limitations on minimum boron concentration (2000 ppm) ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. The limitation on  $K_{eff}$  of no greater than 0.95 which includes a conservative allowance for uncertainties, is sufficient to prevent reactor criticality during refueling operations.

Isolating all reactor water makeup paths from unborated water sources precludes the possibility of an uncontrolled boron dilution of the filled portions of the Reactor Coolant System. This limitation is consistent with the initial conditions assumed in the accident analyses for MODE 6.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core when performing those evolutions with the potential to initiate criticality. Suitable detectors used in place of primary source range neutron flux monitors N-31 and N-32 are recognized as alternate detectors. Alternate detectors may be used in place of primary source range neutron flux monitors as long as the required indication is provided. Since installation of the upper internals does not involve movement of fuel or a significant positive reactivity addition to the core, one primary or alternate source range neutron flux monitor with continuous visual indication in the control room provides adequate neutron flux monitoring capability during this evolution.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment penetration closure limit leakage of radioactive material within containment to the environment to ensure compliance with 10 CFR 100 limits. The requirements on operation of the SLCRS ensure that trace amounts of radioactive material within containment will be filtered through HEPA filters charcoal absorbers prior to discharge to the atmosphere. These

NPF-73  
REFUELING OPERATIONS

BASES

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3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

requirements are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

All containment penetrations, except for the containment purge and exhaust penetrations, that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Penetration closure may be achieved by an isolation valve, blind flange, manual valve, or functional equivalent. Functional equivalent isolation ensures releases from the containment are prevented for credible accident scenarios. The isolation techniques must be approved by an engineering evaluation and may include use of a material that can provide a temporary, pressure tight seal capable of maintaining the integrity of the penetration to restrict the release of radioactive material from a fuel element rupture.

3/4.9.5 COMMUNICATIONS

The requirements for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies; 2) each crane has sufficient load capacity to lift a control rod or fuel assembly; and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the normal weight of a fuel assembly over other fuel assemblies ensures that no more than the contents of one fuel assembly plus an additional 50 rods in the struck fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that 1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor

REFUELING OPERATIONSBASES3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION (Continued)

pressure vessel below 140°F as required during the REFUELING MODE, and 2) sufficient coolant circulation is maintained throughout the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

THE OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The integrity of the containment penetrations of this system is required to meet 10 CFR 100 requirements in the event of a fuel handling accident inside containment. Applicability in MODE 5, although not an NRC safety requirement, will provide additional protection against small releases of radioactive material from the containment during maintenance activities.

3/4.9.10 AND 3/4.9.11 WATER LEVEL - REACTOR VESSEL AND STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 and 3/4.9.13 FUEL BUILDING VENTILATION SYSTEM

The limitations on the storage pool ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the accident analysis. The spent fuel pool area ventilation system is non-safety related and only recirculates air through the fuel building. The fuel building portion of the

NPF-73  
REFUELING OPERATIONS

BASES

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3/4.9.12 and 3/4.9.13 FUEL BUILDING VENTILATION SYSTEM (Continued)

SLCRS is safety related and continuously filters the fuel building exhaust air. This maintains a negative pressure in the fuel building.

3/4.9.14 FUEL STORAGE - SPENT FUEL STORAGE POOL

The requirements for fuel storage in the spent fuel pool ensure that: (1) the spent fuel pool will remain subcritical during fuel storage; and (2) a uniform boron concentration is maintained in the water volume in the spent fuel pool to provide negative reactivity for postulated accident conditions under the guidelines of ANSI 16.1-1975. The value of 0.95 or less for  $K_{eff}$  which includes all uncertainties at the 95/95 probability/confidence level is the acceptance criteria for fuel storage in the spent fuel pool.

Verification that peak fuel rod burnup is less than 60 GWD/MTU is provided in the reload evaluation report associated with each fuel cycle.

The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at  $\geq 1050$  ppm (this includes a 50 ppm conservative allowance for uncertainties) during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) the fuel assemblies satisfy the analyzed U-235 enrichment limits or an analysis has been performed and it was determined that  $K_{eff}$  is  $\leq 0.95$ ; and (2) the boron concentration meets the 1050 ppm limit.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. DPR-66  
AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. NPF-73

DUQUESNE LIGHT COMPANY  
OHIO EDISON COMPANY  
PENNSYLVANIA POWER COMPANY  
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY  
THE TOLEDO EDISON COMPANY

BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By letter dated December 21, 1992, Duquesne Light Company (DLC) requested changes to the Beaver Valley Power Station, Units 1 and 2 Technical Specifications (TS) to allow the use of alternate source range monitors during refueling (Mode 6) as long as the required control room and containment indications are available.

Specifically, the proposed change would modify TS 3.9.2, "Instrumentation," to (1) allow the use of alternate monitors as long as the required visual and audible indications are available, and (2) allow installation of the upper internals when only one monitor with continuous visual indication in the control room is available. The current action statement suspending all operations involving core alterations or positive reactivity changes would be revised as Action "a". Action "b" would be added to require a determination of the reactor coolant system (RCS) boron concentration at least once every 12 hours when both monitors are inoperable or not operating.

2.0 EVALUATION

During refueling (Mode 6), two operable monitors are required to provide redundancy during fuel movement or other actions that may cause positive reactivity changes, including upper internals removal. The proposed change would permit the use of alternate monitors in place of primary source range neutron flux monitors. The alternate monitor(s) may be either an installed spare detector or a portable monitor with sufficient accuracy and sensitivity to provide neutron flux monitoring at a level consistent with the current TS requirements. The staff, therefore, finds this use of alternate monitors acceptable.

During installation of the upper internals, neutrons may be reflected back into the core resulting in a positive reactivity addition. However, this reactivity addition is so small when compared to the negative reactivity provided by the required shutdown margin that, in fact, the shutdown margin remains essentially unchanged. In addition, since inadvertent control rod withdrawal is not a concern during upper internals installation, one primary or alternate source range monitor can adequately monitor the core neutron flux during this operation. Therefore, the proposed change requiring only one monitor with continuous visual indication in the control room during upper internals installation is acceptable.

The proposed action requiring a determination of the RCS boron concentration at least once per 12 hours when both of the source range monitors are inoperable or not operating is consistent with the standard Westinghouse TS and, therefore, acceptable. It also eliminates the need for an exception to Specification 3.0.3, which requires placing the plant in a Mode in which the TS does not apply if a limiting condition for operation is not met.

The changes to Bases 3/4.9.2 adequately incorporate the above changes to TS 3.9.2 and are, therefore, acceptable.

Based on the review described above, the staff finds the proposed change to the Beaver Valley Units 1 and 2 TS to allow use of alternate source range monitors and installation of the upper internals when only one monitor is available are acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change the surveillance requirements. The NRC staff has determined that the amendments involve 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 Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (58 FR 16223). Accordingly, the amendments meet 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 amendments.

## 5.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Kopp

Date: August 20, 1993