November 13, 1984

Docket No. 50-334

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Mr. J. J. Carey, Vice President
Nuclear Division
Duquesne Light Company
Post Office Box 4
Shippingport, PA 15077

Dear Mr. Carey:

SUBJECT: ISSUANCE OF AMENDMENT AS A RESULT OF ACTIONS UDER TAC 49417 AND 52071

The Commission has issued the enclosed Amendment No. 83 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 14, 1983 and supplemented by letters dated September 22, 1983 and July 3, 1984. While your submittal addresses a number of issues, this amendment only addresses those described below.

The amendment changes the Technical Specifications for Beaver Valley Unit No. 1 to clarify conditions under which the safety action of protection system channels are manually bypassed or blocked by the protection system logic.

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

Sincerely,

/s/PTam

Peter S. Tam, Project Manager
Operating Reactors Branch No. 1
Division of Licensing

Enclosures:
1. Amendments No. 83 to DPR-66
2. Safety Evaluation

cc w/enclosures:
See next page

ORB#1:DL	ORB#1:DL	C-ORB#1:DL	OELD	AD:OR:DL
CParrish	PTam;ps	SVarga		GLainas
10/24/84	10/24/84	10/24/84	10/31/84	10/8/84

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PDR ADOCK 05000334
P PDR

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

November 13, 1984

Docket No. 50-334

Mr. J. J. Carey, Vice President
Nuclear Division
Duquesne Light Company
Post Office Box 4
Shippingport, PA 15077

Dear Mr. Carey:

SUBJECT: ISSUANCE OF AMENDMENT AS A RESULT OF ACTIONS UNDER TAC 49417 AND 52071

The Commission has issued the enclosed Amendment No.83 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 14, 1983 and supplemented by letters dated September 22, 1983 and July 3, 1984. While your submittal addresses a number of issues, this amendment only addresses those described below.

The amendment changes the Technical Specifications for Beaver Valley Unit No. 1 to clarify conditions under which the safety action of protection system channels are manually bypassed or blocked by the protection system logic.

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

Sincerely,

Peter S. Tam

Peter S. Tam, Project Manager
Operating Reactors Branch No. 1
Division of Licensing

Enclosures:
1. Amendments No.83 to DPR-66
2. Safety Evaluation

cc w/enclosures:
See next page

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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. 83
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 14, 1983 and supplemented by letters dated September 22, 1983 and July 3, 1984, 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:

8411280539 841113
PDR ADOCK 05000334
P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 83 , 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

Donald C. Fischer /for

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 13, 1984

ATTACHMENT TO LICENSE AMENDMENT
AMENDMENT NO. 83 TO FACILITY OPERATING LICENSE NO. DPR-66
DOCKET NO. 50-334

Revise Appendix A as follows:

Remove Pages*	Insert Pages
2-7	2-7
—	2-7a
B2-8	B2-8
3/4 3-2	3/4 3-2
3/4 3-3	3/4 3-3
3/4 3-4	3/4 3-4
3/4 3-5	3/4 3-5
3/4 3-7	3/4 3-7/8
3/4 3-8	—
3/4 3-11	3/4 3-11
3/4 3-12	3/4 3-12
3/4 3-13	3/4 3-13
3/4 3-15	3/4 3-15
3/4 3-18	3/4 3-18
3/4 3-19	3/4 3-19
3/4 3-19a	3/4 3-19a
—	3/4 3-19b
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
—	3/4 3-24b
—	3/4 3-31b
B3/4 3-1	B3/4 3-1
—	B3/4 3-1a

*The licensee requested to remove Pages 3/4 2-14, 3/4 2-15 and 3/4 2-16. Such has already been accomplished by Amendment No. 9 dated July 12, 1977.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
13. Steam Generator Water Level-Low-Low	≥ 12% of narrow range instrument span-each steam generator	≥ 11% of narrow range instrument span-each steam generator
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	≤ 40% of full steam flow at RATED THERMAL POWER coincident with steam generator water level ≥ 25% of narrow range instrument span-each steam generator	≤ 42.5% of full steam flow at RATED THERMAL POWER coincident with steam generator water level ≥ 24% of narrow range instrument span-each steam generator
15. Undervoltage-Reactor Coolant Pumps	≥ 2750 volts-each bus	≥ 2725 volts-each bus
16. Underfrequency-Reactor Coolant Pumps	≥ 57.5 Hz - each bus	≥ 57.4 Hz - each bus
17. Turbine Trip		
A. Auto stop oil pressure	45 psig	± 5 psig
B. Turbine Stop Valve	≥ 1% open	≥ 1% open
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable
20. Reactor Trip System Interlocks		
A. Intermediate Range Neutron Flux, P-6	$\geq 1 \times 10^{-10}$ Amps	$\geq 6 \times 10^{-11}$ Amps

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINT

20. (Continued)

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
B. Power Range Neutron Flux, P-8	≤30% RATED THERMAL POWER	≤31% RATED THERMAL POWER
C. Power Range Neutron Flux, P-9	≤49% RATED THERMAL POWER	≤51% RATED THERMAL POWER
D. Power Range Neutron Flux, P-10 (Input to P-7)	> 9% RATED THERMAL POWER	>9% and <12% RATED THERMAL POWER
E. Turbine Impulse Chamber Pressure, P-13 (Input to P-7)	≤66 PSIG	≤72 PSIG

Safety Injection Input from ESF

If a reactor trip has not already been generated by the reactor protective instrumentation, the ESF automatic actuation logic channels will initiate a reactor trip upon any signal which initiates a safety injection. This trip is provided to protect the core in the event of a LOCA. The ESF instrumentation channels which initiate a safety injection signal are shown in Table 3.3-3.

Reactor Coolant Pump Breaker Position Trip

The Reactor Coolant Pump Breaker Position Trips are anticipatory trips which provide reactor core protection against DNB resulting from the opening of two or more pump breakers above P-7. These trips are blocked below P-7. The open/close position trips assure a reactor trip signal is generated before the low flow trip set point is reached. No credit was taken in the accident analyses for operation of these trips. Their functional capability at the open/close position settings is required to enhance the overall reliability of the Reactor Protection System.

Reactor Trip System Interlocks

The Reactor Trip System Interlocks perform the following functions:

P-6 Above the setpoint P-6 allows the manual block of the Source Range reactor trip and de-energizing of the high voltage to the detectors. Below the setpoint Source Range level trips are automatically reactivated and high voltage restored.

P-7 Above the setpoint P-7 automatically enables reactor trips on low flow or coolant pump breaker open in more than one primary coolant loop, reactor coolant pump bus undervoltage and underfrequency, pressurizer low pressure and pressurizer high level. Below the setpoint the above listed trips are automatically blocked.

P-8 Above the setpoint P-8 automatically enables reactor trip on low flow in one or more primary coolant loops. Below the setpoint P-8 automatically blocks the above listed trip.

P-9 Above the setpoint P-9 automatically enables a reactor trip on turbine trip. Below the setpoint P-9 automatically blocks a reactor trip on turbine trip.

P-10 Above the setpoint P-10 allows the manual block of the Intermediate Range reactor trip and the low setpoint Power Range reactor trip; and automatically blocks the Source Range reactor trip and de-energizes the Source Range high voltage power. Below the setpoint the Intermediate Range reactor trip and the low setpoint Power Range reactor trip are automatically reactivated. Provides input to P-7.

P-13 Provides input to P-7.

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. Manual Reactor Trip	2	1	2	1, 2, 3*, 4*, and 5*	12
2. Power Range, Neutron Flux					
a. High Setpoint	4	2	3	1, 2	2
b. Low Setpoint	4	2	3	1(1), 2	2
3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	2
4. Power Range, Neutron Flux, High Negative Rate	4	2	3	1, 2	2
5. Intermediate Range, Neutron Flux	2	1	2	1(1), 2, 3*, 4*, and 5*	3
6. Source Range, Neutron Flux (Below P-10)					
A. Startup	2	1	2	2(2), 3*, 4*, and 5*	4
B. Shutdown	2	0	1	3, 4 and 5	5
7. Overtemperature ΔT					
Three Loop Operation	3	2	2	1, 2	2
Two Loop Operation	3	1**	2	1, 2	9
8. Overpower ΔT					
Three Loop Operation	3	2	2	1, 2	2
Two Loop Operation	3	1**	2	1, 2	9
9. Pressurizer Pressure-Low (Above P-7)	3	2	2	1, 2	7

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

	FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
10.	Pressurizer Pressure-High	3	2	2	1, 2	7
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 Loops (Above P-7 and below P-8)	3/loop	2/loop in two operating loops	2/loop each operating loop	1	7
14.	Steam Generator Water Level-Low-Low (Loop Stop Valves Open)	3/loop	2/loop	2/loop	1, 2	7
15.	Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	2/loop-level and 2/loop-flow mismatch	1/loop-level coincident with 1/loop-flow mismatch in same loop	1/loop-level and 2/loop-flow mismatch or 2/loop-level and 1/loop-flow mismatch	1, 2	7
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

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
18. Turbine Trip (Above P-9)					
A. Auto Stop Oil Pressure	3	2	2	1	7
B. Turbine Stop Valve Closure	4	4	4	1	8
19. Safety Injection Input from ESF	2	1	2	1, 2	1
20. Reactor Coolant Pump Breaker Position Trip (Above P-7)	1/breaker	2	1/breaker per operating loop	1	11
21. Reactor Trip Breakers	2	1	2	1, 2, 3*, 4*, and 5*	1
22. Automatic Trip Logic	2	1	2	1, 2, 3*, 4*, and 5*	1
23. Reactor Trip System Interlocks					
A. Intermediate Range Neutron Flux, P-6	2	1	1	2	3
B. Power Range Neutron Flux, P-8	4	2	3	1	12
C. Power Range Neutron Flux, P-9	4	2	3	1	12
D. Power Range Neutron Flux, P-10	4	2	3	1	12
E. Turbine Impulse Chamber Pressure, P-13	2	1	1	1	12

TABLE 3.3-1 (Continued)

TABLE NOTATION

* With the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal.

** The channel(s) associated with the protective functions derived from the out of service Reactor Coolant Loop shall be placed in the tripped condition.

(1) Trip function may be manually bypassed in this Mode above P-10.

(2) Trip function may be manually bypassed in this Mode above P-6.

ACTION STATEMENTS

ACTION 1 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirements, be in HOT STANDBY within 6 hours.

ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels and with the THERMAL POWER level:

a. Less than or equal to 5% of RATED THERMAL POWER, place the inoperable channel in the tripped condition within 1 hour and restore the inoperable channel to OPERABLE status within 24 hours after increasing THERMAL POWER above 5% of RATED THERMAL POWER; otherwise reduce thermal power to less than 5% RATED THERMAL POWER within the following 6 hours.

b. Above 5% of RATED THERMAL POWER, operation may continue provided all of the following conditions are satisfied:

1. The inoperable channel is placed in the tripped condition within 1 hour.

2. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.

3. Either, THERMAL POWER is restricted to $\leq$75% of RATED THERMAL and the Power Range, Neutron Flux trip setpoint is reduced to $\leq$85% of RATED THERMAL POWER within 4 hours; or, the QUADRANT POWER TILT RATIO is monitored at least once per 12 hours.

ACTION 3 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

TABLE 3.3-1 (continued)

ACTION 9 With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 2 hours or be in HOT STANDBY within the next 6 hours; however, one channel associated with an operating loop may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.

ACTION 10 Not applicable.

ACTION 11 With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hour.

ACTION 12 With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1.	Manual Reactor Trip	N.A.	N.A.	S/U(1)	N.A.
2.	Power Range, Neutron Flux				
	a. High Setpoint	S	D(2), M(3) and Q(6)	M	1, 2
	b. Low Setpoint	S	N.A.	S/U(1)	2
3.	Power Range, Neutron Flux, High Positive Rate	N.A.	R	M	1, 2
4.	Power Range, Neutron Flux, High Negative Rate	N.A.	R	M	1, 2
5.	Intermediate Range, Neutron Flux	S	N.A.	S/U(1), M(7)	1, 2, 3*, 4*, 5*
6.	Source Range, Neutron Flux (Below P-10)	N.A.	N.A.	S/U(1), M(8)	2, 3*, 4* and 5*
7.	Overtemperature T	S	R	M	1, 2
8.	Overpower T	S	R	M	1, 2
9.	Pressurizer Pressure-Low	S	R	M	1, 2
10.	Pressurizer Pressure-High	S	R	M	1, 2
11.	Pressurizer Water Level-High	S	R	M	1, 2
12.	Loss of Flow - Single Loop	S	R	M	1

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
13.	Loss of Flow - Two Loops	S	R	N.A.	1
14.	Steam/Generator Water Level-Low-Low	S	R	M	1, 2
15.	Steam Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	M	1, 2
16.	Undervoltage - Reactor Coolant Pumps	N.A.	R	M	1
17.	Underfrequency - Reactor Coolant Pumps	N.A.	R	M	1
18.	Turbine Trip				
	A. Auto Stop Oil Pressure	N.A.	N.A.	S/U(1)	1, 2
	B. Turbine Stop Valve Closure	N.A.	N.A.	S/U(1)	1, 2
19.	Safety Injection Input from ESF	N.A.	N.A.	M(4)	1, 2
20.	Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	N.A.
21.	Reactor Trip Breaker	N.A.	N.A.	M(5) and S/U(1)	1, 2, 5*
22.	Automatic Trip Logic	N.A.	N.A.	M(5)	1, 2, 5*
23.	Reactor Trip System Interlocks				
	A. P-6	N.A.	N.A.	M(9)	1, 2
	B. P-8	N.A.	N.A.	M(9)	1
	C. P-9	N.A.	N.A.	M(9)	1
	D. P-10	N.A.	N.A.	M(9)	1
	E. P-13	N.A.	R	M(9)	1

TABLE 4.3-1 (Continued)

NOTATION

* - With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.

(1) - If not performed in previous 7 days.

(2) - Heat balance only, above 15% of RATED THERMAL POWER.

(3) - Compare incore to excore axial imbalance above 15% of RATED THERMAL POWER. Recalibrate if absolute difference $\geq$ 3 percent.

(4) - Manual ESF functional input check every 18 months.

(5) - Each train tested every other month.

(6) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(7) - Below P-10.

(8) - Below P-6.

(9) - Required only when below Interlock Trip Setpoint.

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION AND FEEDWATER ISOLATION					
a. Manual Initiation	2	1	2	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13, 36
c. Containment Pressure-High	3	2	2	1, 2, 3	14
d. Pressurizer Pressure-Low	3	2	2	1, 2, 3#	14
e. Low Steamline Pressure (Loop stop valves open)					
Three Loops Operating	3/loop	2/loop any loop	2/loop any loop	1, 2, 3#	14
Two loops operating	3/loop	2/loop any operating loop	2/any operating loop	1, 2, 3#	15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. STEAM LINE ISOLATION					
a. Manual	2/steam line	1/steam line	2/operating steam line	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure Intermediate-High-High	3	2	3	1, 2, 3	14
d. Low Steamline Pressure (Loop stop valves open)					
Three Loops Operating	3/loop	2/loop Any loop	2/loop Any loop	1, 2, 3#	14
Two Loops Operating	3/loop	2/loop any operating loop	2/any operating loop	1, 2, 3#	15
e. High Steam Pressure Rate	3/loop	2/loop any loop	2/operating loop	3##, 4	37

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High, P-14	3/loop	2 loop in any operating loop	2/loop in each operating loop	1, 2, 3	14
6. LOSS OF POWER					
a. 4.16kv Bus	1/4.16kv Bus				
1. Loss of Voltage (trip feeder)		1/4.16kv Bus	1/4kv Bus	1, 2, 3, 4	33
2. Loss of Voltage (start diesel)	1/4.16kv Bus	1/4.16kv Bus	1/4kv Bus	1, 2, 3, 4	33
b. Grid Degraded Voltage (4.16kv Bus)	2/4.16kv Bus	2/Bus	2/Bus	1, 2, 3, 4	34
c. Grid Degraded Voltage (480v Bus)	2/480v Bus	2/Bus	2/Bus	1, 2, 3, 4	34

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. AUXILIARY FEEDWATER					
a. Steam. Gen. Water Level-Low-Low					
i. Start Turbine Driven Pump	3/stm. gen.	2/stm. gen. any stm. gen.	2/stm. gen	1, 2, 3	14
ii. Start Motor Driven Pumps	3/stm. gen.	2/stm. gen. any 2 stm. gen.	2/stm. gen.	1, 2, 3	14
b. Undervoltage-RCP Start Turbine-Driven Pump	(3)-1/bus	2	2	1	14
c. S. I. Start Motor-Driven Pumps	See 1 above (all S.I. initiating functions and requirements)				
d. Emergency Bus Undervoltage Start Motor Driven Pumps	1/bus	1	1	1, 2, 3	18
e. Trip of Main Feedwater Pumps Start Motor-Driven Pumps	1/pump	1	1	1, 2, 3	18

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
8. ESF INTERLOCKS					
a. Reactor Trip, P-4	2	1	2	1, 2, 3	38
b. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	38
c. Low-Low Tavg, P-12	3	2	2	1, 2, 3	38

Table 3.3-3 (Continued)

TABLE NOTATION

Trip function may be bypassed in this MODE below P-11.

Trip function automatically bypassed above P-11, and is bypassed below P-11 when Safety Injection on low steam pressure is not manually bypassed.

The channel(s) associated with the protective functions derived from the out of service Reactor Coolant Loop shall be placed in the tripped mode.

ACTION STATEMENTS

ACTION 13 With the number of OPERABLE Channels one less than the Total Number of Channels, be in HOT STANDBY within six hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to two hours for surveillance testing per Specification 4.3.2.1.1., provided the other channel is operable.

ACTION 14 With the number of OPERABLE Channels one less than the Total Number of Channels:

a. Below P-11 or P-12, place the inoperable channel in the tripped condition within 1 hour; restore the inoperable channel to OPERABLE status within 24 hours after exceeding P-11 or P-12; otherwise be in at least HOT STANDBY within the following six hours.

b. Above P-11 and P-12, place the inoperable channel in the tripped condition within 1 hour; operation may continue until performance of the next required CHANNEL FUNCTIONAL TEST.

ACTION 15 With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 2 hours or be in HOT SHUTDOWN within the following 12 hours; however, one channel associated with an operating loop may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 16 With the number of OPERABLE Channels one less than the Total Number of Channels:

a. Below P-11 or P-12, place the inoperable channel in the bypass condition; restore the inoperable channel to OPERABLE status within 24 hours after exceeding P11 or P-12; otherwise be in at least HOT SHUTDOWN within the following 12 hours.

b. Above P-11 or P-12, demonstrate that the Minimum Channels OPERABLE requirement is met within 1 hour; operation may continue with the inoperable channel bypassed and one channel may be bypassed for up to 2 hours for testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and cold shutdown within the following 30 hours.

ACTION 33 - With the number of OPERABLE Channels one less than the Total Number of Channels, the Emergency Diesel Generator associated with the 4kv Bus shall be declared inoperable and the ACTION Statements for Specifications 3.8.1.1 or 3.8.1.2, as appropriate shall apply.

ACTION 34 - With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed until the performance of the next required Channel Functional Test provided the inoperable channel is placed in the tripped condition within 1 hour.

ACTION 36 - The block of the automatic actuation logic introduced by a reset of safety injection shall be removed by resetting (closure) of the reactor trip breakers within one hour of an inadvertent initiation of safety injection providing that all trip input signals have reset due to stable plant conditions. Otherwise, the requirements of action statement 13 shall have been met.

ACTION 37 - With the number of OPERABLE channels one less than the Total Number of channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisified.

a. The inoperable channel is placed in a tripped condition within one hour.

b. The Minimum Channels OPERABLE requirements is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels per specification 4.3.2.1.1.

ACTION 38 - With less than the Minimum Number of Channels OPERABLE, within one hour determine by observation of the associated permissive annunciator window(s) (bistable status lights or computer checks) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
8. ESF INTERLOCKS		
a. P-4	N/A	N/A
b. P-11	$\leq$ 2000 PSIG	$\leq$ 2010 PSIG
c. P-12	$\geq$ 541°F	$\geq$ 539°F

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
8. ESF INTERLOCKS				
a. P-4	N/A	N/A	R	1, 2, 3
b. P-11	N/A	R	M	1, 2, 3
c. P-12	N/A	R	M	1, 2, 3

3/4.3.1 and 3/4.3.2 PROTECTIVE AND ENGINEERED SAFETY FEATURES (ESF) INSTRUMENTATION

The OPERABILITY of the protective and ESF instrumentation systems and interlocks ensure that 1) the associated ESF action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for protective and ESF purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The measurement of response time at the specified frequencies provides assurance that the protective and ESF action function associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

The Engineered Safety Feature Actuation System interlocks perform the following functions:

P-4 Reactor tripped - Actuates turbine trip, closes main feedwater valves on T_{avg} below setpoint, prevents the opening of the main feedwater valves which were closed by a safety injection or high steam generator water level signal, allows safety injection block so that components can be reset or tripped.

Reactor not tripped - prevents manual block of safety injection.

P-11 Above the setpoint P-11 automatically reinstates safety injection actuation on Low pressurizer pressure, automatically blocks steamline isolation on high steam pressure rate, enables safety injection and steamline isolation on (Loop Stop Valve Open) with low steamline pressure, and enables auto actuation of the pressurizer PORVS.

P-11, Continued

Below the setpoint P-11 allows the manual block of safety injection actuation on low pressurizer pressure, allows manual block of safety injection and steamline isolation on (Loop Stop Valve Open) with Low steamline pressure and enabling steamline isolation on high steam pressure rate, automatically disables auto actuation of the pressurizer PORV's unless the Reactor Vessel Over Pressure Protection System is in service.

P-12 Above the setpoint P-12 automatically reinstates an arming signal to the steam dump system. Below the setpoint P-12 blocks steam dump and allows manual bypass of the steam dump block to cooldown condenser dump valves.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 83 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 14, 1983, Duquesne Light Company (the licensee) submitted Change Request No. 86, to Operating License No. DPR-66 requesting that the Technical Specifications set forth in Appendix A to the license be amended to clarify the conditions under which the safety action of channels of the protection system are manually bypassed or blocked by the protection system logic. The proposed changes are in response to the NRC Staff resolution of Multi-plant Action No. B-32, Blocked Safety Injection Signal During Cooldown. In addition the licensee has proposed changes to provide further clarification and consistency of the Technical Specifications in response to the staff review of this matter. By letters dated September 22, 1983 and July 3, 1984 the licensee provided additional information.

DISCUSSION AND EVALUATION

The Limiting Conditions for Operation (LCO's) for the protection systems are specified in Table 3.3-1 for Reactor Trip System Instrumentation and Table 3.3-3 for Engineered Safety Feature Actuation System Instrumentation of the plant Technical Specifications (TS). In Table 3.3-3, the

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Low Steamline Pressure channels used to initiate Steam Line Isolation are required to be operable in Modes 1, 2 and 3#, where # is defined by the Table Notation to indicate that the trip function may be bypassed in Mode 3 when operating below the setpoint for the P-11 interlock. The use of the notation avoids the potential for a conflict with the specified channel operability requirements when the safety action is manually bypassed. The capability to bypass the safety action of the channel is an intended feature of the design which is automatically removed by operation above the P-11 interlock setpoint.

The same notation, (#) is used in Table 3.3-3 for the High Steam Pressure Rate channels used to initiate Steam Line Isolation, however this trip function ~~is~~ by design only active when the aforementioned Low Steamline Pressure channels are manually bypassed. Therefore the licensee has proposed a new notation (##) to clarify the conditions under which High Steam Pressure Rate channels may be manually bypassed. This notation indicates that the trip function is bypassed above P-11, and is bypassed below P-11 when Safety Injection on low steam pressure is not manually bypassed. Since this change appropriately reflects the conditions under which the High Steam Pressure Rate channels are bypassed we find it acceptable.

The Power, Intermediate, and Source Range channels of the Reactor Trip System Instrumentation noted in Table 3.3-1 of the TS include manual bypass features using permissive interlocks P-6 and P-10. The licensee has proposed changes to appropriately note the conditions for the Applicable Modes under which these channels may be manually bypassed. Since this change clarifies bypass capability for the design of these channels we find it acceptable.

In addition to the manual bypass capability of protection system channels, permissive interlocks are used in the logic design such that the safety actions are automatically bypassed. The current Technical Specification utilizes a notation under the Functional Unit description of the Loss of Flow of Flow channels for reactor trip in Table 3.3-1 to identify permissive conditions under which the channels are active and are not automatically bypassed. For consistency the licensee has proposed changes to Tables 3.3-1 and 3.3-3 to indicate the interlock permissive associated with each protection system channel where applicable. Since this change is consistent with the design and provides further clarification of the automatic bypassing of protective actions we find it acceptable.

The reactor trip and engineered safety feature interlock permissives are summarized at the end of Tables 3.3-1 and 3.3-3 respectively indicating the condition (parameter and coincidence of channel trips required to establish the permissive condition), the channel setpoint and the interlock function. The licensee has proposed changes to Table 2.2-1, Reactor Trip System Instrumentation Trip Setpoints and Table 3.3-4, Engineered Safety Feature System Instrumentation Trip Setpoints to identify each interlock channel along with the trip setpoint and an allowable value (not presently defined) consistent with the specification of these values for channels which initiate safety actions. Also it was proposed

to identify these channels in Tables 3.3-1 and 3.3-3 with specifications for the Minimum Channels Operable, Applicable Modes, and Action statements to establish limiting conditions for operation appropriate for the operability of the permissive interlocks. Also it was proposed to identify these channels in Table 4.3-1, Reactor Trip System Instrumentation Surveillance Requirements and Table 4.3-2, Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements with specifications for surveillance tests and modes in which surveillance is required. Finally it was proposed to add a description of the permissive interlocks to the Bases for Reactor Trip System Setpoints in Section 2.2, Limiting Safety System Settings and to the Bases for Instrumentation in Section B 3/4.3. Since these changes are consistent with the current guidance provided in NUREG-0452, Rev. 4, Standard Technical Specifications for Westinghouse Pressurized Water Reactors and provide further clarification of the LCO's appropriate for permissive interlock channels we find that they are acceptable.

In addition to manual bypass and automatic blocking of safety actions which have been addressed above, the logic for Safety Injection includes the capability to block (override) a safety injection signal subsequent to the automatic initiation of a safety injection. This feature has safety significance when used during the normal recovery of stable plant

conditions following an inadvertent safety injection. Under these conditions the safety injection signal is blocked by action of the reset of safety injection and remains until the P-4 interlock permissive is cleared by closing the reactor trip breakers. The present Action statement for inoperable (bypassed) safety injection logic requires that the unit be placed in hot standby within six hours and be in cold shutdown within the following 30 hours. Therefore in order to assure that Safety Injection is restored to operable status during either a return to power or plant shutdown following an inadvertent initiation of Safety Injection, an Action statement has been proposed to stipulate that the block of safety injection be removed by resetting the reactor trip breakers within one hour providing that all trip input signals have reset due to stable plant conditions. We find that this change is acceptable and appropriate for restoring the Safety Injection logic to an operable status following recovery from an inadvertent Safety Injection.

Attachment A to the licensee's letter dated July 3, 1984 identified the proposed changes to the Technical Specifications. Based on the review of these changes, the NRC staff and the licensee mutually agreed to the following modifications to the proposed changes to be included in the Technical Specifications (letter, S. A. Varga (NRC) to J. J. Carey (DLC), September 24, 1984).

1. Functional Unit No. 20 in Table 2.2-1 on reactor trip system instrumentation trip setpoints is titled Reactor Trip System Interlocks (Based on ascending power). Since the logic diagrams in the FSAR specifically note that the interlock channels are tripped on ascending power it was concluded that the parenthetical notation proposed is not necessary and therefore has been deleted. We find this is acceptable since it is consistent with the guidance in the Standard Technical Specifications.

2. The Trip Setpoint and Allowable Value for Functional Unit item 20.D, Power Range Neutron Flux, P-10 in Table 2.2-1 were indicated as greater than 9% and less than 12% Rated Thermal Power respectively. It was concluded that the Trip Setpoint should be specified as 10% Rated Thermal Power and that lower limit proposed for the trip setpoint be included under the Allowable Value column. This change has been incorporated to avoid any ambiguity in interpretation of the specified values. Since this change is consistent with the guidance in the Standard Technical Specifications we find it acceptable.

3. Some of the instrument channels identified in Table 4.3-1 on reactor trip system surveillance requirements included parenthetical notation under the functional unit description to identify permissive

interlocks associated with the automatic bypass of the safety action. Since this notation is included in Table 3.3-1 as clarification of the operability requirements of channels and does not add further to the surveillance requirements of Table 4.3-1, it has been deleted. We find this acceptable since it is consistent with the guidance in the Standard Technical Specifications.

4. In Table 3.3-3 the engineered safety feature actuation system operability requirements were clarified by the addition of the parenthetical notation (Loop Stop Valves Open) for Functional Units 1.e., Low Steamline Pressure and 7.a., Steam Generator Water Level-Low-Low. This addition is consistent with the identification permissive interlocks used in Tables 3.3-1 and 3.3-3 and is therefore, acceptable.

5. Action 36 in Table 3.3-3 was proposed to specify a time limit for unblocking of a Safety Injection signal following an inadvertent safety injection. The Action statement includes a sentence noting that manual block is permitted after safety injection and P-4 reset. In that P-4 reset removes the block this statement is not technically correct, however its purpose to permit the use of the override feature of the reset feature is implicit in the action statement itself. Therefore, this statement was deleted and is acceptable since it was neither technically correct nor necessary.

In summary, the licensee has proposed changes to the Technical Specification for Beaver Valley Unit 1 which are purely administrative to achieve consistency. Based upon this review the Staff finds that they are acceptable on the basis noted therein.

ENVIRONMENTAL CONSIDERATION

This amendment involves only changes in administrative procedure and requirements. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 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: November 13, 1984

PRINCIPAL CONTRIBUTOR:

T. Dunning