Duquesne Light

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June 26, 1979

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Attention: A. Schwencer, Chief
Operating Reactors Branch No. 1
Division of Operating Reactors
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334
Request for Amendment to Operating License
Technical Specification Change Request No. 39

Gentlemen:

Enclosed are three (3) signed originals and thirty-seven (37) copies of a proposed change to the Beaver Valley Power Station, Appendix A Technical Specifications which reduces the time constant of the Neutron Flux Rate Reactor Trips from two seconds to one second, and reduces the trip setpoint of the High Negative Rate from five percent to three percent.

Safety Evaluation

The proposed changes are presently in effect as a result of a notification by the Westinghouse Electric Corporation that the existing setpoints are not adequate to ensure that the minimum DNBR is maintained above 1.30 for certain rod drop accidents, that might occur at high power levels when the automatic rod control system acts to restore the reactor power level to match the turbine power.

Safety Evaluation

The requested setpoints are required to assure that minimum departure from nucleate boiling ratio is always maintained above the value of 1.3 which is utilized in the safety analyses.

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Since the staff has previously been informed of the institution of an administrative control which placed these setpoints in effect at Beaver Valley, we have determined that change should be properly categorized as a Class II change.

A check in the amount of $1200.00 is enclosed.

Very truly yours,

C. N. Dunn
Vice President, Operations

Attachment

(CORPORATE SEAL)

Attest:

N N Staas

H. W. Staas
Secretary

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

On this 26TH day of JUNE, 1979, before me, DONALD W. SHANNON, a Notary Public in and for said Commonwealth and County, personally appeared C. N. Dunn, who being duly sworn, deposed, and said that (1) he is Vice President of Duquesne Light, (2) he is duly authorized to execute and file the foregoing Submittal on behalf of said Company, and (3) the statements set forth in the Submittal are true and correct to the best of his knowledge, information and belief.

Donald W Shannon

DONALD W. SHANNON, NOTARY PUBLIC
PITTSBURGH, ALLEGHENY COUNTY
MY COMMISSION EXPIRES JUNE 7, 1983
Member, Pennsylvania Association of Notaries

BASES

The Power Range Negative Rate trip provides protection to ensure that the minimum DNBR is maintained above 1.30 for rod drop accidents. At high power a single or multiple rod drop accident could cause local flux peaking which when in conjunction with nuclear power being maintained equivalent to turbine power by action of the automatic rod control system could cause an unconservative local DNBR to exist. The Power Range Negative Rate trip will prevent this from occurring by tripping the reactor for all single or multiple dropped rods.

Intermediate and Source Range, Nuclear Flux

The Intermediate and Source Range, Nuclear Flux trips provide reactor core protection during reactor startup. These trips provide redundant protection to the low setpoint trip of the Power Range, Neutron Flux channels. The Source Range Channels will initiate a reactor trip at about 10^{+5} counts per second unless manually blocked when P-6 becomes active. The Intermediate Range Channels will initiate a reactor trip at a current level proportional to approximately 25 percent of RATED THERMAL POWER unless manually blocked when P-10 becomes active. No credit was taken for operation of the trips associated with either the Intermediate or Source Range Channels in the accident analyses; however, their functional capability at the specified trip settings is required by this specification to enhance the overall reliability of the Reactor Protection System.

Overtemperature ΔT

The Overtemperature ΔT trip provides core protection to prevent DNB for all combinations of pressure, power, coolant temperature, and axial power distribution, provided that the transient is slow with respect to piping transit delays from the core to the temperature detectors (about 4 seconds), and pressure is within the range between the High and Low Pressure reactor trips. This setpoint includes corrections for changes in density and heat capacity of water with temperature and dynamic compensation for piping delays from the core to the loop temperature detectors. With normal axial power distribution, this reactor trip limit is always below the core safety limit as shown on Figures 2.1-1, 2.1-2 and 2.1-3. If axial peaks are greater than design, as indicated by the difference between top and bottom power range nuclear detectors, the reactor trip is automatically reduced according to the notations in Table 2.2-1.

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1. Manual Reactor Trip	Not Applicable	Not Applicable
2. Power Range, Neutron Flux	Low Setpoint - $\leq$ 25% of RATED THERMAL POWER	Low Setpoint - $\leq$ 26% of RATED THERMAL POWER
	High Setpoint - $\leq$ 109% of RATED THERMAL POWER	High Setpoint - $\leq$ 110% of RATED THERMAL POWER
3. Power Range, Neutron Flux, High Positive Rate	$\leq$ 5% of RATED THERMAL POWER with a time constant $\geq$ 1 second	$\leq$ 5.5% of RATED THERMAL POWER with a time constant $\geq$ 1 second
4. Power Range, Neutron Flux, High Negative Rate	$\leq$ 3% of RATED THERMAL POWER with a time constant $\geq$ 1 second	$\leq$ 3.5% of RATED THERMAL POWER with a time constant $\geq$ 1 second
5. Intermediate Range, Neutron Flux	$\leq$ 25% of RATED THERMAL POWER	$\leq$ 30% of RATED THERMAL POWER
6. Source Range, Neutron Flux	$\leq 10^5$ counts per second	$\leq 1.3 \times 10^5$ counts per second
7. Overtemperature ΔT	See Note 1	See Note 3
8. Overpower ΔT	See Note 2	See Note 3
9. Pressurizer Pressure--Low	$\geq$ 1945 psig	$\geq$ 1935 psig
10. Pressurizer Pressure--High	$\leq$ 2385 psig	$\leq$ 2395 psig
11. Pressurizer Water Level--High	$\leq$ 92% of instrument span	$\leq$ 93% of instrument span
12. Loss of Flow	$\geq$ 90% of design flow per loop	$\geq$ 89% of design flow per loop

*Design flow is 88,500 gpm per loop.