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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 45 TO FACILITY OPERATING LICENSE NO. NPF-73

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

THE TOLEDO EDISON COMPANY

BEAVER VALLEY POWER STATION, UNIT 2

DOCKET NO. 50-412

1.0 INTRODUCTION

By letter dated January 13, 1992, the Duquesne Light Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit 2 Technical Specifications (TS). The requested changes would revise Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it would lower the value for the minimum required reactor coolant system (RCS) total flow from 274,800 gpm to 270,850 gpm and lower the flow measurement uncertainty value, specified in the footnote, from 3.5% to 2.0%.

2.0 BACKGROUND

Technical Specification 3.2.5 requires that the RCS flow be maintained greater than or equal to 274,800 gpm, and contains a footnote stating that this flow limit includes an allowance for a 3.5% flow measurement uncertainty. This limit placed on RCS flow along with RCS coolant temperature, and pressurizer pressure ensures that the minimum departure-from-nucleate-boiling ratio will be met for each of the transients analyzed in the safety analyses. The current safety analyses assumes a total RCS thermal design flow of 265,500 gpm.

3.0 EVALUATION

The proposed reduction of the RCS flow measurement uncertainty from 3.5% to 2.0% and the resulting lowering of the required RCS total flow from greater than or equal to 274,800 gpm to greater than or equal to 270,850 gpm is based on a plant specific analysis for Beaver Valley Power Station (BVPS) Unit 2. This plant specific analysis was performed using the same methodology as provided in WCAP 12478 and WCAP 11366 Revision 2, titled "RTD Bypass Elimination Licensing Report for BVPS Unit No. 2" and "Westinghouse Setpoint

Methodology for Protection Systems for BVPS Unit No. 2" respectively. The methodology of WCAP 11366 Revision 2, is essentially the same as that used for V.C. Summer Nuclear Station No. 1 which was approved by the NRC in NUREG-0717 Supplement No. 4. In addition, the test procedure used to conduct the heat balance which determines the RCS total flow rate using thermodynamic equations was also reviewed.

The result of this analysis is a RCS flow measurement uncertainty of 1.9%. A value of 0.1% was then added to account for undetected feedwater venturi fouling. Potential fouling of the feedwater venturi, which might not be detected, could bias the results of the heat balance in a non-conservative manner. DLC has stated that BVPS Unit 2 has not exhibited any evidence of feedwater venturi fouling as shown by the secondary side performance monitoring program. The addition of the 0.1% will provide additional conservatism to the measured RCS total flow.

The change to the RCS flow uncertainty does not affect any safety analyses which require an RCS flow value. The value for RCS total flow used as an initial condition in these safety analyses is 265,500 gpm. The uncertainty factor will ensure that actual RCS total flow is at or above the value assumed in the safety analyses for normal operating conditions and anticipated operational occurrences.

The staff has reviewed the methodology applied to determine the flow uncertainty and has concluded that it is similar to methodologies previously approved. The licensee's analysis shows that the minimum departure-from-nucleate-boiling ratio will be met for each of the transients analyzed and that the plant will remain within the limits prescribed for continued safe operation. Therefore, the changes to the minimum required RCS total flow and flow measurement uncertainty are acceptable.

4.0 EMERGENCY CIRCUMSTANCES

The RCS total coolant flow is measured on a frequency of 18 months in accordance with Surveillance Requirement (SR) 4.2.5.2. The next determination of RCS total flow is scheduled to be performed during the week of May 3, 1992, at the end of the third refueling outage. The SR is conducted when the plant is in Mode 3 during the startup sequence. During the third refueling outage, a number of steam generator tubes have been plugged because of deterioration detected by eddy current testing. When steam generator tubes are plugged, RCS total flow is adversely affected, and the licensee is concerned that the measured flow, including the allowance for measurement uncertainty, might fall below the value currently specified. Therefore, the amendment must be issued prior to the completion of SR 4.2.5.2, otherwise, plant restart might be delayed.

Duquesne Light Company submitted a timely application for this proposed amendment on January 13, 1992, and a notice was published on February 19, 1992, in the Federal Register as required by the Commission's regulations

10 CFR 50.91(a)(2)). However, because of an administrative error, the notice did not correctly identify the unit for which this change was proposed. Furthermore, there is insufficient time to re-notice this action pursuant to 10 CFR 50.91(a).

Accordingly, pursuant to 10 CFR 50.91(a)(5), the staff has determined that emergency circumstances exist warranting prompt approval in that failure to act will cause the plant to delay startup, the emergency exists because of the staff's administrative error, and the licensee made a timely application for the amendment.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has made a final determination that the amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92(c), this means that the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The staff has evaluated the proposed changes against the above standards as required by 10 CFR 50.91(a) and has concluded that:

A. The change does not involve a significant increase in the probability or consequences of an accident previously evaluated (10 CFR 50.92(c)(1)) because the accident analyses are not affected by this proposed change. The RCS thermal design flow of 265,500 gpm remains unchanged, and it will continue to be monitored once per 12 hours in accordance with Surveillance Requirement 4.2.5.1.1. The change does not affect the operation or function of the RCS, does not involve any physical modification to the facility, and does not affect the manner in which the facility is operated.

B. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated (10 CFR 50.92(c)(2)) because it does not change system configurations, plant equipment, or the safety analyses performed for the facility. The proposed change merely changes the RCS flow uncertainty value to the latest value determined from a heat balance.

C. The change does not involve a significant reduction in a margin of safety (10 CFR 50.92(c)(3)) because it does not change the RCS thermal design flow rate of 265,500 gpm which is used in all accident analyses. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

6.0 STATE CONSULTATION

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

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and there is no significant increase in individual or cumulative radiation exposure. The Commission has made a final no significant hazards determination with respect to this amendment. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

8.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: April 23, 1992