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Regulatory File Cy.

Commonwealth Edison Company

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Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450

May 3, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
Atomic Energy Commission
Washington, D.C. 20545

SUBJECT: LICENSE DPR-19, DRESDEN NUCLEAR POWER STATION UNIT #2, SECTION 3.4.C OF THE TECHNICAL SPECIFICATIONS

REFERENCE: Our letter of November 30, 1970, regarding License DPR-19, Dresden Nuclear Power Station Unit #2, 6.6.C.1 of the Technical Specifications.

Dear Dr. Morris:

The purpose of this letter is to provide you with additional information regarding the corrective actions taken to assure that Standby Liquid Control System volume-concentration requirements are maintained within the limits specified in the technical specifications of License DPR-19, Section 3.4.C. Corrective actions were stated generally in the above referenced letter and are presented here in greater detail.

Method of Analysis

The analytical procedure for determining sodium pentaborate concentration prior to and including the October 1970 surveillance consisted of titrating a weighed pentaborate solution sample (to an accuracy of 0.1 mg) with 1.0 normal sodium hydroxide. The sodium hydroxide reagent was prepared in the Commonwealth Edison Company Central Efficiency Laboratory. Because the sodium hydroxide supply is not rapidly depleted it can last for several months. One chemical property of sodium hydroxide is that it can absorb carbon dioxide from the air which would cause a gradual change in the reagent's normality. Because of this property, for the November 1970 analysis, a standarization of the reagent was made as part of an overall program to improve the analytical technique used for determination of Standby Liquid Control System chemical concentration. This program included development of specific formulas for determination of correct boric acid and borax additions as well as a more representative sampling procedure. The results of the standardization indicated that the normality of the reagent was not the assumed value of 1.0, but had undergone a gradual decrease to 0.94, thereby introducing a 6% error in any calculations made using the assumption of a 1.0 normal solution. If the calculation of the sodium pentaborate solutions concentration had been made under the assumption of using 1.0 normal reagent, the results would have indicated compliance with the requirements of the technical specifications of License DPR-19, Section 3.4.C, as well as showing no change from the October analysis. When the calculation was made using the known normality, the results failed to meet the specified requirements.

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In order to eliminate this source of posible error in the future and in order to make a more precise determination, the procedure was further modified. These modifications involved using a 0.10 normal sodium hydroxide solution for titrations so a more accurate titration is possible (i.e. 24.1 ml. of 0.1 normal sodium hydroxide in a titration as against a previous 2.4 ml of 1.0 normal sodium hydroxide). The sodium hydroxide will be standardized on a monthly basis at the time of the surveillance analysis. Duplicate samples and analysis are now required for corroborative results.

Level Measurement

To provide for a more direct and accurate measurement of the volume of solution available for inspection, a sight glass, calibrated in gallons of solution has been installed on the Standby Liquid Control Tank. This is in addition to the orginally installed "bubbler" system.

Sincerely,

H.K. Hoyt

H.K. Hoyt
Superintendent
Dresden Station

HKH:glt

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