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Address Reply to: Post Office Box 767
Chicago, Illinois 60690

August 13, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Zion Station Units 1 and 2
Revised License Amendment
on Chemical Releases
NRC Docket Nos. 50-295 and 50-304

Reference (a): September 26, 1977 letter from R. L. Bolger to Edson G. Case transmitting license amendment request and environmental impact appraisal

Dear Mr. Denton:

Per Reference (a), Commonwealth Edison Company requested a license amendment to Appendix B, Environmental Technical Specifications. The proposed changes concerned measuring and reporting chemical releases and included an Environmental Impact Assessment of Discharging Boric Acid from Zion Station into Lake Michigan.

Subsequent to the submittal of Reference (a), the NRC Staff and Commonwealth Edison personnel had numerous discussions concerning the proposed changes of Reference (a). These discussions have recently culminated in a revised set of Zion Environmental Technical Specifications for the measuring and reporting of chemical releases. These revisions have been incorporated into the Zion Station Technical Specification format and are contained in Attachment I.

The revised changes of Attachment I have been reviewed by Commonwealth Edison On-Site and Off-Site Review with the conclusion that no unreviewed safety questions exist.

Please address any additional questions that you might have to this office.

Three (3) signed originals and thirty-seven (37) copies of this letter are provided for your use.

Very truly yours,

C. Reed

Cordell Reed
Assistant Vice-President

attachment

SUBSCRIBED and SWORN to
before me this 13th, day
of August, 1979.

Nancy M. Vaccaro
Notary Public

ATTACHMENT I

ZION STATION UNITS 1 AND 2

NRC DOCKET NOS. 50-295 AND 50-304

REVISED TECHNICAL SPECIFICATION CHANGES TO APPENDIX B

The following pages have been revised:

7 (reformatted)	16
8	17
9	29

The following page has been added:

9A

7621005

ENVIRONMENTAL PROTECTION CONDITIONS

1.3 CHEMICAL EFFLUENTS

Release of chemical effluents from Zion Station to Lake Michigan shall be in accordance with the Waste-Water Sources Permit issued by State of Illinois Environmental Protection Agency, approved September 11, 1972.

Specification:

A. Chlorine

A.1 Service water shall not be chlorinated to give more than 0.5 mg/l of free residual chlorine prior to release from the service water discharge into the condenser cooling water.

A.2 Regular chlorination of each unit service water system shall be initiated when the main condenser of said unit is being cleaned (mechanically). The chlorination of the service water systems shall not be limited by the frequency of mechanical cleaning of main condensers. However, total time of chlorination for both units shall not exceed 2 hours per 24 hour period.

A.3 The main condensers shall not be chlorinated.

MONITORING REQUIREMENTS

2.3 CHEMICAL EFFLUENTS

Specification:

A. Chlorine

A.1 Free and total chlorine residual shall be determined for each chlorination, during the initial plant operations, until reliability of the chlorination system is proven.

A.2 The amount of free and total chlorine residual in each service water discharge will be determined on a weekly basis while chlorinating.

ENVIRONMENTAL PROTECTION CONDITIONS

1.3 CHEMICAL EFFLUENTS (Cont'd)

A.4 When cleaning of a service water system is required and condenser cooling water is not available for dilution, chlorination shall be permitted if the discharge to the lake does not contain more than 0.1 mg/l of total residual chlorine. Chlorination in this manner shall be limited to 2 hours per 24 hour period.

B. Other Chemicals

Water quality parameters for which effluent standards have been established by Illinois Pollution Control Board are shown in Table B.2.

Those parameters shown on Table B.1 for which no effluent standards have been established as well as those shown on Table B.2 will be monitored as part of the program described in 2.4.

MONITORING REQUIREMENTS

2.3. CHEMICAL EFFLUENTS (Cont'd)

B. Other Chemicals

B.1 (a) The chemicals used at the station and discharged to the aquatic environment, excluding chemicals used in station laboratories, shall be tabulated from station inventory and operating records. The tabulation shall indicate the chemical name, the system from which the chemical is released, and the amount of chemical used during the report period.

(b) The licensee shall document the type, amount, date, duration and location of any chemical discharge from the station to the receiving waters whenever such discharge is not in accordance with the respective description of operation presented and evaluated in the FES or subsequent NRC Environmental Impact Appraisals.

ENVIRONMENTAL PROTECTION CONDITIONS

1.3 CHEMICAL EFFLUENTS (Cont'd)

C. The pH of all effluents discharged into the condenser cooling water system shall be in the range of 6-8.

D. Sanitary Wastes

All sanitary wastes are discharged to the North Shore Sanitary District for treatment.

MONITORING REQUIREMENTS

2.3 CHEMICAL EFFLUENTS (Cont'd)

B.2 (a) The results of the monitoring program under Section 2.3.B.1(a) above shall be reported in accordance with Section 3.0. If the discharge of a chemical is greater than that addressed in the FES or subsequent NRC Environmental Impact Appraisals, an evaluation of the environmental impact of the discharge shall be included in the annual report.

B.2 (b) The information documented in the monitoring program in Section 2.3.B.1 (b) above will be maintained in station records and reported with evaluations provided in the annual report as required by Section 2.3.B.2(a) above.

C. pH measurements shall be made as required to insure compliance with 1.3.C.

D. N.A.

*Not Applicable

BASES:

CHLORINE

Service water flow per unit is 44,000 gallons per minute. Service water for each unit is alternately chlorinated for intervals of 15 minutes 3 times a day. The amount of chlorine added will be sufficient to provide a free residual chlorine concentration of 0.5 mg/l in the service water prior to being released from the service water system into the condenser cooling water. Combined residual chlorine in-house service water is expected to be about 0.1 mg/l. Therefore, expected total residual chlorine in-house service water is about 0.6 mg/l. The condenser cooling water system for each unit may not be available during unit shutdown. After mixing with 765,000 gpm per unit of condenser cooling water, part of the free residual chlorine will be either converted to combined residual chlorine or to chloride. The exact ratio between these two is difficult to estimate because of unknown chlorine demand of the water. With no demand, the total residual chlorine would not exceed 0.033 mg/l under normal operating conditions.

OTHER CHEMICALS

Documentation of the chemical releases from the station will enable the NRC to determine whether the facility is being operated, with respect to chemical use and discharge, in the manner evaluated in the Environmental Statement and subsequent Environmental Impact Appraisals. This program also is required by the NRC for evaluation of unusual occurrences revealed by other programs conducted under these ETS. Examples of discharges controlled under Section 3.3.B.1(b) are those due to acid cleaning of heat exchangers and accidental spills.

Spent chemical reagents from the chemical laboratories are not to be included in the reporting requirements because of their small quantities and insignificant concentrations in the liquids released.

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3.0 REPORTING REQUIREMENTS

3.1 ENVIRONMENTAL REPORTS

Special reports for those programs (Entrainment, Plume and Water Quality studies) which are expected to continue for one year after Unit 1 has begun operating at full power (as determined by the Atomic Safety and License Board or appropriate appeal authority) will be submitted to the Division of Reactor Licensing within 120 days after the first year.

Based upon the results of testing o .e thermal plume model, an analysis will be made of the possible interaction of the plume of Unit 1 with that of Unit 2.

Annual reports for the 5 year monitoring program will also be sent to the Division of Reactor Licensing within 120 days after each successive year that Unit 1 began initial operation.

3.2 The following items will be included as an Appendix to the Annual Operating Reports.

a. Documentation of chemical discharges to include the chemical nam as used or as released, the system from which the chemical is released and the amount of chemical used or released over the reporting period.

b. Intake and discharge temperature data.

c. Malfunction of Equipment: Occurrence of malfunction of equipment related to these environmental specifications will be recorded and summarized in these reports.