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**Consumers  
Power  
Company**

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

June 13, 1975

Directorate of Licensing  
US Nuclear Regulatory Commission  
Washington, DC 20555

Re: Docket 50-255  
License DPR-20  
Palisades Plant - AO-12-75

Gentlemen:

Attached is Abnormal Occurrence Report AO-12-75 which describes deficiencies associated with chlorination treatment of the closed cycle condenser cooling system. There were no safety implications associated with this occurrence.

Yours very truly,

Ralph B. Sewell (Signed)

DAB/ds

Ralph B. Sewell  
Nuclear Licensing Administrator

CC: JGKeppler,  
URNRC

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ABNORMAL OCCURRENCE REPORT  
Palisades Plant

1. Report No: A0-12-75, Docket 50-255
2. a. Report Date: June 13, 1975  
b. Occurrence Date: June 3, 1975 (Designated as Abnormal Occurrence)
3. Facility: Palisades Plant, Covert, Michigan
4. Identification of Occurrence: Failure to perform required measurements and observations associated with chlorination treatment of the closed cycle condenser cooling system.
5. Conditions Prior to Occurrence: Plant was operating at steady-state power.
6. Description of Occurrence: A review of our chlorination treatment of the closed cycle condenser cooling system showed that the following requirements of Technical Specifications 3.9.6 through 3.9.10 were not consistently met and that in a few cases appropriate measurements or observations were never taken. These requirements are:
  - a. Chlorine discharge into Lake Michigan shall not exceed 0.02 ppm (T.S. 3.9.6).
  - b. Records of the following quantities for each treatment shall be kept (T.S. 3.9.8).
    - (1) Total quantity of chlorine compound used.
    - (2) The cooling tower blowdown rate.
    - (3) The dilution blow rate.
    - (4) Time of holdup of blowdown to allow chemical decomposition.
  - c. Sampling of the blowdown water for chlorine prior to dilution (T.S. 3.9.9).
  - d. Observation of detrimental effects due to chlorine on aquatic life (T.S. 3.9.10).
7. Designation of the Apparent Cause of Occurrence: When the present Technical Specifications were conceived, chlorine discharge to the lake was considered to be that blowdown which occurred through the "blowdown piping." This path can be controlled and terminated if desired. Recently, it has been determined that some cooling tower water is mixing or diffusing from the pump basin into the makeup basin and, consequently, discharged over the weir into the mixing basin and lake. Originally, this discharge was considered to be service water but measurements now indicate that the

makeup discharge is a combination of both excess service water and cooling tower water.

Because this path for discharging chlorine was not originally recognized, measurements of the discharge were not made. Measurements now indicate that the lake discharge average was about 0.01 ppm (total Cl) which is within 0.02 ppm limit for total chlorine. However, the maximum could have reached as much as 0.06 ppm (total Cl). This limit is still significantly below the NPDES permit limit of 0.5 mg/l.

Failure to meet other requirements associated with chlorination treatment of the closed cycle condenser cooling system appear to be associated with plant procedure problems and the beginning operation of our newly installed closed cycle cooling system.

8. Analysis of Occurrence: There were no safety implications associated with this occurrence.
9. Corrective Action: Procedures are being formulated and will be instituted to insure that the Technical Specifications Requirements of 3.9.6 through 3.9.10 will be met during the chlorination treatment of the closed cycle cooling system. While (as a part of this review) it was also found that certain flow and other measurements are inadequate (this topic will be the subject of a special letter report to follow), we will insure that the chloride discharge limits to the lake will not exceed the limit of 0.02 ppm by making appropriate conservative assumptions of the various flow rates. In addition, we are considering Technical Specifications changes which would revise the current chlorine limit to directly correspond with the NPDES permit requirement.
10. Failure Data: See also letter to follow discussing deficiencies related to the environmental monitoring program.