

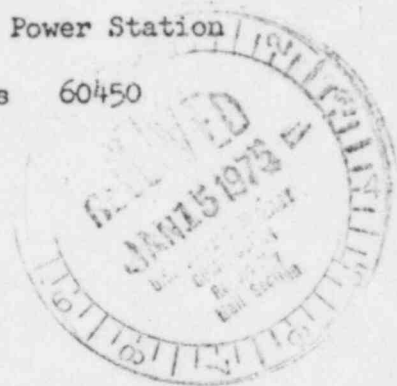


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BBS Ltr #13-75

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
January 9, 1975

Mr. James G. Keppler, Regional Director
Directorate of Regulatory Operations-Region III
U. S. Atomic Energy Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137



SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATIONS
CHLORIDE ION CONCENTRATION IN REACTOR COOLANT GREATER THAN 0.5 PARTS PER MILLION

References: 1) Regulatory Guide 1.16 Rev. 1 Appendix A
2) Notification of Region III of AEC Regulatory Operations
Telephone: Mr. P. Johnson, 1445 hours on January 6, 1975
Telegram: Region III, 1552 hours on January 6, 1975

Report Number: 50-249/1975-2

Report Date: January 10, 1975

Occurrence Date: January 3, 1975

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

The concentration of chloride ions in the reactor coolant was determined to be greater than 0.5 parts per million (ppm) during routine plant operation which is above the limiting condition for operation specified in Technical Specifications Section 3.6.C4.

CONDITIONS PRIOR TO OCCURRENCE

Prior to the occurrence unit 3 was operating at a steady load condition of 1173 MWt (376 MWe) with the reactor coolant clean-up system out-of-service for maintenance. No testing was in progress.

DESCRIPTION OF OCCURRENCE

On January 2, 1975 at 1030 hours, the unit 3 reactor coolant clean-up system was removed from service for repairs to the 3-1201-135B valve. In accordance with past practice, with a reactor clean-up system removed from service, sampling and analysis of reactor coolant for conductivity and chloride approximately every 4 hours was initiated on January 2, 1975 at 1430 hours.

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January 10, 1975

At 1330 hours on January 3, 1975 lab analysis indicated a reactor coolant chloride ion concentration of 0.6 ppm. Subsequent analyses at 1745 and 2140 hours on January 3, 1975 also indicated chloride ion concentrations of 0.5-0.6 ppm. Load reduction, at a rate of 20 MWe/hr, was begun at 2050 hours on January 3, 1975. This rate was increased to 100 MWe/hr at 2400 hours on January 3, 1975. Chloride concentrations decreased to less than 0.5 ppm less than three hours following initial load reduction. The unit was off system at 0259 hours on January 4, 1975 and in cold shutdown at 0924 hours on that same day.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Equipment Failure)

The single cause of the occurrence was the inoperability of the reactor coolant clean-up system. Extended maintenance on the 3-1201-135B valve prevented the clean-up system from being returned to service prior to unit shutdown.

In addition, it is believed that there is a good probability that minor condenser tube leakage may exist. Condenser effluent (condensate) conductivity is being monitored to provide conclusive evidence in this area.

ANALYSIS OF OCCURRENCE

Lab analyses indicated that chloride concentration in the reactor coolant did not exceed 0.6 ppm and remained between 0.5-0.6 ppm for approximately 12 hours. The presence of chloride in these concentrations presented no safety problem in terms of damage to the reactor or fuel as determined from figure 4.6.2 in the Technical Specifications. The dissolved oxygen level in the coolant at shutdown (A worst case situation) was 0.2 ppm. The health and safety of the public was in no way endangered as a result of this occurrence.

CORRECTIVE ACTION

Immediate corrective action was dictated by Technical Specification Section 3.6.C.5 which states that an orderly shutdown is to be initiated when unable to maintain a chloride concentration of less than 0.5 ppm during normal operation. This shutdown was initiated at 2050 hours on January 3, 1975. The unit was off system approximately 6 hours later and in cold shutdown approximately 20 hours after the first indication of 0.5 ppm chloride. Repair of the valve and other components was completed and the cleanup system was returned to service.

FAILURE DATA

A review of station records show that this is the first instance of chloride ion concentration increasing above limits during a cleanup system outage.

Sincerely,

Arthur M. Roberts
for B. B. Stephenson
Superintendent