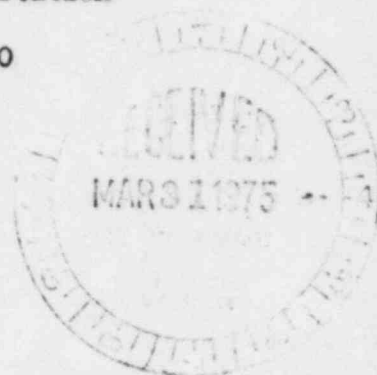




Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

BBS Ltr. #196-75

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
March 27, 1975



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

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATION
UNIT 3 EXCESSIVE CONTROL ROD SCRAM TIMES

References: 1. Regulatory Guide 1.16 Rev. 1 Appendix A
2. Notification of Region III of U. S. Nuclear Regulatory Commission
Telephone: Mr. P. Johnson, 1455 hours on March 17, 1975
Telegram: Mr. J. G. Keppler, 1530 hours on March 17, 1975

Report Number: 50-249/1975-16

Report Date: March 27, 1975

Occurrence Date: March 16, 1975

Facility: Dresden Nuclear Power Station, Morris, Illinois 60450

IDENTIFICATION OF OCCURRENCE

Unit 3 control rod drive scram times failed to meet a limiting condition for operation as defined in section 3.3.C.1 of the Technical Specification.

CONDITIONS PRIOR TO OCCURRENCE

Prior to the occurrence, the unit was operating at 1285 megawatts thermal with the unit in the "Run" mode. Electrical load was at a steady state condition of 250 megawatts electric.

DESCRIPTION OF OCCURRENCE

COPY SENT REGION III

On March 16, 1975 the two week 25 control rod drive scram testing surveillance was in progress. Upon completion of testing it was determined that drive J9 had exceeded the 25 drive average for the 90% insertion time by greater than 0.75 secs. The eight drives around J-9 were then scram tested. Of these eight drives, J-8 and K-10 had a 90% insertion time which exceeded the limit of 0.75 secs greater than the average of the 25 control rods. It was then necessary to scram two more drives to complete the eight drives around

50-249
Loggins

3437

8306150138 750327
PDR ADDCK 05000249
PDR

J-8, and four more drives to complete the eight drives around K-10.

Drive K-8 was not tested at this time since it was previously declared to be inoperable and was inserted to position "00". Drive J-9 at this time was also declared to be inoperable, but because it was at position "48" it was decided to test it and apply all limiting conditions to the results. To insure that 25 operable drives were tested, drive J-9 was replaced by drive P-10 to calculate the average insertion times.

The results of the scram test showed that the limits for the average scram insertion times for the three fastest drives of all groups of four control rods in a two by two array could not be met. Two by two arrays around drive J-8 failed the 5%, 20%, and 50% scram limits, around drives H-8 and K-10 failed the 5% and 20% limit, and around drives L-9, L-11 and J-11 failed the 5% scram limit. A total of eight drives, with the addition of J-9 and K-8, resulted in the long two by two array scram times.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Equipment Failure)

The cause of the failures appears to be due to deterioration of the drive seals. The deterioration of the drive seals has been noted in the past and is being closely monitored. Additionally, the scram pilot solenoid valves were replaced on drive J-9 after recorder traces revealed slow opening travel of the scram valves. When an inspection was made, it was found that the pilot valve "O" rings were hardened which possibly prevented proper valve operation. None of the other drives exhibited this problem.

ANALYSIS OF OCCURRENCE

The safety of the plant and public was not in jeopardy during the period of slow scram insertion times. If a scram had occurred all control rods would have fully inserted. Slow scram times, below 90% insertion, will have a negligible effect on transients since the unit was operating at less than 50% power significantly below the limiting scram reactivity curve. In addition, following the discovery of slow scram times, a retest of the drives was performed. During the second scram test of the drives on March 16, 1975 all of the drives improved such that all Technical Specification limits were met.

CORRECTIVE ACTION

The immediate corrective action taken was to retest the same 39 control rod drives. During the retest all drives improved and all technical specification limits were met.

The drive J-9 scram pilot solenoid valves were replaced and its precharge pressure increased to the maximum allowed by procedure. When drive J-9 was scram tested on March 21, 1975 its scram time was well within Technical Specification limits. To determine if increased precharge pressure decreased the scram insertion time, drives K-10, J-8, H-8, L-9, L-11, J-11, and K-8 were tested on March 23 and 24, 1975 at 400 MWe. The results of the scram test

March 27, 1975

revealed that all drives were still within technical specification limits with a negligible improvement in the initial scram insertion times.

To insure that the control rod drives remain within Technical Specification limits the eight slow drives will be scram tested once each week until the unit outage scheduled for April 1975.

FAILURE DATA

The control rod drives have experienced two types of problems in the past.

1) Uncoupling at position 48, caused by the inner filter and 2) seal wear, causing slow scram times. The most recent excessive scram times were reported to the NRC, Region III, by letter dated March 12, 1975.

The reporting of this abnormal occurrence was extended, per station request to the Region III office on March 25, 1975, to include additional information on the inspection of drive J-9 pilot valves. The results of that inspection are included in this report.

Arthur M Roberts
for B. B. Stephenson
Superintendent

BBS:amp

File/NRC