ABNORMAL OCCURRENCE REPORT
Big Rock Point Plant

1. Report AO-18-75, Docket 50-155

2a Report Date: September 4, 1975

2b Occurrence Date: July 1974, Classified AO on August 25, 1975

3. Facility: Big Rock Point Plant

4. Identification of Occurrence: Control Rod Worth Calculation Errors

5. Conditions Prior to Occurrence: Plant at Power Operation

6. Description of Occurrence: A General Office reactor physics review of mid-cycle 13 input data for control rod worth calculations revealed errors which affected the results of cold and hot standby control rod worth calculations performed for all of cycle 13. The errors were made prior to the start of cycle 13 in July 1974 and discovered the week of June 9, 1975 following plant start-up on June 8, 1975. The plant reactor engineer was notified the afternoon of the discovery of the errors and informed that the erroneous data would not significantly affect the approved rod worth and shutdown margin calculations and that, since these previously calculated rod worths were all well within Technical Specifications limits, power operation could continue as scheduled.

7. Designation of Apparent Cause of Occurrence: Lack of written administrative procedures defining General Office review requirements prior to June 1, 1975. Minor errors unknowingly existed in the start-up related calculations performed prior to the start-up of cycle 13. Some changes to these calculations were made prior to the June 8, 1975 start-up. These changes were reviewed properly in accordance with procedures implemented June 1, 1975 and found to be correct. The errors were not detected in the base calculations until the week of June 9, 1975. Because the errors that existed in the calculations were small, they were not readily detectable in the type of reviews that was performed prior to implementation of June 1, 1975 procedures.

8. Analysis of Occurrence: Corrected input data was factored into recalculations starting the week of June 9, 1975. Recalculated shutdown margin was as great as originally calculated. The corrected shutdown margin was 3.8% for the beginning of cycle 13 and 5.1% at mid-cycle compared to a Technical Specifications limit of .3%. No recalculated rod worth differed by more than .2% $\Delta k/k$ from original calculations and all rod worths remained less than 80% of the Technical Specifications limits of 2.5%. The previously established rod withdrawal sequence and critical rod pattern predictions were verified to be valid. Because the input errors resulted in relatively minor effects on the rod worth and shutdown margin calculations, no hazard existed due to their presence.

9. Corrective Action: Detailed review and correction of the calculations were completed in the General Office on August 5, 1975 and the conclusion reported verbally to the reactor engineer at that time. As the calculations are only used for start-up related activities and as the plant has operated continuously since June 8, 1975, this review and the correction were performed in a timely manner. The procedures implemented June 1, 1975 should preclude this type of occurrence in the future.

10. Failure Data: Not applicable.