



August 28, 1973

Mr. John F. O'Leary, Director  
Director of Licensing  
U.S. Atomic Energy Commission  
Washington, D. C. 20545

TURKEY POINT UNIT NO. 3  
DOCKET NUMBER 50 - 250  
ABNORMAL OCCURRENCE NO. 3-73-8  
ROD CONTROL CLUSTER ASSEMBLY J-5 STUCK



Dear Mr. O'Leary:

I. INTRODUCTION

This report is submitted in accordance with Technical Specification 6.6.2.a for Turkey Point Unit No. 3, Operating License No. DPR-31. This Abnormal Occurrence Report No. 3-73-8 describes an abnormal occurrence which was identified on August 18, 1973. The Directorate of Regulatory Operations, Region II, was notified on August 18, 1973.

II. DESCRIPTION OF OCCURRENCE

On August 18, 1973 at 12:32 a.m., rod control cluster assembly J-5, Control Bank A, failed to drop into No. 3 reactor core after the reactor trip breakers were manually opened during the performance of test number T-0201.22 - CONTROL ROOM INACCESSIBILITY TEST.

Immediate operator actions were directed toward placing the reactor in the hot shutdown condition, emergency borating to compensate for the stuck control rod, and verifying that reactor shutdown margin was maintained or exceeded.

Failure of rod control cluster assembly J-5, Control Bank A, to drop into the reactor core after the reactor trip breakers were manually opened is an abnormal occurrence.

III. ANALYSIS OF THE OCCURRENCE

Instrumentation, including an oscillograph, was connected to No. 3 reactor rod control system to provide test data on the performance of the rod control system. Rod control cluster assembly J-3 was operated for calibration of the instrumentation.

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### III. ANALYSIS OF THE OCCURRENCE (Cont'd)

Rod control cluster assembly J-5, Control Bank A, was then withdrawn about four steps while monitoring the control rod drive mechanism current. The control rod responded to signals from the rod control system. Analysis and evaluation of the oscillograph trace concluded that the control rod was operable and the results were within anticipated values. The control rod was then inserted and withdrawn several times and demonstrated that the control rod was operable.

Instruments were then connected to perform rod drop tests in accordance with procedure number 1600.3. Rod control cluster assembly J-5, Control Bank A, was tested a total of ten times. The results of rod drop tests demonstrated that rod drop time for the control rod were well within acceptable limits.

Rod drop tests were also performed on Shutdown Banks A and B, Control Bank Nos. A, B, C, and D. Results of these rod drop tests were evaluated to be acceptable.

Review and analyses of results of oscillograph traces taken during operation of rod control cluster assembly J-5, Control Bank A, determined that performance was well within anticipated values. Rod drop times were also well within acceptable limits. Evaluation of the results of these tests concluded that the control rod was operable. However, the cause of the failure of the control rod to drop into the reactor core after the reactor trip breakers were opened was not determined.

Review of Nos. 3 and 4 reactor performance reveals that on June 8, 1973, rod control cluster assembly H-8 failed to drop into No. 4 reactor core after the reactor trip breakers were manually opened. The cause of the failure was not determined.

### IV. CORRECTIVE ACTION

The immediate corrective action was to place No. 3 reactor in hot shutdown condition, emergency boration to compensate for the stuck control rod, and verification that the shutdown margin was maintained or exceeded. Following this, efforts were directed to determine if the stuck control rod was operable and to find the cause of the stuck control rod.

Operation of rod control cluster assembly J-5, Control Bank A, corrected the problem of the stuck control rod. Results of test data taken during insertion and withdrawal of the control rod were evaluated. It was concluded that the control rod was operable and the rod drop times were met. The cause of the stuck control rod was not found.

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V. ANALYSIS AND EVALUATION OF SAFETY IMPLICATIONS OF THE OCCURRENCE

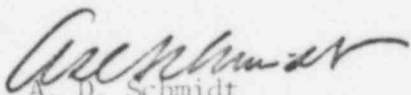
The prompt operator action described above provided for protection against the reactor becoming critical again. Therefore, the safety of the reactor was not adversely affected by this abnormal occurrence.

The shutdown margin specified in Turkey Point Unit Nos. 3 and 4 procedures include design margins even with the most reactive control rod stuck in its fully withdrawn position. Therefore, verification that the specified shutdown margin is maintained or exceeded provides protection against the reactor becoming critical again. Emergency boration performed by the nuclear operator compensated for the reactivity associated with the stuck rod and provided additional shutdown margin.

VI. CONCLUSIONS

- A. Failure of rod control cluster assembly J-5, Control Bank A, to drop into the core after the reactor trip breakers were opened is an abnormal occurrence.
- B. Prompt operator action to place No. 3 reactor in the hot shutdown condition, emergency boration to compensate for the stuck control rod, and verification that shutdown margin was maintained or exceeded provided added protection against the reactor becoming critical. Therefore, the abnormal occurrence did not adversely affect the safety of No. 3 reactor.
- C. Review and analyses of test data concluded that operation of rod control cluster assembly J-5, Control Bank A, corrected the stuck control rod and demonstrated that the control rod was operable. Rod drop tests demonstrated that the rod drop time was well within acceptable limits. The cause of the failure of the control rod to drop into No. 3 reactor core was not found.
- D. The abnormal occurrence did not present any danger to the public health and safety.

Very truly yours,

  
A. D. Schmidt  
Director of Power Resources

ADS/JKH/VTC/mlw

cc: Mr. Norman C. Moseley, Director  
Region II, Directorate of Compliance  
U. S. Atomic Energy Commission  
Suite 818, 230 Peachtree Street, N. W.  
Atlanta, Georgia 30303