



July 20, 1973

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

TURKEY POINT UNIT NO. 3
 DOCKET NUMBER 50-250
 ABNORMAL OCCURRENCE NO. 3-73-6
ACCUMULATOR LEVEL LIMITING CONDITIONS
 FOR OPERATION EXCEEDED



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. 3-73-6, describes an abnormal occurrence which was identified on July 13, 1973. The Directorate of Regulatory Operations, Region II, was notified on July 13, 1973.

II. DESCRIPTION OF OCCURRENCE

On July 13, 1973, it was determined that the limiting condition for operation regarding safety injection accumulator level had been exceeded. New calculations revealed that the upper end of the allowable operating band permitted water volumes greater than the Technical Specification limit. The operating band permitted a water volume of 796.1 ft³ which is 5.1 ft³ above the Technical Specification upper limit of 791 ft³ (a difference of less than 1%).

In addition, during operator adjustment of accumulator boron concentration, a maximum water volume of 804.6 ft³ had occurred. These instances were few and of short duration.

Unit No. 3 had operated below 80% power for more than three quarters of the entire operating time preceeding this incident and had achieved a maximum power of 88%. Accumulator nitrogen pressure was maintained within the allowable operating band for the entire operating time.

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III. ANALYSIS OF THE OCCURRENCE

Excessive leakage through the accumulator check valves into the accumulator has required frequent level adjustment to keep the level within the narrow allowable range of 18% level (2.65 in.). This situation led to an effort to gain acceptance for an increased allowable accumulator level operating band. In connection with this effort, calculations were made relating the level instrument indication in "percent level" to actual water volumes in the accumulator. The results of these calculations indicated that the specified high level alarm setpoint slightly (<1%) exceeded the Technical Specifications for maximum accumulator water volume. The low level alarm setpoint was shown to be within the allowable band with a more than normal margin to the Technical Specification limit. The Nuclear Steam Supply System (NSSS) designer verified that a discrepancy in the level alarm setpoints did exist and provided revised level alarm setpoints.

The high level of 804.6 ft³, which occurred during the adjustment of accumulator boron concentration, was the result of inadequate promulgation of instructions denoting the indicated "percent level" that corresponded to the Technical Specification limits. The relationship between the "percent level" as shown on the face of the indicator and actual water volume in the accumulator was not posted in the control room nor was it identified in the procedure for adjusting accumulator boron concentration.

IV. CORRECTIVE ACTION TO PREVENT RECURRENCE

Immediate corrective action was to issue instructions to the operating shift on July 13, 1973, to operate Unit No. 3 accumulators within the range of the revised setpoints. On July 14, 1973, Unit No. 3 accumulator alarm setpoints were changed to the revised values.

In addition, the new accumulator operating limits were incorporated into the approved operating procedure for charging boric acid into the accumulators (OP 4513.1). New scales marked off in cubic feet, were installed on Unit No. 3 accumulator level indicators located in the control room. In addition, the new scales have a green band signifying normal operation, purple lines signifying Technical Specification limits and yellow lines signifying the alarm setpoints.

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V. ANALYSIS AND EVALUATION OF SAFETY IMPLICATIONS OF THE OCCURRENCE

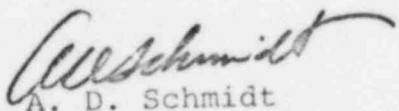
The concern associated with exceeding the specified high water level in the accumulator is, that based on the analysis presented in FSAR, Section 14.3, the high water level tends to reduce the effectiveness of the accumulator performance for the large LOCA. However, the FSAR LOCA analysis is intended to model the most conservative condition and the actual plant operating conditions will always be more favorable than conditions presented in the FSAR. Therefore, to assess the effect of the higher accumulator level on the loss of coolant accident, the mitigating effects of actual plant conditions of operation were considered.

The reduced power level that has existed during the operation of Turkey Point Unit 3, in combination with the higher accumulator nitrogen pressure, and actual lower resistance of the accumulator discharge piping, would have served to mitigate the consequences of the LOCA presented in the FSAR. These factors more than compensate for the higher accumulator level and would have kept the results within the limits presented in the FSAR.

VI. CONCLUSIONS

- a. Exceeding the specified accumulator level was caused by incorrectly specified level alarm setpoints as well as inadequate promulgation of the accumulator level Technical Specification limits to the plant operators.
- b. This abnormal occurrence did not adversely affect the safe operation of Turkey Point Unit No. 3.
- c. Correcting the alarm setpoints, strengthening the operating instructions pertaining to accumulator level adjustments, and installation of the new level indicating scales, should prevent recurrence of this and similar incidents.
- d. This abnormal occurrence did not present any danger to the public health and safety.

Very truly yours,



A. D. Schmidt
Director of Power Resources

ADS/JHB/HNP/VTC/GEL:paz

Mr. John F. O'Leary,
Director

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cc: Norman C. Moseley, Director
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