



Commonwealth Edison  
Quad-Cities Generating Station  
Post Office Box 216  
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Telephone 309/654-2241

NJK-74-439

December 26, 1974



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

Reference: Quad-Cities Nuclear Power Station, Unit 1  
Docket No. 50-254, DPR-29, Appendix A  
Sections 1.0.A.2, 3.3.B.3.b, 6.6.B.1.a

Dear Mr. O'Leary:

Enclosed please find Abnormal Occurrence Report No. AO 50-254/74-39 for Quad-Cities Nuclear Power Station. This occurrence was previously reported to Region III, Directorate of Regulatory Operations by telephone on December 16, 1974, and to you and Region III, Directorate of Regulatory Operations by telecopy on December 16, 1974.

This report is submitted to you in accordance with the requirements of Technical Specification 6.6.B.1.a.

Very truly yours,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis  
Station Superintendent

NJK/BBP/jeh

cc: Region III, Directorate of Regulatory Operations  
J. S. Abel

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REPORT NUMBER: AO 50-254/74-39

REPORT DATE: 12/23/74

OCCURRENCE DATE: 12/16/74

FACILITY: Quad-Cities Nuclear Power Station  
Cordova, Illinois 61242

IDENTIFICATION OF OCCURRENCE:

Rod worth minimizer inoperable below 10% power without operator substitution in violation of Technical Specification 3.3.B.3.b.

CONDITIONS PRIOR TO OCCURRENCE:

Unit 1 in the start-up mode with a power level of approximately 5%, and reactor water temperature of approximately 450° F.

DESCRIPTION OF OCCURRENCE:

On December 16, 1974, prior to start-up, the rod worth minimizer (RWM) was initialized and verified operable. The reactor was made critical at 5:40 a.m. in rod group 4. At approximately 7:15 a.m. while withdrawing rod L-5 the RWM stalled. Normally a RWM stall should alarm in the control room and block rod withdrawal, neither of which happened. The operator being unaware of the RWM failure continued withdrawing control rods, thus exceeding Technical Specification 3.3.B.3.b. At approximately 8:45 a.m. the reactor operator mistakenly selected and withdrew an out of sequence control rod. This was five rods after the computer stall. At 8:55 a.m. a technical staff nuclear engineer noted the rod withdrawal error. Rod J-10 which should have been at position 00 was at position 48 and rod J-7 which should have been at position 48 was at position 00. The out of sequence rods were positioned at their in-sequence positions and the start-up was halted until the source of the RWM failure was determined.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

Procedure -

The cause of this occurrence is attributed to an error in the procedure for initializing the RWM. The Unit 1 RWM was modified during the spring 1974 refueling. At that time the procedure for initializing the RWM was rewritten and a step requiring that computer room console mode switch to be turned to the off position as the last step of initialization was left out. With the console in the local position, the control room receives no indication of a computer stall, and no rod blocks following the stall. This was the cause of the RWM failure.

ANALYSIS OF OCCURRENCE:

The safety implications of this occurrence were minimized by the fact that neither of the Quad-Cities Units has ever had an uncoupled control rod. The rod drop accident which forms the bases for the RWM technical specification would require

a high worth rod to be uncoupled, the rod to stick in when the drive is withdrawn, and then the rod to fall before the rod is found to be uncoupled by the over travel check and the drive inserted. This is a very unlikely set of events. Since there was no rod drop there was no abnormal core transient as a result of this occurrence.

#### CORRECTIVE ACTION

The procedure for initializing the RWM has been changed to require the console switch to be left in the off position after initialization.

A caution has been added to the RWM operating procedure, that if the RWM fails to update as the rod selected changes the RWM is not functioning.

The RWM start-up surveillance has been changed to require that a check be made that the computer room console mode switch be in the off position.

#### FAILURE DATA

No failure of this type has occurred before at Quad-Cities Station.