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

September 22, 1978

T. A. Ippolito, Chief
D. L. Ziemann, Chief
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Dresden Station Units 1, 2 & 3
Quad-Cities Station Units 1 & 2
Failure of Control Rods to Fully Insert on Scram
NRC Docket Nos. 50-10/237/249 and 50-254/265

References (a): T. A. Ippolito letter to C. Reed dated August 29, 1978
NRC Docket Nos. 50-254/265

(b): T. A. Ippolito letter to C. Reed dated August 29, 1978
NRC Docket No. 50-249

(c): D. L. Ziemann letter to C. Reed dated September 6, 1978
NRC Docket Nos. 50-10/237

Gentlemen:

References (a), (b) and (c) requested information regarding instances of control rods failing to fully insert on a scram for Dresden and Quad-Cities Stations. The referenced letters requested that our records be reviewed for calender year 1977 to provide a summary tabulation of such events.

The Stations' records have been reviewed and a determination made that no reactor scrams resulted in any control rods stopping short of the fully inserted position at Dresden Unit 1 and Quad-Cities Units 1 & 2. The review of Dresden Unit 2 & 3 data, however, does show a number of control rods that did not fully insert to "00", but instead settled back to the "02" position upon receiving a scram signal.

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A total of fifty-eight (58) control rods were observed to settle at the "02" position following a reactor scram or during half core scram testing. In these instances, the immediate Nuclear Station Operator's action was to manually fully insert the control rod, in ALL cases, to the "00" position.

We believe the reason the control rods settle to the "02" position following a scram signal is that excessively worn or broken stop and drive piston seals are allowing scram water to build up in the buffer area of the drive, preventing full insertion. The fifty-one (51) CRDs on Unit 2 were replaced in the reactor during the Fall 1977 refueling outage and the seven (7) CRDs on Unit 3 were replaced during the Spring 1978 refueling outage. These drives were completely overhauled, using approved station procedures, and any defective parts, along with all stop and drive piston seals, were replaced before reuse. Attached to this letter is a tabulation of all control rods that exhibited the failure to fully insert in 1977.

Please address any additional questions on this matter to this office.

Very truly yours,

M. S. Turbak

M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors

attachment

ATTACHMENT

The following control rod drives settled to the "02" position following a scram signal:

DRESDEN UNIT 2

7-9-77	C-9, C-11, D-5, D-6, D-7, D-9, D-10, E-6, E-9, F-4, F-5, F-6, F-7, F-9, F-10, F-12, F-13, G-3, G-6, G-7, G-8, G-9, G-10, G-11, H-6, H-7, H-8, H-9, H-10, H-11, H-12, H-13, J-7, J-8, J-11, K-6, K-7, K-9, L-5, L-7, L-8, L-11, M-8, M-11, N-8 (Total - 46 CRDs)
8-2-77	E-10, G-12, J-4, J-10 (Total - 4 CRDs)
9-7-77	C-9, C-11, D-5, D-6, D-7, D-8, D-9, D-10, E-6, E-9, E-10, F-4, F-5, F-6, F-7, F-9, F-10, F-12, F-13, G-3, G-5, G-6, G-7, G-8, G-9, G-10, G-11, H-6, H-7, H-8, H-9, H-10, H-11, H-12, H-13, J-4, J-7, J-8, J-10, J-11, K-6, K-7, K-9, L-5, L-7, L-8, L-11, M-8, M-11, N-8 (Total - 50 CRDs)

DRESDEN UNIT 3

4-25-77	D-5, F-13, H-3, K-13 (Total - 4 CRDs)
6-30-77	F-13, H-3, J-3 (Total - 3 CRDs)
10-22-77	E-3, J-3 (Total - 2 CRDs)
12-6-77	D-5, F-13, H-3, J-3, N-7 (Total - 5 CRDs)
12-16-77	F-13, N-7 (Total - 2 CRDs)