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July 11, 1980

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Mr. James G. Keppler, Director
Directorate of Inspection and
Enforcement - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Quad Cities Station Units 1 and 2
Additional Response to IE Bulletin 80-17
NRC Docket Nos. 50-254/265

Reference (a): J. G. Keppler letter to C. Reed dated
July 3, 1980

Dear Mr. Keppler:

This letter provides Commonwealth Edison's additional response for Quad Cities Units 1 and 2 to certain items in IE Bulletin 80-17, transmitted by Reference (a). The attachment to this letter contains the response to Items 2 and 3 of the bulletin for Quad Cities Unit 1 and Items 4, 5, 6a and 6b for both Quad Cities Units 1 and 2.

Responses to remaining items of the bulletin will be provided in accordance with the schedule identified therein.

Please address any questions concerning this matter to this office.

Very truly yours,

D L Peoples

D. L. Peoples
Director of Nuclear
Licensing

cc: Director, Division of Reactor
Operations Inspection

SUBSCRIBED and SWORN
before me this 11TH, day
of July, 1980

Notary Public

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Attachment

Quad-Cities Station Response

NRC IE Bulletin 80-17

Item 2 (Unit 1 only) Temporary procedure number 1358 was written to gather data as required in Item 2 for Unit 1. On July 5, 1980, a manual scram was performed at 100 MW thermal to gather data. On July 6, 1980, an automatic scram from IRM upscale was performed by down-ranging the IRMs at 25 MW thermal.

a. Twenty-two control rods scram insertion times were obtained utilizing a multi-pen recorder. This was the maximum number of rods that could be timed in this manner. From this information, an all-rod insert time can be estimated from the slowest of these rods. There was no feasible way to determine the actual all-rod insert time.

TIMES:	3.64 sec	Manual Scram
	3.16 sec	Automatic Scram

The faster time for the automatic scram could have resulted from the fact that the additional insert and withdrawal aided to free or loosen the rod motion thereby decreasing insertion time. The identical rod was slowest "in" during both scrams. The times listed above are comparable to those found during hot scram timing surveillance. Computer scans of control rod notch positions also verified all rods were inserted past 06. A visual check was also done to verify this at the time of testing.

b. Voltage was measured across the scram solenoids while the scram signal was present. The voltages for all four groups of both channels were found to be zero. Also, the group lights on the 901-5 panel went out which is a positive indication of loss of voltage.

c. An operator was stationed at the backup scram solenoids during both scrams. The valves operated correctly and air was vented as designed.

d,h. The filling and draining of the instrument volume was monitored by attaching a multi-pen recorder to monitor the magnetrol level switch contact actuation. The following chronology for the manual and automatic scrams is provided to indicate the events as they occurred:

AUTOMATIC		MANUAL
t = 0	Reactor Scram	t = 0
27.8 sec	SDV not drained alarm	31 sec
38.2 sec	SDV high level Rod Block	39.1 sec
29.8 sec	SDV high level Scram	30.5 sec
96 sec	Reset scram in Control Room	*1 min 5 sec
155 sec	SDV drain opened	2 min 18 sec
159.8 sec	SDV not drained alarm reset	2 min 25 sec
184.4 sec	SDV high level Rod Block cleared	2 min 51 sec
195.8 sec	SDV high level scram cleared	3 min 4 sec
297.7 sec	SDV not drained alarm came up	not recorded
304 sec	SDV high level scram came up	not recorded
16 min 30 sec	SDV not drained alarm reset	not recorded
17 min 50 sec	SDV high level scram cleared	not recorded
	All alarms cleared	*17 min 5 sec

*Values determined by stopwatch.

The above data appear inconsistent and were unexpected. Recognizing the need for further investigations, another test was performed. Water was admitted slowly into the instrument volume utilizing a test connection (used for calibration of the level instruments). The following data were acquired:

FILL TIMES -	3 gal	2:05 min
	25 gal	5:20 min
	50 gal	10:25 min
DRAIN TIMES -	50 gal	20 sec
	25 gal	46.9 sec
	3 gal	34.7 sec

As shown in all three cases, inconsistent and questionable results were gathered upon draining the volume. A possible explanation of the instrument behavior can be associated with the drain line piping configuration. The upper or vent instrument legs are connected to the two-inch pipe which drains the SDV to the instrument volume. The act of draining the volume apparently results in the erratic performance of the instruments. Interruption of the draining allowing level to equalize, or the slow filling of the volume yielded results as would be predicted. This phenomena has been referred to General Electric Company and to the CECo Station Nuclear Engineering Department. This sequence of events is not an adverse safety concern, because the slow filling of the volume would be the more realistic situation, since the SDV drain and vent valves are normally open during reactor operation and the system has been adequately demonstrated to be mechanically installed and electrically connected as designed.

e,f. Stroke times of the vent and drain valves were obtained prior to the test scrams. These times were as follows:

	Opening	Closing	Scram Closing Time
1-302-22	Less than 1 sec	1.5 sec	5.5 sec
1-302-21A	Less than 1 sec	8 sec	11.5 sec
1-302-21B	Less than 1 sec	1 sec	4.5 sec

g. A water sample was taken after each of the scrams and analyzed for total suspended solids

Manual Scram	4 ppm
Automatic Scram	3 ppm

i [illegible] step was verified by the technique as outlined in our response to Item 1. (Ref. R. F. Janecek letter to J. G. Keppler dated July 10, 1980). The instrument volume did not cool sufficiently between the two scrams to enable use of this procedure. During the Unit One startup the test was satisfactorily performed, which also began the testing required by Item 5.

j. A scram was not required to determine the scram reset delay times. The procedure to acquire the needed data was to manually close the individual scram relays while monitoring the voltage across the reset contacts. The period of time in which voltage was zero represents the reset times required.

Channel A Groups 1 & 4 -----	15 sec
Channel A Groups 2 & 3 -----	15 sec
Channel B Groups 1 & 4 -----	19 sec
Channel B Groups 2 & 3 -----	20 sec

k. All data acquired have been reviewed and are acceptable. The results are comparable to data obtained from scram timing surveillance.

Item 3 (Unit 1 only) At the conclusion of each of the two scrams, the vent valves were observed to open. This verification was performed after the scram was cleared, the water sample taken, and the instrument volume draining was done. The scram discharge volumes were verified to be drained during the Unit 1 startup. A procedure change is to be made to require that after each reactor scram, a verification is made that no significant amount of water is in the SDV.

Item 4 A review of the Quad Cities Station scram procedure, QGP 2-3, has been conducted by the Station and General Electric Company. Based on G.E. guidelines and discussions covering existing and proposed procedural steps, a new procedure (QGA-19) has been written to cover those actions necessary when control rods fail to fully insert during a scram. Steps have been added to QGP 2-3 to provide an entry point into QGA-19. The Browns Ferry occurrence and the new QCA-19 procedure and revised QGP 2-3 procedure are being reviewed by licensed operators. Training of the Shift Engineers, Shift Foremen, Control Room Operators, and licensed Equipment Operators should be completed by July 13, 1980. Full training of other licensed Station personnel should be complete by August 2, 1980.

Item 5 Temporary procedure 1355 is being performed daily on both units. Results to date have been acceptable. The interval will be extended to weekly pending continued successful results. Consideration is being given to making this procedure permanent.

Item 6a Prompt notification (within 24 hours) by Red Phone, with written follow-up (14 day LER) will be provided for HPCI, RCIC, SBLC, and RHRS-Suppression Pool Cooling being less than fully operable (when required to be operable).

Item 6b Existing procedures specify those actions necessary to initiate suppression pool cooling for high pool temperatures.