



Commonwealth Edison
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Downers Grove, Illinois 60515

June 1, 1992

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Dresden Station Units 2 and 3
Availability of Required Reactor Vessel Water Level Indication
NRC Docket Nos. 50-237 and 50-249

- References:
- (a) H.J. Miller to C. Reed letter dated December 12, 1988; Inspection Report 50-254/88027 and 50-265/88028
 - (b) M.A. Ring to C. Reed letter dated February 27, 1991; Inspection Report 50-254/91002 and 50-265/91002
 - (c) J.L. Schrage to T.E. Murley letter dated December 9, 1991; Response to Unresolved Item; Availability of Required Reactor Level Indication, NRC Docket Nos. 50-254 and 50-265

Dear Dr. Murley:

Reference (a) transmitted the results of a November, 1988 special safety inspection at Quad Cities Station of the instrumentation system required for assessing plant conditions during and following an accident, as specified in Regulatory Guide (RG) 1.97. The Inspection Report identified an Unresolved Item (254/88027-03 and 265/88028-03) with respect to reactor level instruments 263-73A and 263-73B. The Unresolved Item indicated that these level instruments only provide accurate information when the recirculation pumps are tripped or operating at the minimum speed. Based upon this fact, the inspectors did not consider these instruments operable for level measurement within the scope of RG 1.97.

This Unresolved Item was revised during a safety inspection in January, 1991 (Reference (b)). During the Inspection, Quad Cities Station committed to perform an analysis to determine whether or not the reactor level indication required by RG 1.97 would be available to operators during accident and post-accident conditions.

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Commonwealth Edison has performed an analysis of reactor level indication instrumentation availability. This analysis was attached as an Enclosure to the response letter (Reference c). A similar analysis for Dresden Station has been performed and indicates that appropriate instrumentation has been provided which allows the operator to adequately monitor reactor water level during normal operation, accident, and post-accident conditions. This analysis is attached. As a result of this analysis, three level indication instruments (two narrow range and one wide range) will be added to the RG 1.97 Program for Dresden Station Units 2 and 3. These three additional instruments provide reactor level information during normal operation.

Based upon the analysis in Reference (c) and subsequent actions, this action will maintain consistency between RG 1.97 commitments made for Dresden and Quad Cities Stations.

If there are any comments or questions, please contact me at (708) 515-7286.

Sincerely,



Peter L. Piet
Nuclear Licensing Administrator

Attachment

cc: A. Bert Davis - Regional Administrator, Region III
M.A. Ring - Chief, Engineering Branch, Region III
M.J. Kopp - Inspector, Region III
G.M. Hausman - Inspector, Region III
B.L. Siegel - NRR Project Manager, Dresden
W.G. Rogers - Senior Project Inspector, Dresden

ATTACHMENT

AVAILABILITY OF REQUIRED REACTOR VESSEL WATER LEVEL INDICATION

Dresden Station Units 2 and 3

Concern

Instruments 263-73A(B) are forced upscale with the recirculation pumps running (NOTE: Instruments 2(3)-263-73A(B) are actually transmitters that provide signals to indicators 2(3)-263-106A(B) in the Control Room. 2(3)-263-73B also provide a signal to record 2(3)-640-27.

During the January, 1991 inspections at Quad Cities Station, a concern was raised that normal plant operation instrumentation was not included in the RG 1.97 Program. To address this concern, three reactor level indication instruments per unit and their associated transmitters [1(2)-263-100A(B) and 1(2)-263-101], were added to the Quad Cities Station Regulatory Guide 1.97 Program. These are Category 3 instruments and cover the reactor water level range of -60" to +60" and -70" to +330", respectively.

Technical Evaluation of Concern

During normal power operation, both recirculation pumps are running and the above instruments are upscale due to the location of their reference leg instrument taps. This does not create an operational concern because numerous other instruments are designed to provide reactor water level indication to the operator in this plant condition. Instruments normally available to the operator are summarized in Table 1.

During a plant transient (i.e., scram) which does not present a significant challenge to either the containment (i.e., drywall pressure remains below 2.5 psig) or the emergency core cooling systems (i.e., reactor water level remains above -59"), the recirculation pumps would not normally trip. The feedwater flow decreases to less than 20% of rated. Run back of the recirculation pumps would allow instruments 2(3)-263-106A(B) and recorded 2(3)-640-27 to read onscale. These indicators and recorders could be used for trending purposes but would still read slightly higher than actual level. In this plant condition, normal plant instrumentation would be accurate and would be used by operations.

ATTACHMENT (continued)

In the event of a more serious accident that challenges the containment or emergency core cooling systems, the recirculation pumps would trip due to either LPCI loop select logic (initiated by a high drywell pressure signal at +2.5 psig) or a low reactor water level signal at -59". In this plant condition, instruments 2(3)-263-106A(B) are able to be used to determine reactor water level. Recorder 2(3)-640-27 also provides indication of reactor water level under these conditions. The "B" channel recorder is qualified as a Category 1 instrument and covers the reactor water level range of -340" to +60". The "A" and "B" channel indicators cover this range but the "B" channel indicator is not included in the Regulatory Guide 1.97 Program. Both the "A" and "B" channel indicators are a part of a respective circuit that provides a signal to a non-safety related computer point. (NOTE: Appropriate signal isolation has been provided.)

A review, similar to that performed for Quad Cities Station, of the Dresden Station UFSAR was conducted to assess the functions of Instruments 2(3)-263-106A(B) and record 2(3)-640-27 during a design basis accident (DBA). Four DBA's are discussed in the UFSAR. Two of the accidents, control rod drop and refueling accident, are not associated with a loss of reactor water inventory. No conclusion could be drawn from the UFSAR review concerning the performance of the 2(3)-263-106A(B) for these accidents. The main steamline break outside containment and the loss of coolant design basis accidents were also reviewed. The UFSAR analysis for both events shows that each accident results in stoppage (trip or coastdown) of the reactor recirculation pumps.

The main steamline break outside of the drywell is discussed in Section 14.2.3.9 of the UFSAR and addresses the affects of this event on core cooling. The bounding conditions of this accident analysis includes the assumption of the simultaneous loss of normal AC power with the postulated break of one of the main steamlines. This event would result in the coast down of the recirculation pumps due to loss of power (the recirculation pump M-G sets cannot be fed from the diesel generators).

The loss of coolant accident (LOCA) is addressed in Section 14.2.4 of the UFSAR. The full range of coolant loss accidents have been analyzed. The containment response is discussed in Section 5.2.3. Section 5, page 5.2.3-5, states that power production in the reactor was assumed to cease essentially at time zero due to void formation, as well as scram. Figures 5.2.3:2, 5.2.3:5a and 5.2.3.5b support essentially short duration before a scram. The high drywell pressure signal will initiate LPCI loop select logic which results in tripping both reactor recirculation pumps.

ATTACHMENT (continued)

Summary

Based on the above discussion, appropriate instrumentation has been provided which allows the operator to adequately monitor reactor water level during normal operation, accident and post-accident conditions. To address consistency between Dresden and Quad Cities Stations, three normal operator reactor level instruments are being added to the Dresden Station Regulatory Guide 1.97 Program. (See * Items in Table 1). This action provides additional assurance that these instruments will receive appropriate attention during future maintenance activities.

ATTACHMENT (continued)

NORMAL CONTROL ROOM REACTOR WATER LEVEL INSTRUMENTATION

Table 1

<u>Instrument</u>	<u>Transmitter</u>	<u>Range</u>	<u>Comments</u>
*2(3)-263-100A(I)	2(3)-263-58A	-60 to +60	Narrow Range Yarway
*2(3)-263-100B(I)	2(3)-263-57B	-60 to +60	Narrow Range Yarway
2(3)-640-29A(I)	2(3)-646A	0 to +60	Narrow Range GEMAC
2(3)-640-29B(I)	2(3)-646B	0 to +60	Narrow Range GEMAC
2(3)-640-26(R)		0 to +60	See Note 1
*2(3)-263-101(I) 2(3)-263-112(I)	2(3)-263-61	-70 to +330	Wide Range GEMAC (Upper 400)
2-263-0114(I)	2(3)-263-113	-344 to +66	Wide Range GEMAC (Upper 400)

I - Instrument
R - Recorder

* Regulatory Guide 1.97 Instrument

Note 1: This recorder displays the output to either 2(3)-640-29A or B.