



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

March 5, 1981



Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Zion Station Units 1 and 2
Additional Information for use of
Rod-Exchange Technique at Zion Station
NRC Docket Nos. 50-295 and 50-304

- References:
- 1) February 4, 1981 letter from J. S. Abel to H. R. Denton titled "Use of Rod-Exchange Technique for Rod Worth Measurements at Zion Station".
 - 2) February 11, 1981 letter (NS-TMA-2392) from T. M. Anderson to J. R. Miller formally outlining the Generic Rod-Exchange Technique Program Topical.
 - 3) March 6, 1981 letter (NS-TMA-2405) from T. M. Anderson to J. R. Miller.

Dear Mr. Denton:

Commonwealth Edison Company hereby supplements the information related to use of the rod-exchange technique at Zion Station (Reference 1). Per discussion with your Staff on February 5, 1981, Commonwealth Edison was requested to provide additional information regarding corrective action to be taken whenever test results do not meet the design and/or acceptance criteria. In addition, the NRC Staff required a reference to a Westinghouse generic topical report on the subject method or the submittal of a Commonwealth Edison topical report specific to Zion Station. Commonwealth Edison's response to these requests follows.

Failure to meet a rod-exchange program design criterion provided in Reference 1 does not constitute an unreviewed safety question since the design criteria are more restrictive than the Technical Specification and safety criterion. The design criteria are based on the present state of the art of design techniques and methods. They are viewed as a guide to possible measurement or design errors. While efforts should be taken to resolve any conflict between measurement and prediction, the design criteria are not considered inviolable.

P

8108180 241

If a design criterion is not met, an investigation will be performed by on-site and appropriate off-site nuclear design personnel. This investigation will include consideration of plant startup data and the applicability of reload safety analysis. The results of this investigation will be used to improve future design and/or testing methods.

If the rod exchange safety criterion provided in Reference 1 is not met the following actions will be performed. Prior to power operation following zero power physics testing, the on-site review committee will verify that adequate shutdown margin exists between the measured shutdown capability and the shutdown requirement for that cycle employing the following formula:

$$MSC (\% \Delta p) = \frac{(0.9 MRS) (P_T) - WSR - R}{PRS}$$

where:

MSC	=	Measured shutdown capability;
MRS	=	Measured N rod worth employing the rod swap technique;
PRS	=	Predicted N rod worth for the rod swap configuration,
P _T	=	Predicted N rod worth in the all rods in (ARI) configuration;
WSR	=	Worth of most reactive stuck rod; and
R	=	Reactivity requirement for shutdown purposes.

Resolution of any anomaly related to meeting a safety limit will be handled and reported, if applicable, per Technical Specification requirements.

Prior to sustained power operation above 75% of rated power, the on-site review committee will investigate the composite plant startup data and the applicability of reload safety analyses. The ultimate resolution of the violation of the rod exchange safety criterion will be documented and the resident NRC inspector will be informed of the violation and resolution thereof.

By Reference 2, Westinghouse incorporated the rod-exchange documents originally referenced by Commonwealth Edison into a topical report titled "Rod Bank Worth Measurements Utilizing Bank Exchange", WCAP-9863 (Proprietary version) and WCAP-9864 (Non-

proprietary version). By Reference 3, Westinghouse provided information to be incorporated into these documents on actions to be taken upon failure to meet the acceptance criterion which are in conceptual agreement with the actions provided herein. The design and safety criteria provided in the Reference 1 submittal and the aforementioned remedial actions conform to the criteria provided in WCAP-9863 and WCAP-9864. We understand that the NRC review of our request will proceed from your review of those topicals.

Please address any questions that you may have concerning this matter to this office.

One (1) signed original and thirty-nine (39) copies of this letter are provided for your use.

Very truly yours,

T. R. Tramm

T. R. Tramm
Nuclear Licensing Administrator
Pressurized Water Reactors

cc: Resident Office-Zion

11888