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 RECIP. NAME: VARGA, S. A. RECIPIENT AFFILIATION: Operating Reactors Branch 1

SUBJECT: Informs that analyses indicate that existing Tech Specs are sufficient in area of control rod misalignment, in response to NRC 791029 concerns.

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WISCONSIN PUBLIC SERVICE CORPORATION


P.O. Box 1200, Green Bay, Wisconsin 54305



May 5, 1981

Mr. Steven A. Varga, Chief
 Operating Reactors, Branch #1
 U. S. Nuclear Regulatory Commission
 Washington, D. C. 20555

Dear Mr. Varga:

Docket 50-305
 Operating License DPR-43
 Kewaunee Nuclear Power Plant
Rod Misalignment Technical Specifications

- References: 1. Letter from A. Schwencer to E. R. Mathews dated October 29, 1979
 2. Letter from E. R. Mathews to A. Schwencer dated December 5, 1979

In reference 1 you informed us of the concern regarding the potential for technical specifications on control rod misalignment to be non-conservative, considering the susceptibility of the control rod position indication system to a failure. The assumed failure of one coil could cause an uncertainty in the indication system of 7.5 inches (12 steps). Since docketed analyses cover misalignments of 15 inches (24 steps), the staff requested that our technical specifications be revised to limit misalignments to 7.5 inches (12 steps), or justify greater misalignments through analysis.

We believe that a rod misalignment limit of 12 steps would be overly restrictive on plant operation, especially considering that normally all coils are operational. Therefore, we undertook analyses to show that a misaligned rod of 22.5 inches (36 steps) would not result in a violation of core power distribution limits (and thus would be acceptable) or would result in a violation of core tilt or axial offset limits, and thus would not be tolerated. The misalignment of 22.5 inches was assumed to account for our specification of 15 inches plus the worst case error of 7.5 inches. We informed you of this position in reference 2.

Since December of 1979, we have performed analyses to determine the consequences of a rod misalignment of 22.5 inches. The first analysis was performed on the cycle 5 core, which was then in operation. That analysis showed that while a

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22.5 inch misalignment may or may not result in a violation of F_Q or FDHN limits, in all cases it resulted in a violation of axial offset or core tilt limits. Therefore, operation within the limits of our existing technical specifications provides adequate protection in assuring that core power distribution limits are not exceeded.

Subsequent to that first analysis, we have performed similar analyses during the Reload Safety Evaluations for the core configurations utilized in cycles 6 and 7. Again, our analyses show that F_Q and FDHN technical specification limits are maintained or, in all cases where they are not, core tilt or axial offset limits would have been violated as well, thus requiring corrective operator action.

In summary, our analysis indicates that if the technical specifications governing axial offset and core tilt limits are maintained, the limits on F_Q and FDHN will also be maintained.

Based on the results of our analyses, we believe the existing Kewaunee Technical Specifications (Section 3.10) provide the desired assurance that core power distribution limits are maintained. We feel that a revision of the specific portions on control rod misalignment is unwarranted because of this. Furthermore, the technical specifications implicitly support this conclusion since operation is allowed to continue with a misaligned or inoperable rod upon assuring that other power distribution limits are within their specifications.

It should be noted that axial offset and core tilt parameters are announced in the control room. Additionally, our past experience has shown that rod misalignments of as little as 10 inches are readily observable. While we recognize that these items do not guarantee early detection of a misalignment (should one occur), they do provide increased confidence that a misalignment will be detected and appropriate actions taken.

Therefore, since our analyses indicate that our existing technical specifications are sufficient in this regard, we are not proposing any revisions to the technical specifications at this time. We will continue our analyses of rod misalignments with each Reload Safety Evaluation to verify that core power distribution limits will be maintained. If that verification cannot be accomplished, appropriate technical specification limits will be considered at that time. The results of our analyses will be maintained on file in our corporate offices.

Very truly yours,



E. R. Mathews, Vice President
Power Supply & Engineering

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cc - Mr. Robert Nelson, NRC Resident Inspector
RR #1, Box 999, Kewaunee, WI 54216