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SUBJECT: Informs of interim actions to be taken until resolution of NRC concerns re method of assurance that rod misalignments are maintained within allowable limits. Surveillance procedure for interim actions will be issued 810709.

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## WISCONSIN PUBLIC SERVICE CORPORATION



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



July 8, 1981

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

Gentlemen:

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

- References:
1. Letter from A. Schwencer (NRC) to E. R. Mathews (WPS) dated October 29, 1979.
  2. Letter from E. R. Mathews to A. Schwencer dated December 5, 1979.
  3. Letter from E. R. Mathews to S. A. Varga dated May 5, 1981.

Through discussions among members of the NRC staff and WPSC, a mutual understanding has been reached concerning "interim" actions which will be taken by WPS until there is final resolution of this concern.

In summary, the concern raised by the NRC is the method of assurance that rod misalignments are maintained within their allowable limit of 15 inches from the bank demand position. Fifteen inches is equivalent to 24 steps on the Individual Rod Position Indication (IRPI) system. Since the accuracy of the IRPI system can only be assured to  $\pm 12$  steps, allowable indicated misalignments (ignoring other core physics indications) should be maintained within  $\pm 12$  steps.

Based on the analytical work we have performed to date (see references 2 and 3) we have found that core physics parameters are maintained within allowable limits with rod misalignments of 22.5 inches if the rods are maintained above 190 steps. The small Bank D worth for insertions of no more than 190 steps has little effect on power distributions if target band restrictions are maintained. Furthermore,

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the reduction in power to 85% provides increased margin in FQ and FDHN for deeper rod insertions. Based on these initial studies, WPS will implement the following as an administrative control:

- a. When reactor power is greater than 85%, and Control Bank D is withdrawn more than 190 steps, the rods will be maintained within 24 steps of their associated group step counters.
- b. When reactor power is greater than 85% and Control Bank D is withdrawn less than or equal to 190 steps, the individual Control Bank D Rods will be maintained within 12 steps of the Bank D group step counter. The remaining rods will be maintained within 24 steps of their associated group step counters. (NOTE: By allowable rod insertion limits, i.e., Technical Specification 3.10.d, the remaining banks must be maintained in the full out position (228 steps) when reactor power is greater than 77%.)
- c. If the limits described in item b. cannot be maintained, the position of the misaligned rod will be determined to the extent possible utilizing available instrumentation within two hours. Additionally, the core peaking factors will be determined within six hours, and Technical Specification 3.10.b applied.
- d. When reactor power is less than 85% the rods will be maintained within 24 steps of their associated group step counters.

These interim actions will not apply during physics tests or nuclear instrument calibration. The surveillance procedure implementing this action will be issued by July 9, 1981.

Very truly yours,

*E. R. Mathews*

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

jac

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