



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 12, 1978

50-266(NRC PDR)  
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Docket Nos. 50-266  
and 50-301

Wisconsin Electric Power Company  
ATTN: Mr. Sol Burstein, Senior Vice President  
231 West Michigan Street  
Milwaukee, Wisconsin 53201

Gentlemen:

During a telephone conversation with Roger Newton and Chuck Krause of your staff and NRC staff members, on October 12, 1978, agreement was reached concerning your proposed use of the rod bank swap measurement technique to confirm adequate reactor shutdown capability. Our agreement is outlined below.

- (1) The technique may be used for Point Beach Unit 1, Cycle 7, only. The NRC staff will generically review the technique over the next few months. The measurement technique may only be used for future testing after NRC generic approval.
- (2) A two tiered set of acceptance and review criteria were agreed upon.

(A) Acceptance criteria:

The fractional error in percent\* of the sum of the six rod banks measured using the rod bank swap technique is to be greater than minus 10%.

Remedial action:

Prior to exceeding 5% of rated power, the on site safety review committee is to determine that adequate shutdown margin exists. Resolution is to be recorded in the minutes of the review committee. I&E is to be informed of the deviation of the acceptance criteria and the resolution. Resolution is to be based on the composite of plant startup data and consideration of the safety implications to specific accident scenarios as applicable. In the event that the acceptance criteria is not met, shutdown margin is to be calculated as:

$$*e = 100 \frac{(\text{measured value} - \text{predicted value})}{(\text{predicted value})}$$

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$$\text{margin } (\% \Delta \rho) = \left( \frac{.9 M_T}{P_T} \right) * P_{n-1} - \text{required worth}$$

where  $M_T$  = sum of measured bank worth

$P_T$  = sum of predicted bank worth

$P_{n-1}$  - predicted worth of all rods less the most reactive RCCA (this value includes a 10% calculational bias)

As an alternative the boron dilution method of measuring rod worth may be used.

(B) Review criteria:

- 1) The fractional error in percent on the sum of the six rod banks measured using the rod bank swap technique is to be less than plus 10%.
- 2) The fractional error in percent on the reference bank measured by boron dilution is to be less than plus 10% and greater than minus 10%.
- 3) For each of the other five banks measured by rod swap
  - a) the fractional error is to be within  $\pm 15\%$
  - or
  - b) the measured and predicted rod worth must agree within 100 pcm

whichever is greater.

Remedial action:

Prior to reaching 100% power equilibrium xenon, the on site safety review committee is to resolve the discrepancy. Resolution is to be recorded in the minutes of the review committee. Resolution is to be based on the composite of plant startup data and consideration of the safety implication to specific accident scenarios as applicable. I&E is to be notified of the discrepancy and remedial action.

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- (3) WEPCO is to provide the results of this test by telephone to the Reactor Safety Branch, Division of Operating Reactors, NRC, within 24 hours following reduction of the test data or on the Monday morning following weekend testing.
- (4) WEPCO is to provide a written report of the results of the test within 45 days after completion of the test. Raw data, data manipulation algorithms, and precalculated numerical values used in the data manipulation, as well as final test results are to be presented. If review and acceptance criteria are met, the report may be restricted to the rod bank swap test alone. If either review or acceptance criteria are not met, a comprehensive startup test report will be required.



A. Schwencer, Chief  
Operating Reactors Branch No. 1  
Division of Operating Reactors

cc: Joel Kohler, Region III

October 12, 1978

cc: Mr. Bruce Churchill, Esquire  
Shaw, Pittman, Potts & Trowbridge  
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Washington, D.C. 20036

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