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SUBJECT: TS change 157a for amend to license DPR-43,agreeing to 1imit proposed heatup & cooldown curves to 28 EFPY.

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NRC-99-017

Wisconsin Public Service Corporation
(a subsidiary of WPS Resources Corporation)
Kewaunee Nuclear Power Plant
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920-388-2560

March 9, 1999

10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Proposed Technical Specification Amendment 157a

References: 1. Letter from M. L. Marchi (WPSC) to Document Control Desk (NRC) dated November 18, 1998

2. Letter from M. L. Marchi (WPSC) to Document Control Desk (NRC) dated March 1, 1999

Reference 1 requested changes to heatup and cooldown curves contained in the Kewaunee Nuclear Power Plant Technical Specifications (TS). Reference 2 was submitted, as requested by the Nuclear Regulatory Commission (NRC), to support the information contained in reference 1. Discussions held on March 5, 1999 regarding the proposed Technical Specification identified disagreements between the NRC and Wisconsin Public Service Corporation (WPSC) staffs.

WPSC and the NRC disagree on the definition of the term "bounding value" contained in 10CFR50.61(c)(2). 10CFR50.61(c)(2) states:

> To verify that RT_{NDT} for each vessel beltline material is a bounding value for the specific reactor vessel, the licensee shall consider plant-specific information that could affect the level of embrittlement. This information includes but is not limited to the reactor vessel operating temperature and any related surveillance program [5] results.

During the discussions on March 5, the NRC staff communicated that a value of RT_{NDT}, for plants using a plant specific measured value for the unirradiated reference temperature ($RT_{NDT(U)}$), can only be verified to be bounding if all three inputs used to determine RT_{NDT} are bounding. The staff further holds a bounding value for the $RT_{NDT(U)}$ must be the most limiting test result for the heat of material in question. A $RT_{NDT(U)}$ value of -30°F was measured for a different plant which used the same weld wire heat number (IP3571) as used at the Kewaunee plant. This value is the most limiting

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measurement for weld wire heat IP3571. Accordingly, the staff believes that -30°F value should be used as part of Kewaunee's bounding analysis. Alternatively, the staff stated that the generic values for $RT_{NDT(U)}$ and margin described in 10CFR50.61(c)(1)(ii) could be used to calculate a bounding value of RT_{NDT}.

In reference 1, WPSC documented a plant specific value of -50°F for $RT_{NDT(U)}$. This value was determined in accordance with ASME Code paragraph NB-2331, using plant specific surveillance material, as required by 10CFR50.61. As documented in reference 1, the -50°F for $RT_{NDT(U)}$ is a sufficiently bounding value for the Kewaunee Plant for the following reasons:

1. The unirradiated reference temperature ($RT_{NDT(U)}$) for the weld wire heat used to fabricate the Kewaunee vessel was determined to be -109°F in accordance with the procedures described in ASTM E1921 and ASME Code Case N629.

2. The surveillance block used to fabricate the test specimens that resulted in the -30°F value of $RT_{NDT(U)}$ is not considered a valid surrogate of $RT_{NDT(U)}$ for the Kewaunee reactor vessel. This is discussed in attachment 7 of reference 1.

Furthermore, not only is the value of -50°F for $RT_{NDT(U)}$ bounding, the RT_{NDT} and resulting curves are also conservative for the following reasons:

1. The actual measured adjusted reference temperature (based on fracture toughness specimens) corresponding to 33 EFPY for weld wire heat IP3571 was determined to be 234°F. This value was determined in accordance with the procedures described in ASTM E1921 and ASME Code Case N629. The actual fracture toughness of 234°F demonstrates that the charpy V-notch adjusted reference temperature value of 267°F used to develop the heatup and cooldown curves is conservative.

2. Although WPSC did not ask for an exemption to the rule to use the K_{Ic} curve to construct the proposed heatup and cooldown curves, Reference I provides a comparison of heatup and cooldown curves using the K_{Ic} and K_{Ia} curves. The comparison shows significant margin.

During the March 5, 1999 discussions it became clear the NRC and WPSC staffs could not reach agreement on the working definition for a "bounding value" cited in 10CFR50.61(c)(2). The NRC staff communicated that their own calculations demonstrated the curves submitted in reference 1 are acceptable to 28 EFPY. Therefore, in order to resolve this issue in the short term, which will permit continued operation of the Kewaunee plant, all parties agreed that WPSC should limit application of the curves to 28 EFPY. Accordingly, Attachment 1 to this letter contains revised TS pages, which limit the curves to 28 EFPY. Since use of the curves is being limited to a shorter and therefore conservative time period, the safety evaluation, significant hazards determination, and the environmental considerations in Reference 1 remain valid. Therefore, these analyses are not being revised.

Although WPSC has agreed to limit the proposed heatup and cooldown curves to 28 EFPY, we still support that our original position, documented in references 1 and 2. We will continue to work with the NRC to resolve this issue and to reach a mutually acceptable resolution. To this end, WPSC will be proposing a revision to the heatup and cooldown curves contained in the Kewaunee Technical Specifications and a revision to the PTS evaluation within the next three months. The planned amendment will include a request for an exemption to 10CFR50.61 to use master curve methodology as described in ASME Code Case N629.

In accordance with the requirements of 10CFR50.30(b), this submittal has been signed and notarized. A complete copy of this transmittal has been transmitted to the State of Wisconsin as required by 10CFR50.91(b)(1).

To avoid confusion, all Technical Specification pages submitted as part of proposed amendment 157 are being resubmitted with this letter.

Please contact Mr. Chuck Tomes (920-433-1729) or Mr. Tom Webb (920-388-8537) if you have any questions.

Sincerely,

Kenneth H. Weinkam
for

Mark L. Marchi
Vice President-Nuclear

TJW/CAT

Attach.

cc - US NRC Region III
US NRC Senior Resident Inspector
Electric Division, PSCW

Subscribed and Sworn to
Before Me This 9th Day
of March 1999
Janeth L. Bennett
Notary Public, State of Wisconsin

My Commission Expires:
November 18, 2001