

May 6, 1986

Docket No. 50-255

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Mr. Kenneth W. Berry
Director, Nuclear Licensing
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Dear Mr. Berry:

SUBJECT: PRESSURIZED THERMAL SHOCK RULE (PTS), 10 CFR 50.61, RESPONSE
FOR PALISADES PLANT

Your submittal dated January 23, 1986 providing your response to the PTS rule did not conform to the requirements of 10 CFR 50.61(b)(2)(ii) with regard to the required margin to be used in the calculation for determining when the screening criterion would be exceeded. This is discussed more fully in the enclosure that also requests additional information with regard to your response.

Using the margin prescribed by the PTS rule would result in the Palisades vessel exceeding the screening criterion during the plant life (1998). Consequently, within 3 months from receipt of this request, Consumers Power Company is required to submit, in accordance with 10 CFR 50.61(b)(3), an analysis and schedule for implementation of such flux reduction programs as are reasonably practicable to avoid exceeding the PTS screening criterion.

This request for information affects fewer than 10 respondents; therefore OMB clearance is not required pursuant to P.L. 96-511.

Sincerely,

/s/

Thomas V. Wambach, Project Director
PWR Project Directorate #8
Division of PWR Licensing-B

Enclosure:
As stated

cc: See next page

PD#8:
PKreutzer
5/1/86

PD#8: *JVM*
TWambach: jch
5/1/86

PD#8: *AT*
ATHadani
5/5/86

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PDR

Mr. Kenneth W. Berry
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Palisades Plant

cc:

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Resident Inspector
c/o U.S. NRC
Palisades Plant
27782 Blue Star Memorial Hwy.
Covert, Michigan 49043

PALISADES PLANT

MATERIAL PROPERTIES FOR FRACTURE TOUGHNESS REQUIREMENTS
FOR PROTECTION AGAINST PRESSURIZED THERMAL SHOCK EVENTS
10 CFR 50.61

The Consumers Power Company submittal does not conform to the requirements of the PTS rule in all respects. The key item is the calculation of RT_{PTS} for the plate material, where $10^{\circ}F$ margin was used instead of $48^{\circ}F$ as required by the PTS rule. Thus, the EOL (32 EFY) value of RT_{PTS} becomes $309^{\circ}F$, and the screening criterion ($270^{\circ}F$) will be reached in 1998 if the fluence rate continues as at present. (The rule was made very prescriptive in an attempt to avoid time consuming arguments about the way RT_{PTS} should be calculated, because flux reduction programs, if needed, should be started early for maximum benefit.)

In addition, there are certain corrections and additional information needed to complete our review of the January 23, 1986 submittal.

1. Correct the margin term as described above.
2. The PTS rule requires that RT_{PTS} be calculated "for each weld and plate, or forging in the reactor vessel beltline." The intent of this requirement was to provide justification that the values reported are indeed for the controlling material with regard to meeting the screening criterion. The submittal needs to provide this justification.
3. In the January 23 submittal, the phrase "generic chemistry" needs explanation. It was used in regard to the weld metal, and reference was made to a Consumers Power Company letter dated June 14, 1985. How many heats of weld wire were considered in deriving the "generic chemistry" for the longitudinal weld, and for the circumferential weld? What was the number and range of copper and nickel values considered for each?
4. In the January 23 submittal (Reference 1) there is no justification of the projected end of life peak vessel fluence value of 6.8×10^{19} n/cm². Such justification should include plant specific neutron sources, the use of a benchmarked code, cross sections and approximations.
5. The January 23 submittal was based on information from WCAP-10637 (Reference 2) in which the Cycle 5 power distribution was assumed to be a conservative representation of the power distribution (for purposes of neutron leakage) for Cycles 1-4. Please present data to support this assumption.

6. In reference 2 the axial peaking factor is listed as 1.2. Justify this value for the past cycles and for the fluence projection.
7. Give an estimate of the uncertainty of the fluence calculations for cycles 1-5 and under the assumptions of the extrapolation for the fluence at the end of life (32 EFPY).

References

1. Letter K. W. Berry, Consumers Power Company to Director, NRR, dated January 23, 1986.
2. WCAP-10637 "Analysis of Capsules T-330 and W-290 from the Consumer Power Company Palisades Reactor Vessel Radiation Surveillance Program" W September 1984.