Consumers Power
POWERING MICHIGAN'S PROGRESS
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Nuclear Regulatory Commission
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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
COMPLIANCE WITH PRESSURIZED THERMAL SHOCK RULE 10CFR50.61
AND REGULATORY GUIDE 1.99, REVISION 2 - FLUENCE REDUCTION STATUS

Consumers Power Company letter dated March 9, 1988 informed the staff that we planned to install stainless steel shield rods and increase our use of burnable poison in the Cycle 8 fuel design; and, because of that modification, we would not submit a report on Cycle 1 through Cycle 8 Fluence Analysis until December 1, 1988.

The attachment to this letter is a preliminary Cycle 8 fluence reduction report which describes the effect of incorporating low-leakage fuel management and partial stainless steel shielding assemblies on the pressure vessel inner wall fast flux (E>1.0 MeV) levels relative to previous high neutron leakage fuel management. In addition, the effect of utilizing the Regulatory Guide 1.99, Revision 2, reference temperature correlation with the existing 10CFR50.61 PTS screening criteria is described, and vessel lifetimes based on the allowable fluence levels corresponding to the PTS screening criteria are calculated.

The report concludes, based on the Regulatory Guide 1.99, Revision 2, reference temperature correlation and the flux reduction achieved in Cycle 8, that the PTS screening criteria will be exceeded at the axial welds in the year 2001. This would not permit operation until the nominal end of plant life at year 2011 (based on 40 years after initial criticality). Thus, further measures, eg, greater flux reduction, Regulatory Guide 1.154 analysis, etc, must be taken to allow operation to the end of licensed plant life and beyond.

Additionally, detail is provided regarding the flux reduction methods utilized for Cycle 8 and in-house efforts to measure and analyze vessel fluence levels. Further refinements in flux reduction fuel management which are expected to improve the dates at which the screening criteria would be exceeded are

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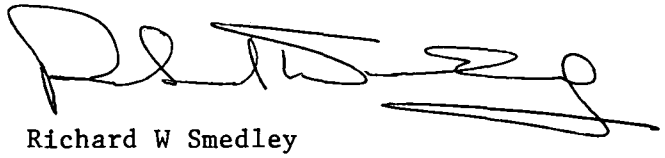
planned for the Cycle 9 loading pattern. In-house capability to perform vessel fluence calculations using industry-accepted methodology is being developed. Further, the installation of ex-vessel dosimetry during the end of Cycle 7 refueling outage will provide the detailed vessel flux mapping to be used in benchmarking calculated flux levels. The ex-vessel program will be enhanced during Cycle 9 by the installation of a replacement in-vessel dosimetry capsule to provide through-wall fluence level benchmarking.

During final review of the report, it was discovered that an error had been made in generating the neutron source file used to calculate the vessel wall fluxes. This error could shorten the expected time to exceed the screening criteria fluence limit at the axial weld location to about 1999. Activities are underway to recalculate the wall fluxes based on the new neutron source file; therefore, the attached report and its results are classified as preliminary. A revised report reflecting the corrected neutron source and the resulting wall fluxes should be available by April 1, 1989. Because the revisions are expected to be minor, and because this preliminary report contains valid programmatic information that will not be revised, we are submitting it for staff review at this time.

Due to the fact that the date for exceeding the PTS screening criteria is expected to be no earlier than 1999, instead of the previously forecast 1991, the requirement for expeditious completion of the Cycle 9 through end-of-life fluence report is somewhat relieved. Therefore, in recognition of that fact and with regard for better accuracy (the actual Cycle 8 loading pattern can be utilized), we are revising the scheduled submittal date of that analysis to August 1, 1989.



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Attachment