

**EXXON NUCLEAR COMPANY, Inc.**

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REGULATORY DOCKET FILE COPY

April 16, 1976



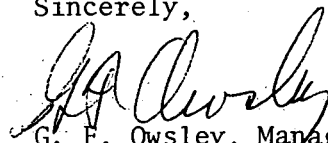
Director of Nuclear Reactor Regulation  
Attention: R. A. Purple, Chief  
Operating Reactor Branch No. 1  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Reference: Docket No. 50-255  
License No. DPR-20  
Palisades Plant

Dear Mr. Purple:

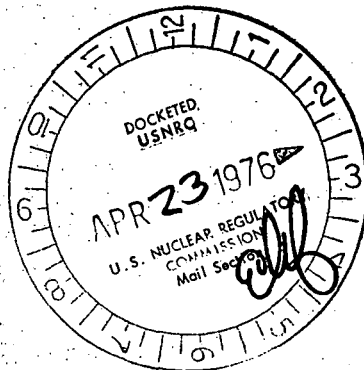
The enclosed information is submitted directly at the request of Mr. R. B. Sewell of Consumers Power. This information is provided in response to your question regarding the extent of metal-water reaction as part of the ECCS analysis for Type D fuel.

Sincerely,

  
G. F. Owsley, Manager  
Reload Licensing

GFO:lp

Enclosure



4082

EXTENT OF LOCAL MAXIMUM METAL-WATER REACTION  
PALISADES CYCLE 2 ECCS ANALYSIS

The value reported for "D" fuel Loop 2 break (XN-76-4, Supplement 1, page 6) is "less than 13 percent."

The value reported for "D" fuel Loop 1 break cleanup calculation was "less than 17 percent."

These two numbers were conservatively estimated in order to expedite the documentation of the ECCS analysis. This was possible at that time as the extent of metal-water reaction was clearly less than the Appendix K limit.

A refined estimate of metal-water reaction shows the extent to be less than the cited 13 and 17 percent. The refined estimates for the Loop 2 and Loop 1 breaks are respectively between 8 - 9 percent and between 9 - 10 percent, the latter corresponding to the slightly higher PCT case.

It should be noted that the peak metal-water reaction node is the ruptured node and not the PCT node. The extent of the metal-water reaction in all other nodes is significantly less than that of the rupture node.