

December 8, 1997

U.S. Nuclear Regulatory Commission
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Washington, DC 20555

**DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT
SPENT FUEL STORAGE RACKS - BORAFLEX TESTING INTERVAL REVISION**

By letter dated October 24, 1996, Consumers Energy committed to perform blackness testing on the Palisades Region II spent fuel storage racks during the spring of 1998. This letter revises that commitment from a testing interval of three years to a testing interval of five years. The next blackness testing is scheduled for completion during the spring of 2000.

In response to Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Pool Storage Racks" (TAC NO. M95981), Consumers Energy committed to perform blackness testing on Region II storage racks in the spring of 1998. The previous blackness testing on Region II storage racks was completed in 1995. The test data indicates the Boraflex performance in the Region II storage racks was satisfactory.

For the reasons listed below, Consumers Energy has determined that the function of the Boraflex in the Palisades Region II spent fuel storage racks can be adequately monitored using a testing interval of 5 years:

1. Silica concentration in the spent fuel pool is an indicator of Boraflex degradation. Higher silica levels are expected if dissolution of Boraflex from the storage racks is taking place. Silica levels at Palisades have remained relatively constant since blackness testing was performed in 1995. This is a primary indicator of



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minimal Boraflex degradation. Monitoring of spent fuel pool silica levels is accomplished weekly in accordance with Chemistry Procedure COP-27, "Spent Fuel Chemistry." If silica concentrations indicate significant Boraflex degradation, Boraflex testing will be performed.

2. Electric Power Research Institute's (EPRI) computer code RACKLIFE, computes the irradiation and dissolution of Boraflex neutron absorber panels as used in spent fuel pool storage racks. Preliminary RACKLIFE results support the minimal Boraflex degradation levels. Collectively, the stable silica levels and the supporting RACKLIFE results provide a high level of confidence that the Boraflex integrity remains satisfactory.
3. Palisades uses Boraflex only in the Region II storage racks. The Region II storage racks credit assembly burnup for reactivity control, thus limiting assemblies to a fresh fuel equivalent enrichment of 1.5 weight percent which further reduces the potential for a critical configuration.
4. Fuel assemblies are required to cool for a minimum of one year following discharge from the reactor core prior to placement in the Region II storage racks. This reduces potential degradation of the Boraflex panels due to high radiation exposure.
5. Palisades has a relatively tight rack design, as described in the EPRI RACKLIFE Instruction Manual, that does not allow for fast dissolution of Boraflex. The tight rack design does not allow for a rapid exchange of the water that comes into contact with the Boraflex. The racks contain stainless steel plates that minimize the water exchange with the Boraflex panels. This supports the stable silica levels that have been observed at Palisades over the last three years.
6. The Region II storage racks were installed in 1987 and blackness testing was performed in January of 1995. This evolution tested 48 storage cells, which represents a total of 14% of the usable Region II cells. A total of 98 full length Boraflex panels were tested, of which 63 panels had no measurable gaps. The average gap size was calculated to be 0.7 inches. The largest single gap measured was one inch. The maximum amount of gap measured in any one panel was 1.9 inches. The cells tested included storage cells that received the highest exposure relative to other cells in Region II.

The untested cells in Region II have received less radiation exposure than the area that was tested. In addition, the flow characteristics at the untested cells in Region II are not significantly different from those tested. When the results of the testing are extrapolated to the untested cells, the results indicate that the

Boraflex panels at Palisades are fully capable of performing their intended criticality control function.

7. Palisades Technical Specifications require a minimum boron concentration of 1720 ppm be maintained in the spent fuel pool. Although not credited in the criticality analysis, this high boron concentration does provide additional negative reactivity in the spent fuel pool.

SUMMARY OF COMMITMENTS

This letter contains one new commitment and one revised commitment. The new commitment is:

If silica concentration in the spent fuel pool indicates significant Boraflex degradation, Boraflex testing will be performed.

The revised commitment is:

Consumers Energy will perform blackness testing on the Region II spent fuel storage racks during the spring of 2000. The need and timing of additional blackness testing will be based on the results of the 2000 testing and pool information considered to be good indicators of the Boraflex condition (e.g., pool silica concentration).

The revised commitment was originally submitted to the NRC by Consumers Energy letter dated October 24, 1996. It stated that Consumers Energy will perform blackness testing on the Region II spent fuel storage racks during the spring of 1998 and that the need and timing of additional blackness testing would be based on the results of the 1998 testing and pool information considered to be good indicators of Boraflex condition (e.g., pool silica concentration).



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