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NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 31, 1998

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50-255

LICENSEE: Consumers Energy Company

FACILITY: Palisades Nuclear Plant

SUBJECT: SUMMARY OF THE MAY 28, 1998, MEETING REGARDING PALISADES  
NUCLEAR PLANT REACTOR VESSEL PTS EVALUATION

See  
Repts

A meeting was held at NRC Headquarters on May 28, 1998, between Consumers Energy Company and the NRC to discuss the revised reactor vessel fluence calculation for the Palisades plant. A list of attendees is provided in Enclosure 1. The purpose of the meeting was to facilitate technical exchange regarding the unresolved issues identified in the staff's December 20, 1996, interim safety evaluation (SE) concerning the licensee's April 4, 1996, submittal that provided a reevaluation of reactor pressure vessel (RPV) neutron fluence exposure.

The licensee's revised fluence evaluation calculated a reduction in RPV fluence of 25-percent, resulting in the Palisades RPV reaching the 10 CFR 50.61 (PTS rule) screening criteria in late-2011. This fluence reduction consisted of: (1) an 8-percent reduction resulting from changes in physical plant parameters; and (2) a 17-percent reduction due to a combination of biasing of the calculated fluence with the results of RPV and reactor cavity dosimetry measurements and adjustment of the measured and calculated fluence values using a least-squares spectral adjustment code. The staff's interim evaluation approved the 8-percent reduction due to changes in physical plant parameters, resulting in the Palisades RPV reaching the PTS rule screening criteria in mid-2003. The staff did not approve the 17-percent reduction due to biasing of the calculated RPV fluence and the least-squares spectral adjustment.

The licensee indicated that the primary focus of its presentation would be on the methodology of combining calculated and measured fluence values to obtain a best-estimate of the vessel fluence. The licensee stated its belief that the methodology is consistent with 10 CFR 50.61, Draft Regulatory Guide DG-1053, and applicable ASTM standards. The licensee stated its objectives for the meeting were to present the methodology and solicit staff feedback on what additional information would be needed for the staff to complete its review.

Westinghouse, the licensee's contractor, presented a historical review of the fluence calculation methodology, including an overview of its development, a description of its components, and a description of benchmarking performed to validate the methodology. The presentation material is provided in Enclosure 2. The licensee concluded that the combination of plant specific measurements and calculation, using a least-squares evaluation, provides the most appropriate method for determining the best-estimate vessel neutron exposure.

Following the presentation, the participants discussed areas of contention regarding application of the methodology to the Palisades reactor vessel. These include uncertainties assigned to the capsule dosimetry values, the dosimeter thresholds, and energy spectrum dependence. The participants also discussed the relative merits of use of bias values based on a fleet-wide

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data base versus plant-specific bias values. The staff indicated that use of a well-justified fleet-wide bias could be acceptable.

The staff indicated that its concern with the Palisades plant-specific bias determination is related to the uncertainties assigned to the capsule dosimetry data input to the least-squares adjustment code. The staff stated that the uncertainty values assigned to the dosimetry data have not been adequately justified. The staff acknowledged that adjustments to the measured and/or calculated fluence values could be acceptable, *provided* that they are made based on statistically valid and qualified data bases.

The licensee reiterated its belief that the proposed methodology is sound and requested that the staff provide specific, detailed questions regarding additional information needed to complete the review of the methodology. The staff indicated that it would develop questions to be forwarded to the licensee in a request for additional information (RAI). By letter dated July 31, 1998, the staff forwarded its RAI to the licensee.

ORIGINAL SIGNED BY

Robert G. Schaaf, Project Manager  
Project Directorate III-I  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Enclosures: As stated (2)

cc w/encs: See next page

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## MEETING ATTENDANCE

### MEETING REGARDING PALISADES NUCLEAR PLANT REACTOR VESSEL FLUENCE CALCULATION

Name	Affiliation
Ralph Caruso	NRC/NRR/SRXB
Lambros Lois	NRC/NRR/SRXB
Tony Uises	NRC/NRR/SRXB
Robert Schaaf	NRC/NRR/PD31
Barry Elliot	NRC/NRR/EMEB
Mathew Mitchell	NRCNRR/EMEB
Santos Cayetano	NRC/RES/DET
John Carew	Brookhaven National Laboratory
Nicholas Tsoulfanidis	University of Missouri-Rolla
Daniel J. Malone	Consumers Energy
Nathan Haskell	Consumers Energy
George Goralski	Consumers Energy
John Kneeland	Consumers Energy
Ross Snuggerud	Consumers Energy
Stan Anderson	Westinghouse
John Perock	Westinghouse
Patrick Griffin	Sandia National Laboratory
Richard Maerker	Oak Ridge National Laboratory (ret.)