

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
DUKE POWER COMPANY) Docket No. 70-2623
(Amendment to Materials License)
SNM-1773 for Oconee Nuclear Station)
Spent Fuel Transportation and Storage)
at McGuire Nuclear Station))

TESTIMONY OF CHARLES R. MAROTTA

- Q. By whom are you employed, and describe the work you perform?
- A. I am employed by the Office of Nuclear Material Safety and Safeguards (NMSS), Branch, of the U.S. Nuclear Regulatory Commission. I perform criticality calculations as part of my responsibility in employment with the U. S. Nuclear Regulatory Commission.
- Q. State your professional qualifications.
- A. A copy of my professional qualifications is attached to this Affidavit as Appendix B.
- Q. Would you state the purpose of your testimony in this proceeding?
- A. This testimony addresses Board questions (Tr. 4027; 4432-47), concerning whether fuel stored in the McGuire Unit 1 spent fuel pool would remain subcritical if a 25-ton truck cask fell onto spent fuel stored in the McGuire Unit 1 pool while being transferred to the McGuire cask unloading pit.
- Q. What was the scope of your testimony given in this proceeding?
- A. My approach to analysis of the postulated question was an extremely conservative one based on an assumption of complete failure of the racks in which the spent fuel is stored. This is because I did not have available

to me a structural analysis on which I could assume that the rack structure would fail at less than complete failure.

Q. What conclusions did you reach based on your analysis?

A. My analysis shows that subcriticality can always be assured for the spent Oconee fuel with 2000 ppm boron in the pool water. For the fresh McGuire fuel, subcriticality will be assured with at least 2000 ppm boron if the average fuel enrichment is 2.6% uranium-235 by weight. Subcriticality will be assured with at least 3000 ppm boron if the maximum enrichment of 3.5% uranium - 235 by weight (the maximum licensed enrichment allowed) is utilized. The attached analysis (Appendix A) of the postulated 25-ton spent fuel cask drop into the McGuire Unit 1 spent fuel pool is adopted as part of my testimony.