

William T. O'Connor, Jr.  
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**Detroit Edison**



*A DTE Energy Company*

10CFR50.67

July 19, 2001  
NRC-01-0053

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington D C 20555-0001

- References:
- 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43
  - 2) Detroit Edison Letter to NRC, "Proposed License Amendment for a Limited Scope Application of the Alternative Source Term Guidelines in NUREG-1465 Related to the Re-evaluation of the Fuel Handling Accident Dose Consequences," NRC-00-0073, dated December 29, 2000
  - 3) Detroit Edison Letter to NRC, "Response to NRC Request for Additional Information Regarding the Application of the Alternative Source Term Guidelines to the Re-analysis of the Fuel Handling Accident Dose Consequences," NRC-01-0036, dated May 2, 2001

Subject: Clarification of Additional Information Provided to the NRC  
Regarding the Use of Alternative Source Term Guidelines for the  
Re-analysis of the Fuel Handling Accident Dose Consequences

Reference 2 requested NRC approval of a proposed license amendment to modify the Technical Specification requirements for handling irradiated fuel and performing Core Alterations. The NRC staff requested additional information to help complete their review of the proposed amendment. Reference 3 provided the requested additional information. The staff requested further clarification of the methods that Detroit Edison will use to determine the extent of compliance of the fuel with the limits in Footnote 11 of Regulatory Guide 1.183 and the uncertainties associated with these methods. The requested clarification is provided below.

Typically, each hour while the reactor is operating above 25% power, the General Electric (GE) 3D-Monicores core monitoring system calculates the power distribution within the reactor on a six-inch nodal basis. The system integrates this power over the time interval since the previous power distribution calculation was performed to accumulate the exposure of the fuel. The uncertainties in this power distribution and exposure accumulation calculation are the same as those for the calculation of the Safety Limit Minimum Critical Power Ratio (MCPR) and the Technical

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Specifications thermal limits, and are documented in GE Topical Report NEDC-32694P-A. This report has been reviewed and approved generically by the NRC, and has been specifically approved by the NRC for application at Fermi 2 in License Amendment 138.

Nodal power and exposure data reports can be easily generated by the 3D-Monicores system to facilitate the verification of compliance with the power and exposure limits in Footnote 11 of Regulatory Guide 1.183. The verification process will begin by requesting the necessary end-of-cycle power and exposure data reports from the 3D-Monicores system. The reports will be reviewed to determine if the maximum six-inch nodal exposure in the core is less than the 54 GWD/MTU rod average exposure limit specified in Footnote 11 of the Regulatory Guide. If so, then the verification process is complete. For any nodes that have an exposure greater than 54 GWD/MTU, a manual calculation will be performed to determine the average exposure of the fuel pins in question by summing the 25 nodal exposures of the fuel pin in question and dividing by 25. If all of the rod average exposures are found to be less than 54 GWD/MTU, then the verification process is complete. If any fuel rods are determined to have a rod average exposure exceeding 54 GWD/MTU, the fuel rod will first be confirmed to have a rod average exposure less than 62 GWD/MTU, and then a review of the archived 3D-Monicores data for the cycle will be performed to confirm that the fuel rod's average power did not exceed 6.3 kw/ft after exceeding 54 GWD/MTU. The rod average power will be manually calculated by numerically averaging the 25 nodal powers over the length of the fuel rod.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,



cc: T. J. Kim  
M. A. Ring  
NRC Resident Office  
Regional Administrator, Region III  
Supervisor, Electric Operators,  
Michigan Public Service Commission

I, William T. O'Connor, Jr., do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

William T. O'Connor Jr.  
William T. O'Connor, Jr.  
Vice President, Nuclear Generation

On this 19<sup>th</sup> day of July, 2001 before me personally appeared William T. O'Connor, Jr., being first duly sworn and says that he executed the foregoing as his free act and deed.



Karen M. Reed  
Notary Public

**KAREN M. REED**  
Notary Public, Monroe County, MI  
My Commission Expires 09/02/2005