

September 6, 2012

Mr. Rodney McCullum
Director, Used Fuel Programs
Nuclear Generation Division
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

SUBJECT: KEY NUCLEAR REGULATORY COMMISSION MESSAGES RELATED TO THE RELEASE OF TECHNICAL LETTER REPORTS, "BORAFLEX, RACKLIFE AND BADGER: DESCRIPTIONS AND UNCERTAINTIES" AND "INITIAL ASSESSMENT OF UNCERTAINTIES ASSOCIATED WITH THE BADGER METHODOLOGY".

Dear Mr. McCullum:

The Nuclear Regulatory Commission (NRC) staff is issuing Technical Letter Report (TLR), "Boraflex, RACKLIFE and BADGER: Description and Uncertainties" and TLR, "Initial Assessment of Uncertainties Associated with the BADGER Methodology". Enclosed are the key messages concerning these reports that the NRC staff wants to relay to the industry. The NRC staff has established a dialogue with NEI staff regarding the path forward with respect to the issues that are addressed in these two TLRs. As a part of this dialogue, public meetings will be noticed and conducted in the near future.

Please contact Gloria Kulesa at 301-415-6011, if you have any questions.

Sincerely,

/RA/

Patrick Hiland, Director
Division of Engineering

Enclosure:
As stated

Cc w/encl: John Butler
Sheldon Stuchell

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KEY NUCLEAR REGULATORY COMMISSION MESSAGES RELATED TO THE
RELEASE OF TECHNICAL LETTER REPORTS, "BORAFLEX, RACKLIFE AND
BADGER: DESCRIPTIONS AND UNCERTAINTIES" AND "INITIAL ASSESSMENT OF
UNCERTAINTIES ASSOCIATED WITH THE BADGER METHODOLOGY"

- Technical letter report (TLR), "Boraflex, RACKLIFE and BADGER: Description and Uncertainties" and TLR, "Initial Assessment of Uncertainties Associated with the BADGER Methodology" discuss: (1) RACKLIFE, a computer code developed to track and predict the loss of Boraflex; and (2) the Boron Areal Density Gauge for Evaluating Racks (BADGER), an in-situ measurement device that was developed to measure the loss of Boron-10 (B-10) in the Boraflex panels. BADGER has also been used to measure the loss of B-10 in other neutron absorbing materials such as Boral and Carborundum.
- Boraflex is a silicone rubber based material that contains boron carbide (B_4C) and is used as a neutron absorber in spent fuel pool (SFP) storage racks to meet the SFP criticality requirements specified in a plant Technical Specifications (TSs). The NRC has documented the degradation of Boraflex in previous generic communications with licensees. Several reactor licensees continue to credit Boraflex, to a certain extent, in their SFP criticality analysis. Neutron absorbing materials other than Boraflex, like Carborundum and Boral, have also degraded. The NRC is continuing to interact with the industry on these issues.
- The staff does not consider this to be a safety issue because: (1) there is margin in the TS requirements, and (2) there is conservatism in the nuclear criticality safety analyses that demonstrates compliance with the TS requirements.
- Based on the information in these two TLRs, the NRC staff has questions regarding the continued use of the RACKLIFE and BADGER methodologies to manage SFP neutron absorber degradation in their spent fuel pools.
- The TLRs contain studies done on a generic basis and summarize the use of RACKLIFE and BADGER. These reports discuss the reliability of the RACKLIFE and BADGER methodologies for certain applications. The staff is considering generic communications with licensees to obtain plant specific information to determine if NRC actions are needed to address the issues brought up by these two TLRs. In addition, the NRC is issuing an Information Notice to inform licensees of recent cases of degradation of Boraflex in spent fuel storage racks and potential issues with the monitoring of this degradation.

ENCLOSURE