

From: [Lombard, Mark](#)
To: [Gallardy, Vivian](#); [Damiano, Debra](#); [Rodgers, Mary](#); [RidsEdoMailCenter Resource](#); [RidsSecyMailCenter Resource](#)
Cc: [Conley, Maureen](#); [Marcano, Damaris](#); [Hsia, Anthony](#); [Roman, Cinthya](#)
Subject: FW: Response to questions submitted to the US NRC regarding dry cask storage
Date: Thursday, September 04, 2014 8:22:24 AM

Please close the ticket for this action.

Viv/Deb please put the email into ADAMS DPC folder today as Publicly Available.

Mark

From: Lombard, Mark
Sent: Thursday, September 04, 2014 7:54 AM
To: 'bmoldow@gmail.com'; 'vsanfi@gmail.com'; 'momasters@cox.net'; 'serge@jonnaert.com'; 'mccune@prizm.org'; 'alessandra@alessandracolfi.com'
Subject: Response to questions submitted to the US NRC regarding dry cask storage

In response to your concerns provided by emails to the U.S. Nuclear Regulatory Commission (NRC) dated July 19, 2014, the NRC previously performed an investigation of dry storage cask and fuel conditions after storage of low burnup fuel for 15 years (documented in NUREG/CR-6831, "Examination of Spent PWR Fuel Rods after 15 Years in Dry Storage"). The research summarized in this report included opening of a storage cask to visually inspect the fuel condition and the cask interior. No significant deterioration of either the fuel or the cask was discovered. For both high burnup and low burnup fuel, measures are in place during storage which mitigate the possibility of deterioration. Because of these measures, the NRC concluded that the results of this report could be extended to high burnup fuel in storage for an initial licensing period of up to 20 years. The NRC will review the cladding material property data submitted with dry storage renewal applications as part of our comprehensive technical review. Additionally, storage licensing renewals beyond the initial licensing period will be required to include either a time-limited aging analysis, or an aging management plan (AMP) for all components of the system that have the potential to degrade and affect safety. An AMP consists of ten parts that include identification of the degradation mechanism, and physical signs of the degradation occurring. The AMP describes the methods to be used to detect the degradation, the frequency of inspection, and the criteria for when mitigative or corrective action is necessary.

In addition to ongoing cladding research being conducted by NRC, DOE is planning a high burnup fuel cask demonstration project. This project includes loading an instrumented cask with different types of high burnup fuel, and storing it at a reactor site for an extended period. Instrumentation will allow the monitoring of fuel temperature and radiation levels. At the end of a specified storage period, the cask will be opened so the fuel can be visually inspected, similar to what was done for NUREG/CR-6831. NRC will monitor this research project, and will incorporate any results deemed applicable to current spent fuel storage systems into our relevant guidance or regulations.

Please let us know if you have any further questions.

Sincerely,

Mark D. Lombard, Director
Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
301-287-0673