

# PURDUE

UNIVERSITY

SCHOOL OF NUCLEAR ENGINEERING

50-182

Cindy Montgomery  
U.S. NRC  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

November 14, 2016

SUBJECT: PUR-1 Response to Generic Letter 2016-01: Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools

Dear Ms. Montgomery,

This letter is to respond to the generic letter dated April 7, 2016 regarding the monitoring of neutron-absorbing materials in spent fuel pools and to address concerns of potential degradation of the neutron absorber in wet storage systems for reactor fuel.

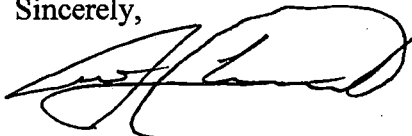
The PUR-1 pool contains both the reactor core and fuel storage racks. A 1/4" BORAL plate separates two rows of nine fuel assemblies in order to further reduce the multiplication factor but is not required to maintain compliance with regulatory requirements.

In the Purdue University Safety Analysis Report dated June 30, 2008 (ML111890201), Section 9.2 addresses the multiplication factor for the in-pool fuel storage rack. Considering a fully loaded rack and taking no credit for the 1/4" BORAL plate, an eigenvalue of  $k_{eff} = 0.7660 \pm 0.0046$  was determined. This value, with no credit for a neutron absorbing material, is in compliance with the licensing and design basis as well as applicable regulatory requirements. The physical storage racks design maintains this compliance simply due to its geometry.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge Executed on November 14, 2016.

Please feel free to contact me with questions or if you require any further information.

Sincerely,



Clive Townsend  
PUR-1, Reactor Supervisor



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