

November 22, 2010

CCN 222660
NRC Project #0748

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

SUBJECT: Contract No. DE-AC07-05ID14517 – Next Generation Nuclear Plant Project –
Response to Request for Information – Request for AGR-2 Fuel Compacts
Information – NRC Project #0748

Consistent with the actions identified in "*NGNP Licensing Strategy – Report to Congress*," dated August 2008, the purpose of this letter is to transmit the subject Next Generation Nuclear Plant (NGNP) Project response to the Nuclear Regulatory Commission (NRC)'s request for reports containing specific tristructural-isotropic (TRISO) fuel compact fabrication data. This request was transmitted to the NGNP project via e-mail from Dr. Sudhamay Basu (NRC/RES) dated August 18, 2010.

The NRC staff requested specific fabrication data associated with four lots of TRISO fuel compacts that were fabricated by Oak Ridge National Laboratory (ORNL) in support of the Department of Energy's Office of Nuclear Energy (DOE-NE) Advanced Gas Reactor Fuel Development and Qualification program. This fuel was fabricated for the Advanced Gas Reactor program's second irradiation test, Advanced Gas Reactor (AGR)-2. It is our understanding that these data were requested by the NRC to support Methods for Estimation of Leakages and Consequences of Release (MELCOR) code development work.

The AGR-2 compacts described in the subject report contain two types of fuel kernels, uranium oxide (UO₂) and mixed uranium oxide/uranium carbide (UCO). The fuel kernels were produced by Babcock and Wilcox (B&W) in Lynchburg Virginia while ORNL fabricated the TRISO fuel particles onto the final fuel form. Particles were over coated in a resinated graphite powder and then were pressed into cylindrical compacts at ORNL.

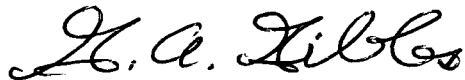
Enclosure 1 contains a compilation of characterization data for AGR-2 UCO Variant fuel compact lot LEU06-OP1-Z, AGR-2 UCO Baseline fuel compact lot LEU07-OP1-Z, AGR-2 UCO Variant fuel compact lot LEU09-OP2-Z, and AGR-2 B&W UO₂ fuel compact lot LEU11-OP2-Z. The information contained in the report addresses the lots specified in the NRC's information request.

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If you have any questions regarding this submittal, please contact me at (208) 526-6063 or James Kinsey, Director, Regulatory Affairs at (208) 526-6882.

Sincerely,



Greg Gibbs, Project Director
Next Generation Nuclear Plant Project

MH:CN

Enclosure:

1. ORNL/TM-2010/296, Rev. 1, Oak Ridge National Laboratory, "*AGR-2 Fuel Compacts Information Summary: Prepared for the NRC MELCOR Project*," November 2010.

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