

Department of Energy National Nuclear Security Administration Washington, DC 20585



August 1, 2013

MEMORANDUM FOR KENNETH PICHA

DEPUTY ASSISTANT SECRETARY

OFFICE OF TANK WASTE AND NUCLEAR MATERIAL

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FROM:

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OFFICE OF NUCLEAR THREAT SCIENCE

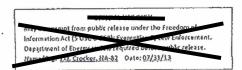
SUBJECT:

Proliferation Attractiveness of Jülich Graphite Spheres

We have completed a technical evaluation of the High Temperature Gas-Cooled Reactor graphite fuel assemblies currently stored at Forschungzentrum Jülich (GmbH) to assess its material attractiveness. The graphite spheres each weigh approximately 200 g. The concentration of uranium (²³³U) is 0.5% by weight, as dioxide. Thorium dioxide is also present at 5% by weight along with a small amount of SiC (2.3 g). We assess the material as low attractiveness (Attractiveness level "E"), which only requires Category IV security protection. We also assess the material is not attractive to sub-state/terrorist entities in its current state. Since the material is stored in a secure environment in a politically stable country, it is not of a proliferation concern.

However, because the material is of U.S. -origin, the NNSA believes that the Department does have an unofficial responsibility to assure the material is adequately dispositioned. Therefore, NNSA supports "Work for Other" activities by DOE's Office of Environmental Management to help Germany develop and implement an appropriate disposition pathway for this material. Although not a nonproliferation activity, it does serve to minimize the amount of U.S. HEU at civilian facilities worldwide.

cc: Jay Tilden, NA-80 Deleon Edgardo, EM-22



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