



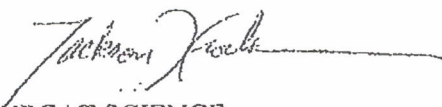
Department of Energy
National Nuclear Security Administration
Washington, DC 20585



August 1, 2013

MEMORANDUM FOR KENNETH PICHHA
DEPUTY ASSISTANT SECRETARY
OFFICE OF TANK WASTE AND NUCLEAR MATERIAL

ARTHUR G. ATKINS
ACTING ASSISTANT DEPUTY ADMINISTRATOR
OFFICE OF GLOBAL THREAT REDUCTION

FROM: JACKSON Q. CROCKER 
DIRECTOR
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 Forschungszentrum 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
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~~Information is exempt from public release under the Freedom of Information Act (5 U.S.C. 552). Exemption: Law Enforcement. Department of Energy will require controlled release. Name: J. Q. Crocker, NA-82 Date: 07/31/13~~

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