

Energy - More bang for the buck

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Spent nuclear fuel from commercial reactors could be minimized and burn-up potentially doubled if Gamma Engineering's new silicon carbide-based cladding proves viable. Conventional cladding, the tubing that contains the enriched uranium that fuels reactors, becomes brittle and must be replaced – along with the fuel – every five years. If, however, Gamma Engineering's proprietary duplex material can be used instead, the refueling cycle could be extended to a theoretical 10 years.

Information gained from tests at the High Temperature Materials Lab is helping determine the extent, rate and exact method of corrosion of the material. The goal is to learn whether the tubes, which consist of a silicon fiber-reinforced composite around a silicon monolithic tube, are sufficiently corrosion-resistant to withstand conditions in the high-temperature water used in reactors. Zia Faiztompkins, an engineer with the Rockville, Md.-based Gamma Engineering, is working with ORNL's Larry Walker, Michael Lance and Harry Meyer to answer that question. Funding is provided by the Department of Energy's offices of Nuclear Energy and Energy Efficiency and Renewable Energy.

Source: DOE/Oak Ridge National Laboratory

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