



ISOTOPE APPLICATIONS

Eden targets domestic medical radioisotope production

Eden Radioisotopes has filed a construction permit application with the Nuclear Regulatory Commission for a facility to produce medical radioisotopes, primarily molybdenum-99 and lutetium-177.

The United States has lacked a reliable domestic source of Mo-99 for diagnostic imaging for decades but has invested in infrastructure in other countries. These reactors are old, and there have been disruptions to the supply chain due to unplanned outages for repairs. With a 66-hour half-life, Mo-99 cannot be stockpiled.

Eden Radioisotopes proposes to use a small, nonpower, open-pool reactor design that is optimized for high-yield isotope production. The reactor will use low-enriched uranium and operate at 1.8 MWt.

A hot cell facility is being constructed for target fabrication and for separating the desired radioisotopes from irradiated targets on-site. The reactor will generate no spent fuel, the company said, and 90 percent of the uranium will be recycled for additional isotope production.

UNIVERSITY RESEARCH

Study points to need for standardization in helium generation rate calculations

Researchers from the University of Michigan and Oak Ridge National Laboratory have found that predictions of helium generation rates through neutron transmutation in fission and fusion reactors vary widely and include

dependencies on the choice of nuclear data library and calculation method.

“Helium production has a strong influence on high temperature embrittlement and dimensional stability for structural materials in both fusion and fission systems,” said Stephen Taller, an Alvin M.

Weinberg Fellow and R&D staff scientist at ORNL.

As described in a paper published in *Journal of Physics: Energy*, the team found that neutron energy impacted helium generation rates, as expected, and that the presence

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