SMALL-SCALE REACTOR FOR THE PRODUCTION OF MEDICAL ISOTOPES

Sandia National Laboratories

intellectual property MANAGEMENT, LICENSING & ALLIANCES

TECHNOLOGY READINESS LEVEL: 5

KEY ELEMENTS HAVE BEEN DEMONSTRATED IN RELEVANT ENVIRONMENTS.

US PATENT PENDING

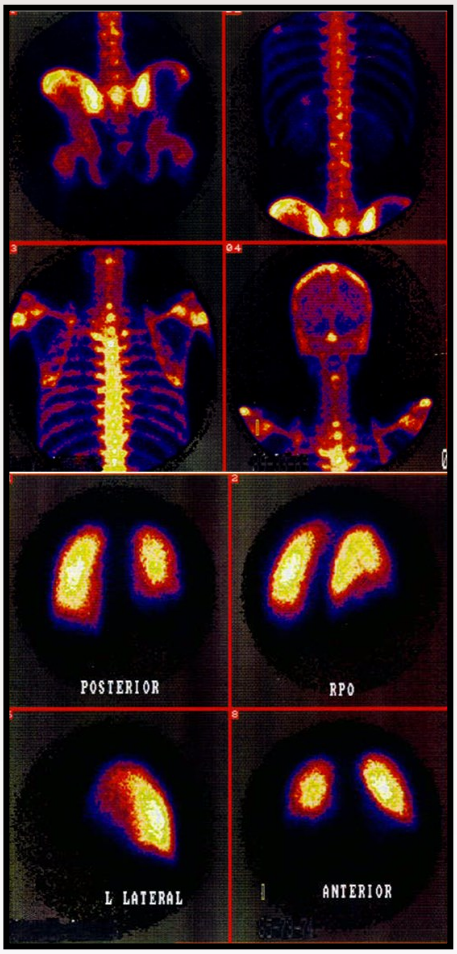
TECHNOLOGY SUMMARY

Molybdenum 99 (Mo-99) is a medical isotope essential in cancer treatment, diagnostics, and medical imaging. The US is completely dependent on foreign sources that produce this isotope which means the United States does not have a domestic or backup supply in case of a worldwide shortage. Further contributing to the problem, the current reactors are more than 50 years old which means there is a higher risk for unplanned outages and they are not dedicated to production.

Current US demand for Mo-99 has historically been 6,000 6-day curies (Ci) per week, or approximately half of the global demand. Demand is forecasted to grow up to approximately 5-10% per year with estimated revenue from US demand yielding approximately $150 million per year. This technology could produce enough Mo-99 to satisfy US demand and have a surplus available to meet global needs. Isotopes in addition to Mo-99 are also produced as a result of this process and would be commercially valuable.

This design can be implemented with commercially available components and has been proven to work on Sandia's Cintichem-based process. Our LEU reactor is ready to construct!

This Sandia intellectual property is not funded by the U.S. Department of Energy nor is it part of or in support of any Department of Energy/National Nuclear Security Administration program or project.



APPLICATIONS & INDUSTRIES

- Radiopharmaceutical Companies and Distributors
- Medical and Healthcare Facilities
- Medical Diagnostics and Cancer Treatments

TECHNOLOGICAL BENEFITS

- Technology could allow an investor to exceed US supply demands and participate in the global market
- Low enriched uranium (LEU) fuel minimizes nuclear proliferation risk
- Operational at low power and passively safe
- Commercially available control system results in ease of operation
- Drawing upon proven technology with minimal research effort required

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 11290

or visit

https://ip.sandia.gov

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NNSA National Nuclear Security Administration

U.S. DEPARTMENT OF ENERGY