

NE-26-40468 Independent Neutronics and Multiphysics Assessment for a Helicopter-Portable Heat-Pipe Microreactor

Tam Fortis Solutions, located in Marina Del Ray, CA, is developing a sealed, helicopter-portable nuclear microreactor for locations without dependable grid power or continuous fuel supplies. Its mission is to provide long-duration, logistics-independent power for defense, disaster response, remote communities, mining, critical infrastructure, and other off-grid applications.

Tam Fortis needs to validate its computational reactor design before finalizing a configuration for its planned zero-power criticality test. The company requires independent analysis to confirm criticality, shutdown margins, temperature feedback, power distribution, neutron leakage, and the interaction of the reactor's neutronics, heat pipes, and hydride moderator.

Tam Fortis will partner with Argonne National Laboratory (ANL) to independently evaluate its reactor design using advanced neutronics and multiphysics modeling capabilities. ANL will benchmark the company's models, evaluate operating and transient conditions, assess heat-pipe and moderator behavior, and identify uncertainties. This project will accelerate development of a portable nuclear power source for defense, disaster response, remote communities, critical infrastructure, and other locations where reliable grid power is unavailable.