NE-24-34981 – Independent Assessment of a Novel Heat Exchanger Concept for Open-Air Brayton Cycle

Nano Nuclear Energy Inc., located in New York, NY, is an advanced technology-driven nuclear energy company seeking to become a commercially focused, diversified, and vertically integrated company across four business lines: cutting edge portable microreactor technology, nuclear fuel fabrication, nuclear fuel transportation, and nuclear industry consulting services.

Zeus, Nano's 1 Mwe Micro Modular Reactor (MMR), features a unique design that does not rely on any primary fluid coolant as heat is transferred by conduction through a solid moderator matrix. A critical aspect to the success of this design is the capability to remove heat from the reactor vessel using an open-air Brayton cycle. Nano has developed a novel heat exchanger design, however, an independent evaluation of this design using more detailed models is required.

Nano will partner with Idaho National Laboratory (INL) to perform an independent evaluation of the heat exchanger design. This will include the development of a computational model of the heat exchanger to help analyze the design and confirm certain attributes that are critical to the reactor operations.