

RFA-18-15827, Nuclear Grade Graphite Powder Feedstock Development

Domestic nuclear graphite suppliers do not currently exist in the United States. All of today's high temperature gas cooled reactor and molten salt reactor designs require nuclear grade graphite as a key material in the reactor core. Urbix Resources intends to fill this gap by offering a new nuclear grade graphite powder feedstock that is manufactured in the United States for the production of graphite and graphite-based fuel forms for nuclear applications. This goal requires a long series of activities involving graphite powder processing, purification, consolidation into billets, characterization, and data generation from neutron irradiation testing and post-irradiation examination.

Urbix Resources will leverage well-established expertise and resources at Oak Ridge National Laboratory to characterize its purified graphite powder, fabricate solid specimens of graphite matrix material, and conduct post-fabrication testing for properties determination.

By decreasing feedstock cost, production time, and environmental impact, Urbix Resources expects to achieve competitive nuclear graphite grades at a discounted price. By lowering the costs of these crucial consumables, nuclear power projects can propose stronger project economics, and therefore increase the likelihood of new project implementation throughout the United States.