

## **NE-24-32494 – Ceramic Matrix Composites (CMC) Irradiation Testing**

Westinghouse Electric Company, located in Cranberry Township, PA, develops new nuclear technologies that can provide reliable, clean, safe, and economical energy to future generations.

The eVinci microreactor operates at a high temperature and there is a need for a neutronically-compatible material. Ceramic Matrix Composites (CMC) have been identified as a candidate material for this situation. CMC materials experience dimensional and material property changes as a result of accumulated radiation damage and CMC irradiation performance data is extremely limited, especially for composite materials irradiated over 700°. Therefore, there is a need to obtain irradiated information to support Westinghouse's evaluation of the feasibility of using CMC materials in the eVinci microreactor.

Westinghouse will partner with Oak Ridge National Laboratory (ORNL) to perform an irradiation test and associated Post-Irradiation Examination (PIE) on a specific CMC to ensure it is a viable option for the eVinci microreactor prior to performing a larger irradiation campaign. The work will utilize the High Flux Isotope Reactor (HFIR) at ORNL.