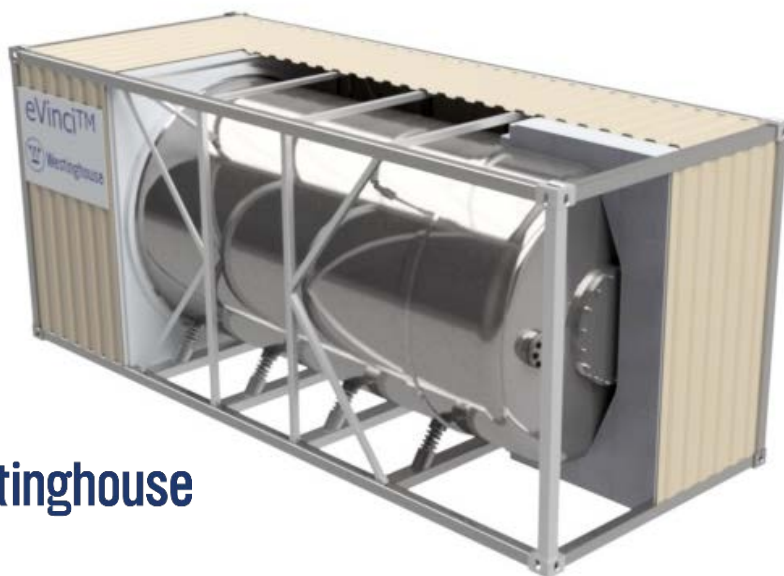




Westinghouse eVinci™ Micro Reactor GAIN Workshop

Thomas Tweedle
Autonomous Control System Technical Lead

eVinci Micro Reactor



Attributes

- ~1-2 MWe mobile energy generator, and ~4 MWe for fixed installations
- Fully factory built, fueled and assembled in intermodal containers
- Passive heat pipe technology
- 40 year design life with 3+ years continuous power
- Inherent safety – safe shutdown without need for operator action
- Capable of providing high temperature process heat
- Zero emergency planning zone (EPZ)
- Small installation footprint

eVinci Micro Reactor

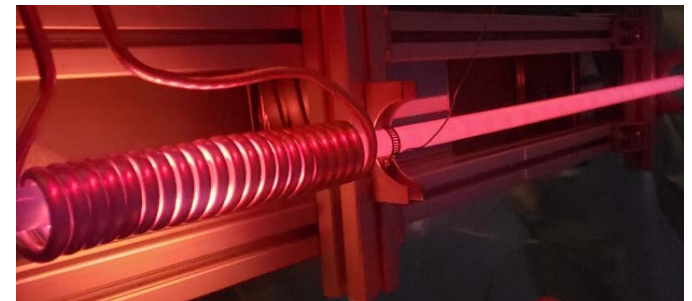
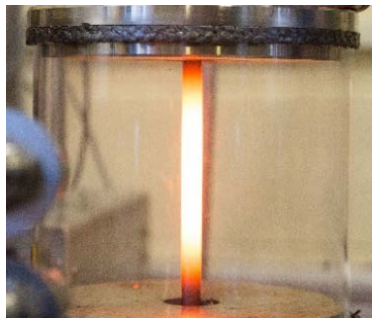
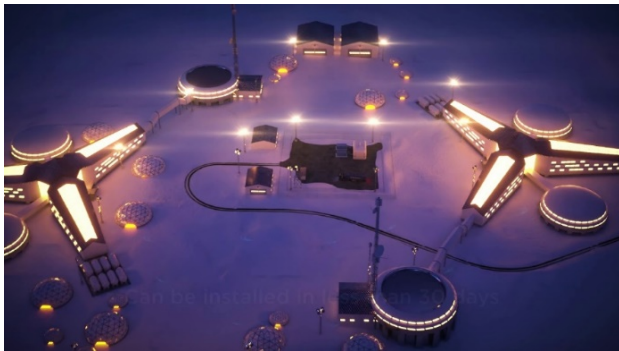
Program Goals and Specific Needs

Autonomous Control and Remote Monitoring

- Limited operator action with simple operator interface and controls
- Reduced complexity, reduced maintenance of the eVinci micro reactor
- *Challenges*
 - Regulatory framework for licensing and public acceptance of autonomous reactor operation is needed

Instrumentation

- eVinci design implements sufficient instrumentation to enable autonomous operation
- Instrumentation has high reliability, high spatial resolution, qualified for nuclear safety related use
- *Challenges*
 - High operating temperature
 - I/O density
 - New reactor type



eVinci Micro Reactor

Vision For Operations and Maintenance

Fully autonomous operation with limited or no operators present on site

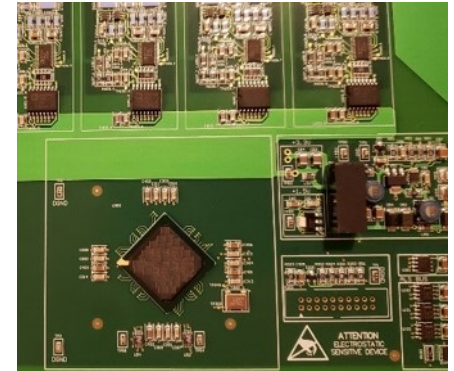
- Significantly reduces operating cost; strengthens business case

Remote monitoring capabilities provide

- Predictive analytics and predictive maintenance
- Data collection for big data and machine learning

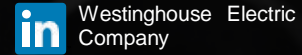
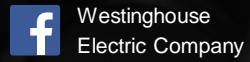
Reducing the reliance on human operators and maintenance technicians

- Reduces O&M costs through predictive versus prescribed maintenance
- Reduce downtime of critical power infrastructure
- Enables remote locations where travel or logistics are difficult



eVinci product vision for O&M is possible
with key enabling technologies and
regulatory engagement





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