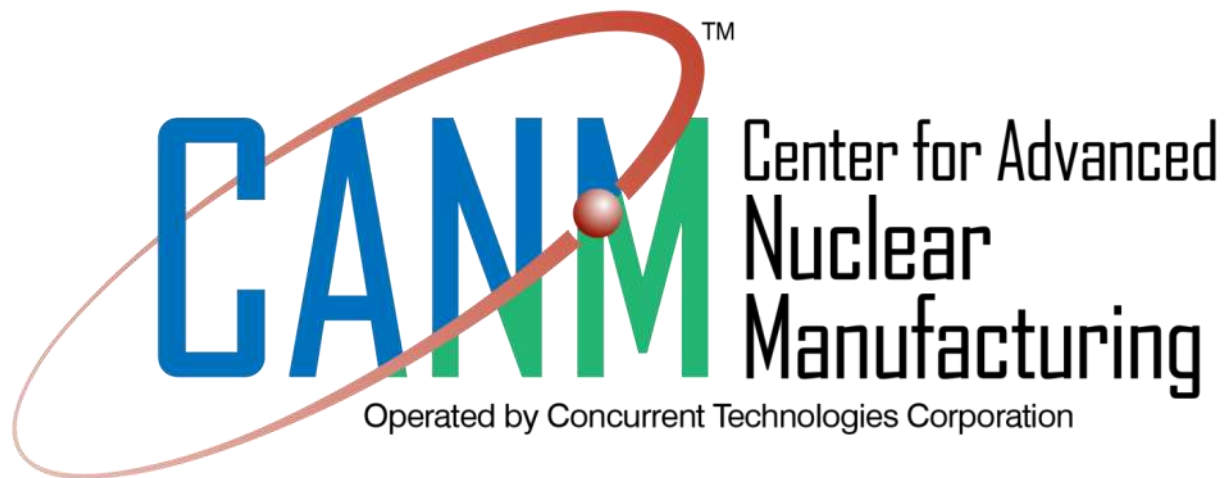


USNIC/ETEC Nuclear Supplier Workshop



Robert E. Akans
Sr. Director, Manufacturing Technologies

CTC - Leading Innovation through Engineering, Technology and Services

Concurrent Technologies Corporation (CTC) is an independent, nonprofit, applied scientific research and development professional services organization.

Enterprise Ventures Corporation (EVC) is CTC's technology commercialization arm and is organized as a wholly owned for-profit affiliate of CTC. CTC and EVC provide full lifecycle support services to clients, from innovative concepts through production and deployment.



29+
YEARS OF
INNOVATION

600
EMPLOYEES

25
LOCATIONS



Center for Advanced Nuclear Manufacturing

- With the advent of the next generation of SMRs and AR's there is a clear need for advanced manufacturing technologies to support the efficient fabrication of complex modular systems
- Two organizations have recently developed models for a manufacturing technology center for U.S. nuclear industry -
 - DOE NE vision for a nuclear advanced manufacturing technology center
 - USNIC's concept for a U.S. Virtual Advanced Manufacturing and Research Center (VNAMRC)
- Leveraging CTC's experience in operation of the Navy Metalworking Center (NMC) helps to facilitate an efficient start-up and operation of the Center -
 - Transferrable experience and capabilities
 - Extensive experience in managing project identification and development efforts
 - Experienced management and technical staff with "right mix" of skills.

CANM Operation

- With USNIC's support, CTC made the decision in 2017 to establish the Center for Advanced Nuclear Manufacturing (CANM)
- CANM will utilize existing metalworking capabilities to establish a self-sustaining global resource to develop and deploy applied metalworking and manufacturing capabilities to advance SMR / AR design, fabrication and operation
 - Bring together the right mix of technologists, engineers and solution providers from industry and academia to develop and demonstrate cost effective and implementable technical solutions
 - Provide manufacturing and demonstration facilities to support the fabrication and testing of functional prototype systems
- CANM is initially being operated as an industry-funded organization
- DOE is working to establish an advanced manufacturing technology center with an industry cost-share requirement for awarded projects.

CTC Manufacturing Technology Facilities

- 130,000 ft² of 'highbay' space in two bays
- Configurable for prototype fabrication and large-scale demonstration / validation
- Dedicated fabrication and testing facilities located adjacent to highbay spaces.



CTC Manufacturing Technology Capabilities

- Machining Facilities
- Welding / Cladding
- Organic & Inorganic Coatings
- Metrology
- Quasi-static & Dynamic Mechanical Testing
- Metallurgical Lab
- Corrosion Testing Labs



CANM Ribbon Cutting / Open House

- On 24 August 2017, CTC held an Open House celebrating the opening of CANM in Johnstown, PA
- Speakers included Congressman Rothfus (PA-12) and David Blee, Executive Director of USNIC.



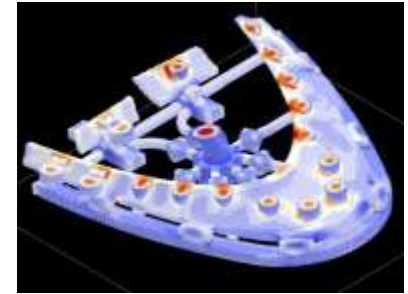
CANM Ribbon Cutting / Open House

- Following the Ribbon Cutting ceremony, tours of CTC's facilities were offered to attendees
- In addition to touring the CTC Highbay facilities, several manufacturing technology demonstrations were conducted.



Relevant Nuclear Power Manufacturing Technology Issues

- Prototyping capability for FOAK issues
- Advanced joining technologies
 - improved narrow groove welding capabilities for thick sections
 - high speed cladding and hard facing
- Net-shape component manufacturing
 - Near-net forgings, additive manufacturing, PM/HIP, investment castings
- Forming & welding of complex piping/tubing structures
- Factory automation
 - High-speed machining – EDM, ultrasonic, cryogenic
 - Fixtures and material handling automation
- Cybersecurity solutions for digital manufacturing processes
- Supply Chain development



CANMTM
Center for Advanced
Nuclear
Manufacturing
Operated by
Concurrent Technologies Corporation



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