Micro-Reactor Workshop
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Micro-Reactor Supply Chain Considerations & Needs

Parry Walborn
Senior Fellow for Advanced Manufacturing and Supply Chain
**US Nuclear Industry Council (USNIC) Overview**

- Leading U.S. business consortium advocate for nuclear energy and promotion of the American supply chain globally.

- Composed of nearly 90 companies, USNIC represents the "Who's Who" of the nuclear supply chain community, including key utility movers, technology developers, construction engineers, manufacturers and service providers.

- USNIC encompasses eight working groups and select task forces including an Advanced Reactors Task Force; Advanced Manufacturing & Supply, Fuel Cycle and International Working Groups.

- Key proponent for an all-of-the-above approach to advanced reactors including Gen 3+, Gen 4 (SMRs, Non-LWRs)
Micro-Reactor Supply Chain Considerations and Needs

• US Nuclear Industry Council (USNIC) – Manufacturing and Supply Chain Committee
  ▪ Regional Ready4Nuclear Workshops
  ▪ Supply chain gap analysis: non-light water reactors
  ▪ Tracking and Support for Business and Funding Opportunities
  ▪ National Labs – reactor development programs
  ▪ Regional Nuclear Industry focused Business Development Initiatives
  ▪ Integration of all these initiatives into a single tool to aid industry organizations in advancing the developer, supplier relationship
Micro-Reactor Supply Chain Considerations and Needs

• Economics
  ▪ Market economics of the existing fleet needs to remain strong
  ▪ Developers - cost from design to 1st plant is significant – must secure financing for the long haul
  ▪ Suppliers have expertise, are innovative, and are in consistent search for new opportunities – investments in money, time and resources require some assurance of a return

• Technology
  ▪ Developers must engage with key suppliers in the early stages of technology development
    ✓ Overcome barriers to develop relationships with suppliers
    ✓ Reduces time, money and risk
Micro-Reactor Supply Chain Considerations and Needs

• Technology, cont.
  ▪ Designs must be manufacturable and licensable
    ✓ Manufacturing materials and technics can be as difficult as new reactor design developments
    ✓ Critical components – it may be advantages to involve a supply partner in the licensing process

  ▪ Developers and manufactures must remain focused on the end result
Micro-Reactor Supply Chain Considerations and Needs

- **Capability**
  - **Manufacturability**
    - Advance manufacturing technics and methods
    - Demonstration of materials and manufacturing methods
    - Development of human capital
    - Certifications – investment justification, cost and time for approvals
  - **Constructability**
    - Developments in technology, methods are required
    - Modular construction benefits are significant – overcome hurdles
  - **Certification**
    - Component certification process is new
Micro-Reactor Supply Chain Considerations and Needs

• Capacity
  • What will it take to convince the supply chain there is a real capacity need?
    ✓ Orders for critical prototype components – this phase is so critical as it not only proves technology developments, but enables completion of licensing and certification
    ✓ Fully licensed reactor designs
    ✓ The first production order for a advance reactor design (SMR, Advance Reactor, Micro-Reactor)
    ✓ Project announcements for additional reactors
  ▪ The smaller the units, the faster the supply chain can react to capacity constraints
Micro-Reactor Supply Chain Considerations and Needs

• Safety
  ▪ Inherently safe, but the industry can’t have any new safety failures
  ▪ New safety features will ensure that Nuclear remains the safest source of energy

• USNIC is developing a solution to assist in the integrations between developers and suppliers
  ▪ Many developers either don’t have, or are starting to add procurement resources to their organizations
  ▪ Developers can spend large sums of money and time searching for suppliers to provide the capabilities they need
  ▪ Suppliers may not be aware of a need a designers have, but are willing to help
Micro-Reactor Supply Chain Considerations & Needs

Thank You