National Reactor Innovation Center Advanced Construction Initiative EOI

Nuclear Energy Institute Webinar
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NATIONAL REACTOR INNOVATION CENTER

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WE'VE DONE THIS BEFORE

Strategy

Inspire

With Action, Urgency, and Results

- Outreach/Showcase/Events
- Convening space
- Practical aesthetic design
- Visualization, augmented reality, etc.
- Test and demonstrate groundbreaking and cost-cutting techniques

Empower

With Preparation, Teamwork, and Leadership

- Provide access to government resources, facilities, sites, materials, & expertise
- Support permitting/regulatory needs
- Facilitate contracting and local engagement
- Collaborate with and support existing projects

Deliver

With Follow-Through and an Intense Focus on Outcomes

- Prepare sites
- Create demonstration pathways
- Provide navigation support from start to finish
- Core team for rapid demonstration excellence
- Understand private sector needs and meet them

Addressing Critical Path Issues

- Demonstration Reactor Infrastructure
  - Gap Assessment
  - Demonstration Reactor Sites
  - Fuel Production

- Regulatory and Economic Risk Reduction
  - NEPA Coverage
  - Safety Analysis
  - DOE Authorization and NRC Licensing Processes
  - Coordination with NRC
  - Digital Engineering
  - Advanced Construction Technology
  - Transportation and Disposition
  - Safeguards and Security

Nuclear Cost Drivers Identified in Recent Reports

- **Dominant cost categories:**
  - Civil construction
  - Site preparations and site-specific activities
  - Installation
  - Indirect costs
- **Key cost drivers:**
  - Standardization
  - Speed of construction/installation
  - Design stability
  - Quality control
  - Regulatory approach
  - Governance, contracting, organization, risk management

References:

- *The Future of Nuclear Energy in a Carbon-Constrained World*, Massachusetts Institute of Technology 2018
- *ETI Nuclear Cost Drivers Project: Summary Report*, Energy Technologies Institute (ETI), 2018
- *Advanced Nuclear Technology: Economic-Based Research and Development Roadmap for Nuclear Power Plant Construction*, Electric Power Research Institute (EPRI), 2019
- *Strategic Project Management Lessons Learned & Best Practices for New Nuclear Power Construction,* Nuclear Energy Institute (NEI), 2020.

Advanced Construction Technology EOI Request

- https://beta.sam.gov/opp/dd45e829b2b8416fa4af633a2eb32caa/view
- Points of Contact: Steven.Gihring@inl.gov; George.Wood@inl.gov
- Published: April 13, 2020
- Responses Due: May 16, 2020 5:00 pm MDT
- Purpose: Information capture and planning
- Topic area: development and/or demonstration of advanced construction technologies and processes that would be transformative in nuclear energy system project economics and schedule success.
- Objective: Support reductions in nuclear energy construction and deployment costs. Increase confidence in the capability of nuclear energy systems to be delivered on schedule and on budget.

Responses should address

- **Scope, structure, cost-sharing, teaming**
- **Benefits**
- **Projected cost-reduction impact on future nuclear energy construction or manufacturing**
- **Pathway to demonstrating technology in a nuclear project**
- **Potential locations or types of locations**
- **Approach to cost and schedule risk mitigation**
- **Experience and credibility**
- **Strategies to develop regulator experience and review of the technology**
- **Redundancy**

FAQs

Other Questions?


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