Research and Development Technical Working Group (R&D-TWG)

Discussion of Manufacturing and Project Delivery / Site Characterization and Preparation

Wednesday, May 6, 2026; 2:00 p.m. to 4:00 p.m. EDT

Discussion Summary

Welcome and Questions

- The facilitator from Eastern Research Group (ERG), a New York State Energy Research and Development Authority (NYSERDA) contractor, welcomed TWG members, reviewed the meeting agenda, and asked TWG members if they had follow-up questions from the previous TWG meeting.

Manufacturing and Project Delivery Study Topic

- Solestiss, a contractor responsible for researching and drafting the R&D Study, reviewed the manufacturing and project delivery R&D Study topic.
    - Reliable and timely project delivery are significant challenges for Gen III+ and Gen IV reactors and are driven by supply chain and workforce constraints, limited nuclear-qualified manufacturing capacity, and project delivery models that have not yet adapted to advanced reactor designs.
- Solestiss also described three key subtopics that the study may address: (1) improving constructability and modernizing project delivery models, (2) advancing modularization and factory fabrication, and (3) reducing the cost and complexity of NQA-1 (Quality Assurance Requirements for Nuclear Facility Applications) program compliance.
- TWG members responded to the following electronic polling question: *Which manufacturing and project delivery R&D needs have high potential for New York State to support?*
    - Of ten members who selected all options they agreed with, 70% said rebuilding nuclear-qualified supplier base, 70% said capital investment barriers (forging and specialized production), 50% said constructability and delivery model modernization, 40% said improving non-destructive evaluation and inspection techniques, 30% said modularization and factory fabrication, and 30% said reducing cost and complexity of NQA-1 programs.
- TWG member feedback:
    - The study should consider adjacent industries' supply chains and any knowledge that creates commonalities across those industries and nuclear.
    - Enhancing knowledge sharing of solutions to common issues would benefit manufacturing and project delivery efforts. For advanced nuclear, knowledge

sharing may be complex since there are diverse needs and not all existing concepts will get to market.
    - New York State should support manufacturing and project delivery efforts by providing universities with funding for research that they can leverage to apply for additional funding through federal programs.
    - Digital tools exist that follow every step in fabrication and could be used for fabrication facilities in New York State.
    - New York State has digital twin and project management expertise in non-nuclear sectors that could be adapted for nuclear.
    - The study should support development of tools to identify existing nuclear worker training programs and training in related skilled trades, and it should promote these tools and training programs.
    - The study should consider creating or enhancing a center of excellence and should use semiconductor manufacturing as a model for building related skills.
    - Policy research on risk-informed qualification criteria is needed, possibly in partnership with university research and policy centers.
    - Fabrication or machine shops in New York State can demonstrate streamlined approaches and tools are available that can detect flaws in parts at the manufacturing stage.
- TWG members then responded to the following electronic polling questions:
    - *In addition to options already discussed, what does the New York State R&D community need to advance improvements in manufacturing project and delivery?*
    - *Are there any other key opportunities or expertise in New York State relevant to manufacturing and project delivery not already discussed?*
        - Further study related to various aspects of high-pressure vessels is needed, including understanding what knowledge exists in adjacent fields and what can be transferred to nuclear.
        - The study should consider offering support for existing machine shops to implement new technology and additional worker training.

Site Characterization and Preparation Study Topic

- Solestiss provided an overview of site characterization and preparation.
    - Advanced nuclear generation is being considered at existing nuclear, brownfield, and greenfield sites. Standardized, predictable methods for site characterization will benefit new nuclear deployment.
- Solestiss also described three key subtopics that the study may address: (1) developing modular and reactor-specific site characterization models, (2) advancing predictive monitoring tools for environmental impacts, and (3) streaming data requirements for Emergency Planning Zone (EPZ) determinations.
- TWG members responded to the following electronic polling question: *Which site characterization and preparation R&D needs have high potential for New York State to support?*

    - Out of ten respondents selecting a single option, 40% said integrating nuclear reactors at existing non-nuclear brownfield or industrial sites; 20% said standardizing site geotechnical and subsurface investigation protocols; 20% said developing modular, reactor-specific characterization templates; 10% said advancing predictive modeling tools for environmental and Geotech impacts; 10% said improving early-phase environmental baselining methods; 0% said streamlining data requirements for EPZ determination; and 0% said approaches for siting new nuclear facilities at existing or retired nuclear sites.
- TWG member feedback:
    - Opportunities exist in New York universities to develop integrated site evaluation frameworks that combine reactor modeling, environmental data, and risk assessment to support advanced reactor siting decisions in New York State.
    - Oak Ridge - Siting Analysis for power Generation Expansion (OR-SAGE) and the Siting Tool for Advanced Nuclear Development (STAND) are tools that support siting analyses using a variety of information, including geographic information system data.
    - Research into drone- and remote sensing-based site characterization, inspection, and assessment is ongoing in New York State.
    - Having information about sourcing, particulate size, plumes, and other data supports better evaluation of fuel and reactor types. Further testing on advanced fuels can provide information to help support technologies where there is not currently a large body of data.
    - Developing a New York State roadmap that defines EPZs and research to evaluate doses for reactor EPZs would be useful.

Moving Forward

- R&D-TWG meetings will take place as follows: Tuesday, May 26, 2:00 p.m. to 4:00 p.m.; Friday, June 12, 9:00 a.m. to 11:00 a.m.; and Thursday, July 9, 12:00 p.m., to 1:30 p.m. (final meeting).

Action Items and Next Steps

Task	Assigned to	Target date
Provide the agenda and read-ahead for the next meeting.	ERG	May 15, 2026
Publish meeting two summary notes and slide deck.	ERG	May 20, 2026

Participants

Member Organizations

Brookhaven National Laboratory
City College of New York
Columbia University
Cornell University
Idaho National Laboratory
Nuclear Science and Engineering Research Center—West Point
Oak Ridge National Laboratory
Rensselaer Polytechnic Institute
Rochester Institute of Technology
State University of New York
University at Buffalo

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