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## *Meeting Objectives*

This Program Review will be focused on ongoing progress for each Technical Focus Area and discussion of path forward for the remainder of FY24. Discussions will highlight:

- Accomplishments to date and progress on key efforts.
- Issues/concerns related to meeting FY24 goals and M2 milestones.
- Potential collaboration with other NE programs.
- Initial thoughts on priorities for FY25 and beyond.
- Review participant questions.

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## *Program Vision*

Through cross-cutting research and development and technology demonstration support, the Microreactor Program will enable broad deployment of microreactor technology by:

- Achieve technological breakthroughs for key features of microreactors.
- Identify and address technology solutions to improve the economic viability and licensing readiness of microreactors.
- Enable successful demonstrations of multiple domestic commercial microreactors.

## *Program Objectives*

- Address critical, cross-cutting R&D needs that require unique national lab or university expertise or capabilities.
- Develop R&D infrastructure to support design, demonstration, regulatory issue resolution, and M&S code validation.
- Develop advanced technologies that enable improvements in microreactor viability.

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## Agenda

*Tuesday, March 5, 2024*

(note: all times are EST)

Teams Link [Click Here](#)

- 10:00 Welcome and Introduction to MRP Winter Meeting ..... Diana Li
- 10:10 Purpose, Expectations, and Program Overview ..... John Jackson
- 10:25 System Integration and Analysis Overview** ..... Alex Huning
- 10:40 Microreactor Cost Basis ..... Abdalla Abou-Jaoude
- 11:10 CRAB/MELCOR Code to Code Comparison..... Jason Christensen
- 11:30 Emergency Planning for Transportation..... Steve Maheras
- 12:00 (NEUP Project 20-19693) Evaluation of Micro-Reactor Requirements  
and Performance in an Existing Well-Characterized Micro-Grid ..... Caleb Brooks
- 12:25 (NEUP Project 23-29622) Development of the Technical Bases to  
Support Flexible Siting of Microreactors Based on Right-Sized  
Emergency Planning Zones ..... Saya Lee
- 12:35 Wrap Up ..... Alex Huning
- 12:40 Break
- 12:50 Microreactor Technology SBIR Projects** ..... John Jackson / Diana Li
- 12:50 Online Monitoring System to Support Autonomous Remote  
Microreactor Operations..... Brent Shumaker
- 1:10 Cost Reduction Technology for Neutron Absorbers in  
Microreactor Applications..... Drew Spradling
- 1:30 Lunch - Demonstration Capabilities Overview** ..... Piyush Sabharwall
- 2:15 High Pressure Helium Loop Facility ..... Zach Sellers
- 2:40 SPHERE ..... Jeremy Hartvigsen
- 3:05 MAGNET ..... TJ Morton
- 3:30 (NEUP Project 20-19735) Experiments for Modeling and  
Validation of Liquid-Metal Heat Pipe Simulation Tools for  
Micro-Reactor..... Yassin Hassan
- 3:55 Break
- 4:05 (NEUP Project 21-24152) Direct Heating of Chemical Catalysts  
for Hydrogen and Fertilizer Production Using Microreactors ..... Hitesh Bindra
- 4:30 Wrap Up..... Piyush Sabharwall
- 4:45 Adjourn**

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## Agenda

*Wednesday, March 6, 2024*

(note: all times are EST)

Teams Link [Click Here](#)

- 10:00 Welcome Day 2 ..... John Jackson
- 10:05 Technology Maturation Overview** ..... Holly Trelue
- 10:20 High Temperature Moderator Containment..... Latif Yacout / Sumit Bhattacharya
- 10:45 Advanced Moderator Material Handbook.....Adi Shivprasad / Chase Taylor
- 11:00 Instrumentation and Sensors – Microreactor Automatic Control System (MACS) .....Tony Crawford
- 11:25 Instrumentation and Sensors – Acoustics Sensors ..... Paul Geimer
- 11:45 Graphite Test Article and Heat Pipes (Heat Transfer)..... Katrina Sweetland
- 12:00 Break
- 12:10 Structural Materials - PM-HIP Code Case.....Tate Patterson
- 12:35 Structural Materials - Refractory Metals ..... John Carpenter
- 1:00 Wrap Up Technology Maturation..... Holly Trelue
- 1:10 Lunch (NEUP Project 19-17416) Mini-Core Heat Pipe Facility** .....Victor Petrov
- 2:00 (NEUP Project 21-24226) Cost Reduction of Advanced Integration Heat Exchanger Technology for Micro-Reactors..... Curtis Foster / Greg Nellis
- 2:25 (NEUP Project 22-27123) Development of Hydrogen Transport Models for High Temperature Metal Hydride Moderators..... Jeff King
- 2:50 (NEUP Project 19-16802) Evaluation of Semi-Autonomous Passive Control Systems for HTGR Type Special Purpose Reactors .....Brendan Kochunas
- 3:15 (NEUP Project 22-26910) Demonstrating Autonomous Control, Remote Operation, and Human Factors for Microreactors..... Stylianos Chatzidakis
- 3:40 Break
- 3:50 (Project 23-29784) Deciphering Irradiation Effects of YHx Through In-situ Evaluation and Micromechanics for Microreactor Applications..... Eric Lang
- 4:10 (Project 23-29834) Transforming Microreactor Economics Through Hydride Moderator Enabled Neutron Economy ..... Jason Trelewicz
- 4:30 **Highlight actions and next steps** ..... John Jackson
- 4:45 **Adjourn**

MARVEL Technology Review: Thursday, March 7, 2024