
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.

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.

Agenda

Tuesday, March 5, 2024
(note: all times are EST)

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	ALL
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	(NEUP Project 21-24152) Direct Heating of Chemical Catalysts for Hydrogen and Fertilizer Production Using Microreactors	Hitesh Bindra
4:20	Wrap Up	Piyush Sabharwall
4:30	Adjourn	

Agenda

Wednesday, March 6, 2024
(note: all times are EST)

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
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
12:10	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	(Project 23-29784) Deciphering Irradiation Effects of YHx Through In-situ Evaluation and Micromechanics for Microreactor Applications	Eric Lang
3:50	(Project 23-29834) Transforming Microreactor Economics Through Hydride Moderator Enabled Neutron Economy	Jason Trelewicz
4:00	Highlight actions and next steps	John Jackson
4:30	Adjourn	

MARVEL Technology Review: Thursday, March 7, 2024