

GAIN-EPRI-NEI-US NIC MICRO-REACTOR WORKSHOP

Idaho National Laboratory – EIL Meeting Center • June 18-19, 2019



AGENDA

Tuesday, June 18, 2019

Set the Stage

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8:00 a.m.	01	Welcome/Introductions/Purpose	Lori Braase, GAIN
8:20 a.m.	02	DOE Mission Need	Tom Sowinski, DOE
8:40 a.m.	03	Micro-Reactor Program Overview	Jess Gehin, INL
9:00 a.m.	04	National Reactor Innovation Center (NRIC) Overview	John Wagner, INL
9:20 a.m.	05	Micro-Reactor Activities/Policy	Marc Nichol, NEI

9:40 a.m. Break

10:00 a.m.	06	EPRI Perspective on Utility Needs	Cristian Marciulescu, EPRI
10:20 a.m.	07	Micro-Reactor Supply Chain Considerations & Needs	Perry Walborn, USNIC
10:40 a.m.	08	High-Assay Low-Enriched Uranium (HALEU)	Monica Regalbuto, INL
11:00 a.m.	09	HALEU Availability	Art Baker, INL

11:30 a.m. Lunch – on your own

User / Developer Needs

User Needs: Special Applications

1:00 p.m.	10	Alaska	George Roe, ACE&P
1:30 p.m.	11	Puerto Rico	Eddie Guerra, Arup
2:00 p.m.	12	Industrial User Needs	Corey McDaniel, CNL
2:30 p.m.		Summary Discussion	Jess Gehin, Lori Braase

2:40 p.m. Break

Microreactor Developer Needs (1 slide on the concept, 2-3 slides on needs)

3:00 p.m.	13	• eVINCI™ Micro-Reactor	Yasir Arafat, Westinghouse
3:10 p.m.	14	• Micro-Scale Nuclear Battery	Paul Marotta, MicroNuclear
3:20 p.m.	15	• NuGen Micro-Reactor	Steve Rhyne, NuGen
3:30 p.m.	16	• Ultra Safe Nuclear	P. Venneri, Ultra Safe Nuclear
3:40 p.m.	17	• U-Battery	Steve Threlfall, Urenco
3:50 p.m.	18	• Oklo	Caroline Cochran, Oklo
4:00 p.m.	19	• NuScale	Derick Botha, NuScale Power
4:10 p.m.	20	• General Atomics	Bob Schleicher, GA
4:20 p.m.	21	• Hydromine	Tadashi Shida, Hydromine
4:30 p.m.	22	• Holos Reactor	Claudio Filippone, HolosGen
4:40 p.m.	23	• X-energy	Martin Van Staden, X-energy

4:50 p.m.		Summary Discussion: Cross-cutting Needs	Jess Gehin, Lori Braase
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5:30 p.m. Poster Session – Hosted by NEI, EPRI, and US NIC

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Wednesday, June 19, 2019

National Lab Capabilities

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8:00 a.m.	24	Demonstration / Siting / Discussion	George Griffith, INL
8:40 a.m.	25	Micro-Reactor Licensing	Stewart Magruder, NRC
9:10 a.m.	26	Kilopower / KRUSTY / NCERC	Nicholas Thompson, LANL
9:40 a.m.	27	Advanced Manufacturing / TCR	Sherri Buchanan, ORNL
10:10 a.m.		Break	
10:30 a.m.	28	Materials for Micro-Reactors	Sam Sham, ANL
10:50 a.m.	29	Fuel Development and Fabrication	Doug Crawford, INL
11:20 a.m.	30	Advanced Moderator Development	DV Rao, LANL
11:40 a.m.	31	Integration of Energy Systems (Tour ESL: 4:30 p.m.)	Shannon Bragg-Sitton, INL
Noon		Lunch – On your own	

Codes and Modeling / Next Steps

1:30 p.m.	32	DireWolf: MOOSE-based Multiphysics Simulator for MegaWatt Scale Micro-Reactor	Richard Martineau, INL
2:00 p.m.	33	Using Codes in Analysis	Chris Matthews, LANL
2:20 p.m.	34	Sensors and Instrumentation Development (Tour HTTL)	Joshua Daw, INL
2:40 p.m.	35	DOE Authorization Experience	Jason Andrus, INL
3:00 p.m.		Break	
3:20 p.m.	36	Summary Discussion: Needs, Capabilities, and Gaps	Jess Gehin, Lori Braase
4:00 p.m.	37	Path Forward – GAIN	John Jackson, GAIN
4:30 p.m.		Adjourn	

*Numbers correspond to presentation titles

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ACRONYMS

ACE&P	Alaska Center for Energy & Power
ANL	Argonne National Laboratory
ATR	Advanced Test Reactor
CNL	Canadian Nuclear Laboratory
EBR	Experimental Breeder Reactor
EFF	Experimental Fuels Facility
EIL	Energy Innovation Laboratory
EPRI	Electric Power Research Institute
ESL	Energy Systems Laboratory
GAIN	Gateway for Accelerated Innovation in Nuclear
HALEU	High Assay Low Enriched Uranium
HFEF	Hot Fuel Examination Facility
HTTL	High-Temperature Test Laboratory
IMCL	Irradiated Materials Characterization Laboratory
INL	Idaho National Laboratory
KRUSTY	Kilowatt Reactor Using Stirling TechnologY
LANL	Los Alamos National Laboratory
NCERC	National Criticality Experiments Research Center
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NRIC	National Reactor Innovation Center
ORNL	Oak Ridge National Laboratory
TCR	Transformation Challenge Reactor
TREAT	Transient Reactor Test (Facility)
USNIC	United States Nuclear Industry Council

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INL SITE TOUR

Thursday, June 20, 2019

<i>Time</i>	<i>Activity</i>	<i>Presenter</i>
7:30 a.m.	Meet at INL Meeting Center, Energy Innovation Lab, 775 University Blvd., Idaho Falls, ID	Load Bus
8:00 a.m.	Travel to ATR	INL Bus
9:00 a.m.	Tour ATR	Norman/Weeks/Miley
10:30 a.m.	Travel to EBR-1	INL Bus
10:45 a.m.	EBR-I Tour / Lunch	EBR-I Staff/Griffith
11:45 a.m.	Travel to TREAT	INL Bus
12:15 p.m.	Tour TREAT	Broussard
1:00 p.m.	Travel to MFC	INL Bus
1:15 p.m.	Group 1 Tour HFEF	Norman/Weeks
	Group 2 Tour IMCL/EFF	Giglio/Fielding
2:15 p.m.	Group 1 Tour IMCL/EFF	Giglio/Fielding
	Group 2 Tour HFEF	Norman/Weeks
3:15 p.m.	Walk through EBR-II Dome	Crawford
3:30 p.m.	Return to Idaho Falls, INL Meeting Center, EIL	INL Bus
4:15 p.m.	Arrive at INL Meeting Center, EIL	