## AGENDA

**Tuesday, June 18, 2019**

### Set the Stage

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 a.m.</td>
<td>01 Welcome/Introductions/Purpose</td>
<td>Lori Braase, GAIN</td>
<td></td>
</tr>
<tr>
<td>8:20 a.m.</td>
<td>02 DOE Mission Need</td>
<td>Tom Sowinski, DOE</td>
<td></td>
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<tr>
<td>8:40 a.m.</td>
<td>03 Micro-Reactor Program Overview</td>
<td>Jess Gehin, INL</td>
<td></td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>04 National Reactor Innovation Center (NRIC) Overview</td>
<td>John Wagner, INL</td>
<td></td>
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<tr>
<td>9:20 a.m.</td>
<td>05 Micro-Reactor Activities/Policy</td>
<td>Marc Nichol, NEI</td>
<td></td>
</tr>
<tr>
<td>9:40 a.m.</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>06 EPRI Perspective on Utility Needs</td>
<td>Cristian Marculescu, EPRI</td>
<td></td>
</tr>
<tr>
<td>10:20 a.m.</td>
<td>07 Micro-Reactor Supply Chain Considerations &amp; Needs</td>
<td>Perry Walborn, USNIC</td>
<td></td>
</tr>
<tr>
<td>10:40 a.m.</td>
<td>08 High-Assay Low-Enriched Uranium (HALEU)</td>
<td>Monica Regalbuto, INL</td>
<td></td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>09 HALEU Availability</td>
<td>Art Baker, INL</td>
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</tbody>
</table>

### User Needs: Special Applications

<table>
<thead>
<tr>
<th>Time</th>
<th>Application</th>
<th>Speaker</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 p.m.</td>
<td>Alaska</td>
<td>George Roe, ACE&amp;P</td>
<td></td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Puerto Rico</td>
<td>Eddie Guerra, Arup</td>
<td></td>
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<tr>
<td>2:00 p.m.</td>
<td>Industrial User Needs</td>
<td>Corey McDaniel, CNL</td>
<td></td>
</tr>
<tr>
<td>2:30 p.m.</td>
<td>Summary Discussion</td>
<td>Jess Gehin, Lori Braase</td>
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</tbody>
</table>

### Break

<table>
<thead>
<tr>
<th>Time</th>
<th>Microreactor Developer Needs (1 slide on the concept, 2-3 slides on needs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 p.m.</td>
<td>13 eVINCI™ Micro-Reactor, Yasir Arafat, Westinghouse</td>
</tr>
<tr>
<td>3:10 p.m.</td>
<td>14 Micro-Scale Nuclear Battery, Paul Marotta, MicroNuclear</td>
</tr>
<tr>
<td>3:20 p.m.</td>
<td>15 NuGen Micro-Reactor, Steve Rhyne, NuGen</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>16 Ultra Safe Nuclear, P. Venneri, Ultra Safe Nuclear</td>
</tr>
<tr>
<td>3:40 p.m.</td>
<td>17 U-Battery, Steve Threlfall, Urenco</td>
</tr>
<tr>
<td>3:50 p.m.</td>
<td>18 Oklo, Caroline Cochran, Oklo</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>19 NuScale, Derick Botha, NuScale Power</td>
</tr>
<tr>
<td>4:10 p.m.</td>
<td>20 General Atomics, Bob Schleicher, GA</td>
</tr>
<tr>
<td>4:20 p.m.</td>
<td>21 Hydromine, Tadashi Shida, Hydromine</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>22 Holos Reactor, Claudio Filippone, HolosGen</td>
</tr>
<tr>
<td>4:40 p.m.</td>
<td>23 X-energy, Martin Van Staden, X-energy</td>
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</tbody>
</table>

### Summary Discussion: Cross-cutting Needs

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Organisation</th>
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<tbody>
<tr>
<td>4:50 p.m.</td>
<td></td>
<td>Jess Gehin, Lori Braase</td>
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### Poster Session – Hosted by NEI, EPRI, and US NIC

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>5:30 p.m.</td>
<td>Poster Session</td>
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</tbody>
</table>
AGENDA

Wednesday, June 19, 2019

National Lab Capabilities

* 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
# ACRONYMS

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

**Thursday, June 20, 2019**

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