

# Advanced Reactor Technologies Gas-Cooled Reactor Program Review

July 14-16, 2020  
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July 14, 2020  
GCR Fuels Program  
Session 1 (All Times MT)

8:00	Welcome and Meeting Logistics	Gerhard Strydom, INL
8:10	Department of Energy Perspective	Tim Beville, DOE-NE
8:20	ART GCR Program Overview	Gerhard Strydom, INL
8:30	Advanced Gas Reactor Fuel Development and Qualification Program Overview	Paul Demkowicz, INL
8:45	Post-irradiation Examination (PIE) Overview	John Stempien, INL
9:05	AGR-2 Compact Destructive PIE and Safety Testing	John Hunn, ORNL
9:30	<i>Break</i>	
9:45	Scanning Electron Microscopy of Irradiated TRISO Fuel Particles	Tyler Gerczak, ORNL
10:15	Advanced Microscopy at Idaho National Laboratory	Isabella van Rooyen, INL
10:40	FITT Testing and Characterization Support for Oxidation Studies	Tyler Gerczak, ORNL
11:00	<i>Adjourn</i>	

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GCR Fuels Program  
Session 2 (All Times MT)

12:00	AGR-3/4 PIE	John Stempien, INL
12:30	AGR-3/4 Modeling and Transport Parameters	Paul Humrickhouse, INL
12:50	AGR-3/4 Reirradiation Heating Tests	John Stempien, INL
13:20	<i>Break</i>	
13:35	AGR-5/6/7 Irradiation Summary as of the End of Cycle 167A	Joe Palmer, INL
14:00	Fission Gas Monitoring for the AGR-5/6/7 Experiment	Dawn Scates, INL
14:20	AGR-5/6/7 Irradiation Experiment: Summary Status and Path Forward	Paul Demkowicz, INL
14:25	AGR-5/6/7 PIE Preparations	John Stempien, INL
14:55	<i>Adjourn</i>	

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July 15, 2020  
GCR Fuels Program  
Session 3 (All Times MT)

8:00	PIE Tasks to completion: AGR-2 and AGR-3/4	John Stempien, INL
8:20	UCO TRISO Topical Report Update	Paul Demkowicz, INL
8:40	AGR Program Path Forward	Paul Demkowicz, INL
9:00	AGR Program Wrap-up Discussion	All
9:30	<i>Break</i>	
9:45	Multi-scale Computer Simulation and Experimental Validation of Fission Product Diffusion in Silicon Carbide (NEET-NSUF)	Fei Gao, University of Michigan
10:05	Radioisotope Retention in Graphite and Graphitic Materials Nuclear Energy University Program	Sudarshan K. Loyalka, University of Missouri
10:25	Mechanisms of Retention and Transport of Fission Products in Virgin and Irradiated Nuclear Graphite	Kevin Coffey, University of Central Florida
10:45	<i>Adjourn</i>	

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July 15, 2020  
GCR Graphite Program  
Session 4 (All Times MT)

12:00	ART Graphite R&D Introduction	Will Windes, INL
12:10	Graphite Baseline Status	Austin Matthews, INL
12:30	Irradiated Graphite Data and Analysis (Advanced Graphite Creep [AGC] Data)	Will Windes, INL
12:55	ART Graphite Irradiation Update (From AGC to HDG)	Michael Davenport, INL
13:15	Oxidation and Material Property Effects on Graphite	Rebecca Smith, INL
13:40	<i>Break</i>	
14:00	Microstructural Characterization and Irradiation Damage Studies of Graphite	Nidia Gallego, ONRL
14:20	Modeling Graphite Behavior (Fracture and Oxidation)	Joseph Bass, INL
14:45	ASME Graphite and Ceramic Composites (Nonmetallic) Core Components code and ASTM standards development	Wilna Geringer, ORNL
15:10	Discussion	All
15:30	<i>Adjourn</i>	

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July 16, 2020  
GCR Advanced Materials and Experimental/Simulation Methods  
Session 5 (All Times MT)

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| 8:00  | Advanced Materials Program Summary   | Michael McMurtrey, INL                                       |
| 8:30  | High Temperature Gas-Cooled Reactor (HTGR) Simulation Methods and International Collaborations   | Sonat Sen,<br>Gerhard Strydom, INL                           |
| 9:00  | Water-Cooled Natural Convection Shutdown Heat-Removal Test Facility (NSTF) Data and Status   | Darius Lisowski, ANL   |
| 9:30  | Integral System Testing for Prismatic Block Core Design HTGR at the Oregon State High Temperature Test Facility                                    | Brian Woods,<br>Izabela Gutowska,<br>Oregon State University |
| 9:55  | <i>Break</i>   |  |
| 10:10 | RELAP5-3D Assessment of High Temperature Test Facility (HTTF) test PG-26 Depressurized Conduction Cooldown (DCC) Data                              | James Wolf,<br>Aaron Epiney, INL                             |
| 10:35 | Computational fluid dynamics (CFD) and System Code Benchmark Data for Plenum-to-Plenum Flow Under Natural, Mixed and Forced Circulation Conditions | Austin Parker,<br>Barton Smith, Utah<br>State University     |
| 11:00 | Experimental Determination of Helium/air Mixing in Helium Cooled Reactor   | Zachary Welker,<br>Victor Petrov,<br>University of Michigan  |
| 11:25 | High-resolution Experiments for Extended LOFC and Steam Ingress Accidents in HTGR  | Xiaodong Sun,<br>Chengqi Wang,<br>University of Michigan     |