

2023 DOE-NE Advanced Reactor Technologies Gas Cooled Reactor Program Review Meeting

July 25-27, 2023

Agenda

Tuesday, July 25th, 2023

*(All times are MT. *Note: 8:30 a.m. start time on Day 2)*

Advanced Gas Reactor (AGR) TRISO Fuel Qualification Program

08:00	Welcome and Meeting Logistics.....	Gerhard Strydom, INL
08:05	Department of Energy Nuclear Energy Perspectives	Matt Hahn, Alice Caponiti, DOE-HQ
08:20	ART GCR Program Overview	Gerhard Strydom, INL
08:35	AGR Program Overview.....	Paul Demkowicz, INL
08:55	AGR-3/4 PIE and Data Analysis.....	Adriaan Riet, INL
09:25	Break (15 minutes)	
09:40	AGR-5/6/7 PIE Overview	John Stempien, INL
10:00	AGR-5/6/7 Capsule 1 Temperature Re-analysis.....	Grant Hawkes, INL
10:20	AGR-5/6/7 Disassembly and Metrology	Lu Cai, INL
10:40	AGR-5/6/7 Compact Cross-section Microscopy	John Stempien, INL
11:00	Lunch break (45 minutes)	
11:45	FITT Testing: Particle Silver Release Behavior at 1100-1600°C	Tyler Gerczak, ORNL
12:05	AGR-5/6/7 Safety Testing and Compact Destructive Exams—INL	John Stempien, INL
12:35	AGR-5/6/7 Safety Testing and Compact Destructive Exams—ORNL.....	John Hunn, ORNL

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13:05 AGR-5/6/7 Fission Product Release John Stempien, INL

13:25 Break (15 minutes)

13:40 Initial results from electron microscopy from AGR-5/6/7 Capsule 1 fuel and..... Lu Cai,
and applications of other microanalysis techniques to irradiated TRISO fuel..... INL

14:00 TRISO Fuel Performance Modeling in Bison..... Wen Jiang, INL

14:20 NDMAS Overview Courtney Otani, INL

14:40 Concluding remarks Paul Demkowicz, INL

14:55 Adjourn

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Wednesday, July 26th, 2023
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TRISO Fuels NEUP Projects

- 08:30 Statistical modeling of the effect of microstructural heterogeneity..... Yongfeng Zhang,
on the Irradiation behavior of TRISO fuel buffer layer University of Wisconsin Madison
- 08:50 Robust bullet-time tagging and tracking system based on computer Muthanna Al-Dahhan,
for individual ex-core TRISO-fueled identification Missouri University of Science & Technology
- 09:10 Measuring Mechanical Properties of Select Layers and Layer Interfaces..... Mary Lou Dunzik-Gougar,
of TRISO Particles via Micromachining and In-Scope Tensile Testing Idaho State University
- 09:30 Break (20 minutes)**

ART Graphite R&D

- 09:50 Introduction Will Windes, INL
- 10:05 AGC Update..... Will Windes, INL
- 10:30 Oxidation Activities (Oxidation rate, penetration/lathing, strength after oxid) Rebecca Smith, INL
- 10:55 Lunch break (45 minutes)**
- 11:40 Baseline Status (Data use in ASME, improved split-disc)..... Arvin Cunningham, INL
- 12:05 ASME Update (New task area introduction)..... Will Windes, INL
- 12:15 Irradiation model Steve Johns, INL

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- 12:35 Ceramic Composites..... Wilna Geringer, ORNL
- 12:55 Design task group Andrea Mack, INL
- 13:15 Component failure..... Martin Metcalfe, Martin Metcalfe Consultancy
- 13:35 Break (20 minutes)**
- 13:55 VIC meeting summary.....Steve Johns, INL
- 14:15 Molten salt studiesNidia Gallego, INL
- 14:35 Concluding remarksWill Windes, INL
- 14:45 Adjourn**

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Thursday, July 27th, 2023
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ART Graphite R&D NEUP Projects

- 08:00 Introduction of NEUP speakers Will Windes, INL
- 08:10 Multiscale Effects of Irradiation Damage on Nuclear Aman Haque,
Graphite Properties The Pennsylvania State University
- 08:30 Quantifying the Dynamic and Static Porosity/Microstructure Jacob Eapen,
Characteristics of Irradiated Graphite through Multi-technique North Carolina State University
Experiments and Mesoscale Modeling
- 08:50 Concluding remarks Will Windes, INL
- 09:00 Break (15 minutes)**

GCR High Temperature Materials

- 09:15 High Temperature Materials Program Overview Sam Sham, INL

GCR Methods, Modeling, and Validation

- 09:45 Methods Overview & International Collaborations Paolo Balestra, INL
- 10:05 Multiphysics Monte Carlo Run In Methodology Ryan Stewart, INL

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- 10:25 HTGR PBR Reactor optimization methodology..... Zach Prince, INL
- 10:45 Multiphysics PBR Control Rod Withdrawal sensitivity analysis Vincent Laboure, INL
- 11:05 Lunch break (45 minutes)**
- 11:50 Water-Cooled Natural Convection Shutdown Heat Removal Test Facility (NSTF)..... Darius Lisowski, data and statusANL
- 12:20 NEA High Temperature Test Facility (HTTF) BenchmarkRobert Kile, INL
- 12:40 HTGR Validation: NEUP Survey and DatabaseSunming Qin, INL
- 13:00 Break (20 minutes)**
- 13:20 Experimental Investigations and Numerical Modeling of Near-wall..... Yassin Hassan, and Core Bypass Flows in Pebble Bed Reactors..... Texas A&M University
- 13:40 Experimental Investigations of HTGR Fission Product Transport in..... N. K. Anand, Separate-effect Test Facilities Under Prototypical Conditions for Texas A&M University
Depressurization and Water-ingress Accidents.....
- 14:00 Questions/Discussions..... Paolo Balestra, INL
- 14:15 Final Remarks 2023 Program Review..... Gerhard Strydom, INL
- 14:30 Adjourn**