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Technical Program

Monday, 26 February 2018

MONDAY AM - I

Plenary Session

Monday, 26 February 2018, Salons A & B

08:15 – 09:00 Robert N. Coward, President (2017-2018) ANS

09:00 – 09:45 Dr. Terry C. Wallace, Jr., Director, LANL

MONDAY AM - II

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Session Chairs: Jorge Navarro (ORNL), Leonard Dudzinski (NASA)

Panel members: Ralph McNutt (Johns Hopkins Univ.), David Schurr (NASA), Christophe Fongarland (Airbus Defence and Space)

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Tuesday, 27 February 2018

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Plenary Session

Tuesday, 27 February 2018, Salons A & B

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Panel members: Lee Mason (NASA GRC), Mike Houts (NASA MSFC), Pat McClure (LANL)

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Wednesday, 28 February 2018

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09:00 – 09:45 Dr. Jeffrey Sheehy, Chief Engineer, STMD, NASA

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Richard M. Ambrosi, Univ. of Leicester; Emily Jane Watkinson, Univ. of Leicester; Steven M. Goodrich, Univ. of Dayton; Chadwick D. Barklay, Univ. of Dayton; Emma Vernon, National Nuclear Laboratory; Mark J. Sarsfield, national nuclear laboratory; Tim P. Tinsley, National Nuclear Laboratory298

- 11:00 24223 ADVANCED THERMOELECTRIC MATERIALS FOR INFUSION INTO A POTENTIAL NEXT GENERATION RADIOISOTOPE THERMOELECTRIC GENERATOR, Kurt Star, JPL; Sabah Bux, JPL, California; Fivos Drymiotis, NASA JPL; Sevan Chanakian, Michigan State Univ.; Dean Cheikh, Univ. of California Los Angeles; James Ma, JPL, California; Kathleen Lee, JPL-CIT; David Uhl, JPL-CIT; Chen-Kuo Huang, JPL-CIT; Jennifer Ni, JPL-CIT; Jong-Ah Paik, JPL-CIT; Samad Firdosy, JPL-CIT; Vilupanur Ravi, California State Polytechnic Univ., Pomona; Jean-Pierre Fleurial, JPL-CIT302
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- 11:40 24316 CHARACTERIZATION OF PLATINUM POWDER FOR LIGHT WEIGHT RADIOACTIVE HEATER UNIT FRIT PRODUCTION, Brian Friske, Oak Ridge National Lab310

Track/Session: Nuclear Missions Applications & Mission Support: Nuclear launch safety and approval processes, including NEPA compliance

Wednesday, 28 February 2018, 10:15-12:00, Salon D

Session Chair: Reina Buenconsejo (IDA S&T Policy Institute)

- 10:20 24069 A SIMPLIFIED APPROACH FOR LAUNCH SAFETY APPROVAL FOR SMALL FISSION POWER REACTORS, Allen L. Camp, Consultant; Patrick McClure, LANL314
- 10:40 24090 Developing a Launch Approval Process for Nuclear Fission Reactors: Lessons Learned from Risk Mitigation and Approval Processes in Other Sectors, Jonathan Behrens, IDA STPI; Reina Buenconsejo, IDA Science and Technology Policy Institute; Bhavya Lal, IDA Science and Technology Policy Institute; Susannah Howieson, IDA Science and Technology Policy Institute318
- 11:00 24222 IMPROVING THE NUCLEAR LAUNCH APPROVAL PROCESS, Peter McCallum, NASA; Kelli Markham, DOE323
- 11:20 24250 LEGAL REQUIREMENTS OF NUCLEAR LAUNCH APPROVAL, Susannah Vale Howieson, IDA Science and Technology Policy Institute; Reina Buenconsejo, STP; Bhavya Lal, Science and Technology Policy Institute; Jonathan Behrens, IDA STPI327
- 11:40 24297 Streamlining NASA NEPA Process For Radioisotope Power System Enabled Missions, Tina Borghild Norwood, NASA; Thomas M. Hayes, NASA Headquarters; Margaret C. Steiner, George Washington Univ.331

WEDNESDAY PM - I

Special Panel Session: New Initiatives in Nuclear Technologies

Wednesday, 28 February 2018, 13:00-14:45, Salon E

Session Organizers: Jorge Navarro (ORNL), Leonard Dudzinski (NASA)

Session Chairs: Jorge Navarro (ORNL), Leonard Dudzinski (NASA)

Panel members: Tim Tinsley (NNL), Paolo Venneri (Ultra Safe Nuclear Corp.),
Larry Forsley (Global Energy Corp)

(See the Featured Panels description on pg 27 for additional information.)

Track/Session: Nuclear Propulsion: NTP system concepts (cont'd)

Wednesday, 28 February 2018, 13:00-14:45, Salon C

Session Chairs: Wesley Deason (USNC), Nicholas Smith (Southern Research)

- 13:05 24233 Modeling of Compressed Fission Targets for Pulsed Fission-Fusion Hybrids, Kevin John Schillo, Univ. of Alabama Huntsville; Jason Cassibry, Univ. of Alabama in Huntsville; Rob B. Adams, Marshall Space Flight Center335
- 13:25 24240 Fuel Temperature Considerations Due to In-Element Peaking of NTP Fuel, Vishal Patel, Idaho National Laboratory; Michael Eades, USNC; Sam Judd, USNC338
- 13:45 24241 NTR Performance Sensitivity Studies of Thermal-Hydraulic Parameters, Andrew Christopher Denig, Georgia Institute of Technology; Jonathan Tyler Gates, Georgia Institute of Technology; Rahat Ahmed, Georgia Institute of Technology; Vedant Kiritkumar Mehta, Georgia Institute of Technology; Dan Kotlyar, Georgia Institute of Technology341
- 14:05 24254 NUCLEAR TESTING AND SAFETY COMPARISON OF NUCLEAR THERMAL ROCKET CONCEPTS, David I. Poston, LANL345
- 14:25 24296 Feasibility of Low Thrust, Low-Enriched Uranium Nuclear Thermal Propulsion, Samantha Rawlins, Korea Advanced Institute of Science & Technology; Yonghee Kim, Korea Advanced Institute of Science and Technology349

Track/Session: Nuclear Fuels, Materials & Processes: Radioisotope fuels and fuels development (cont'd)

Wednesday, 28 February 2018, 13:00-14:45, Salon D

Session Chair: Tom Sutliff (NASA)

- 13:05 24225 UNDERSTANDING THE CAUSE OF PELLET FRACTURE DURING PRODUCTION OF PU-238 OXIDE HEAT SOURCES THROUGH THE COUPLING OF EXPERIMENTATION AND MODEL DEVELOPMENT, Adam J. Parkison, LANL; Ursula Carvajal-Nunez, LANL; Faith Anne Carver, LANL; Christopher Matthews, LANL; Andrew T. Nelson, LANL352
- 13:25 24230 Logistical Constraints Must Be Considered In Simulation of Pu-238 Supply Process, Steven Randall Sherman, ORNL356
- 13:45 24231 Progress in Chemical Processing for Production of Plutonium-238 from Irradiated Neptunium Oxide Cermet Targets, David DePaoli, ORNL; Dennis Benker, Oak Ridge National Lab.; Laetitia Delmau, ORNL; Emory D. Collins, ORNL; Robert M. Wham, ORNL360
- 14:05 24244 OPTIMIZATION OF PLUTONIUM-238 PRODUCTION IN THE ADVANCED TEST REACTOR FOR RADIOISOTOPE THERMOELECTRIC GENERATORS IN DEEP SPACE EXPLORATION APPLICATIONS, Lucas Beveridge, Idaho State Univ.; Joshua H. Rhodes, Missouri Univ. of Science and Technology; Grace A. Marcantel, Texas A&M Univ.; Dominik A. Fritz, Rensselaer Polytechnic Institute; Ashoak N. Nagarajan, Idaho State Univ.364
- 14:25 24251 The Evolution of HFIR Cermet Pu-238 Production Targets, Richard H. Howard, ORNL368

WEDNESDAY PM - II

Track/Session: Radioisotope Power Systems: Radioisotope system concepts (cont'd)

Wednesday, 28 February 2018, 15:15-17:00, Salon C

Session Chairs: Dr. Emily Jane Watkinson (U. Leicester), Young Lee (JPL)

- 15:20 24242 DEVELOPMENT OF A 1-WATT STIRLING CONVERTOR FOR SMALL RPS, Scott Wilson, NASA Glenn Research Center; Steven Michael Geng, NASA Glenn Research Center; Nicholas A. Schifer, NASA Glenn Research Center; Lawrence Penswick, Consultant372
- 15:40 24282 SMART CRITICAL FISSION CELL FOR SPACE AND TERRESTRIAL APPLICATIONS, Yasser Ragab Shaban, Guangdong Provincial Strategic Alliance of Medical Devices Innovation376

Banquet at Palace Station (included in registration)

18:00-21:00 Please join us in Salons A&B for a dinner banquet, and an exciting and informative presentation on the history of the Rover / NERVA program by Alan Carr, the LANL Historian

Thursday, 1 March 2018

THURSDAY

Nevada National Security Site (NNSS) Technical Tour

07:00-17:30 Meet the bus in front of Palace Station Hotel & Casino at 07:00
Limit 40 persons on tour
All personnel must be in possession of a "Real ID" form of identification
(See the Technical Tour description on pg 12 for additional information)