Thursday, March 22, 2012
RADIOISOTOPE POWER SYSTEMS: RPS DESIGN SAFETY
1:30 p.m. Waterway Ballroom 3

Chairs: **Ronald Lipinski** (Sandia National Laboratories)
Ryan Bechtel (DOE Headquarters)

1:30 p.m. Clayton D. J. Lucas G. M. * Radel T. E. Wiberg B. D.
Accident Sequence Modeling for Radioisotope Power Systems **[#3008]**
Radioisotope power systems have extended our knowledge of the solar system. Due to the hazardous material that can be released during a launch accident, the potential health risk of an accident must be quantified.

1:50 p.m. Clayton D. J. * Lucas G. M. Radel T. E.
Resulting Source Term from the Mars Science Laboratory Safety Analysis **[#3009]**
An updated Final Safety Analysis Report was prepared for the MSL launch. A summary of the results of the source term analysis from the updated Final Safety Analysis Report are presented here.

2:10 p.m. Lipinski R. J. * Tikare V.
Model for Grain Growth in DOP-26 Iridium Clad **[#3004]**
The nuclear fuel in a radioisotope power system is contained within an iridium alloy. To avoid brittle behavior, the iridium grains must be small compared to the clad thickness. This paper describes an improved model for grain growth.

2:30 p.m. Clayton D. J. * Lucas G. M.
Solid Propellant Behavior in Radioisotope Power Systems Accident Sequence Modeling **[#3046]**
Observations from accident videos have enabled a closer look into the solid propellant processes that occur during a launch accident. Modifications to the fragment distribution model, along with a secondary fragmentation model are discussed.

2:50 p.m. Gelbard F. *
Analysis of Aluminum Drop Combustion in the Gap Region Below a Burning Propellant **[#3003]**
The temperature below a burning propellant during a hypothetical accident is of interest for determining possible vaporization of hazardous materials. The conditions for aluminum drop oxidation that would affect the temperature below the propellant are analyzed.

3:10 p.m. BREAK