

Thursday, March 22, 2012

**ADVANCED CONCEPTS: ADVANCED FISSION CONCEPTS AND SYSTEMS**

**10:30 a.m. Waterway Ballroom 1**

**Chair:** Jeffrey George (NASA Johnson Space Center)

10:30 a.m. Mason L. S. \* Oleson S. R. Mercer C. R. Palac D. T.

[\*Nuclear Power System Concepts for Electric Propulsion Missions to Near Earth Objects and Mars\*](#) [#3066]

This paper examines the fission power concepts developed to support recent studies for nuclear electric propulsion (NEP) missions to near Earth objects (NEOs) and Mars.

10:50 a.m. Cliquet E. \* Ruault J.-M. Roux J.-P. Paris N. Cazalé B.

[\*Study of a Megawatt Level Power Generation System for Exploration Missions\*](#) [#3005]

CNES and AREVA have done a study of a megawatt level power generation system. The paper will describe the method used and results obtained.

11:10 a.m. George J. A. \*

[\*Solid-State Nuclear Power\*](#) [#3095]

A strategy for “solid-state” nuclear power is proposed to guide development of technologies and systems into the second 50 years of nuclear spaceflight. The strategy is based upon a simplified integrated system architecture with few moving parts or fluid loops.

11:30 a.m. O’Brien R. C. \* Stoots C. M. McKellar M. G.

[\*In-Situ Resource Utilization and Cabin Atmosphere Revitalization Via the Use of Nuclear Process Heat and Electrical Power Generation\*](#) [#3079]

*In situ* resource utilization on planetary surfaces may be considered to be beneficial under future manned or robotic space exploration missions. In this presentation, example *in situ* processes that may be coupled to “nuclear enabled” mission architectures are presented.