National Aeronautics and Space Administration
Hydrogen Fueled Propulsion Systems

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Abstract

NASA has been a preeminent user of hydrogen since the Apollo era, when President John F. Kennedy’s directive to land a man on the Moon by the end of the 1960’s became a reality. As Apollo designs were maturing, NASA was turning its attention to designing safe and efficient hydrogen fuel cells to provide astronauts with electricity and water. After Apollo, NASA’s research and development of hydrogen powered engines enabled the design and “lift capability to orbit” of the world’s first safe, reusable man-rated launch platform, the Space Shuttle. The Space Shuttle’s use of hydrogen fuel for its main engines will be the primary focus of this presentation. By the end of this decade NASA will begin a transition from the Space Shuttle operating in Low Earth Orbit to next generation Constellation launch vehicles destined to enable exploration of the Moon and beyond. During this transition period, NASA’s dependence on hydrogen and investment in its safe handling will only continue to grow. Finally, NASA’s development and extensive Space Shuttle program flight history with the use of hydrogen fuel cell technology may well be the key to helping the United States make the “giant leap” forward to a clean energy, hydrogen economy.

Faculty and students interested in Mr. Gerstenmaier’s presentation are invited to register at http://www.purdue.edu/discoverypark/energy/events/2009hydrogen/

Registration is free for graduate students. Dinner is $25 for students and included in faculty registration.