

International Space Station water system successfully activated

October 27 2010, By Michael Curie

NASA has announced the successful activation of new hardware that will support water production services aboard the International Space Station.

The Sabatier system can create up to 530 gallons of water per year from byproducts of the station's Oxygen Generation System and [Carbon Dioxide](#) Removal Assembly. The process is named for Paul Sabatier, a 1912 Nobel Prize winner in chemistry.

"This is an important step forward in NASA's commercialization endeavors and shows how successful private industry can be at providing solutions on its own," said Bill Gerstenmaier, NASA associate administrator for Space Operations at the agency's Headquarters in Washington. "The ability to produce this water will be important for sustaining space station operations once the shuttle is retired."

The system was integrated into the space station's Water Recovery System during the week of Oct. 11. Activation, checkout and first use of the system were completed Oct. 22, running for over eight hours.

The Sabatier process uses a nickel catalyst to interact with hydrogen and carbon dioxide at elevated temperatures and pressures to produce water and methane. The water is retained for recycling processes, and the methane is vented outside of the space station.

Prior to adding the Sabatier system, hydrogen produced while generating station oxygen was considered waste gas and vented overboard. Carbon

dioxide generated by crew metabolism also was vented overboard. With the Sabatier system, these two former waste gases will generate a valuable product for the space station: [water](#).

Under contract to NASA, Hamilton Sundstrand supplied the flight hardware and operational support for a Sabatier-reaction-based system that operates as part of the station's Environmental Control and Life Support System. This contract is unique because NASA did not participate in design reviews or impose any specifications on the design, except for those defined in the safety, interface and acceptance requirements met by Hamilton Sundstrand.

The company developed, procured, and built the flight hardware and support equipment needed for operations and training. The in-orbit operational portion of the contract runs until Sept. 30, 2014.

Provided by JPL/NASA

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