Key Element of Electrical Power System for International Space Station in Huntsville for Testing

With just eight months remaining before the first U.S. astronaut teams go into space to begin assembly of the International Space Station, a vital component of the system that will provide the electrical lifeblood to Space Station crews has arrived at Marshall Space Flight Center (MSFC) for an extensive battery of structural tests. A team of engineers from The Boeing Company and NASA will conduct a series of tests on the P6 cargo element to determine if the structure can withstand the rigors of spaceflight.

The P6 cargo element is a photovoltaic module (PVM) which will generate, store and distribute electrical power to the International Space Station. The P6 as it appears at MSFC is a massive 45-foot structure that is packaged with orbital replacement units (ORU) -- the electronic boxes and photovoltaic radiators (that will be used on-orbit to dissipate heat) -- as well as Beta gimbal assemblies and photovoltaic arrays that will be used to gather sunlight for power. The truss structure also includes tubing, cables and cable boxes.

The completed Space Station will include four PVMs, all of which are designed and developed by Boeing engineers at the company's Rocketdyne Propulsion & Power business in Canoga Park, Calif.

Before its journey to Huntsville, the P6 achieved a major milestone when it successfully passed a series of thermal balance and electromagnetic compatibility tests, as well as acoustic tests demonstrating that the structure could withstand launch in the cargo bay of the Space Shuttle as well as on-orbit as part of the Space Station. Tests at Lockheed Martin's facilites outside Denver simulated the noise and vibrations the element will experience when the Shuttle's engines are fired. Following simulated launch conditions, the P6 was subjected to on-orbit conditions while for six hours electrical power from a simulated solar power source coursed through the P6's components and a series of computer functions were run.

At MSFC, the P6 will undergo modal and static tests over the coming months. The initial P6 flight hardware will be delivered to Kennedy Space Center for final assembly and testing prior to being loaded into the Space Shuttle for the first launch of a PVM in March 1999.

Sixteen countries are involved in the International Space Station program, including Russia, member-nations of the European Space Agency, Japan, Canada and Brazil.

The first element of the International Space Station is scheduled to be launched in June 1998. The U.S. Node 1 will be launched in July 1998. A series of flights over five-and-a-half years will complete the Space Station in December 2003.

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