

NASA Glenn to Test Orion Crew Exploration Vehicle

March 19 2007

NASA's Glenn Research Center will conduct integrated environmental testing of the Orion crew exploration vehicle in the Space Power Facility at the center's Plum Brook Station in Sandusky, Ohio.

The environmental tests are designed to demonstrate the ability of Orion hardware to meet specified performance requirements in simulated environmental conditions such as those experienced during launch, in-orbit operations and re-entry. Thermal, acoustic and mechanical vibration and electromagnetic compatibility testing will be conducted on Orion's full assembly. The launch abort system, crew module, service module and spacecraft adapter will be tested.

The work is valued at approximately \$63 million during a five-year period from 2007 to 2011. During this period, the Space Power Facility will be augmented with a number of capabilities, including a new acoustic chamber and a mechanical vibration test stand. Specialized equipment that will enable electromagnetic test capabilities also will be added to the thermal vacuum chamber.

"We are pleased to play this essential role in the agency's quest to develop the next generation of space vehicles," said Glenn Director Dr. Woodrow Whitlow, Jr. "The Space Power Facility is the world's largest thermal vacuum chamber. The modifications will enhance this world-class facility and allow us to make significant contributions to the development of future space systems."

The Space Power Facility measures 100 feet in diameter by 122 feet in height. The facility currently can simulate in-space conditions such as low vacuum environments and temperature extremes. The facility's wide-ranging capabilities have been used extensively to test rocket payload fairings; orbital hardware, including International Space Station systems; and planetary landing and surface systems such as the Mars Exploration Rover landing systems.

The testing will be performed in support of NASA's Constellation Program, which is developing spacecraft and other systems to support NASA's exploration mission to the moon, Mars and other destinations in the solar system, and its Orion Project Office. Both are located at NASA's Johnson Space Center in, Houston. Glenn is leading development of the Orion service module for the Orion Project Office.

Source: NASA

Citation: NASA Glenn to Test Orion Crew Exploration Vehicle (2007, March 19) retrieved 2 May 2024 from <https://phys.org/news/2007-03-nasa-glenn-orion-crew-exploration.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
