

DRAFT

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

**National Environmental Policy Act; Modification and Operation of Test Stand 4550 in Support of Integrated Vehicle Ground Vibration Testing for the Constellation Program, George C. Marshall Space Flight Center**

**AGENCY:** National Aeronautics and Space Administration (NASA)

**ACTION:** Finding of No Significant Impact

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**SUMMARY:** Pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 *Code of Federal Regulations* [CFR] Parts 1500 through 1508), and NASA's regulations (14 CFR Part 1216, Subpart 1216.3), and based on the analyses in the Environmental Assessment (EA), the National Aeronautics and Space Administration (NASA) has made a Finding of No Significant Impact (FONSI) with respect to the Proposed Action. The action involves the modification and operation of Test Stand (TS) 4550 at NASA's George C. Marshall Space Flight Center (MSFC) in support of Integrated Vehicle Ground Vibration Testing (IVGVT) for the Constellation Program.

**DATE:** September 2007

**ADDRESSES:** After public and agency comments received on the Draft EA are addressed, the Final EA will be prepared and the FONSI will be signed.

To receive a copy of the Draft EA, contact Mr. Allen Elliott, Manager, Environmental Engineering and Occupational Health Office, NASA Marshall Space Flight Center, AS10, Marshall Space Flight Center, Alabama 35812, Phone: (256) 544-0662, Email: [Allen.Elliott@nasa.gov](mailto:Allen.Elliott@nasa.gov)

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## SUPPLEMENTAL INFORMATION:

NASA has embarked on a program for exploration of the Moon, Mars, and beyond. The completion of the International Space Station and retirement of the Space Shuttle fleet by 2010 necessitate an innovative plan and program to fulfill these exploration goals. NASA's Constellation Program, a family of new spacecraft, launchers, and associated hardware, would facilitate a variety of human and robotic missions, from ISS re-supply to lunar and planetary landings.

The new crew transportation system, which uses both Earth Orbit Rendezvous and Lunar Orbit Rendezvous techniques, can be categorized into three parts: The Orion Crew and Service Modules, the Lunar Surface Access Module (Lunar Lander), and the Earth Departure Stage. The rockets to be used for launching the different components consist initially of the Ares I, also known as the Crew Launch Vehicle and later the Ares V, also known as the Cargo Launch Vehicle.

Under the Proposed Action (Preferred Alternative), TS 4550 would be modified and operated to conduct IVGVT in support of the Constellation Program. IVGVT at TS 4550 is needed to provide test data to experimentally anchor and validate structural and controls analysis models used in the design of the Ares I. The proposed modification of TS 4550 would involve upgrading utility and mechanical systems and remodeling the test position infrastructure within the interior of the building. Interior remodeling would also include construction of data acquisition centers, storage rooms, and security features. The exterior walls and support structure of TS 4550 would not require any architectural modifications.

The alternative of constructing a new IVGVT test stand was rejected as a reasonable alternative to the Proposed Action of modifying and operating TS 4550. The No-Action Alternative is to maintain existing conditions, i.e., not to modify or operate TS 4550 to conduct IVGVT for the Constellation Program.

The potential impacts that the Proposed Action would have on air quality and noise would be short-term and temporary, and are expected to be minor. Based on the type and condition of the habitat at and around the TS 4550 site, the Proposed Action would have a minimal impact on wildlife. TS 4550 is listed in the National Register of Historic Places (NRHP) and is designated a National Historic Landmark (NHL), as being representative of "Man in Space." Because TS 4550 is designated a NHL, agency consultation for the Proposed Action has been conducted in accordance with the 1991 Programmatic Agreement among NASA, the National Conference of State Historic Preservation Officers (NCSHPO), and the Advisory Council on Historic Preservation (ACHP) pertaining to NHLs. The proposed upgrades and refurbishments would improve the structural integrity of TS 4550 and the reuse of the building to support another NASA program would add historical significance to the structure. MSFC is currently preparing Level II Historic American Buildings Survey-Historic American Engineering Record (HABS-HAER) documentation for TS 4550. The Alabama State Historic Preservation Officer (SHPO) has determined that the HABS-HAER documentation would serve as adequate mitigation for the proposed modifications. Modification and operation of TS 4550 under the Proposed Action would not require permanent personnel relocations or employee hires. Expenditures for construction-related materials and supplies would have a small, short-term, beneficial effect on the economy of the region. Operation of TS 4550 would increase energy consumption at MSFC;

however, the increase in energy demand would not overburden the energy utility system of the Center. Modification of TS 4550 would temporarily increase traffic in the area during construction; however, the projected increase is not expected to significantly burden the road system at or around MSFC. TS 4550 contains lead-based paint (LBP). LBP management would be conducted by the MSFC Environmental Engineering and Occupational Health Office during the modification and operation of TS 4550 in accordance with all applicable federal, state, local, and NASA regulations and policies. Workers in TS 4550 would follow Occupational Safety and Health Administration standards and procedures and the project safety representative would ensure that all LBP safety measures are implemented. The TS 4550 site is located near an area that has been designated as having an "occasional" probability for Munitions and Explosives of Concern (MEC). A MEC sweep would be conducted at the site as a precautionary measure before the commencement of any construction activity. Any MEC that is identified would be appropriately removed and disposed of. Construction activities would be allowed to proceed only after the site is determined by MSFC officials to be safe from potential MEC hazards. The Proposed Action would have little potential to interact with any past, present, or reasonably foreseeable future actions at or outside MSFC. The coupling of the Proposed Action with the planned development projects identified in the MSFC Master Plan is not expected to result in adverse cumulative impacts to any resource based on their locations, schedules, and respectively low direct/indirect impact potentials. Because the Proposed Action would allow MSFC to support IVGVT for the Constellation Program and provide critical test data for the design of the launch vehicle system, it would have positive cumulative impacts on operations at MSFC and the mission of NASA.

Under the No-Action Alternative, MSFC would not be able to support IVGVT for the Constellation Program and provide critical test data for the design of the launch vehicle system. As such, the No-Action Alternative would negatively impact operations at MSFC and the mission of NASA.

After careful review of the EA, NASA has determined that the Proposed Action (Preferred Alternative) would not generate significant controversy, or have a significant impact on the quality of the human or natural environment. This analysis fulfills the requirements of the National Environmental Policy Act and Council on Environmental Quality regulations. An Environmental Impact Statement will not be prepared, and NASA is issuing this Finding of No Significant Impact.

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David A. King  
Director  
George C. Marshall Space Flight Center  
National Aeronautics and Space Administration

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Date Issued: September 2007