

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOTICE 92-SSC-01

National Environmental Policy Act; Finding of No Significant Impact; High Heat Flux Facility at Stennis Space Center

AGENCY: National Aeronautics and Space Administration (NASA)

ACTION: Finding of No Significant Impact

SUMMARY: Pursuant to the National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and NASA's Procedures for Implementing NEPA (14 CFR Subpart 1216.3), NASA has made a Finding of No Significant Impact (FONSI) with respect to the planned construction and operation of the High Heat Flux Facility. The High Heat Flux Facility will be constructed and operated at the John C. Stennis Center, located in Hancock County, Mississippi. The facility is designed to test external space vehicle panels under high heat and pressure conditions.

DATE: Comments in response to this notice must be received in writing within 30 days of (first date of publication in local newspaper).

ADDRESSES: Comments should be addressed to Ronald G. Magee, NASA Environmental Officer, Code GA00, Stennis Space Center, MS 39529-6000; Telephone (601) 688-2004. The Environmental Assessment (EA) prepared for the High Heat Flux Facility which supports this FONSI may be reviewed at:

NASA Research Library, Building 1100, Stennis Space Center, MS

Hancock County Library, Highway 90, Bay St. Louis, MS

Margaret Reed Crosby Library, Picayune, MS

St. Tammany Parish Library, Slidell, LA

NASA Headquarters Information Center, Room 126, 600 Independence Avenue, S.W., Washington, DC

A limited number of copies of the EA are available by contacting Ronald G. Magee, NASA Environmental Officer, at the address and/or telephone number indicated.

FOR FURTHER INFORMATION CONTACT:

Ronald G. Magee, NASA Environmental Officer, Code GA00, Stennis Space Center, MS 39529-6000; Telephone (601) 688-2004

SUPPLEMENTARY INFORMATION: NASA has reviewed the EA prepared for the High Heat Flux Facility and has determined that it represents an accurate and adequate analysis of the scope and level of associated environmental impacts. The EA is incorporated by reference in this FONSI.

The United States Air Force, (USAF), in a joint research effort with the National Aeronautics and Space Administration (NASA), is proposing to construct a High Heat Flux Facility (HHFF) at the John C. Stennis Space Center (SSC), located in Hancock County, Mississippi. The facility will assist in the development and testing of potential components for the National Aero-Space Plane and other hypersonic vehicles.

The HHFF is designed to test external space vehicle panels under high heat and pressure conditions. There are currently no existing government or private sector testing facilities capable of validating material performance and cooling techniques for high heat and high pressure conditions under the proposed time duration sequences and panel dimensions.

Actively cooled panel technology will be demonstrated in a test program utilizing a test rig that provides high levels of heat flux across a 20 inch by 20 inch (50.8 centimeters by 50.8 centimeters) panel. The proposed test rig consists of a 2-dimensional array of gaseous hydrogen/gaseous oxygen fired gas generators that provide heat and pressure through a transitional nozzle section. Test panel specimens are mounted upon a rectangular duct for testing. High velocity, high temperature exhaust from the gas generation system flows over the specimen. Tests will occur for a maximum duration of approximately one minute, at a rate of one test per day, five tests per week.

Alternatives considered include the No Action Alternative (*i.e.*, no High Heat Flux Facility) and alternative sites located at Stennis Space Center and offsite. Cancellation of the project would result in the loss of essential scientific information relative to component technology and operation.

The environmental impacts identified as a result of the Environmental Assessment are as follows. Air emissions include

natural gas combustion byproducts and minor amounts of hydrogen fluoride and fluorine from a fluorine ignition system. Wastewater, generated from testing, results from cooling the test rig and does not come into contact with the gas stream. The wastewater will be collected and discharged once its temperature has been reduced to acceptable levels. NASA will obtain air and wastewater discharge permits for the facility with the appropriate regulatory agencies. The proposed site of the facility is located on previously cleared land and is not located in wetlands or floodplains. No threatened or endangered species, critical habitats, historical or cultural resources will be affected by the project. No other matters of potential environmental concern have been identified. Under planned construction and operation of the facility, no significant effects to the environment are anticipated.

On the basis of the High Heat Flux Facility EA and underlying reference documents, NASA has determined that the environmental impacts associated with this project will not individually or cumulatively have a significant effect on the quality of the environment. Therefore, an environmental impact statement is not required. NASA will take no final action or authorize construction activities prior to the expiration of the 30-day comment period.

Roy S. Estess
Center Director
John C. Stennis Space Center

Date

Kevin R. McCloskey, LT, USAF

Lt. Kevin McCloskey
Manager for Structures Tests
NASP Joint Program Office

20 JUL 1992

Date

Concurrence:

Billie J. McGarvey

Billie J. McGarvey
Director, Facilities Engineering Division
NASA Headquarters

7/29/92

Date