

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

**NOTICE 94-LERC-06**

National Environmental Policy Act; Finding of No Significant Impact; Installation of test equipment at Building 38 to support advanced subsonic combustion (ASC) tests on turbine engines at the Lewis Research Center.

**AGENCY:** National Aeronautics and Space Administration

**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 installation of test equipment in Building 38 at the Lewis Research Center (LeRC) located in Cleveland, Cuyahoga County, Ohio. The proposed action involves installing and operating ASC test equipment at a former combustion-equipment site at Building 38. This new ASC testing is expected to result in the development of higher efficiency turbine engines with improved fuel efficiency and reduced emissions. Such testing is critical to achieve NASA's stated goals of its engine efficiency program, and addresses specific environmental and energy needs of the nation.

**DATE:** Comments in response to this notice must be received in writing no later than (30 days after the first date of publication in the local newspaper).

**ADDRESSES:** Comments should be addressed to Mr. Peter W. McCallum, Chief, Office of Environmental Programs, NASA Lewis Research Center, Mail Stop 6-4, 21000 Brookpark Road, Cleveland, OH 44135; telephone 216-433-8852. The Environmental Assessment (EA) prepared for the installation of test equipment at Building 38 at the Lewis Research Center which supports this FONSI can be reviewed at:

NASA Lewis Research Center  
Office of Environmental Programs, Building 6  
(Contact Peter W. McCallum, 216-433-8852)

Berea Public Library, 7 Berea Commons  
(Contact Mary Ellen Nichols, 216-234-5475)

Fairview Park Public Library, 4449 West 213th Street  
(Contact Gary Claxton, 216-333-4700)

North Olmsted Public Library, 27425 Butternut Ridge Road  
(Contact Donna Meyers, 216-333-4700)

Rockport Branch, Cleveland Public Library,  
4421 W. 140th Street  
(Contact Eunice Peters, 216-623-7053)

NASA Headquarters Information Center  
Room 1H23  
Two Independence Square, S.W.  
Washington, DC 20546  
(Contact Kenneth M. Kumor, 202-358-1112)

A limited number of copies of the EA are available by contacting Mr. Peter W. McCallum, Chief, Office of Environmental Programs, at the address and/or telephone number indicated herein.

**FOR FURTHER INFORMATION CONTACT:**

Mr. Peter W. McCallum, Chief, Office of Environmental Programs,  
NASA Lewis Research Center, Mail Stop 6-4, 21000 Brookpark Road,  
Cleveland, OH 44135; telephone 216-433-8852.

**SUPPLEMENTARY INFORMATION:**

NASA has independently reviewed the EA prepared for the installation of test equipment at Building 38, LeRC, 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 NASA Lewis Research Center is proposing action which include:

- o Installation of a new preheat facility (jet fuel fired, 18 MMBTU/hour\* estimated). An existing natural gas fired pre-heater may occasionally be used at low operating conditions;
- o Installation of a new electrically driven compressor (low frequency noise);
- o Installation of a small scale test rig (burning JP5 and Jet A fuel for 16-32 hours per week/generating inside, high-frequency sounds from pressure drops across valves);
- o Installation of a closed-loop quench system, containing contact cooling water. The contact cooling water will contain traces of unburned fuel and combustion products.

\* 18 million British Thermal Units/hour =  
approximately 5.274 megawatts

Two major alternatives to the proposed action were considered. First, the implication of not installing the proposed equipment was examined. This alternative was judged to be significantly less desirable than the proposed action since it would either prevent the development of higher performance combustors (with the consequential negative impacts on future aircraft performance), or result in similar testing at another location (essentially the equivalent of the second alternative).

The second alternative considered the impact of performing the testing elsewhere. Unlike the proposed action, this option would require construction of a support facility similar to what currently exists at the Building 38 site, along with the installation of the equipment described in the proposed action. This alternative would not only require more resources to duplicate the existing facility, but would have a greater impact on the environment due to the additional construction activities.

NASA also considered the impact on the environment associated with the operation of the proposed test equipment. The environmental parameters expected to be most impacted by the proposed action are Air Resources, Water Resources, and Noise. While the proposed testing may result in short-term impacts on these parameters, these impacts will be controlled in a manner similar to other on-going engine tests at LeRC. The ultimate goal of the test program is, among other things, to design jet engines for the future which generate less emissions. On the basis of the EA developed in connection with the installation and operation of test equipment in Building 38 at the Lewis Research Center 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.

*for* Stuart Fordyce  
Donald J. Campbell, Director  
Lewis Research Center

6/28/94  
Date

Concurrence:

Robert E. Hammond  
Robert E. Hammond, Director  
Environmental Management Division  
NASA Headquarters

6/14/94  
Date