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National Aeronautics and Space Administration

NOTICE 93-ARC-02

**National Environmental Policy Act; Finding of No Significant Impact;
Modification of the Unitary Plan Wind Tunnel Complex at Ames 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 proposed modification of the existing Unitary Plan Wind Tunnel Complex. The proposed project will modify the existing Unitary Plan Wind Tunnel Complex by automating controls for the tunnel systems, model support systems, and auxiliaries; providing flow quality improvements in the 11-FT TWT; repairing or replacing aging facility systems; and repairing weld defects in the pressure shell to allow recertification of the facility.

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

ADDRESS: Comments should be addressed to :

Sandy Olliges
Assistant Branch Chief
NASA Ames Research Center
MS 218-1
Moffett Field, CA. 94035-1000
Telephone (415) 604-3355

Comment period, Jan 12. - Feb 12, 1994

The Environmental Assessment (EA) prepared for the Unitary Plan Wind Tunnel Complex which supports this FONSI may be reviewed at:

NASA Library, Building N202, Ames Research Center, Moffett Field, CA. 94035-1000

Sunnyvale Library, 665 West Olive Street, Sunnyvale, CA. 94086

NASA Headquarters; Information Center, Room 1H23
300 E Street, S.W.
Washington D.C. 20546

Copies of the EA are available by contacting Sandy Olliges, Assistant Branch Chief, at the address and/or telephone number above.

SUPPLEMENTARY INFORMATION: NASA has reviewed the EA prepared for the Unitary Wind Tunnel Complex; 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.

This proposed project will modify the existing Unitary Plan Wind Tunnel Complex, Building N-227, at NASA - Ames Research Center. This work will include:

1. Refurbish and provide automatic controls for the total pressure controls, temperature controls, and variable geometry nozzle systems.
2. Refurbish and provide automatic controls for the model support systems.
3. Provide automatic controls for the make-up air system.
4. Enlarge and rehabilitate the control rooms.
5. Install flow quality improvements in the 11-FT TWT, including flow straightening structures in the stilling chamber, incorporation of new technology into the porous slots in the test section, modification of wide-angle diffuser, and improved control of the tunnel temperature.
6. Replace as necessary the cooling tower, large electrical switchgear, and make-up air system.
7. Repair weld defects in the pressurized portions of the tunnel circuits and make-up air systems and recertify the pressurized systems for safe operation within the original design limits.

The No Project Alternative was analyzed and involves the continued use of the Unitary Plan Wind Tunnel Complex in its current state. If this alternative is chosen, the facility would not keep pace with increasing aeronautical research requirements, nor would it meet current or projected NASA goals in this area. Failure to modernize this facility could lead to increasing unavailability or delay in acquiring critical test data, which in turn could reduce or delay increases in advanced commercial and military aircraft performance and/or cause increased aircraft cost.

The major considerations and conclusions from the Environmental Assessment are as follows:

The Environmental Assessment identified potential impacts to air quality, water quality, geology, historic resources, noise, traffic, and public health.

The modification of the Unitary Wind Tunnel Complex will have a minimal impact on air quality. New natural gas burners will be used to reactivate silica gel air dehumidifiers. Combustion products will be exhausted to the atmosphere. In addition, minimal short term impacts will result from the generation of dust, smoke from electric arc welding and roofing tar, during construction activities. All air emission equipment will be designed to meet local and federal air pollution controls and will conform with the Clean Air Act (CAA) and the regulations of the Bay Area Air Quality Management District.

The existing facility contains two structures (oil houses) that contain equipment used to circulate oil to the wind tunnel's large rotating machinery. Some minor leaks of oil onto the floor are known to result. The proposal to add water sprinkler fire suppression systems to these structures could result in oil contaminated waste water that could flow into the storm water system and pollute the San Francisco Bay. The storm drains in the two oil houses will be plugged to prevent contaminated waste water from entering the storm drain system. A berm will be added to contain water inside the oil house in the event the fire prevention system is implemented. Contaminated water will be pumped into barrels and sent to a treatment or reclamation facility or disposed of as hazardous waste.

Due to the proximity to known earthquake faults and the potential for liquefaction of soils in the project site, the facility could experience differential settling. All structures modified by the project will comply with the Uniform Building Code to reduce seismic hazards.

The existing structure is designated a Historical Landmark on the National Register of Historic Places. The significant elements of the wind tunnel complex identified in the nomination are the closed return variable density tunnel circuits, the variable geometry nozzles, the 3-stage and 11-stage axial flow compressors, the test sections and the drive system. The variable geometry nozzle walls of the 11- Ft wind tunnel will be replaced because of cracks in the wall structure welds. A more suitable steel alloy will be used. Other changes include repair and rehabilitation of the facility. The closed return, variable density tunnel circuits will have defective welds repaired. The 3-stage axial flow compressor, the variable geometry nozzles, and the drive motor system will have their control systems replaced with modern versions that will result in better Mach number control, monitoring and facility safety.

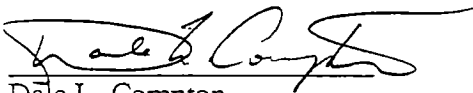
Modification of the facility will not alter the purpose, function, or use of the facility and therefore, will not impact its historic integrity. The project will follow the stipulations of the programmatic agreement among NASA, the National Conference of State Historic Preservation Officers (NCSHPO) and the Advisory Council on Historic Preservation (Council). Original as-built drawings and other records will be provided to the Secretary of the Interior for incorporation into the National Architectural and Engineering Records in the Library of Congress. In addition, the project must annually summarize its activities to the Council and the NCSHPO.

The existing facility contains hazardous materials such as asbestos, mercury, chlorofluorocarbons (CFCs), and polychlorinated biphenyls (PCBs). Hazardous materials will be removed from those portions of the facility to be modernized. A hazardous material removal contract will cover removal of asbestos from the piping and inside the control rooms, removal of mercury, PCB containing ballasts from the control rooms and the electrical capacitors. In addition, the project will install an oil separator and double wall holding container for the oil exhausted from the vacuum pumps in building N-227C. The CFC equipment will be removed and replaced with non-CFC equipment. All state and Federal handling, storage and disposal practices will be followed to ensure that there is no threat to public health and safety. These requirements will be reviewed and approved by the Safety, Health, and Medical Services organization at ARC. Inspectors will monitor the removal of all hazardous materials and enforce compliance with all regulations and procedures.

Approximately 155 parking spaces will be temporarily displaced during construction activities. A gravel parking lot is proposed in the field, north of building N-260 to accommodate displaced parking. Construction of this parking area could impact Burrowing Owls. Prior to construction activities, any Burrowing Owls found in this area will be relocated in accordance with the procedures of the Santa Clara County Humane Society.

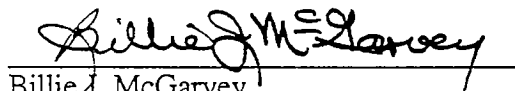
No other potential environmental concerns have been identified. Under planned construction and operation of the facility, no significant effects to the environment are anticipated to result.

On the basis of the Unitary Plan Wind Tunnel Complex Environmental Assessment 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.


Dale L. Compton
Center Director
Ames Research Center

11/18/93
Date

Concurrence:


Billie J. McGarvey
Director, Facilities Engineering Division
NASA Headquarters

12/10/93
Date