

1. COMPONENT AF (AFMC)	FY 2011 CONSTRUCTION PROJECT DATA COMPUTER GENERATED		2. DATE JUNE 2011
3. INSTALLATION AND LOCATION WRIGHT-PATTERSON AFB OH (AFMC)		4. PROJECT TITLE CNST HVAC FOR RESEARCH FACILITY F/20019	
5. PROGRAM ELEMENT 65976	6. CATEGORY CODE 318-612	7. PROJECT NUMBER ZHTV060039B	8. PROJECT COST (\$000) EEIC 529: \$ 1,533

9. COST ESTIMATES

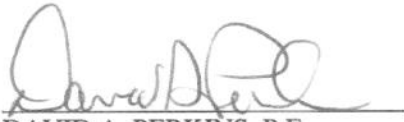

ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				1,451.7
Construct HVAC for Research Facility	TN	84	12,998.80	(1,091.9)
Construct Mezzanine	SF	4212 SF	85.42	(359.8)
TOTAL COST				1,451.7
SUPERVISION, INSPECTION, AND OVERHEAD (5.6%)				81.3
TOTAL FUNDED COST				1,533.0
TOTAL FUNDED COST (ROUNDED)				1,533.0
UNFUNDED COST (A/E Fee)				70.0

10. DESCRIPTION OF PROPOSED WORK: Remove unit heaters and construct ducted heating, ventilation, and air conditioning system. Provide ducts, diffusers, dampers, chillers, air handlers, fans, coils, motors, controls, connections, and all labor and material to provide a ducted HVAC system in 20019. Construct a mezzanine to house research workspace.
Air Conditioning: 84 Tons

11. PROJECT: Construct HVAC for Research Facility F/20019

REQUIREMENT: Facilities to house research and development of new propulsion systems for military aircraft.

CURRENT SITUATION: The Air Force Scientific Advisory Board (SAB) has recommended the Air Force Research Laboratory (AFRL) develop the capacity for integrated simulation, modeling, and demonstration of proprietary energy, power, and thermal management components and systems on the ground, in support of AFRL's research and development process. AFRL, in conjunction with its industry and academic partners, conducts applied research into prototype technology but does not have a system of apparatus to evaluate the new technology on the ground via integrated modeling and simulation of critical systems and components under flight conditions. The systems integration laboratory proposed for Building 19 will provide this capability. Assembled under one roof will be hydraulic, electric, pneumatic, and computing capacity sufficient to simultaneously operate a wide range of aircraft subsystems, including high power electric actuators, robust electrical power systems, adaptive thermal management systems, as well as the computing capacity supporting static and dynamic modeling and simulation. Using private sector test facilities to evaluate components and subsystems is not a realistic option as these facilities are frequently not available to the Air Force. Private sector facilities are used and scheduled to support aircraft production and configured to support specific aircraft types, impairing their ability to support Air Force research. Private sector facilities cannot provide a neutral environment for technology evaluation since proprietary technology of one contractor would be evaluated by a competing contractor. The proposed systems integration lab will provide a neutral evaluation and integration capability, permitting the Air Force to independently assess manufacturers' proprietary technology as part of the research process. The proposed facility for the systems integration lab used to house a 1920s-era wind tunnel, and lacks a ducted HVAC system, only having unit heaters, and cannot support the proposed process research load, without proper heating, cooling and air conditioning. Scientists, engineers, and technicians working on research occurring in the facility require work space physically and acoustically separate from the research apparatus.

1. COMPONENT AIR FORCE	FY 2011 MILITARY CONSTRUCTION PROJECT DATA COMPUTER GENERATED	2. DATE
3. INSTALLATION AND LOCATION WRIGHT-PATTERSON AFB OH		
CNST HVAC FOR RESEARCH FACILITY F/20019		5. PROJECT NUMBER ZHTV060039B
<p><u>IMPACT IF NOT PROVIDED:</u> Research programs into new technology will be delayed indefinitely, adversely impacting the development and fielding of improved weapons systems. Among the programs that would be adversely affected are the Integrated Vehicle Energy Technology (INVENT) program, which is dependent on a location to install contract deliverables for ground level research. INVENT program goals of increasing the range of military aircraft, enhancing low altitude combat support performance, and reducing weight and volume of aircraft by using renewable energy would not be met. Improved performance and efficiency of combat aircraft will not be achieved, resulting in subpar combat performance vis a vis future threats, and increases in operational costs due to lack of more efficient systems. Research projects "Integrated Megawatt Power and Thermal Management for Energy Optimized Aircraft" (EOA) and "Directed Energy Weapons" (DEW) are dependent on the high power drive stands, air stations and thermal management assets planned for facility 20019, and would be delayed indefinitely if the facility is not renovated. Specialized custom-built equipment is awaiting installation or is in development in support of the above research programs, and cannot be deployed if the system integrations facility is not established. Delays in schedule would increase contract costs significantly and ultimately cause the technology to be unavailable for insertion at the right time in the weapon systems development cycle.</p> <p><u>ADDITIONAL:</u> Companion Project: ZHTV060039A, Repair/Modernize for Research Facility. This project will be accomplished using the Lab Revitalization and Demonstration Program (LRDP) funds authorization for minor construction up to \$2,000,000, supporting mission requirements in accordance with changes to 10 U.S.C. §2805 Section 2804 of the FY08 National Defense Authorization Act. This project was approved by the AFRL Commander for FY11 3600 funds.</p> <p><u>JOINT USE CERTIFICATION:</u> This facility can be used by other components on an as available basis; however, the scope of the project is based on Air Force requirements, supporting R&D conducted by AFRL/RZ, the focal point within the Air Force propulsion research. Although intended primarily for AFRL use, the proposed research facility will be a national asset, providing neutral modeling, simulation, and evaluation capabilities for non-Air Force DoD, US government, and private sector propulsion system research.</p> <p>I have reviewed this and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the installation commander.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  <p>DAVID A. PERKINS, P.E. Director Civil Engineer Directorate</p> </div> <div style="width: 45%;"> <p>4 Aug 11 Date</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  <p>PAUL A. PARKER, SES Command Civil Engineer Communications, Installations, and Mission Support</p> </div> <div style="width: 45%;"> <p>22 Dec 11 Date</p> </div> </div>		