21 Apr 26

**AEDC Velocity Alliance Program Objectives**

The Arnold Engineering Development Complex (AEDC) executes a diverse portfolio of infrastructure projects with the overarching goal of sustaining and advancing the world's most sophisticated complex of flight simulation test facilities. The primary objective of these projects is to ensure that AEDC's infrastructure is robust, technologically superior, and capable of meeting the demanding test and evaluation requirements of current and future aerospace and defense systems. Projects will focus on the improvement, modernization, restoration, and maintenance of critical test assets and supporting utilities.

Performance locations for projects awarded through the Alliance may include, but are not limited to, the following Air Force Test Center sites:

- Arnold Air Force Base, Tennessee
- 704th TG, Holloman Air Force Base, New Mexico
- Tunnel 9, Silver Spring, Maryland
- National Full-Scale Aerodynamics Complex (NFAC), Moffett Field, California

Additionally, the Government reserves the right to permit other installations and organizations across the broader Air Force Test Center (AFTC) enterprise to leverage the AEDC Velocity Alliance Consortium. These entities may utilize this vehicle to execute infrastructure, sustainment, and modernization projects, provided the work aligns with the general scope and categories defined within these Program Objectives.

Key goals for this work include enhancing operational readiness, integrating innovative engineering solutions to solve complex challenges, increasing system reliability and efficiency, and ensuring the long-term viability and mission capability of the entire complex. We invite industry partners to review the following project categories, which represent the scope of work required to achieve these critical objectives.

| Project Type | Scope Definition |
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| General Construction | Encompasses the complete lifecycle for standard building structures (e.g., windows, doors, flooring, roofing) and general renovations. This includes the initial analysis and planning of the project, the design phase adhering to standard building codes, procurement of materials, fabrication of components, installation or demolition of structures, and final verification and validation to ensure the work meets project requirements. |
| Industrial Construction | Covers the full project lifecycle for buildings and structures with industrial features, such as test areas or integrated heavy equipment. The scope includes analysis of requirements, planning and design of the structure and its industrial systems, procurement of specialized materials and equipment, fabrication and installation or demolition of industrial components, and comprehensive verification and validation to confirm operational readiness and safety. |

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| Low Pressure Process Systems | Manages the entire lifecycle for process piping and equipment operating at or below 150 PSIG. This includes analysis of system requirements, planning and design of the process flow, procurement of components (pumps, valves, etc.), fabrication and installation or demolition of the piping system, followed by verification testing and validation of system performance and safety. |
| High Pressure Process Systems | Addresses the full lifecycle for process piping and equipment operating above 150 PSIG. The process includes detailed analysis of high-pressure requirements, meticulous planning and design to ensure system integrity, procurement of high-pressure rated components, precise fabrication and installation or demolition of the system, and rigorous verification and validation to guarantee safety and operational specifications are met. |
| Hazardous Process Systems | Encompasses the complete project lifecycle for systems handling flammable or toxic media, as defined by OSHA. This critical process involves in-depth analysis of hazards, comprehensive planning and design with a focus on safety protocols, stringent procurement of specialized materials, controlled fabrication and installation or demolition of the system, and exhaustive verification and validation to ensure containment and operational safety. |
| Process Ducting | Covers the full lifecycle for large-scale process ducting (over 24 inches in diameter) and related equipment not subject to ASHRAE standards. This includes analysis of airflow and pressure requirements, detailed planning and design of the ducting system, procurement of materials and equipment, fabrication and installation or demolition of the ductwork, and final verification and validation of performance. |
| High Voltage Electrical | Manages the entire lifecycle for electrical systems rated above 6.9kV. This includes analysis of power load and distribution requirements, planning and design of the high-voltage infrastructure, procurement of transformers, switchgear, and other components, installation or demolition of the electrical systems, and thorough verification and validation to ensure safety and power quality. |
| Medium Voltage Electrical | Encompasses the full project lifecycle for electrical systems rated between 600V and 6.9kV. This process involves the analysis of power requirements for equipment like large motors, planning and design of the distribution system, procurement of motor control centers and cabling, installation or demolition of components, and complete verification and validation of system performance and safety. |
| Low Voltage Electrical | Covers the complete lifecycle for electrical systems rated at 600V or less, including building power, instrumentation, and controls. This includes analysis of power and control needs, planning and design of circuits and control logic, procurement of panels, wiring, |

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| | and devices, installation or demolition of the systems, and final verification and validation to confirm functionality. |
| Fire Suppression | Manages the full lifecycle of dedicated fire suppression systems. This includes the analysis of fire hazards and code requirements, planning and design of the suppression system, procurement of system components, fabrication and installation or demolition of the system, and rigorous verification and validation through testing to ensure operational readiness. |
| Equipment Repair | Addresses the complete repair and restoration lifecycle for existing equipment (e.g., motors, pumps, cranes). This includes analysis of the failure or required maintenance, planning the repair process, design of replacement parts if needed, procurement of components, fabrication and installation of new parts (which may involve demolition of old ones), and verification and validation to confirm the equipment is restored to full functional capacity. |
| Mechanical Engineering Services | A service-based category for non-standard and complex mechanical components often in high temperature and/or high pressure applications. The scope is primarily centered on expert analysis, conceptual planning, and detailed design services, including trade studies and cost estimates. The category also includes procurement, fabrication, installation, demolition, verification, and validation for such components. |
| Electrical Engineering Services | A service-based category non-standard and complex electrical systems. The scope primarily involves expert analysis, planning, and design of electrical systems. This category also includes procurement, installation, demolition, verification, and validation of electrical systems. |
| ID&C Engineering Services | A service-based category focused on the complete lifecycle for Instrumentation, Data, and Control (ID&C) systems. This includes analysis of data and control requirements, planning and design of the control architecture and user interfaces (e.g., HMI screens), procurement of sensors and controllers, software development, installation or demolition of ID&C components, and system verification and validation to ensure accurate data acquisition and control. |
| Utilities | Encompasses the full project lifecycle for utility distribution systems such as raw water and steam. This includes analysis of distribution capacity and needs, planning and design of the distribution network, procurement of piping and related components, fabrication and installation or demolition of the utility lines, and verification and validation to ensure reliable and efficient distribution. |

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