ATTACHMENT L-10
SURGE PROJECT SAMPLE TASK

The following narrative describes a potential task to represent the nature of anticipated AEDC surge projects. The Offeror shall not make any effort to design a system to meet this notional requirement. The Offeror shall answer the associated Surge Project Sample Task Questions (Attachment L-11) in the Offeror's proposals, and the Government will evaluate the Offeror's proposal IAW Section M, paragraph M-2.2.5.4.

Surge Project Sample Task: Hybrid Propulsion Upgrade

Location: Arnold AFB, TN

Timing: Sometime during contract – assume spring / summer if it matters in the development of the response.

Scenario: AEDC has an existing test facility / cell which is connected on each end to an industrial air supply and an exhaust system capable of approximately 2400 lbm/sec. There is emerging requirement to test significantly more energetic test articles with hybrid propulsion capabilities. It is desired that this test cell be located adjacent to existing cells to exploit the capabilities of both plants, as well as connect to existing networks for output data handling. The cell needs to be either hardened or below ground to mitigate adjacent damage from any test article failures that could potentially occur with the new hybrid propulsion system – up to an equivalent 45.6 lb. net explosive weight and fragmentation from test article failure. The cell must be at least 25ft diameter and 80ft in length. If the cell is underground and requires top loading of test articles, facility must incorporate full length access and in situ handling equipment to precisely load / position test articles weighing up to 20,000 lb. Side or end loading must incorporate sufficient prepared adjacent hardstand to enable test article delivery / positioning to engage similar in situ handling equipment for positioning in the cell. Additional cooling capacity will be required between test article and the exhaust plant, expected to reduce duct gas temperature to maximum of 150 degrees Fahrenheit. The core test article effluent could range as high as 5,500 degrees Fahrenheit, but this is only a small fraction of total airflow through the cell. Design has also indicated the requirement for mechanisms to neutralize or eliminate potential corrosive / explosive gases from the effluent as well. Any combination of sprays, gas injection / separation, or flaring may be used to mitigate risk to the exhaust plant rotating machinery.

The project will include all necessary electrical work to support cell operations and maintenance, as well as requirements for powering instrumentation, data, and control systems for the cell and the test article. All cell, duct, and gas monitoring instrumentation are included, as well as systems for associated controls of duct flow, cooling operations, effluent handling, etc. instrumentation of the test stand for thrust measurement in all axes, vibration, and condition monitoring. Construction includes all systems / connections / runs of instrumentation wiring to handle high frequency / high bandwidth test article instrumentation from the developer for real-time monitoring in the control room. Implementation must be compatible with existing control room applications / hardware.

Based on this description, the Government expects there to be significant heavy construction and fabrication work in and adjacent to an operating test facility. The desire is to have the minimum down time for tie-in to the existing plants, and to perform all the work in the shortest amount of time to meet customers' most pressing needs.