STATEMENT OF WORK
SPECIALIZED ENGINEERING SERVICES TASKS
For
Test Laboratory Facility Support

1.0 Scope

The scope of this order is to provide Test Laboratory Facilities support for the testing of the launch vehicle systems, sub-systems and elements. The contractor shall provide technical support for the modification, activation, and operation of mechanical and electrical systems at facilities used by Test Laboratory.

2.0 Task Order Management and Reporting

2.1 Contractor Management

The contractor shall provide the planning, coordination, technical direction, and surveillance of the activities necessary to assure disciplined performance of work and timely application of resources for the accomplishment of all tasks issued under the order. The Contractor shall be responsible for maintaining communication with each supported organization and alerting the Contracting Specialist immediately of any problems that would prevent meeting established milestones.

2.2 Data Requirements Descriptions (DRDs)

The contractor shall report and document this work and fulfill the requirements of associated Data Requirement Descriptions (DRD's) as outlined in Data Procurement Document (DPD) 1222 (Attachment J-2). The contractor shall determine the data restriction that applies to each data deliverable and mark or transmit the data restriction in accordance with section 2.3.3 of the Data Procurement Document.

The contractor shall submit a Monthly Status Report in accordance with DRD 1222MA-001. Any presentation, reports, analyses or technical memorandum that is developed during the execution shall be pre-coordinated with the COTR and final copies provided to the COTR.

The contractor shall provide NASA with necessary information on project progress to allow the Government to monitor product assurance, identify significant problems, and implement corrective action as applicable based on the Contractor's performance.

The contractor shall develop and maintain a Work Breakdown Structure (WBS) defining all task elements continued in this Task Order and in accordance with established negotiated GSA rates per hours worked (with discounts as they apply).

The contractor shall submit a Badged Employee and Remote IT User Listing in accordance with DRD 1222MA-002.

The contractor shall prepare and deliver Contractor Employee Clearance Documents in accordance with DRD 1222MA-003.

The contractor shall prepare and deliver Position Risk Designation for Non-NASA Employee in accordance with DRD 1222MA-004.

The Contractor shall be responsible for information and information technology (IT) security when physical or electronic access to NASA's computer systems, networks, or IT infrastructure is required or when NASA information is stored, generated or exchanged with NASA or on behalf of NASA, regardless of where the information resides. The contractor shall prepare a Contract Information Technology Security Program Plan (CITSPP) that documents how the contractor will be responsible for information and IT security in accordance with DRD 1222CD-001.

The contractor shall establish and implement an industrial safety, occupational health, and environmental program that (1) prevent employee fatalities, (2) reduce the number of incidents, (3) reduce the severity of employee injuries and illnesses, and (4) protects the environment through the ongoing planning, implementation, integration and management control of these programs in accordance with DRD 1222SA-001. The SHE Plan shall address each of the following MSFC SHE core program requirements in detail that are applicable to the contracted effort:

a. Management leadership and employee involvement.
b. System and worksite analysis.
c. Hazard prevention and control.
d. Safety, health and environmental training.
e. Environmental compliance.

The contractor shall report mishaps and safety statistics to the MSFC Industrial Safety Office in accordance with DRD 1222SA-002. The contractor shall submit direct to the NASA Incident Reporting Information System (IRIS) or shall use the forms listed in section 15.4 of DRD 1222SA-002 or electronic equivalent to report mishaps and related information required to produce the safety metrics.

3.0 Technical Requirements

The contractor shall be responsible for information and information technology (IT) security when physical or electronic access to NASA's computer systems, networks, or IT infrastructure is required or when NASA information is stored, processed, generated or exchanged with NASA or on behalf of NASA, regardless of where the information resides.

All data files and reports electronically delivered shall comply with Technical Standard 1194.21 of the Rehabilitation Act of 1973, Section 508.

Tasks shall be defined as follows:

3.1 Test Laboratory Facilities Support

For the Test Laboratory, the contractor shall provide engineering support, expert assessment, senior management advice and recommendations in the following facilities/disciplines/areas:

1. Engineering support for Area Warning and Control System (AWACS) in the Propulsion Test Area;
2. Engineering support for Pressure systems certification;
3. Test conductors;
4. Control engineers;
5. Engineering support for modification, activation and operation of mechanical and electrical systems at building 4619, 4732, 4670, 4699, 4550, TS 116, TS 115;
6. Facility configuration control and change management documentation process.

3.2 ET10 USE J-2X GGWH / ET20 Experimental Fluids and Environmental –

The Contractor shall provide controls engineering, test conductor support, and facilities upgrades for ET10 including Test Stands 115 and 116.

3.3 ET20 Vehicle Integration Wind Tunnel

The Contactor shall provide software integration, data collection and analysis, and general test support for wind tunnel testing conducted by ET20.

3.4 ET40 FITO GVT First Test / ET40 Structural Dynamics Test

The Contractor shall provide mechanical, electrical, and project support for ground vibration testing including Hydrodynamic Support Systems.

3.5 ET02-Overhead

The Contractor shall provide project management support including, but not limited to; SHE and Quality audit preparation and support, marketing support for Test Laboratory, technical writing, and resource management.

3.6 PP&C Transition Support

The Contractor shall provide Pressure Systems Certification Support including pressure vessel and piping certifications to applicable NASA and ASME Standards.

3.7 ET60 Shuttle & Other Testing

The Contractor shall provide electrical engineering and controls support for East and West Test areas including Shuttle fill and drain testing.

3.8 ET60 P9122 Lox Recirculation Test

The Contractor shall provide electrical engineering and controls support for the West Test area including Lox Recirculation Testing.

3.9 RESERVED

3.10 ET60 P4550 IGVT Testing

The Contractor shall provide electrical engineering and controls support for the East Test area including support of HDS, mast climber, and general facility upgrades for IVGVT Testing in P4550.

3.11 US MAF Construction of Facilities Support – ET60 – Closed January 2010

3.12 Technology Development – VP Support

The Contractor shall provide test engineering support for new pintel and nozzle revisions, and data analysis for Test Stand 115.

3.13 ET20 Shuttle & Other Testing

The Contractor shall provide electrical engineering and controls support for Vacuum Chamber Testing in 4619.

3.14 Main Propulsion Systems Support (ER22)

The contractor shall support ongoing test development, planning, execution and data analysis activities for main propulsion systems testing. The contractor shall provide systems engineering support for MPS related testing to include but not limited to test support, test readiness reviews, critical data reviews and analysis to anchor models for both current and future launch vehicles.

3.15 SSME Structural Support (ER41)

The objective of this task order is to provide structural analysis support of the Space Shuttle propulsion system. Components of the Space Shuttle Main Engine (SSME) including systems interfacing with the SSME are included within the scope of this task order. The Marshall Space Flight Center (MSFC) Task Order initiator will coordinate specific TBE assignments with the TBE task order lead.

In addition, at the discretion of the SSME Project, task personnel may perform analyses relevant to the development and retention of skills necessary to support the structural analysis of the SSME components. These analyses may be parametric in nature or use generic models of liquid engine hardware to develop analytical capability applicable to the SSME.

3.16 Thermal/Fluids Analysis Support (ER43)

The scope of this task is to provide expert thermal/fluids analyses to support the facility upgrades to the MSFC hot gas test facility. Current MSFC TPS hot gas convective testing capability is limited to approximately 25 Btu/hr-ft2 heat flux. Higher heat flux capability is needed to encompass ascent, plume and re-entry heating environments for future vehicle development.
In support of the upgrades to the hot gas facility, the contractor shall:

i. Independent thermal design assessment of the proposed hot gas facility upgrades
ii. Perform independent thermal analyses of the ITT-designed facility combustor coolant circuit and hot wall
iii. Perform independent thermal analyses of the ITT-designed nozzle throat section coolant circuit and hot wall
iv. Perform thermal analysis of the instrumentation ring

3.17 ET40-Overhead

The Contractor shall provide engineering and project management support for IVGVT Testing in 4550.

3.18 MSFC Test Laboratory Facilities and Test Support
(Authorization to proceed with this subtask will be provided by the Contracting Officer in written direction.)

The Contractor shall provide Test Laboratory Facilities support for the testing of the launch vehicle systems, sub-systems and elements. The contractor shall provide technical support for the modification, activation, and operation of mechanical and electrical systems at facilities used by Test Laboratory.

4.0 Travel

The contractor shall travel as requested to accomplish each technical requirement. Any travel must be approved by the Contractor Officer‘s Technical Representative (COTR) or task order technical monitor, prior to travel.

The contractor’s monthly report shall contain travel detail to include travel destination, dates of travel, number of people who traveled, and purpose of the travel.

5.0 Materials

No materials are currently required for this order. However, this may change based on the customer's requirements as directed by the Contractor Officer's Technical Representative (COTR) or task order technical monitor. Any materials being purchased must be approved by the Contracting Officer prior to purchase.

6.0 Reserved

7.0 Personnel Skill Levels

The Contractor shall provide skills at a level to perform the subtasks in this order.

8.0 Technical Milestones and Deliverables

Specified under Section 2.B of the SOW; any additional deliverables for specific subtasks are specified under Section 3.0.