

I.3 AUTHORIZED DEVIATIONS IN CLAUSES (FAR 52.252-6) (APR 1984)

- (a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.
- (b) The use in this solicitation or contract of any NASA FAR Supplement (48 CFR Chapter 18) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of Clause)

I.4 OMBUDSMAN (NFS 1852.215-84) (JUNE 2000)

- (a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from Offerors, potential Offerors, and Contractors during the pre-award and post-award phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the Contracting Officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the Contracting Officer for resolution.
- (b) If resolution cannot be made by the Contracting Officer, interested parties may contact the installation ombudsman, Marina Benigno, NASA Business Management Directorate, John C. Stennis Space Center, MS. 39529, Phone: (228) 688-2387, FAX: (228) 688-1946, e-mail: Marina.L.Benigno@nasa.gov. Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0422, facsimile 202-358-3083, e-mail sthomps1@mail.hq.nasa.gov. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

(End of Clause)

[END OF SECTION]

PART III – LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J

LIST OF ATTACHMENTS

LIST OF ATTACHMENTS

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PART III – LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J-1

PERFORMANCE WORK STATEMENT

PERFORMANCE WORK STATEMENT
FOR
TEST OPERATIONS CONTRACT

Introduction

The National Aeronautics and Space Administration's (NASA) George C. Marshall Space Flight Center (MSFC) and John C. Stennis Space Center (SSC) require a Contractor to provide test and test support services. Successfully meeting the requirements of this performance work statement (PWS) requires knowledgeable and experienced engineers, technicians, trades and project managers.

This PWS consolidates test operations requirements of current test program activities at MSFC and SSC, specifically describing work according to the existing scope and processes. Consistent with goals for this consolidation effort, NASA expects to achieve process improvements in the areas of safety and mission assurance, commonality between Centers, efficiency, and best practices. This PWS requires the Contractor to seek and develop assigned tasks for innovation, consolidation, and streamlining.

To provide for a smooth startup with minimal risk, this PWS is configured to address current scope and unique processes at MSFC and SSC. With consideration of the uniqueness of each Center, innovative ideas may be proposed with sufficient justification to mitigate risks. The Contractor will be a significant driving force in identifying and developing rationale for improvements to be implemented over the term of the contract. Although some work requirements are identified in this PWS as MSFC or SSC only, appropriate rationale for all work requirements may be developed for application at both centers.

Section 1.0 Management And Administration

The management and administration functions are those necessary to successfully execute testing at MSFC and SSC as described in this performance work statement. The Contractor's management team (DRD MA02) shall focus on accomplishing safe test operations using sound business practices. This team shall efficiently utilize personnel across and within the two centers and will, to the maximum extent possible, streamline and consolidate business and technical processes.

1.1 Administer Integrated Contract Team

Supply and administer a flexible, competent, and qualified staff, integrated across all testing sites, to fully support and accomplish the contract requirements. The management organization shall be "seamless", with a single point of contact at SSC to act as the overall manager fully responsible for all services described in this PWS, acting as primary interface between the Contractor and the NASA/SSC Contracting Officer and Contracting Officer's Technical Representative and NASA/MSFC Technical Management Representative. Subcontractors and/or teaming arrangements shall be integrated into the Contractor's management structure.

NASA program requirements and schedules will dictate workforce and work hours, from one shift a day five days a week, to potentially 24-hour operations, 7 days a week, according to test requirements. In addition, short-term technical tasks, such as special designs and studies, may require provision of highly specialized technical personnel or services.

Provide integrated management and administrative services required for the execution of all contract activities, fully meeting the business, technical performance, and statutory and regulatory requirements of the contract such that the outcome of work performed under each work request:

- Fully meets the performance objective of the authorizing work request.
- Is performed within the schedule of the authorizing work request.
- Is accomplished within the cost estimate of the authorizing work request.
- Is accomplished in a safe and high quality manner.

1.1.1 Provide technical staff that are trained and certified in all necessary skill types for rocket propulsion test activities.

Ensure all personnel are qualified on the basis of appropriate education, training, experience, and certification to perform assigned tasks, accomplishing safety critical operations in compliance with regulatory requirements and in accordance with site-specific standards and procedures.

Based on site-specific requirements:

- Establish plans and processes for obtaining and maintaining a skilled workforce to meet the performance challenges of testing, which can include an apprentice/training program.
- Provide training to TOC personnel, to include cross training within and between test centers, through appropriate internal and external sources, to ensure the quality of workmanship on systems and equipment is consistent with aerospace/industry standards and NASA requirements.
- Personnel performing critical processes and safety critical tasks shall be certified as having been trained and proficient in their work tasks, e.g. maintain cleanliness procedures.
- Maintain and provide training records for Contractor personnel.
- **MSFC Only** - Provide Occupational Safety and Health Administration (OSHA) required safety training for Contractor's own personnel.
- **SSC Only** - Provide safety training and certification for assigned hazardous operations for all personnel including NASA and on site Contractors.
- **SSC Only** - Hazardous operations training and certification records shall be maintained in the SSC Training and Certification records System (TCRS).
- **SSC Only** - OSHA required safety training is provided by other Contractors.

Certification shall be accomplished and maintained in accordance with the requirements of NPG 8715.3 "Safety and Health Procedures and Guidelines", SPG 8715.1, MWI 3410.1 "Personnel Certification Program," and applicable codes for welding, inspection, and nondestructive evaluation (NDE) of structural and pressure piping welding. A Personnel Certification Plan shall be provided in accordance with DRD SA01, which will cover both MSFC and SSC.

1.1.2 Conduct and maintain a comprehensive program of safety and mission assurance (S&MA) and environmental protection

Conduct and maintain a comprehensive program of safety and mission assurance (S&MA) and environmental protection in order to provide world-class test capability and a safe working environment. Support and maintain compliance with NASA's safety, environmental, and quality management initiatives to include Safety Training Observation Program (STOP), and ISO 9001 and 14001 registrations. In addition, the TOC will be prepared to implement OSHA Voluntary Protection Program (VPP), if required.

1.1.2.1 Conduct operations safely

Conduct operations safely, assuring products and services meet customer requirements and are in compliance with applicable Federal, State and Local regulatory requirements, including OSHA/EPA/State/NASA requirements, with a focus on institutional safety and health, operational safety, and system safety. Operations shall not compromise the safety and health of employees, the value of property, nor harm the environment. Safety hierarchy shall be given in the following order:

- Safety of public
- Safety of astronauts and pilots
- Safety of employees

- Safety of high value equipment

Identify hazards and control methods associated with the design, buildup, activation, and operation of systems supporting tests, in accordance with site-specific processes for TOC Process Safety Management (PSM) and core capability areas. (ref. section 2.0). Provide for:

- A Safety and Health Plan in accordance with DRD SA02.
- An Emergency Plan in accordance with DRD MA04.
- Participation in system and facility safety and test readiness reviews.
- Assessment and documentation of potential hazards, associated risk, and development of recommended remediation.
- Maintenance of product and services.
- Pursuit of process improvements where cost effective.
- Safety specialists who are authorized to take appropriate actions relative to safety requirements, including operational safety and environmental health considerations.
- Monthly safety review meetings for all test personnel including NASA and on site contractors.
- Provide and maintain a "job hazard analysis" to identify hazards and hazard controls for each job.

1.1.2.2 Develop and maintain a mission assurance and quality management system

Develop and maintain an effective and timely mission assurance program that includes quality assurance and control, and reliability and maintainability, which will be developed in conjunction with all other functions necessary to satisfy the contract requirements. The program shall:

- Provide a Mission Assurance Plan in accordance with DRD SA04.
- Demonstrate recognition of the mission assurance aspects of the contract and an organized approach to achieve them.
- Ensure that mission assurance requirements are determined and satisfied throughout all phases of contract performance as specified by the contract.
- Provide for the detection of actual or potential deficiencies, non-conformances, system incompatibility, marginal quality, and trends or conditions, which could result in unsatisfactory quality or performance.
- Use existing NASA systems to maintain quality records in an access controlled central location.
- Provide timely and effective remedial and preventive action.

Maintain compliance to the NASA Quality Management System (ISO Standard 9001). The ISO Registration scope includes the Contractor.

Develop and maintain appropriate work instructions necessary to implement the Level I and Level II QMS document requirements. Examples of processes requiring work instructions (which include Test Preparation Sheets [TPS]) include: engineering, purchasing, calibration, software development, test operations, and training. Support the

SSC internal audit process, which includes providing a central point of contact, organizational participation in the quality system internal audits, providing auditor personnel, and resolution of documented nonconformances (Corrective Action Requests [CAR]).

1.1.2.3 Conduct and manage work activities in compliance with all applicable state, federal, local, and agency environmental regulations

Review and evaluate proposed and promulgated federal and state environmental statutory and regulatory changes for impact on test operations. Within fifteen (15) calendar days of such notice, provide a written evaluation, discussing the operations and financial impact, and identify with rationale alternatives for impact mitigation, including implementation strategies. Report Air Emissions data in accordance with DRD EN01.

MSFC Only

Comply with all applicable state, federal, local, and agency environmental regulations.

SSC Only

Comply with ISO14001/environmental management system as described in SPG 8500.1 and all applicable state, federal, local, and agency environmental regulations and statutes.

1.1.2.4 Maintain all assigned work areas in a clean and orderly condition

Maintain all TOC assigned work areas, including assigned vehicles, storage areas, and field job sites, in a clean, neat, and orderly condition at all times, free from accumulations of waste materials. Remove all rubbish and waste materials to appropriate containers for recycling and/or pick-up by custodial staff. Required materials, tools, and equipment will be stored and maintained in the work area in a safe and orderly fashion.

1.2 Use existing automated work authorization system

Use existing automated work authorization and control systems for conducting day-to-day test activity. Do not accept unauthorized or out-of-scope work. However, actions taken to mitigate hazardous or emergency situations are in scope.

MSFC Only

Use existing Electronic TPS and QTPS for the detail work authorization system.

SSC Only

Use work authorization documents as specified in SOI-8080-0027.

1.3 Effectively manage cost and schedule performance in accordance with approved operating plans and report resources status

Effectively track, manage, and report all work performed with an appropriate financial accounting system that interfaces properly with existing government financial systems, and conforms to all Government accounting standards and reporting requirements, DRD MF01-MF06 and MF08.

The Contractor's work management system shall electronically interface with the NASA work ordering and financial accounting systems. Interface with MASS Release 2 (i.e. FRS and Sitewide) to provide detailed costs (e.g. labor materials, etc.), schedule, and workforce data. Costs will be reported weekly and accumulated monthly in an electronic file format based on requirements for inclusion in the SSC Sitewide system. Costs will be reported using the form 533Q and 533M, inclusive of detailed backup at the work authorization level. Monthly reports are due by close of business Tuesday following the end of the SSC fiscal month.

Provide annual operating (i.e. monthly cost phasing) plans in accordance with guidelines provided by NASA. Manage the contract to meet programmatic requirements using the approved fiscal operating budget as a guideline. Provide accurate, timely responses to data requests in support of the development of the Program Operating Plan (POP), annual cost phasing plans, and other actions on an ad hoc basis. A copy of the NASA SSC Fiscal Calendar is developed by the Financial Management Division and will be provided to the Contractor before October 1 of each fiscal year.

As requested by NASA, provide formal cost estimates associated with assigned tasks, including all labor, materials, schedule, and assumptions; and develop an Implementation Plan prior to initiating activity. The cost estimate will be the basis for work authorization for the project. Ensure customers are notified in writing or via email when actual cost of the work request has reached 80%, 90%, and 100% of the awarded and/or estimated funding. At no time shall the estimated funds on any work request be exceeded without approval from the NASA Contracting Officer. Report work requests with costs exceeding 100% of the original work request estimate (DRD MF07).

Reimbursable work requests, upon receipt, are required to provide estimates into the SSC Funds Availability System (FAS), and obtain FAS acceptance and reservation of funds before work begins. Updates to the FAS are required when work requests are amended and costs are incurred.

NASA is in the process of implementing an Integrated Financial Management Program (IFMP) utilizing SAP software. The Contractor should understand and support this initiative.

1.4 Report Project Performance

Report project performance status monthly and review with NASA management in accordance with applicable work request. For each project, by identified WBS and OBS elements, provide financial, technical, workforce, and schedule status information (budgeted cost of work performed (BCWP)) as required. The government normally compares the actual cost and schedule to the currently approved plan, and provides an analysis of variance. However, as requested, the Contractor must possess the capacity to provide this function.

1.5 Provide procurement and property management for all assigned equipment

Conduct property management for all government assigned equipment according to applicable regulations. Comply with NASA Property Management Manuals (MM 4000.1

and NASA Series 4000) for acquisition and accountability of materials and equipment. Implement an inventory control system for all non-capitalized property and equipment. Provide a Government Property Management Plan DRD LS01, including both sites, on request.

Provide property, and equipment necessary to perform the PWS as required by Contract Administration Data Section G and Special Contract Requirements Section H.

MSFC Only

On an exception basis, provide procurement services of items not available from Government supply. Based on the dollar value and complexity, Contractor procurement may include: verification of non-availability from Government supply; preparation of procurement documentation; coordination with MSFC Quality Assurance Office; issuance of solicitations; review and evaluation of Contractor proposals; and managerial, technical control, and quality surveillance of vendors and subcontractors. Procurements over \$2,500 will be approved by the designated MSFC TMR with an aggregate of \$200,000 in this account per contract year.

Provide an itemized list of expenditures on request.

SSC Only

The Contractor shall be responsible for all supplies, materials, equipment, and services needed for performance of work under the contract. All procurements will be requested through the Facility Operating Services (FOS) Contractor. NASA/SSC ISO Common Work Instruction SCWI-5100-0001 sets forth the SSC procedures for initiating the purchase of supplies and services.

1.6 Administer the Rocket Propulsion Test Management Board (RPTMB) and the National Rocket Propulsion Test Alliance (NRPTA)

In accordance with RPTMB and NRPTA operating procedures (SSC-SOI-8080-0045-LC and NRPTA-001), administer the following:

- (a) Coordinate, initiate, and document teleconferences and Board/Alliance meetings by developing agendas, collecting and disseminating related information to Board/Alliance members and relevant parties, setting up teleconferences, maintaining meeting minutes and action items, and drafting and coordinating Action Requests and Board Directives/Alliance Recommendations, and disseminating and archiving the final recommendations.
- (b) Maintain master files of all documentation.
- (c) Maintain an equipment loan and transfer database consistent with NASA property management standards, including all supporting documentation.
- (d) Design and develop informational brochures and educational material as needed.

- (e) Maintain facilities capabilities database, including all NASA, Department of Defense (DOD), and industry rocket propulsion test capabilities.
- (f) Maintain cost savings and avoidance information documenting rationale and providing updates as savings occur or at least quarterly.
- (g) Track and report on test facility investments within NASA and DOD.
- (h) Maintain overall utilization schedules and associated metrics for NASA and DOD.
- (i) Coordinate, schedule, and disseminate material associated with lessons learned in rocket propulsion testing at NASA, DOD, and industry test sites.
- (j) Prepare Alliance annual report(s) and supporting documentation.
- (k) Maintain technology and test requirements roadmaps.
- (l) Coordinate and document semi-annual Alliance Senior Steering Group Meeting(s).
- (m) Develop presentation material and maintain history of presentations.
- (n) Provide support to the Propulsion Test Program Office outreach initiatives and meetings, developing displays and handout material.
- (o) Maintain existing web-based management information system containing all Propulsion test web site(s) for the RPTMB and the NRPTA and the information required by the Paragraph 1.6 above.
- (p) Maintain a current database of propulsion development and potential tests.

1.7 Develop Customer Outreach

SSC Only

- (a) Develop test prospects, multi-site outreach plans, strategic business interests, standardized business plans; support and prepare conferences.
- (b) Develop and coordinate customer agreements as assigned and in a proprietary manner as described in the appropriate contract clauses.
- (c) Develop and maintain test capability handbook for SSC and MSFC as required by DRD PT08.

1.8 Formulate Test Project Concepts

SSC Only

Formulate test project concepts including project concept development, requirements definition (Phase 0 PRD), cost estimation and analysis, as well as, decision packages for project authorization. Test project estimates will include a schedule and risk assessment

with potential schedule and cost impacts identified using standard risk based scheduling tools. A cost phasing plan (Budgeted Cost of Work Scheduled) BCWS, shall be submitted with the project estimate and will serve as the basis for comparison and BCWP calculation from section 1.4. ROM cost estimates will serve as the initial input for the potential customer but will be refined using the Cost Analysis Requirements Description (CARD) process for final submittal for negotiation and approval. Coordinate with appropriate NASA managers on the following new customer activities:

- (a) Documentation processing
- (b) Site orientation
- (c) Identification of technical points of contact
- (d) Access to propulsion test facilities and services
- (e) Development of quotes/proposals
- (f) Development of requirements documents
- (g) Conduct and document special studies such as: feasibility, make or buy, trade, and other related studies
- (h) Draft customer agreements

(End of Section 1)

Section 2.0 Test & Engineering Core Capability

The test and engineering core capabilities as described in this section are those which are necessary to maintain a test capability at MSFC and SSC, independent of whether there is an active test program or not.

2.1 Engineer, operate, maintain, and manage test core capabilities

Engineer, operate, maintain, and manage test core facilities and critical processes defined in subsequent paragraphs and listed in Attachment J-10 (List of Government Furnished Property). These activities shall be closely coordinated with test operations in order to ensure minimal impacts to test conduct.

NASA expects the Contractor to take full responsibility for any systems or functions they are assigned in this section (Section 2). All necessary planning, engineering, configuration control, operations, and maintenance are included at SSC. Only configuration control, operations, and maintenance are included at MSFC. The Contractor is an integral member of a test team with the government, and expected to be a champion on issues related to core capability. The maintenance responsibilities, relative to all Contractors, are specified in the Stennis Operations Maintenance Responsibilities Document (SOMRD), and MSFC Test Directorate/Center Operations Directorate (TD/COD) responsibility agreement.

Core facilities support test operations activities, requiring the provision of services during any scheduled work period. Specific test projects may require both operations and maintenance of core facilities to be performed outside normal shifts. Although some maintenance will need to be performed outside normal shifts, most operations will only be required within that time. For example the high-pressure gas facility at Stennis may have to be operated outside of those parameters to assure minimum pressures needed for test requirements and system maintenance. Core operations for direct test support, other than high-pressure gas, will be demand services.

2.1.1 Plan, procure, receive, and handle consumable propellants and pressurants (DRD PT05)

2.1.1.1 Provide Propellants Management for propellants and pressurants

MSFC Only

This activity is provided by COD propellants and pressurants contracts. The TOC shall collect and consolidate yearly long range propellant forecast sheets provided by MSFC Test Engineers.

SSC Only

Manage and coordinate propellant and pressurant requirements and logistics. Provide long-range forecasting, ordering, coordination of delivery, transport scheduling, certification, acceptance, storage, and distribution of propellants and pressurants, both

gas and cryogenic. Ensure the required quantity and quality of commodities is available at each test facility.

This effort requires close coordination with NASA, NASA's test article Contractors, other NASA centers and other NASA support Contractors. Submit reports of forecasted propellants requirements and propellants and pressurants usage in accordance with DRD PT06.

The commodities currently involved are: liquid and gaseous oxygen, liquid and gaseous hydrogen, liquid and gaseous nitrogen, air, high pressure gaseous nitrogen, high pressure gaseous hydrogen, high pressure gaseous oxygen, high pressure gaseous helium, hydrocarbon based fluids (i.e. RP-1, JP-8, JP-4), triethylaluminum-triethylborane (TEA/TEB), and hydrogen peroxide from medium to high concentrations.

2.1.1.2 Operate and maintain propellant and pressurant systems

MSFC Only

Operate and maintain the cryogenic, RP1, TEA/TEB, and propellant receiving, storage, and delivery systems. This shall include offloading commodities from delivery trucks into storage at all test facilities. This does not include operation of transport trailer valves.

Maintain pressurant and propellant systems for all test stands downstream of defined interface points per document TD/COD Responsibility Agreement.

SSC Only

Operate and maintain the cryogenic propellant and pressurant receiving, storage, and delivery systems. This shall include offloading cryogenics from delivery trucks into bulk storage and all test facilities. It also includes the operations and maintenance of six (6) liquid oxygen barges and three (3) liquid hydrogen barges used for bulk delivery to the A and B complexes, as well as JP8, RP1, TEA/TEB, hydrogen peroxide and all other propellants in use at SSC. Barge transportation provided through the FOS contract. Coordination of delivery of barges to the test complex is the responsibility of the TOC.

2.1.1.3 Operate and maintain high pressure gas systems

SSC Only

Operate and maintain the high-pressure gas system used to create and distribute high-pressure gases throughout the facilities. This includes bulk storage tanks, compressor units, pump units, vaporizers, distribution lines with associated components, tube bank trailers and remote gas storage bottles and equipment. The Contractor will support the pressure vessel/system certification program in accordance with NASA standards. The gases generated and distributed are: hydrogen, nitrogen, helium, and air.

2.1.2 Operate and maintain high pressure industrial water systems (HPIW) required for deluge and fire suppression**MSFC Only**

Operate and maintain the HPIW systems on all test stands downstream of defined interface points per document TD/COD Responsibility Agreement.

SSC Only

Operate and maintain, including overhaul, these HPIW systems: three deep wells, the canal pumping system, the storage reservoir, ten diesel driven pumps, two electric-driven pumps, and the distribution systems supplying industrial water to the test complex.

2.1.3 Track, monitor, and install mechanical and electrical components to meet test needs**MSFC Only**

Assure all components used within assigned systems are maintained, tracked, and installed as required in NASA and MSFC standards. Maintain a database of all components requiring periodic maintenance or calibration as required in MSFC standards and notify appropriate government employees of impending due dates to avoid impacting test operations. Serve as calibration point of contact per MSFC MPG 8730.5B

SSC Only

Assure all components used within assigned systems are maintained, tracked, and installed as required in NASA and SSC standards. Implement procedures and policies addressing the maintenance, specification, and use of components to provide maximum efficiency and safety. The Technical Services Contractor (TSC) located on site at SSC will provide component calibration services for all system components. All changes from current policies, procedures, and programs will be coordinated with and approved by NASA before implementation.

Maintain existing database of all components requiring periodic maintenance or calibration as required in SSC standards and notify appropriate Government personnel of impending due dates to avoid impacting test operations.

2.1.4 Manage test data, including delivery, storage, dissemination, and archiving**SSC Only**

Manage data products produced during test activities and/or the operation of core functions. Store and transmit data in a consistent and organized manner using NASA and SSC standards. Data is defined as low speed, high speed, video, and photographic data. Disseminate and transmit data according to project requirements. Ensure data security, including protection of proprietary data and information, according to NASA and SSC Information Technology (IT) standards, DRD PT03 and PT07. The contractor will be provided data storage and retrieval, LAN administration, system administration, and all desktop computing services.

2.1.5 Operate and maintain emergency power generators to provide emergency backup power

SSC Only

Operate and maintain the emergency power generators located in Building 4400, including the electrical distribution system within the facility to insure backup power as necessary. The emergency generation system consists of four diesel-driven generators and associated switchgear, controls, and instrumentation. Conduct operator preventive, predictive and corrective maintenance, including the management of equipment overhaul, calibration, and configuration control of the facility. Detailed coordination with test operations and the Facilities Operations and Support Services Contractor (FOSC) is required in performance of these functions. Interface with the 13.8 Kv power transmission system is identified in the SOMRD document. Provide services to support the Cogenerations Agreement with Mississippi Power Company in accordance with documents on file with SSC Acquisition Management Office.

2.1.6 Perform test stand operator maintenance and integrate all maintenance activities

Perform test stand operator maintenance as required by standard operating procedures (SOP) or other work authorization documents. This requirement also includes the integration of all maintenance activities at the facilities covered under this contract. Coordinate maintenance within each facility and between facilities for maximum efficiency and minimum downtime. Coordinate maintenance performed by other Contractors at the facilities for which they are responsible or as directed by NASA engineers.

MSFC Only

The systems for which the TOC is responsible are identified in the TD/COD Responsibility Agreement. Operator maintenance includes East and West Test Areas.

SSC Only

The systems for which the TOC is responsible are identified in the SOMRD document. All preventive maintenance (PM) at SSC is to be tracked and scheduled using a Computerized Maintenance Management System (CMMS). The MAXIMO system is the current CMMS at SSC and is administered by the FOSC.

The TOC shall establish a central work control center for receiving, scheduling, tracking and reporting of all preventive maintenance and repair work.

Preventive maintenance work orders will be generated in the FOSC administered Computerized Maintenance Management System (CMMS) and sent to the TOC on a weekly basis. The TOC will be responsible for scheduling each PM by entering the appropriate scheduling dates in to the CMMS. The CMMS will use this scheduling information to generate a schedule of maintenance activities in the test complex.

The TOC will be responsible for creating work orders in the CMMS for any repair work/corrective maintenance (CM) of equipment/systems managed by the TOC. [i.e. The TOC is defined as the System Manager for such equipment/systems in the System

Operation and Maintenance Responsibility Database (SOMRD).] Again, the TOC will be responsible for scheduling each CM by entering the appropriate scheduling dates in to the CMMS.

The TOC will also be responsible for the input and update of data, in the CMMS, required for the tracking of maintenance and repair work. Such data shall include equipment number, completion date, labor hours and descriptive comments that detail the scope of work performed.

2.2 Maintain and operate the existing secure configuration management and control system for all test projects, facilities, systems, subsystems, and components for each site

Maintain and operate current configuration control systems. Activities will include operating configuration management systems, support configuration management boards and sub-boards, cross organization and Contractor coordination for planning, system and documentation auditing, review, problem identification, and resolution. Submit a Configuration Management Plan in accordance with DRD CM01 delineating the policies, processes, procedures, and improvements used for configuration management. The Contractor will assess and recommend feasibility of consolidating Configuration Management Systems at both sites.

MSFC Only

The existing MSFC configuration control system is based on utilization of existing Work Authorization Tracking System (WATS). WATS is an electronic work order (TPS) generation, routing, approval, and tracking system that runs on PC-based local area networks and is maintained by another Contractor. Use this system to track open work orders and generate reports of open items for Test Readiness Reviews as required.

Performance shall be in accordance with Technical Document (TD70-003), "Test Preparation Sheet Instructions."

SSC Only

SSC currently uses a system based upon the commercial software Windchill and the Site-wide Operational & Repair Documentation (SORD) system. All drawings, designs, and/or models must be compatible with the latest production release of the SSC Design and Data Management System (DDMS). The Contractor, utilizing the Windchill environment, shall provide electronic access to all controlled data generated, appropriately marked, in digital form, to a specified number of users, through the DDMS. The Contractor must interface with the Windchill based Government DDMS to facilitate controlled unclassified real-time information exchange between multiple locations at a rate of transmission that does not limit the ability to exchange data. The Contractor will establish a collaborative environment to support NASA insight into analysis, design and engineering, test and evaluation, training, experimentation and other areas as required. All data contained within this system is the property of NASA and will remain with NASA at termination of contract.

Assist/support the Government in populating DDMS with contents Engineering Drawings, operational procedures, safety analysis, configuration management,

component information and any additional information that is used in support of this contract. Configuration control and storage of any analyses, reports, drawings, designs, and/or models produced under this contract must utilize the SSC DDMS and adhere to NASA-STD-2817, "Computer-Aided Engineering, Design And Manufacturing Data Interchange And Application Programming Interface Standards."

2.3 Develop and maintain documentation utilizing existing systems

MSFC Only

Provide documentation services in compliance with the requirements of MPG 1440.2, "MSFC Records Management Program", TD70 – 003, "Test Preparation Sheet Instructions", and TD70 – 004, "Test Procedure Instructions." Provide documents to support investigations and impounding of data and records as required.

SSC Only

To the maximum extent possible use existing SSC documentation and systems. Develop and use necessary documentation such as operating plans and procedures, maintenance and operating instructions, and other types of work instructions.

All documentation and the document index will be developed, managed, and maintained in accordance with SPG 1400.2, Stennis Document, Numbering System (SDNS) User Guidelines, and Management Guidelines and Standards and Stennis System Level Procedure (SSLP)-1410-0001, Documentation and Data Control.

Plans, manuals, reports, and procedures must conform to NASA standards. Included within these documents shall be detailed scientific and engineering language, charts, graphs, specifications, cost estimates, and drawings. Maintain, archive, and store all such documentation in the NASA Central Engineering Files, which is maintained by the FOS Contractor.

File, maintain, store, retrieve, and disposition records, such as test data, test readiness reviews, pretest reviews, open end item status reviews, test article data packages, video, and still photography.

2.4 Develop and maintain analytical tools and methodologies

SSC ONLY

Analytic models of test facilities, systems, and STE are required to perform the engineering design and analysis functions described in Section 3.2 to ensure safe and predictable test operations. Use of a broad range of analysis tools and design and analysis methodologies will be necessary. The Contractor will be required to develop, maintain and use existing analytic models that describe and evaluate the test systems here at SSC. There are two distinct fidelity levels of the analytic models employed in normal/typical test project work:

- High fidelity (detailed spatial and temporal analytic description of applicable physical processes coupled with an accurate detailed definition of applicable initial and boundary conditions) models predicting and reconstructing the physical

processes experienced by the interaction of Rocket Propulsion Test (RPT) facility hardware, propellants and test system operations, and

- Low fidelity and or quick turnaround analytic models and processes supporting preliminary/ROM test system sizing and performance assessments propellant/fluid processes.

Develop and maintain documentation of the analytic tools and utilization/application methodologies used in executing the engineering design and analysis tasks. This documentation will include a technical description of the analytic tool, its application in test systems design and analysis, and the procedure for this application.

Demonstrate applicability and adequate validation of the analytic tools used in the test systems design and analysis tasks described in Section 3.2 of this PWS. Analytic tools, models, documentation, and validation results developed during performance of this PWS are the exclusive property of NASA.

2.5 Identify, evaluate, and adapt new test technology and systems to continually improve propulsion system ground testing

Develop test technology, including identification, evaluation and adaptation of new technology and systems to continually improve system ground testing and related processes. These systems will be developed for use in real-time operation and control of ground test systems. Working with NASA:

- (a) Provide advanced planning to maintain NASA's testing capabilities at the leading edge of propulsion test technology
- (b) Provide or support technology activity that improves ground test operations with cryogenic systems and high-pressure gas systems
- (c) Sustain and enhance capabilities in plume effects predictions and monitoring, particularly with respect to test stand safety and operability
- (d) Support the development, evaluation, and deployment of new sensor systems, instrumentation systems, automated control systems, real-time facility modeling and characterization, distributed data networks, health monitoring systems, and other systems applicable to ground testing
- (e) Support the assessment and infusion of applicable new technologies into propulsion testing in those areas of science and engineering that are at the present limits of commercial availability.
- (f) Collaborate with other technology development organizations, both external and internal to this contract
- (g) Provide a "new technology" review summary

2.6 Plan, evaluate, engineer, and support construction of test facility modernization and improvements

SSC Only

Provide Construction of Facilities (CoF), modernization, and maintenance project inputs consisting of a prioritized listing with one-page justifications for each project. CoF shall conform to the same reporting standards as test project and maintenance as described in sections 1.4, 1.8, and 2.1.6.

Provide operational support required to properly implement these improvements. This consists of attending design reviews and interfacing with civil servant and construction personnel.

2.7 Provide a comprehensive plan to operate and maintain core capability

Provide a comprehensive operation and maintenance plan for core capabilities in accordance with DRD PT09. Specify an approach for meeting the minimum requirements. Identify and propose consolidation opportunities, innovations, and efficiencies realizable by using expertise and resources made available across test facilities and centers. The plan will also address management objectives to consolidate NASA's test operations business practices. Include a prioritized schedule of specific initiatives, supported by rationale emphasizing standard procedures throughout the process.

(End of Section 2)

Section 3.0 Test Project Implementation and Test Performance Capability

The test capabilities as described in this section are those necessary to develop, construct, and operate test systems required for successful completion of a test program. This includes project management, project management support, scheduling, system design, construction, activation, pre-test activities, testing, and post-test activities. This work is performed as part of an integrated team with NASA and test article Contractors (customers). The level of Contractor participation for an individual project varies depending on the project's scope and scale.

3.1 Support, Schedule, and Manage projects

SSC Only

Provide project management support, project scheduling, and overall project management for test programs. The majority of this requirement is for project management support and scheduling, but the capability for total project management should be available. Detailed descriptions of these requirements are specified in paragraphs 3.1.1 through 3.1.4.

3.1.1 Develop Project Plans

SSC Only

Develop and submit written plans for new projects in accordance with the work request. Plans may include:

- (a) Test requirements
- (b) Work breakdown structure (WBS)
- (c) Organizational Breakdown Structure (OBS)
- (d) Final detailed cost estimates for test projects and /or facility upgrades
- (e) Preliminary planning estimates for new business development
- (f) Expenditure projections
- (g) Description of work effort
- (h) Workforce loading
- (i) Detailed schedules
- (j) Any project unique requirements
- (k) Documentation and written revisions for any project plan changes

3.1.2 Provide project management and systems integration engineering support

SSC Only

Participate with the Government in the planning of test operations and work phasing in order to prepare for full and continuous support to test customers. Review and make

programmatic recommendations to meet propulsion test project requirements on schedule. Review and support includes:

- (a) Project manager/project engineer support
- (b) Systems integration engineering support
- (c) Policy development, documentation, and implementation support
- (d) Programmatic and technical issues development and resolution
- (e) Business management practices development and implementation
- (f) Coordination of engineering analysis
- (g) Development of Rough Order of Magnitude (ROM) cost estimates
- (h) Coordination of preliminary designs including all safety and environmental aspects
- (i) Participation with the Government in technical discussions with potential test customers to refine test requirements
- (j) Project tracking with approved tools in required frequency
- (k) Management of test documentation in accordance with site-specific standards

3.1.3 Manage projects

SSC Only

Provide project management for specific projects. This includes the responsibility for the compilation of all requirements and information necessary to complete a Project Requirements Document (PRD) as specified in SSC SOI-8080-0004. Also included is responsibility for assuring all requirements established in the PRD are met and continue to be met for the life cycle of the project.

3.1.4 Schedule and integrate projects

Schedule and integrate all project activities and resources (Budgeted Cost of Work Schedule, BCWS) at all test locations. Integrate all activities including special test equipment fabrication, test position buildup, hardware delivery, pre-test procedure development, installation of test hardware, test, and facility refurbishment. The scheduler is responsible for coordinating across all functional elements to assure test project schedules are complete and status provided weekly. Interfaces will include fabrication personnel, test project engineers, instrumentation and measurement system engineers, control engineers, and the test requestors. This requirement shall be in electronic format using Microsoft Project 2000.

MSFC Only

Perform scheduling and integration in accordance with TD70 work instructions, TD70 – 006, “Test Project Scheduling.” Track and monitor test project cost estimates.

SSC Only

Perform scheduling and integration in accordance with SSC-SOI-8080-0003, “Project Scheduling System.”

3.2 Design and analyze test systems

Design, analyze, and integrate a broad range of test systems to accommodate testing and associated research and development activities.

3.2.1 Design and analyze mechanical systems

SSC Only

Provide mechanical design and analysis of test facilities and facility operational performance. The scope of this effort includes system design and analysis of cryogenic, non-cryogenic, vacuum to ultra high-pressure (15000 psi) propellant storage, run, distribution, and disposal systems for existing facilities, Special Test Equipment (STE), and Ground Support Equipment (GSE). These systems are composed of propellant and pressurization system tanks and delivery systems, test article thrust measurement, thrust restraints, propellant ignition, component hydraulic and pneumatic actuation, environmental and test article purge systems and related water deluge, and other ancillary and support systems.

Provide specialized engineering services required for test system design and analysis, and in particular, knowledge, expertise and analysis capabilities in cryogenic systems engineering, from vacuum to an ultra high pressure (UHP) regime and related fluid/structural phenomena, such as flow induced vibration and fluid hammer. Specialized analytical capabilities in steady state, transient, and dynamic modeling of reacting and non-reacting flows are required.

Provide engineering support during test operations, including real time activation test support, post-test data analysis, propellant discharge plume diagnostics, acoustic monitoring, radiometric monitoring, thermal imaging, and other special and unique measurements.

3.2.1.1 Design and analyze propellant systems

Provide cryogenic systems engineering in a test environment, from ambient to a UHP regime. The primary cryogenics in use at the test facilities are liquid oxygen (LO₂), liquid hydrogen (LH₂), and liquid nitrogen (LN₂).

Provide non-cryogenic fluid systems engineering in a test environment. The primary non-cryogenic propellants used at the test facilities include hydrogen peroxide (H₂O₂), rocket propellant (RP_x), jet propellant (JP_x), various alcohols as well as hydroxyl terminated polybutadiene (HTPB), and similar solid fuels. Design and analysis of test article propellant ignition systems will be required. TEA/TEB, O₂/H₂, O₂/RP, H₂O₂/RP catalyst systems are typical systems used at SSC.

3.2.1.2 Design and analyze pressurant and purge systems

Provide ambient temperature and UHP fluid systems engineering (systems design and analysis) in a test specific environment. Test projects typically require high flow (100 – 1800 lb/sec), ultra high pressure (6000 – 15000 psi) pressurants. The primary ambient

temperature, UHP fluids in use at the test facilities include oxygen (GO₂), hydrogen (GH₂), nitrogen (GN₂), helium (He), and high-pressure air (HPA).

3.2.1.3 Design and analyze components

Provide propellant, pressurant, and purge system fluid control system design, component sizing, and component selection for a test environment. Components in test systems include, but are not limited to, valves, filters, screens, orifices, venturis, pumps, compressors, intensifiers, heaters, connectors, reducers, instrumentation (pressure, temperature, acceleration), flow meters, and similar components.

3.2.1.4 Design and analyze hydraulic and pneumatic systems

Provide hydraulic and pneumatic systems design, sizing, and selection for a test environment.

3.2.2 Design and analyze electrical systems

SSC Only

Design and analyze electrical systems for test facilities and facility system performance. The scope of this effort includes existing facilities, Special Test Equipment (STE), and Ground Support Equipment (GSE). This effort includes system design and analysis of the electrical systems supporting test in a cryogenic, non-cryogenic, and ambient to UHP propellant environment.

3.2.2.1 Design and analyze data acquisition systems

Provide design and analysis of data acquisition systems for conducting test operations. This effort includes design, selection, and integration of hardware/software systems, development and verification support for high and low speed data acquisition systems, development of software, and integration of signal conditioning, data acquisition, display, and recording systems. Knowledge and experience in the assessment of measurement uncertainty, time correlation, and system margins is also required.

Provide design and analysis of systems (hardware/software) to process acquired test data. This effort includes coding, networks, and computer systems for both dynamic and static data processing.

3.2.2.2 Design and analyze test control systems

Provide design and analysis of control systems for conducting test operations. This effort includes hardware/software development and verification support for controls systems, and requires development of ladder logic, operation screens, integration with Engine Controllers, specialized equipment for valve operations, test sequencing, redline cut systems, abort design and analysis, prep complete, timing, and system margin analysis.

Provide design and analysis of systems (hardware/software) to process acquired test data. This effort includes coding, networks, and computer systems for both dynamic and static data processing.

3.2.2.3 Design and analyze instrumentation

Provide evaluation and selection of dynamic and static measurement instrumentation. This effort includes instrumentation range selection, placement, measurement uncertainty analysis, cabling, signal conditioning, stress analysis, procurement specifications development, calibrations, and installation support.

3.2.2.4 Design and analyze ancillary systems - fire detect, video, oral warning

Provide design and analysis of video (cameras, high & low speed), GH2, GOX, and H2O2 detection, fire detection, intercom/paging, infrared (IR) cameras, and mass spectrometer systems, specific to a test environment.

Provide design and analysis of special power, grounding, and lighting systems. For example: 28Vdc power for motor operated valve and solenoid operated valve (MOV & SOV) operation, 270Vdc for electromotive actuators (EMA), three phase camera lighting and heaters, grounding layouts for instrumentation, controls, and data acquisition and control system (DACS) equipment.

3.2.3 Draft designs utilizing Autocad and Pro/Engineer

Perform schematic and solid model drafting for test facility and test project design definition utilizing commercially available Autocad and Pro/Engineer software environments.

MSFC Only

Performance shall be in accordance with TD70-005, "Procedures for Test Facility Drawings", including maintenance of Master List for all approved engineering drawings (i.e. Current revision list, etc.).

Perform configuration control of this drafting effort and maintain a historical records system in accordance with current test facility standards, work instructions, and process at the respective test site.

SSC Only

SSC drafting is defined by Stennis Work Instruction (SWI)-8820-0001, 'SSC Systems Engineering Drafting Process' and SOI-8080-0007, 'SSC Test Site Drawings.'

3.2.4 Conduct special studies

SSC Only

Conduct special studies such as concept development, requirements studies, trade studies, operations research, predictive modeling, component and system failure analysis, feasibility and applicability of new methods and processes in data acquisition and controls systems, avionics and telemetry, safety engineering, risk evaluation, management, and accident investigation.

3.3 Fabricate and install test systems

Fabricate and install test systems and subsystems as required by each project and within the responsibility of the TOC. All fabrication and installation of test systems require close coordination with NASA and other Contractors performing construction on the same facility.

3.3.1 Fabricate mechanical systems

Fabricate mechanical systems within the responsibilities of the TOC, as required for each test program. The specific types of work required consist of:

a. Tubing

Fabricate and install tubing consisting of field fitting of all tubing, installing appropriate connections, and connecting with all components and subsystems. Examples of this would be master facility panels, purge systems, pressurization systems, and instrumentation connect tubing.

b. Piping and Structures

MSFC Only

Fabricate and install piping consisting of field fitting, welding, NDT to include visual, NDE radiographic and penetrant inspection and by hydroproof test, and connecting with all components and subsystems. Fabricate and install structures and adapting hardware for test articles. This effort shall be performed in accordance with all applicable codes and procedures, both NASA and industry.

SSC Only

Piping and structures construction at SSC is performed by the FOSSC and other NASA direct Contractors.

c. Components

Assure all required components have the proper configuration and cleanliness levels. Install required components as part of systems and subsystems for which the Contractor is responsible for construction. Examples of this would be components in master facility panels or gauges and regulators in purging systems.

d. Vessels

Install vessels as required for each test program. Typically, vessels are installed and certified by others. Occasionally, small specialty vessels can be installed by the TOC. The TOC is responsible for the connection of vessels to systems and subsystems as required by the specific test program.

3.3.2 Fabricate electrical systems

Fabricate electrical systems as required for each test program. The specific types of work required consist of:

a. Data acquisition systems

SSC: total system/MSFC: only to the signal conditioning interface. Examples of the type of work involved would be running and terminating copper wire and fiber optic cable, building-up panels and racks, component preparation and installation fabricate and install drag-on cables. (examples include: programmable signal conditioners, amplifiers, and multiplexers), and connection with computer-based interface units.

b. Test control systems

Fabricate and install all control systems in facilities for which the Contractor is responsible. Examples of the type of work involved would be: running and terminating copper wire and fiber optic cable, panel and rack build-up including component preparation and installation (examples include: programmable logic controllers, event recorders, and both analog and discrete input/output devices), valve position sensors, and connection with computer-based interface units.

c. Instrumentation

Install all instrumentation used in facilities for which the Contractor is responsible. Examples of the type of work involved would be: Resistance Temperature Device (RTD's), transducers, transmitters, accelerometers, thermocouples, strain gauges, and load cells, along with all the required supporting hardware. Test article instrumentation is normally installed by the test article Contractors. If requested, the TOC is required to do test article instrumentation installation.

d. Ancillary systems

Install all ancillary systems as required in facilities for which the Contractor is responsible. Examples of instrumentation used include but are not limited to: fire detection, hazardous gas detection, low and high speed video (SSC), intercoms, oral and aural warning systems, test communication systems, area access and control systems, test warning systems, 28Vdc power for MOV & SOV operation, 270Vdc for EMA's, three phase camera lighting and heaters, and grounding layouts for instrumentation, controls, and DACS equipment.

3.4 Activate test systems

Activate mechanical and electrical systems and subsystems per engineering instruction as required by each program. (SSC is per SSC-SOI-8080-0041, "Project & Systems Integration") Activation is performed after construction and fully characterizes the facility, including demonstrating that facility performance meets requirements.

3.4.1 Develop Facility Activation Plan

Participate in and/or develop a Facility Activation Plan (FAP). The FAP verifies and validates that all facility systems are ready to meet test article customer test objectives. The FAP shall include cleanliness verification, leak checks, cold flows, data acquisition system validation, control system validation, functional tests and redline cut system validation. (Note: government employees usually develop the FAP.)

3.4.2 Activate mechanical systems

MSFC Only

In support of facility activation, perform mechanical system setup and safing operations for tests, verifying system readiness for test, performing testing, supporting facility or test article failure troubleshooting, and performing written instructions for maintenance and repairs. Examples of this type of work include: cleanliness verification, leak checks, and cold flows.

SSC Only

In support of facility activation, perform mechanical system setup and safing operations for tests, verifying system readiness for test, performing testing, supporting facility or test article failure or incident investigations, troubleshooting, issuing and performing written instructions for maintenance and repairs, and reviewing and validating test results. Examples of this type of work include: cleanliness verification, leak checks, and cold flows.

3.4.3 Activate electrical systems

MSFC Only

In support of facility activation, perform electrical system setup and shutdown operations for tests, verifying system readiness for testing, performing testing, supporting facility or test article failure or incident investigations, troubleshooting, and performing written instructions for maintenance and repairs. Examples of this type of work include: data acquisition system validation, control system validation, functional tests, and redline cut system validation.

SSC Only

In support of facility activation, perform electrical system setup and shutdown operations for tests, verifying system readiness for testing, performing testing, supporting facility or test article failure or incident investigations, troubleshooting, issuing and performing written instructions for maintenance and repairs, supporting test engineering data reduction and reviewing, and validating test results. Examples of this type of work include: data acquisition system validation, control system validation, functional tests and redline cut system validation.

3.4.4 Activate integrated systems

Integrated systems activation demonstrates all test systems (mechanical and electrical) are operating in unison to accomplish facility performance objectives.

MSFC Only

In support of facility activation of integrated systems, verify system readiness for testing; perform integrated system performance and shutdown operations; support facility off nominal, failure, or incident investigations; perform troubleshooting.

SSC Only

In support of facility activation of integrated systems, verify system readiness for testing; providing engineering analysis and corresponding expected systems performance assessments and documentations, perform integrated system performance and shutdown operations; support facility off nominal, failure, or incident investigations; perform troubleshooting; issue written instructions for maintenance and repairs; support test engineering data reduction; and review and validate test results.

3.5.1 Conduct Test

Operate mechanical and electrical systems and subsystems to gather data on test article performance as required by each program. Test conduct is the span of operations beginning with facility preparation and includes test article installation/integration, test conduct, facility safing, test article removal and concludes with return of the facility to pretest configuration. Operation of these systems is performed by a NASA led test team, which includes NASA, the test article Contractor, and the Contractor. Examples of this type of work include: console operations, mechanical and electrical technician operations, problem resolution (**SSC Only**), stand and system set up and safing.

3.5.1 Conduct pretest operations

Conduct pretest operations to prepare the facility for test in accordance with specific test project requirements and install/integrate the test article.

3.5.1.1 Test article receipt and installation

(Note: The test article Contractor is normally responsible for receipt and installation at SSC.) Receive and inspect test articles, check for transportation damage and parts defects and shortages, identify equipment, and verify completeness of accompanying records, transport, and install test articles into the test stand.

3.5.1.2 Integrate test article

Test article integration involves coordinated operations between the entire test operations team, including NASA, the test article Contractor, and the Contractor. Perform test article pretest setup and checkout, conditioning, and inspection as required. Install and remove test article instrumentation, as required.

Assist in the resolution of any performance anomaly associated with the test facility or technical issues related to test article and test facility interaction.

Clean, dry, store, package, ship, and handle test articles and their components, as required. A test article data package shall be maintained which, as a minimum, shall include a history of tests, discrepancies, repairs, serialization of parts, and time/cycle data, where applicable.

SSC Only

Perform test anomaly resolution as requested by NASA and coordinated with the test article Contractor.

3.5.1.3 Setup test facility and test systems

Prepare test facility mechanical, data, and control systems for subsequent test performance per detailed test requirements. Set up hydraulic, pneumatic, cryogenic, mechanical and electro-mechanical systems, electrical control systems including analog servo controllers, programmable logic controllers (PLCs), digital controllers, event recorders and personal computer-based equipment, per detailed test requirements. Implement FOD control program.

Install measuring transducers and assure pretest systems calibration per detailed test requirements.

Checkout and verify instrumentation and data acquisition systems installation per detail test requirements. Set up instrumentation front end equipment.

Diagnose and troubleshoot problems associated with facility mechanical systems involving valves, regulators, filters, relief devices, gauges; control problems within the test facility control systems. Diagnose and troubleshoot problems associated with sensors, cabling, and front end signal conditioning equipment, and assist in diagnosing end to end instrumentation systems involving standard electronic test equipment.

Set up instrumentation front-end signal conditioning equipment and (SSC only) data acquisition systems tests per detailed test requirements.

3.5.1.4 Conduct all-up Firing Readiness Test

Perform or support (as required by NASA) a firing readiness test (FRT) with the facility and test article in final configuration. The FRT consists of complete systems operations less propellant flow with data and control systems operation.

SSC Only

The FRT results will be analyzed by the Contractor to ensure facility and systems are performing as required.

3.5.1.5 Conduct Test Readiness Review**MSFC Only**

Keep test readiness review (TRR) records per TD70-015, "Test Readiness Review for Hazardous Operations".

SSC Only

Prepare and present material at the test readiness review in support of NASA and the customer, substantiating readiness to continue with the test phase. All open items and discrepancies will be reviewed and dispositioned. The review will be in accordance with SOI-8080-0041 "Project And System Integration."

3.5.1.6 Present documentation for Facility Operational Readiness Reviews

SSC Only

Participate in various reviews as requested by NASA including Operational Readiness Inspections, Safety Review Teams, and Independent Investigations. The level of participation and responsibility will typically be as an area expert reviewing project designs, procedures, and documentation to reach an independent assessment as to the risk of proceeding with test. Provide technical and administrative support in assembling information required by the review teams.

3.5.1.7 Operate and manage all ground support equipment (GSE) (supplied by hardware Contractor) required to support Test Operations

SSC Only

As a project team member, operate and manage the development of test requirements, GSE design reviews, and performance of independent analyses of GSE used for test operations. GSE is defined as the hardware provided by a test article Contractor, primarily to support a flight system at multiple locations. The equipment includes but is not limited to transporters, slings, hoists, dollies, lift beams, covers, access stands, handling fixtures, as well as equipment required for inspection, test and checkout of the flight system.

3.5.2 Conduct test

Test is activity performed in accordance with the center specific work authorization system from the successful FRT (if required) and is considered complete after the facility and test article are safed.

3.5.2.1 Load and condition propellant systems

Load propellant run tanks to the required level; and condition propellants, run systems, and test article to required temperatures per specific test instructions.

3.5.2.2 Conduct final facility test setups

Conduct any final facility adjustments such as master facility panel settings and data system changes as required by specific test instructions and as indicated by FRT's.

3.5.2.3 Operate test systems

The current and anticipated facility systems to be operated by the Contractor are those for liquid propulsion test systems, hybrid propulsion systems, solid propulsion test systems, cryostructural systems, and altitude test chamber systems assigned to SSC and MSFC.

MSFC Only

Operate test systems and related equipment safely and efficiently in support of test requirements. All work shall be completed in accordance with NASA guidelines, MSFC Management Instructions, and Operating Instructions, i.e. Test and Checkout Procedures (TCP) Facility Operating Procedures (FOP). Examples of the type of work required include: facility console operator, anomaly resolution technician activity, access control, and technician test crew and pretest safety walk-downs.

SSC Only

Operate test systems and related equipment safely and efficiently in support of test requirements. All work shall be completed in accordance with NASA guidelines, SSC Management Instructions and Operating Instructions. Examples of the type of work required include: low speed data console operator, high speed data console operator, facility console operator, video operator, anomaly resolution engineering and technician activity, access control, and technician test crew.

3.5.2.4 Secure and safe test facility and test systems

Secure the test facility and systems after each test, placing each system in a safe mode as directed by the test operations engineer or work authorization document. In the event of an off nominal condition before, during or after the test, implement contingency procedures to secure and safe the test facility and systems.

3.5.3 Conduct post test operations

Conduct post test operations after the test is completed and the facility is safed.

SSC Only

Examples of this work include: data processing, data review, data transmittal, storage and retrieval of data, and disposition of test article and associated equipment in accordance with specific test project requirements.

MSFC Only

Examples of this work include: disposition of test article and associated equipment in accordance with specific test project requirements.

3.5.3.1 Process and transmit data**SSC Only**

Process and transmit all test data according to requirements specified in the PRD. Protect processed data from security and proprietary perspectives in accordance with the Data Handling Plan.

3.5.3.2 Analyze data**SSC Only**

Analyze all facility and test article data for accuracy and validity, and quantify and certify test/measurement accuracy. Identify data channels that are invalid and recommend corrective action

3.5.3.3 Review data

SSC Only

Provide processed facility and test article data in the required formats. With NASA and the customer's participation, review and evaluate the data to determine test outcome and to prepare for subsequent testing.

3.5.3.4 Inspect test article and facility at the conclusion of each test

Inspect the test article and facility at the conclusion of each test or test series as required by each program. Inspection should include checks for cracks or leaks, loose or broken mechanical and electrical connections, loose debris, or any other condition indicating a safety or technical problem. Document all anomalies with a Discrepancy Report at SSC or a QTPS at MSFC.

3.6 Conduct Test Project Closeout/Review

Review the accomplishments at the conclusion of each test program. Review the PRD to assure all desired goals have been met. Close all open work documents.

3.6.1 Prepare final reports

SSC Only

Prepare a final report at the conclusion of each test program reviewing and substantiating the measured results of project testing relative to the requirements defined in the PRD.

Identify all STET. Address any requirements not met.

(Note: The Project Manager or test requester, who is usually a NASA employee, normally performs this task.)

3.6.2 Conduct customer surveys

MSFC Only

Develop and maintain customer survey database to track results and implement corrective actions.

SSC Only

Conduct customer surveys as required by the appropriate SSC SOI-8080-0006, "Development and Approval of Customer Agreements."

(Note: The Project Manager, who is normally a NASA employee, usually submits these.)

3.6.3 Disposition test article and customer furnished equipment

Disposition all equipment provided by the test article Contractor as required. This may include the test article and any other equipment provided as part of the test program. Proper packaging, documentation, and shipping are critical. Any special instructions will be provided by the test article Contractor to the Government and transmitted to the TOC Contractor.

3.6.4 Gather and incorporate lessons learned and corrective actions

As part of the test activity, gather and incorporate any lessons learned into daily operations. Support the identification and submittal of new lessons learned through the Rocket Propulsion Test Management Board. Complete any corrective actions identified during the gathering of lessons learned.

3.6.5 Reconfigure test facility and systems

Return the test facility and its systems to a configuration as specified by NASA engineering instruction. This includes the removal of any hardware installed specifically for a program and the reconfiguration of the test facility. The scope will vary depending on the specific program and future programs.

(End of Section)

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

ATTACHMENT J-2

DATA PROCUREMENT DOCUMENT

INTRODUCTION1. SCOPE

This Data Procurement Document (hereinafter called DPD) is the basic contract document that shall govern all data required by and for the Test Operations Contract. The Contractor shall furnish all data described by the Data Requirements listed on the Data Requirements List hereinafter called DR's and DRL, attached hereto and a part of this DPD. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this DPD.

2. DESCRIPTION

This DPD consists of a Statement of General Requirements, the DRL, and DR's.

2.1 Statement of General Requirements (SGR)

The SGR prescribes those general requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual data requirements documents.

2.2 Data Requirements List (DRL)

Throughout the performance of the contract, the DRL at all times provides a complete listing of the data requirements of the contract. The DRL is not presented as an entity, but rather, is segmented into separate categorized listings that precede each section of DR's (See Paragraph 2.3).

2.3 Data Requirement (DR)

Each data requirement listed on the DRL is given complete definition by the DR. The DR prescribes content, format, maintenance instructions and submittal requirements.

For the purpose of classification and control, DR's are grouped into the following broad functional management categories:

<u>CATEGORY SYMBOL</u>	<u>DESCRIPTION</u>
CM	Configuration Management
EN	Environmental
LS	Logistics/Support
MA	Program Management
MF	Manning and Financial
PC	Procurement/Contracts
PT	Propulsion Test
SA	Safety and Mission Assurance

The symbol representing these categories forms the prefix of the DR identification number. To facilitate the usage and maintenance of the DPD, the DR's have been sectionalized in accordance with these data categories.

Each section contains all DR's within a specific data category. The DR's are filed in numerical sequence and are listed on a DRL page (or pages) that precedes, and is part of, the section.

3. Maintenance

Revisions to this DPD shall be accomplished by contractual direction (e.g., Change Order, Supplemental Agreement).

STATEMENT OF GENERAL REQUIREMENTS

1.0 GENERAL DATA REQUIREMENTS

1.1 Deferred Delivery

NASA reserves the right to reasonably defer the dates of delivery of any or all data required to be submitted by this DPD. Such right may be exercised at no increase in the contract amount. In the event that NASA defers delivery of a data item, resulting in a cost impact to the total contract cost, the contract amount shall be subject to equitable adjustment in accordance with the contract clause entitled "Changes".

1.2 Excusable Delays

The validity of the data delivered hereunder is directly dependent upon the validity of the technical data made available by the Government. When non-availability, delayed availability or subsequent revision of the pertinent technical data result in delayed delivery of the required data, then such delay shall be deemed to be subject to the Government Property clause of the contract.

In the event contractual submittal dates are not met by the Contractor due to the non-availability or delayed availability of Government Furnished Services, or due to any other cause within the control of the Government, then such delay shall be deemed to be subject to the Government Property clause of the contract.

1.3 Cost of Data

Except as otherwise provided in this contract, the cost of data to be furnished in response to this DPD is included in the total cost of this contract and shall be reimbursed in accordance with the Schedule of the Contract.

1.4 Data Not Required by the DPD

Data generated within the normal course of the contracted work, and not a part of the data required by DPD, shall be made available in accordance with the requirements of this contract.

1.5 Referenced Documents

Documents referenced in this DPD are those in effect at the time of contract award, unless otherwise specified, and form a part of the DPD to the extent specified herein.

2.0 DOCUMENT PREPARATION STANDARDS

2.1 Contractor's Internal Documents

Insofar as practicable, the Contractor's internal documents shall be used to meet the data requirements of this DPD. These documents shall not be rewritten for the sake of meeting the minimum requirements as specified in the applicable DR. In instances where minor differences in content and format exist between DPD requirements and Contractor's document, action will be taken to resolve these differences and, where appropriate, a change in requirements will be effected.

2.2 Document Identification

Documents published by the Contractor and submitted in response to the data requirements of this DPD shall be identified within an organized identification numbering system prescribed by the Contractor. Documents submitted in response to the data requirements of the DPD, that are to be subsequently published by NASA, shall be identified as prescribed by NASA. All document submittals shall be clearly marked with the contract number and applicable DR number except that Drawings and Engineering Change Proposals (ECP's) need not include applicable DR Number. Documents that satisfy the requirements of more than one DR shall be marked with all applicable DR numbers. Successive issues or revisions of documents shall be identified in the same manner as the basic issue and shall include appropriate change identification.

2.3 Reference to Other Documents in Data Submittals

References to other documents in documents submitted in response to the data requirements of the DPD are permissible. Referenced documents must be adequate and include such identification elements as title and number. When a document to be referenced would only be applicable to a minor or limited extent, every effort shall be made to include the applicable information in the response document rather than using the reference. All referenced documents shall be made readily available to the cognizant NASA organization upon request.

2.4 Printing Requirements

Printing of formal reports and data in book format shall be in accordance with the following general specifications:

- (a) Finished size - 8 1/2" X 11"
- (b) Paper - 20 pound opaque bond
- (c) Pages will be printed on both sides, blank pages will be avoided when possible
- (d) Oversize pages will be avoided when possible, but if necessary will be folded to 8 1/2" X 11"
- (e) Additional color shall be used only upon written approval by the Contracting Officer Technical Representative.
- (f) Binding shall be the most economical method commensurate with the size of the report and its intended use.

2.5 Maintenance of Documents

- 2.5.1 Revisions to documentation may be accomplished either by individual page revision or a complete reissue of the document, with the exception of drawings that shall be revised in accordance with minimum Configuration Management Requirements.
- 2.5.2 Individual page revision shall be made as deemed necessary by the Contractor or as directed by the Contracting Officer.
- 2.5.3 The document shall be completely reissued when in the opinion of the Contractor and/or Government the document has been revised to the extent that it is unusable in its present state, or when directed by the Contracting Officer. When complete reissues are made, the entire contents of a document shall be brought up to date.
- 2.5.4 Changes of a minor nature to correct typing errors, misspelled words, etc. shall only be made whenever a technical change is made, unless the accuracy of the document is affected.
- 2.5.5 All revised pages shall be identified by placing a revision symbol and data in the upper right-hand corner of the page. Each document shall contain a log or revised pages that will identify the revision status of each page with the revision symbol. This list shall follow the table of contents in each document. The line or lines revised in the margin of the page, and the change authority shall be indicated adjacent to the change.

- 2.5.6 Contractor reports shall not be submitted containing pen and ink markups that correct, add to, or change the text, unless schedule problems exist and approval is obtained in writing from the Contracting Officer Technical Representative. Such markups, however, shall not exceed 20% of the page content and shall be acceptable provided that the reproduced copies are legible. In addition, hand drawn schematics, block diagrams, data curves, and similar charts may be used in original reports, in lieu of formally prepared artwork. Acceptability will be determined by the Contracting Officer Technical Representative performing the quality inspection function.

RFP 13SSC-O-02-38 DRD MASTERLIST

DRD Total: 35

CM Configuration Management

- 01 Configuration Management Plan

EN Environmental

- 01 (Air Emissions)

LS Logistics/Support

- 01 (Government Property Management Plan)

MA Program Management

- 01 [Reserved]
- 02 (List of Owners, Officers, Directors & Executive Personnel)
- 03 (Personnel Report-Wage Determination)
- 04 (Emergency Plan)
- 05 (EEO)
- 06 (Contract Performance Progress)
- 07 (Handling of Data Plan)

MF Manning and Financial

- 01 (Financial Mgmt, 533M & 533Q)
- 02 (Monthly Workforce)
- 03 (Resources Mgmt)
- 04 (Cost of Operations)
- 05 (SSC Mgmt Accounting System)
- 06 (RFMAS/FACS)
- 07 (Cost Exceeding 100% summary)
- 08 (Occupational Health Program Cost)
- 09 (Cost & Services Allocation)

PC Procurement/Contracts

- 01 [Reserved]
- 02 (Subcontract Litigation)
- 03 (Patent & Copyright Infringement)
- 04 (Liability to Third Party)
- 05 (Insurance)
- 06 (Subcontracts)
- 07 (Patent Application)

PT Propulsion Test

- 01 (5 year Equipment Plan)
- 02 [Reserved]
- 03 (Automated Information Security Incident)
- 04 [Reserved]
- 05 (Propellants & Pressurants Plan)
- 06 (Propellants & Pressurants Forecast)
- 07 (Automated Information Security Plan)
- 08 (Test Capability Handbook)
- 09 (Core Capability Plan)

SA Safety and Mission Assurance

- 01 (Personnel Certification Plan)
- 02 (Safety & Health Plan)
- 03 (Mishap Report)
- 04 (Mission Assurance Plan)

DATA REQUIREMENT

DR Number, Date Revised

CM01

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Plan, Configuration
Management

Responsible Office

RA00

P.W.S. Reference

2.2

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA31 Contracting Officer
Concurrence:
Information – HA20 Contracting Officer Technical Representative
AA00, BA20, BA30, CA00, HA00, QA00, RA00, and VA00

Initial Submittal Date

90 days after start of the contract.

As of Milestone

End of month.

Frequency of Submittal

Yearly, updated as required

DATA REQUIREMENT DESCRIPTION

Purpose

To describe and outline methods used in assuring proper configuration identification, control and accounting of government resources, programs and projects.

Scope

This DRD establishes the requirement for submittal of a Configuration Management Plan to delineate the Contractor policy, processes, and procedures used to assure compliance with established SSC configuration management policies. This DRD is applicable to all SSC Mission Essential Infrastructure, Special Management Attention Systems, and other institution, program, and project infrastructure and resources.

References

PWS 2.2; PTD SOI-8080-0015 - Configuration Control of Propulsion Test Systems; SSLP-1410-0001- Document and Data Control; SSLP-1440-0001 – SSC Records Management Program and Control of Quality Records, SPC 1152.1 - SSC/NASA Boards; SPG 1280.1 – SSC Management Manual; SSC STD 66-500 - SSC Facility Engineering Documentation Standard

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The plan shall include, but is not limited to the following:

1. Contractor's policy with regard to configuration management
2. Description of how Contractor integrates Contractor policy with NASA policies concerning safety, mission assurance, operational effectiveness, and ISO 9000
3. Organizational structure and assignment of functional responsibilities to assure effective institutionalization of configuration management principles into the work environment.
4. Process and procedures
5. Areas requiring configuration management
6. Areas excluded from configuration management

Plan to be submitted electronically as MS Word (SSC desktop standard version at time of submission) file formatted to print on standard 8.5" x 11" paper in portrait orientation. Plan requires NASA approval prior to implementation and subsequent revisions.

Remarks

None

DATA REQUIREMENT

DR Number, Date Revised

EN01

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Air Emissions

Responsible Office

RA02

PWS. Reference

1.1.2.3

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverables System
Approval: RA02 Environmental Officer
Concurrence:
Information –

Initial Submittal Date

45 days after contract start, Quarterly-10/10/2003 (Quarterly Report for E Complex Emissions Data).

As of Milestone

Monthly-the 10th of each month, Quarterly- Jan 10th, Apr 10th, Jul 10th, Oct 10th.

Frequency of Submittal

Monthly, Quarterly (E Complex Emissions Data).

DATA REQUIREMENT DESCRIPTION

Purpose

Provides actual run times for the engines located at B4400. The Official File Numbers are 8530.4.E.4

Scope

This Data Requirement Description (DRD) establishes the requirement for collection of hourly engine meter data for ten engines at B4400. This report is inclusive of the serial # for each engine and any other corrective actions associated with that engine. Provide the actual emissions data for the E Complex including test at the H-1 Test Facility.

References

Clean Air Act, Mississippi APC-S-1, APC-S-2, and APC-S-6, and SSC Title V Permit.

Subject to regulatory requirements revisions.

Exceptions/Additions to Referenced Requirements

The report provides the meter run times for each engine. The E Complex data shall include date, time, type and size of each test motor fired; number of LOX/LM motor components fired each day and each consecutive 365 day period; quantity of GOX/HTPB propellant fired each day and each consecutive 365 day period; quantity of LOX/HTPB propellant fired each day and each consecutive 365 day period; quantity of N2O/HTPB propellant fired each day and each consecutive 365 day period.

8 ½ x 14 paper (spreadsheet) or electronically.

Data submitted to procuring activity for review no later than three weeks prior to project implementation. Data shall be considered approved unless Contractor has been notified of disapproval prior to project implementation.

Preparation Instructions

One (1) copy each must be delivered with 1) SSC Official File Number and copy ready to be filed in SSC Official Environmental Files.

Remarks

DATA REQUIREMENT

DR Number, Date Revised

LS01

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Plan, Government Property
Management Administration

Responsible Office

RA30

P.W.S. Reference

1.5

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverables System
Approval: RA30 Supply & Equipment Management Office
Concurrence:
Information – BA31 Contracting Officer. HA20 Contracting Officer Technical

Initial Submittal Date

60 days after contract start.

As of Milestone

As of start of contract & revisions thereof.

Frequency of Submittal

One time and revisions.

DATA REQUIREMENT DESCRIPTION

Purpose

To identify the methods of controlling and administering government property.

Scope

This Data Requirement Description (DRD) establishes the requirements for the preparation of procedures covering the Contractor's methods of implementing all elements of an integrated property control and administration program.

References

PWS 1.5, NPG 4100.1, NASA Materials Inventory Management Manual; NPG 4200.1, NASA Equipment Management Manual; NPG 4200.2, Equipment Management Manual for Property Custodians; NPG 4300.1, NASA Personal Property Disposal Procedures and Guidelines, NPG 4310.1, Identification and Disposition of NASA Artifacts; NASA FAR Supplement Part 1852.245-71, Installation Provided Government Property.

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The procedures shall include, as a minimum, the Contractor's methods of implementing the intent of the applicable documents in the "References" section above. Other procedures shall be included as required, to fully define and identify the system of property control.

Plan requires NASA approval prior to implementation and subsequent revisions.

Remarks

None

DATA REQUIREMENT

DR Number, Date Revised

MA02

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

List, Owners, Officers, Directors,
and Executive Personnel

Responsible Office

RA30

P.W.S. Reference

1.0

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: RA30 Security Officer
Concurrence:
Information – BA31 Contract Officer, HA20 Contracting Officer Technical Representative

Initial Submittal Date

Start of contract.

As of Milestone

As of the last revision.

Frequency of Submittal

As Required.

DATA REQUIREMENT DESCRIPTION

Purpose

To provide the Defense Security Services (DSS) cognizant security officer with current listing of owners, officers, directors and executive personnel in accordance with the National Industry Security Program Operating Manual (NISPOM), DOD 5220.22-M

Scope

This Data Requirement establishes the requirement for the submittal of a list of owners, officers, directors, and executive personnel in accordance with DOD NISPOM 5220.22-M.

References

DSA Form 406, NISPOM, DOD 5220.22-M.

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

A list will be submitted when there is any change in officers, directors, partners, regents, trustees, or executive personnel, including as appropriate, the names of the individuals they are replacing. In addition, a statement shall be made indicating: (i) whether the new officers, directors, partners, regents, trustees, or executive personnel are cleared, and if so, to what level, when, their date and place of birth, and their citizenship; (ii) whether they have been excluded from access in accordance with the provisions of paragraph 22e; or (iii) whether they have been temporarily excluded from access pending the granting of their personnel clearance.

DSA Form 406 will be used.

Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

Original to be mailed directly to cognizant office with a copy to RA30, Security Officer.

DATA REQUIREMENT

DR Number, Date Revised

MA03

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Personnel

Responsible Office

BA30

S.O.W. Reference

None

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA31 Contracting Officer
Concurrence:
Information – HA20 Contracting Officer Technical Representative and PS52 MSFC

Initial Submittal Date

30 days after start of contract.

As of Milestone

Date of submittal.

Frequency of Submittal

Annually, due May 1.

DATA REQUIREMENT DESCRIPTION

Purpose

To provide pertinent and administrative information as related to program personnel to be used in resource analysis and obtaining Service Contract Act wage determinations from the Department of Labor.

Scope

This Data Requirement Description (DRD) establishes the requirement for the submission of a personnel report.

References

None

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The report shall provide the following information:

- A. Identification of all personnel by name, organization, job classification and distinguishing exempt from non-exempt and Information Technology sensitive "public trust" positions.
- B. Exempt salary levels and non-exempt applicable (hourly) rates by level which will be utilized in staffing for performance of this contract.
- C. Detailed information on key personnel directly employed in connection with the performance of this contract, covering professional competence, authority and assignment when requested by the Contracting Officer.
- D. Organization charts, including major subcontractors, delineated by divisions and number of personnel.

Electronically transmitted. For company sensitive information, a hard copy and disk may be provided. Organizational charts may be on 11 by 17 inch bond paper, if necessary.

Report will be updated when any pertinent changes are made in personnel realignments or organizational structure.

Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

None

DATA REQUIREMENT

DR Number, Date Revised

MA04

Contract Number, Date, & Modification No.

TOC
Effective:

Title

Plan, Emergency

Responsible Office

RA20

P.W.S. Reference

1.1.2.1

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval:
Concurrence:
Information – Submit to RA20 with one copy each to BA30, QA00 and MSFC PS52, QS50, TD70.
Submit to the SSC TechDoc System.

Initial Submittal Date

60 days after contract start.

As of Milestone

Start of contract.

Frequency of Submittal

Annual Review and Update

DATA REQUIREMENT DESCRIPTION

Purpose

To provide a course of action including procedures to be followed by the Contractor in the event of a disaster.

Scope

This data requirements description establishes the requirements for the preparation of a Plan for the reasonable protection of the Government facilities and related utilities, for which the Service Contractor is responsible, to prevent or minimize personnel injury and casualties, damage or destruction of the facilities, related utilities and privately owned property resulting from a natural or civil emergency, including but not limited to acts of sabotage, buried munitions, labor disturbances, riots, fire, explosions, hurricanes, and acts of God, as outlined in the SSC and MSFC Emergency Plans.

References

SPG 1040.1, MPG 1040.3

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The Plan shall include, but is not limited to, the following:

- Levels of disaster
- Routes of evacuation
- Color-codes and signals the Contractor will execute in case of a disaster.
- Provisions for maintenance of up-to-date records of the physical location of all site personnel at all times.
- Provisions for immediate notification of next of kin in case of a catastrophic occurrence.
- Identification of hospitalization, first-aid areas, emergency vehicles, and qualified medical personnel capabilities.
- Indoctrination and training techniques proposed to insure adequate execution of the disaster plan.
- Provide a vital records program to allow survival of essential records during disaster conditions.
- Provisions for survival equipment and supplies.

Electronic 8 1/2 X 11 format compatible with Microsoft Word.

Maintain per GRS Schedule 5 Disposition 1, A1 NPG 1441.1.

Plan requires NASA approval prior to implementation and subsequent revisions.

Remarks

Contractor will review annually updating to maintain currency. In the event no changes are required to the plan a letter format report will be submitted stating the fact that the plan is current, and that no revisions are required.

DATA REQUIREMENT

DR Number, Date Revised

MA05

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Equal Employment
Opportunity

Responsible Office

AA00

P.W.S. Reference

None

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval:
Concurrence:
Information – AA00 Equal Employment Opportunity Office, BA31 Contracting Officer and MSFC
PS52

Initial Submittal Date

90 days after contract start

As of Milestone

Quarterly.

Frequency of Submittal

Reports shall be provided not later than the 5th of each month following the end of a calendar
year quarter.

DATA REQUIREMENT DESCRIPTION

Purpose

This document will be used by the Government to assess the Contractor's equal employment
and affirmative action management of Contract effort.

Scope

Data Requirement Description (DRD) establishes the requirement for the preparation and submittal of a quarterly EEO report.

References

FAR 22.802; FAR Clause 52.222-26, Narrative Reports

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

Format and content of report specified in applicable document.
See applicable documents (Note: Contractor may reproduce forms, or obtain from NASA EO Office a diskette which will enable them to generate the forms through the use of PC Software.
Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

Ensure that workforce profile data includes minority and gender designations.

DATA REQUIREMENT

DR Number, Date Revised

MA06

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Contract Performance
Progress

Responsible Office

BA30

P.W.S. Reference

None

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA31 Contracting Officer
Concurrence:
Information – HA20 Contracting Officer Technical Representative AA00, CA00, BA30,
BA20, IA00, QA00, RA00, HA00, VA00 and MSFC PS52, TD70, QS10 and QS50

Initial Submittal Date

30 days after start of the contract.

As of Milestone

End of fiscal month.

Frequency of Submittal

Monthly, 15th day of each calendar month.

DATA REQUIREMENT DESCRIPTION

Purpose

To report results of contract performance and accomplishments, including accomplishments in selected special emphasis areas.

Scope

This DR establishes the requirement for the preparation and submittal of a monthly contract performance report. This includes a status of all subcontract activity as well as efforts and special emphasis areas.

References

None

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The report shall address major accomplishment, "new" technology reviews, events of special significance, difficulties, and progress toward meeting contract requirements. The report shall be in narrative form, brief, and informal in content. It should include discussion of any current problems, which may impede performance, and the proposed corrective action. This report shall also provide Contractor safety and quality metrics and initiatives, including a summary of man-hours, mishaps and close-calls, lost-time accidents, accident frequency and average number of employees.

As a subsection of the report, there shall be a status of all purchase orders and subcontracts (including any modifications to existing purchase orders and subcontracts) awarded. The purchasing activity report shall be generated from the Contractor's automated tracking and status system for all procurement actions. The report shall include a purchase order/subcontract number, date of receipt of the requirement, date the purchase order/subcontract was issued, the dollar amount, a brief description, the vendor and size of business (small, small disadvantaged, women-owned, large, foreign government) and whether it was a sole source or competitive procurement. The report shall summarize the total dollar amount awarded for the month, total contract year to date, and total Government fiscal year to date. The report summary shall also reflect total obligated dollars and total paid dollars for the month, total contract year to date, and total Government fiscal year to date.

Electronic transmission via letter form. Purchasing activity in tabular form. MS Word format.

Monthly updates.

Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

None

DATA REQUIREMENT

DR Number, Date Revised

MA07

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Plan, Handling of Data

Responsible Office

VA00

P.W.S. Reference

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA31 Contracting Officer
Concurrence:
Information – HA20 Contracting Officer Technical Representative
CA00, HA00, QA00, and VA00 Directors

Initial Submittal Date

60 days after contract start

As of Milestone

Start of Contract

Frequency of Submittal

Annual review and update, as required

DATA REQUIREMENT DESCRIPTION

Purpose

To describe and outline Contractor methods used in assuring proper handling and control of sensitive and proprietary government and third party data.

Scope

This DRD establishes the requirement for submittal of a Data Handling plan to delineate the Contractor's policy, process, and procedures used to assure the proper handling of sensitive and proprietary data. Data handling includes but is not limited to government or third party data access, use, disclosure, reproduction, transmission, storage and disposal activities.

References

Exceptions/Additions to Referenced Requirements

RFP, section H-8

Preparation Instructions

Plan to be submitted electronically as MS Word (SSC desktop standard version at time of submission) file formatted to print on standard 8.5"x11" paper in portrait orientation.

Remarks

Plan shall include a government notification process, in the event of a policy or procedure violation.

DATA REQUIREMENT

DR Number, Date Revised

MF01

Contract Number, Date, & Modification No.

TOC
Effective:

Title

Report, Contractor Financial Management

Responsible Office

BA20

P.W.S. Reference

1.3

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA22 (Cost Accountant)
Concurrence:
Information – BA21 Deputy CFO (Resource), BA22 Deputy CFO (Finance), BA31 Contracting Officer, HA20 Contracting Officer Technical Rep, TD02 Program Analyst, HA40 Program Control, and MSFC PS52,

Initial Submittal Date

533M plus detail, COB Tuesday after SSC Fiscal month; 533Q, first quarter after contract start.

As of Milestone

John C. Stennis Space Center Fiscal Calendar Month End Date.

Frequency of Submittal

533M plus detail Due COB Tuesday after SSC Fiscal month, 533Q Due Quarterly (Monthly is also due when Quarterly is submitted).

DATA REQUIREMENT DESCRIPTION

Purpose

To assure that dollar and labor resources realistically support the schedule and to evaluate Contractor cost performance. The 533M reporting level is at the total contract. Detail costs will be reported at the work authorization level by NASA Center. The reporting baseline is against total contract value.

Scope

This Data Requirement Description (DRD) establishes the requirements for the preparation of a report covering accumulated and forecasted dollar expenditures required to perform the contractual effort.

References

NASA Form 533M & 533Q; NPD 9501.1, NASA Contractor Financial management

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

The report shall be prepared in accordance with the General Provision Clause (NASA Financial Management Reporting on NASA Form 533M or 533Q). The 533 will be submitted in electronic format to interface with SAP software.

Remarks

This data is due by close of business Tuesday following the end of the SSC fiscal month. The financial data will consist of manhours and total costs for the applicable tasks at the work order level. The Contractor will process reimburseable work orders and estimates into the Funds Availability System (FAS) and obtain FAS acceptance and reservation of funds before work is performed. The FAS will be updated by the Contractor as work is completed or work orders are amended. 533Q due on the 20th day of each month preceding the quarter being projected. All supporting 533's from Team Members should accompany the total TOC 533.

DATA REQUIREMENT

DR Number, Date Revised

MF02

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Monthly Workforce

Responsible Office

BA21

P.W.S. Reference

1.3

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA21 Budget Analyst, Lead-Institution
Concurrence:
Information –BA31 Contracting Officer, HA20 Contracting Officer Technical Rep, BA22 and
MSFC PS52, TD02 Program Analyst
(The original is to be submitted to the Contracting Officer BA31)

Initial Submittal Date

After start of contract.

As of Milestone

COB last Friday of NASA/SSC accounting month.

Frequency of Submittal

Monthly, COB Wednesday after SSC Fiscal month. This report is due no later than the third
Monday following the close of each fiscal month.

DATA REQUIREMENT DESCRIPTION

Purpose

Reporting of workforce for both the prime and all subcontractors to SSC
management and NASA Headquarters.

Scope

This Data Requirement Description (DRD) establishes the requirements for the preparation of the monthly workforce report that provides monthly status (dollars and workforce) against the approved operating budget.

References

None

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

Computer generated report depicting headcount. Information input directly into the NASA Interactive Planning System (NIPS). Letter format report to NASA Contract Deliverable System stating date of input into NIPS.

Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

This report is due no later than the third Monday following the close of each fiscal month.

DATA REQUIREMENT

DR Number, Date Revised

MF03

Contract Number, Date, &
Modification No.

TOC
Effective:

Title

Report, Resources
Management

Responsible Office

BA21

P.W.S. Reference

1.3

SUBMITTAL REQUIREMENTS

Distribution Instructions

NASA Contract Deliverable System
Approval: BA21 Budget Analyst, Lead-Institution
Concurrence:
Information –BA31 Contracting Officer, HA20 Contracting Officer Technical Rep, BA22,
and MSFC PS52, and TD02 Program Analyst
(The original is to be submitted to the Contracting Officer BA31.)

Initial Submittal Date

After start of contract.

As of Milestone

End of fiscal month.

Frequency of Submittal

Monthly, COB Wednesday after SSC Fiscal month

DATA REQUIREMENT DESCRIPTION

Purpose

To provide the SSC Management with a detailed review of each major centers cost
of operations.

Scope

This Data Requirement Description (DRD) establishes the requirements for the preparation of an operating statement, a work performed report and a burden analysis report for each Contractor controlled Budget Line item by Work Breakdown Structure indenture.

References

SSC Management Accounting System Manual.

Exceptions/Additions to Referenced Requirements

None

Preparation Instructions

Information will be submitted in accordance with the content identified in the SSC Management Accounting System Manual. Format will be submitted in accordance with the SSC Management Accounting computer generated report, depicting resources. Information input directly into NASA Interaction Planning System (NIPS). Letter format report to NASA Contract Deliverables System starting date of input into NIPS.

Data submitted to procuring activity for coordination, surveillance, or information.

Remarks

MF03 information shall be input directly into the NASA Interactive Planning system (NIPS) and electronically transmitted to the NASA/SSC CFO.