

ATTACHMENT J-1
PERFORMANCE WORK STATEMENT
(PWS)

FOR

MEDICAL AND ENVIRONMENTAL
SUPPORT CONTRACT (MESC)

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INTRODUCTION

This Performance Work Statement (PWS) describes the services to be provided by the Medical and Environmental Support Contractor (hereinafter referred to as “the MESC Contractor”). The MESC Contractor shall provide non-personal technical services to the Government. Services under this contract will be provided to the National Aeronautics and Space Administration (NASA) and the United States Air Force (USAF) at Cape Canaveral Air Force Station and Patrick Air Force Base, as well as to the many contracted activities at Kennedy Space Center and those USAF installations.

The work to be performed under this contract shall be incorporated over a two year period. The first year requirements include:

- Medical clinic operations
- Emergency medical services
- Environmental health services (industrial hygiene and health physics)
- Public health and sanitation services
- Environmental services
- Hazardous waste processing

In year two of this contract, the MESC Contractor shall provide services and support currently provided under portions of the Life Sciences Services Contract. The second year elements are noted throughout the PWS. Those elements include:

- Medical planning for shuttle launch and landing activities (Sections 2.2(h)–(j), 2.3.1(q), 2.6)
- Emergency medical care for the astronauts and their family members (Section 2.6)
- Fitness center operation and musculoskeletal rehabilitation services (Sections 2.8, 2.9,)
- Microbiological laboratory services (Sections 2.10(f)-(j), 3.4(v), 3.7(d))
- Biomedical Studies Support (Section 2.11)
- Medical Education Program (Section 2.12)
- Technical Review of NEPA documents prepared by others (Section 4.4.3(d))
- Remediation Program Services (Section 4.4.6)
- Ecological Monitoring Program Services (Section 4.7)
- Earth Systems Modeling and Data Management Operations (Section 4.8)
- Agency Support for Recycling and Affirmative Procurement (RAP) (Section 4.9)

- Agency Occupational Health Program Support Office (Section 5.0)

1.0 PROJECT/PROGRAM MANAGEMENT.

1.1 General Management and Control.

The MESC Contractor shall institute and maintain an effective, efficient, and responsive program management organization that is responsible for oversight of MESC Contractor personnel, other contract resources, contract performance, deliverables, and cost. The MESC Contractor shall notify the Contracting Officer's Technical Representative (COTR) and Contracting Officer (CO) of any problems that may adversely impact the timely and cost-effective delivery of quality products and services under this contract. The MESC Contractor shall:

- a. Interact, plan, and effectively coordinate and communicate with all levels of customers, both Government and contractors;
- b. Institute an on-site centralized program management office and a single set of consolidated and easily understandable policies and procedures for the MESC;
- c. Implement, for performance of this contract, established government initiatives such as energy management and conservation, and evolving requirements related to the protection of the environment and minimizing personnel exposure to hazards;
- d. Analyze compliance with all applicable regulatory and statutory requirements and when necessary identify to the Government potential trade-offs with other contract functions to ensure compliance. The MESC Contractor shall notify the Government in writing within 3 working days of identifying the need for a trade-off necessity. The Government must provide the MESC Contractor written direction on the implementation of any trade-offs prior to implementation;
- e. Implement and sustain a customer-oriented work control and planning process that shall provide responsive support and simultaneously support multiple customers having competing requirements and priorities. In an event those conflicts cannot be resolved, the CO and COTR shall be consulted;
- f. Conduct a contract review meeting on a semi-annual basis. The semi-annual review shall cover all aspects of the MESC operations, both technical and business, including a concise summary of performance and risk assessment in each major work element of the Performance Work Statement in accordance with DRD1.1-001 Report, Performance Assessment;
- g. Comply with Government policies, procedures and agreements as identified in Section J, Attachment J-9, MESC Compliance Document List.

1.2 Risk Management.

The Contractor shall develop, implement, and update a Risk Management Plan (DRD1.2-001 Plan, Risk Management) in accordance with NPR 8000.4, Risk Management Procedural Requirements. The Risk Management Plan shall provide an organized, systematic decision making process that efficiently manages risk associated with the MESC at KSC.

The Contractor shall develop and implement management approaches, including the criteria, methods, and procedures for identifying, analyzing, planning, tracking, controlling, communicating, and documenting MESC-related risks associated with:

- a. Contract Transition/Phase-In;
- b. Contract Administration/Execution;
- c. Performance of PWS Requirements;
- d. Accomplishment of Task Orders.

1.3 Business Management.

1.3.1 Resource Management and Work Control.

The MESC Contractor shall provide a contract resource management and work control system to include subcontracts for the total contract work activity. The MESC Contractor resource management system shall provide timely and accurate visibility of contract workforce, cost, and schedule performance. The control system shall be designed to enable the MESC Contractor to provide work progress reports to the Government. The control system shall allow insight into the various customers requesting services in this PWS.

The MESC Contractor shall operate a website to promote and implement MESC medical, environmental health, and environmental services. As a minimum, the website shall provide a means for requesting physical examinations and environmental health and environmental support services, and access to the KSC Material Safety Data Sheet archive.

The Government will provide a centralized help desk function. The MESC Contractor shall interface with that help desk, accept work referrals, and provide status or close out information on work requests generated by that centralized activity. The MESC contractor shall work with the centralized help desk provider to develop processes for receipt and disposition of work requests, 24 hours per day, 7 days per week.

The MESC Contractor will be provided six MAXIMO licenses in order to interface with other NASA/KSC contractors and organizations. The MESC Contractor shall have personnel familiar with MAXIMO operations for interacting with other NASA/KSC contractors and organizations work control systems.

Applicable Work Load Indicators (WLI's) for each WBS are incorporated in Section J, Attachment J-5, and shall be reported in accordance with DRD1.3.1-001 Report, Workload Indicators, Work Backlogs and Deferred Work.

1.3.2 Human Resources.

The MESC Contractor shall:

- a. Recruit and maintain a highly skilled workforce;
- b. Apprise the COTR and CO of any human resource issues that could have an impact on their ability to perform required elements of this contract;
- c. Take a proactive management approach to labor relations involving collective bargaining agreements and participate in the KSC Labor Management Council;

- d. Proactively manage wages and benefits for represented and non-represented employees
- e. Manage compensation for all employees in accordance with the MESC Total Compensation Plan;
- f. Comply with DRD1.3.2-001 Report, Advance Notification of Workforce Reductions, when a workforce reduction is imminent;
- g. Provide the following reports:
 - DRD1.3.2-002 Report, Monthly KSC Headcount;
 - DRD1.3.2-003 Report, Quarterly Summary of 3rd Step Labor Grievances and Arbitrations.

1.3.3 Property Control.

The MESC Contractor shall ensure the proper control, use, and maintenance of Government property provided to support the MESC operations (see Section J, Attachment J-6, Government Furnished Property (GFP) to be replaced as Contractor Acquired Property (CAP) and Attachment J-14, Government Furnished Property to be replaced as Contractor Property (CP)). The MESC Contractor shall:

- a. Serve as the Property Custodian for all Installation Accountable Property provided to the MESC in accordance with government regulations. The MESC Contractor's custodial responsibilities are defined in the current version of KNPR 4000.1, Supply and Equipment Systems Manual;
- b. Assess, recommend, and purchase property necessary for maintaining successful day-to-day contract operations;
- c. Maintain a master list of all equipment items purchased for review at final contract end in accordance with DRD1.3.3-001 Report, Replacement of Government Furnished Property;
- d. Submit to the Government a monthly asset capitalization report in accordance with DRD1.3.3-002 Report, Asset Capitalization.

1.3.4 Motor Vehicle Utilization.

The MESC Contractor shall provide general use motor vehicles necessary to perform the requirements of the contract. (Note: Attachment J-14 lists Government furnished specialized motor vehicles.)

1.3.5 Export Control.

The MESC Contractor shall implement an Export Control Program to assure compliance to International Trade in Arms Regulation (ITAR) and Export Administration Regulations (EAR). The MESC Contractor shall identify an Export Control Official responsible for the implementation of the program and to coordinate issues with the Center Export Administrator (CEA). The MESC Contractor's export control program shall adhere to the policy and guidance covered in NPD 2190.1A, NASA Export Control Program and NPR 2190.1, NASA Export Control Program.

1.3.6 Procurement Management.

The MESC Contractor shall:

- a. Purchase goods and services necessary to accomplish work on the MESC, in accordance with guidance of the Federal Acquisition Regulation (FAR), and the NASA FAR Supplement (NFS);
- b. Develop and implement a comprehensive set of procedures covering all phases of the purchasing process and shall ensure integrity, efficiency and protection of the government's resources in all purchasing actions;
- c. Utilize the Transportation Officer, Base Operations Receiving Warehouse, Building M6-744, Kennedy Space Center, Fl. 32899, as its receiving agent;
- d. Provide the CO with a monthly Purchase Order report in accordance with DRD1.3.6-001 Report, Purchase Order.

1.3.7 Documentation, References and Records Management.

The MESC Contractor shall operate and maintain an electronic archive of all reports, surveys, analysis, inspections and other contract activities conducted on behalf of KSC. The MESC Contractor shall maintain internal document records of all administrative and operational procedures such as records of employee certification and training, clinic certifications, reports, and other auditable activities. The Contractor shall:

- a. Maintain a records management program and submit a records management plan in accordance with DRD1.3.7-001 Plan, Records Management Program;
- b. Submit a file plan and an annual report to the center records manager in accordance with DRD1.3.7-002 Report, File Plan and Summary of Record Holdings and Transfers;
- c. Manage the legacy Federal records (data created for Government use and delivered to, or falling under the legal control of, the Government) inherited by the contractor from previous contracts.
- d. At the completion or termination of this Contract, the Contractor shall leave all Government-owned data at Kennedy Space Center. The contractor shall deliver Government-owned data to center records manager in accordance with DRD1.3.7-001, Plan, Records Management Program.
- e. Provide NASA or authorized representatives access to all Government records. The Government reserves the right to inspect, audit and copy record holdings.

1.3.8 Facilities.

The MESC Contractor shall:

- a. Operate facilities including a medical clinic, first aid nursing stations, fitness centers, environmental health facility, and laboratories;
- b. Assist the government in management and oversight of the facilities assigned under this contract;
- c. Identify and track facility requirements, requesting facility services and repairs from the government, inspection of assigned facilities and instituting protective actions for prevention of damage such as hurricane preparedness.

- d. Section J, Attachment J-8, Government Furnished Facilities, identifies facility space assigned to the MESC.

1.3.9 Flexibility.

The MESC Contractor shall respond to changing service requirements, including work resulting from unexpected surges or reductions, and prioritize activities to best accomplish the intent of the contract. Strategies for responding to those changing levels of demand, whether they are triggered by NASA mission change, regulatory requirements, budgetary adjustments or other factors, will be coordinated with the Government.

1.3.10 Work for Others.

Work for Others is defined as work performed for and paid for by other(s) under a separate agreement.

The MESC Contractor is encouraged to undertake Work for Others at KSC and CCAFS that would utilize the unique capabilities within the MESC. These unique capabilities include the Government-furnished facilities/worksites for which the MESC Contractor has operational responsibility and/or the expertise of the MESC Contractor personnel resident at the KSC. The primary purpose of this authority is to provide commercial entities, NASA contractors, academic institutions, and outside agencies access to the MESC for support not funded under the scope of the MESC.

Work for others will be considered for authorization when those activities are deemed to be consistent with the Government's needs in the fields of ecological studies, wildlife refuge/ecosystem management, aerospace and occupational medicine, and environmental health. Activities that are supportive of partnerships with the regulatory agencies having jurisdiction over KSC property, the Merritt Island National Wildlife Refuge (MINWR), and the Canaveral National Seashore shall also be considered for authorization.

The Government will approve work for others and support to other agencies and scientific partners prior to commencement, to assure compatibility with the Government's needs, funding requirements and priorities.

Work for others shall not create a conflict of interest or interfere with the performance of this PWS.

1.3.11 Performance Metrics.

The MESC Contractor shall assist the Government in development, maintenance, and analysis of performance metrics for the MESC contract. The MESC Contractor shall develop and provide objective, measurable metrics as coordinated with the Government. DRD1.3.11-001 Program and Performance Metrics shall be finalized in coordination with the Government within 180 days of contract award. The MESC Contractor shall report existing or potential problem areas with recommended solutions.

1.3.12 Training, Certification, and Licensure.

Each professional and technical member of the MESC Contractor's staff shall possess an academic degree in the discipline or an equivalent combination of education and experience suitable to the responsibilities of their position. The MESC Contractor shall provide and adhere

to a plan to ensure personnel are provided with the technical and professional training necessary for obtaining and maintaining professional development, certifications, and licensure. It is the expectation of the government that the MESC Contractor's training plan will include elements for the professional development of all staff. The MESC Contractor shall collect, maintain, and make available to the Government current data for all required certifications in accordance with DRD1.3.12-001 Report, Certifications and Licensure. The MESC Contractor shall ensure that there are no violations resulting from lapses in required personnel certifications/training. (Note: KSC area access training will be provided by the Government.)

1.4 Safety, Health and Environment.

The MESC Contractor shall ensure the safety of its personnel, other on-site personnel, and public visitors to KSC are of primary importance, and that Government property and the environment are protected from damage.

1.4.1 Safety and Health Plan.

The MESC Contractor shall submit and maintain a current detailed safety and health plan in accordance with DRD1.4.1-001 Plan, Safety and Health. The plan shall describe the policies, procedures and approaches to be used to ensure the safety and occupational health of its employees, to ensure the safety of their operations and to protect property. The plan shall discuss the flow down of the MESC Contractors safety program to its subcontracted activities. The plan shall be structured according to the outline contained in NPR 8715.3, NASA General Safety Program Requirements and shall be approved by the CO prior to commencement of contract operations. The MESC Contractor shall manage to its Safety and Health Plan.

1.4.2 Safety and Health Compliance.

The MESC Contractor shall:

- a. Comply with all applicable federal, state and local laws and regulations, as well as NASA policy, procedure and guidelines. The MESC Contractor's safety and health program shall be fully documented and auditable and the MESC Contractor shall participate in government audit and surveillance activities of their plans, procedures, and processes when deemed necessary by the Government;
- b. Conduct safety and health inspections of all MESC contractor-occupied facilities on a quarterly basis. Those inspections shall assure compliance with requirements of Occupational Safety and Health Administration (OSHA) regulations. The inspections shall be formally documented and all findings tracked to closure. Qualified safety and health professionals (as defined in 29 CFR§1960) shall perform inspections at least annually. MESC Contractor internal assessments, results, and surveillance activities shall be made available and auditable by the Government;
- c. Assist NASA, or its representatives, in examination of sites or areas where work under the contract is being performed in order to determine the adequacy of the safety and health program;
- d. Ensure equipment owned, leased, rented or obtained from off-site locations is properly assembled, maintained and safe for use by the MESC;
- e. In the event of a Program or Center incident or contingency, support any government investigation and make available all pertinent documentation as requested;

- f. Submit a monthly Safety Statistics Record, in accordance with DRD1.4.2-001 Report, Safety Statistics and utilize the Agency provided Incident Reporting Information System (IRIS) for entering accident and incident information;
- g. Report all injuries, damage and close calls resulting from MESC Contractor activities and investigate and take appropriate corrective action. The MESC Contractor shall electronically enter all mishaps meeting the criteria for Type A through Type D mishaps as defined in KNPR 8715.3, KSC Safety Practices Procedural Requirements into the NASA mishap-reporting database. All close calls with the potential to have been Type A through Type D mishaps shall also be entered. Mishap reporting methods and timelines shall be in accordance with DRD1.4.2-002 Report, Safety Anomaly;
- h. In the event the MESC Contractor determines the need to deviate from a government requirement, a formal request must be processed through the appropriate variance review and approval system. The MESC Contractor shall perform risk assessments for all variances requested to safety procedures and processes. The risk assessment shall be performed to assure the safety of personnel and equipment is not compromised, and alternate work procedures, as a result of a variance, shall be evaluated prior to implementation.

1.4.3 Voluntary Protection Program (VPP) Support.

NASA-KSC and some of its contractors are participants in the OSHA VPP. It is expected that continued participation by the government in the VPP process will require the MESC Contractor to support that VPP effort inasmuch as it requires medical and environmental support services. For example, OSHA may, in the course of reviewing NASA's VPP qualifications, need to review clinic medical procedures and review industrial hygiene surveys conducted under the MESC contract. The MESC Contractor shall support NASA's VPP readiness efforts and on-site VPP reviews.

The MESC Contractor's safety and health plan shall identify how their safety and health program addresses, and are compliant with, the elements of the VPP. VPP qualification by OSHA is not a requirement for this contract; however the MESC Contractor is expected to be VPP compliant. The MESC Contractor shall annually complete a VPP Self Assessment Report, meeting the intent of the OSH TED 8.4, VPP: Policies and Procedures Manual, and submit to the Government in accordance with DRD1.4.3-001 Report, VPP Self-Assessment.

1.4.4 Operational Safety Assessments and Hazard Analysis.

The MESC Contractor shall develop and implement a process for assessing and managing hazards associated with their activities. The process shall provide for appropriate hazardous operation surveillance, review of hazardous procedures, and assessment of risks associated with deviations from procedures or safety and health requirements.

The MESC Contractor shall conduct and document an operational safety assessment of all high risk, first time operations and make those assessments available to the government for review.

For MESC Contractor-controlled operations involving hazardous materials that meet or exceed the threshold specified in 29 CFR§1910.119, Process Safety Management Standard, the MESC Contractor shall develop an auditable program that complies with all of those requirements. All personnel engaged in potentially hazardous operations or hazardous material handling shall be

certified as capable to operate the equipment and perform their jobs in a safe manner. Hazardous operation safety certification is required for those tasks that potentially have an immediate danger to the individual (death/injury to self) if not done correctly, or could create a danger to other individuals in the immediate area (death or injury), or are a danger to the environment. All employees shall be trained and/or maintain certification per the requirements outlined in specific government standards/requirements.

1.4.5 Transportation Safety.

All motor vehicles (e.g. cars, trucks, vans, boats, all-terrain vehicles), used for transportation of personnel or hazardous material shall comply with laws regarding inspections and markings and must have passed an inspection to ensure that the vehicle is in safe mechanical operating condition. The mode of transportation shall be inspected to the applicable standards of the Federal Highway Administration, U.S. Coast Guard, and Department of Transportation (DOT). All vehicles transporting hazardous materials on government and public roadways shall display all DOT required placards, lettering, or numbering. All personnel operating such vehicles shall receive the appropriate training and or licensing.

1.4.6 Environmental Management.

The MESC Contractor shall ensure that MESC operations and facilities are in compliance with all applicable federal, state and local environmental regulations and Executive Orders, and NASA policies, procedures and guidelines, in accordance with KNPR 8500.1, KSC Environmental Requirements. The MESC Contractor shall support NASA environmental program requirements applicable to the MESC. This support includes response to environmental data calls and support to internal and external inspections and audits.

1.5 Financial Management.

1.5.1 General Requirements.

The contractor shall perform all business and administrative functions and integrate these functions across all areas of performance. The contractor shall provide on-going business analysis and respond to requests and inquiries from the Government relating to budget, schedule, and cost performance. The contractor shall employ best business practices and sound financial management in the performance of financial management and reporting. The contractor shall develop, update, and implement a financial management process in compliance with Federal Acquisition Regulation (FAR) and NASA FAR Supplement (NFS), Subpart 1842.72, "NASA Contractor Financial Management Reporting." The contractor shall use flexible and innovative procedures designed to ensure compliance with the variety of cost charging and reporting requirements of NASA based on category of customer and sources of funds. The contractor shall provide complete, accurate, and timely reporting of monthly and accumulated expenditures, projected costs and workforce utilization. The contractor shall manage contract resources to maintain flexibility to respond to surge, one-of-kind, and unforeseen requirements, and shall coordinate with the Government to prioritize such requirements. The contractor shall provide a recovery plan for any activity or project under their responsibility that is estimated to exceed established cost or scheduled plans.

1.5.2 Financial Management System.

The contractor shall:

- a. Track expenditures and workforce utilization by Government specified customers, WBS down to the lowest level, unique project/activity/event identifiers (Job Order Number or equivalent), unique task identifiers (Work Order Numbers or equivalent), and elements of cost including labor hours, other direct costs, fringe, overhead, General and Administrative (G&A), fee, and Work Year Equivalents (WYEs) for both Contractor and Major Subcontractors;
- b. Provide on-going financial analysis and respond to Government requests related to budget, schedule, and cost performance;
- c. Utilize accounting procedures capable of monthly collection, distribution, and reporting of Government-identified cost pool charges for multiple customers. Provide cost pool reporting in accordance with DRD 1.5-001 Report, Shared Cost Pool Analysis;
- d. Provide data in support of multi-year budget calls and other special budget requests;
- e. Develop and maintain a financial management system with automated data transfer capability from Management Information System (MIS) and other applications to ensure complete data integrity and eliminate duplicative data entry. At a minimum, provide planned and actual costs and labor hours with the ability to query by the following data fields: charge date, facility number, customer number, Work Breakdown Structure (WBS) element, unique project and task identifiers, direct and indirect elements of costs, type or categories of work, Government fiscal year, and for all Major Subcontractors. Provide network accessible, on-line query capability for the government;
- f. Develop and maintain a cost accounting system with adequate internal checks, balances and audit steps to isolate and identify erroneous, incomplete data and procedural deviations. Upon detection of significant errors, implement required corrective actions, and notify the Government per DRD 1.5-002 Report, Reconciliation of Incurred Costs to Reported Costs;
- g. Provide a cost correction (or error) tracking feature as part of the cost collection system. Log entries individually, validate entries, correct errors, and show disposition of reported errors. Government as well as contractor employees shall be able to enter items on the error log;
- h. Participate in monthly financial reviews with the Government to discuss cost performance. These reviews shall include both formal and informal reviews with multiple customers requiring multiple products/reports, sometimes due concurrently.
- i. Develop and maintain the following financial DRDs. Ensure all DRDs are auditable and reconcilable to the Contractor's financial management systems.
 - DRD 1.5-001 Report, Shared Cost Pool Analysis
 - DRD 1.5-002 Report, Reconciliation of Incurred Costs to Reported Costs
 - DRD 1.5-003 Report, Contractor Financial Management Analysis, NASA Form 533M & NASA Form 533Q
 - DRD 1.5-004 NF533M Flat File
 - DRD 1.5-005 Plan, Annual Phased Contract Operating

- DRD 1.5-006 Report, Rate-Volume Variance Analysis
- DRD 1.5-007 Report, Direct and Indirect Rates
- DRD 1.5-008 Report, Prime and Subcontractor Contract Value (CV) Status
- DRD 1.5-009 Report, Phased Negotiated Estimated Cost (NEC) Baseline
- DRD 1.5-010 Report, Annual IT NASA Headquarters and Special IT Budget

1.6 Quality Assurance.

The MESC Contractor shall establish, implement, document and maintain a quality assurance program for evaluation of the internal processes, controls, metrics and procedures. The quality assurance program shall follow the guidance in ANSI/ASQC/ISO 9001-2000.

1.7 Information Technology (IT).

1.7.1 IT User Guides.

The MESC Contractor shall provide a user's guide and training for user access to MESC Contractor provided on-line information technology tools and databases for the Government.

1.7.2 Administrative and Engineering Desktops.

The Government will provide administrative and engineering desktops, workstations, or laptops for performance of this contract.

1.7.3 IT Security Compliance.

The Government is responsible for all necessary actions to achieve IT security compliance for Government-furnished IT services. The MESC Contractor shall be responsible for ensuring IT Security compliance for all MESC Contractor provided IT systems and Government-furnished property that the MESC Contractor is responsible for operating and maintaining.

The MESC Contractor is responsible for ensuring that all of the IT systems and tools utilized to provide services under this contract comply with applicable Federal laws and regulations and Agency requirements, standards, policies, and procedures. The MESC Contractor is also responsible for providing technical point of contact for IT security to the Government. The MESC Contractor shall maintain an IT Security Plan in accordance with DRD1.7-001 Plan, IT Security.

The MESC Contractor shall develop, document, and manage operational and technical IT security policies, procedures, and controls for all services the MESC Contractor provides to the Government. For each of these services, the MESC Contractor shall integrate the IT security policies, procedures, and control measures into their full life cycle, and shall test and annually review these policies, procedures, and controls for adequacy and compliance. The MESC Contractor shall comply with NPR 2810.1A, Security of Information Technology as supplemented by Section J, Attachment J-2, IT Security Implementation Guide.

2.0 MEDICAL SERVICES.

2.1 Administration and General Requirements.

The MESC Contractor shall provide comprehensive medical services to maintain a healthful and productive workforce.

The MESC Contractor shall:

- a. Provide medical services to all NASA-KSC civil servant, NASA-KSC resident contractor personnel, NASA-KSC guests, and KSC Visitors Center (KSC VC) visitors, specified personnel described in specific paragraphs below, and NASA tenant personnel resident at KSC and CCAFS;
- b. Provide the administrative and technical operations and management of Occupational Medicine (OM) functions, as specified in KNPD 1810.1, KSC Occupational Medicine Program and of Aerospace Medical functions, as specified in the KSC-PLN-1914, KSC Medical Operations Support Implementation Plan (MOSIP) and KSC-PLN-1915, KSC Emergency Medical Services (EMS) Plan;
- c. Transition existing electronic medical data provided by the Government into an MESC Contractor provided health information management system and maintain and utilize the system for storage of medical records and data analysis of medical information. When the Agency implements an Agency-wide system, the MESC Contractor shall transfer the medical data and implement that system at KSC. The MESC Contractor shall ensure the portability of any medical data to allow its transfer to other systems if required by the Government;
- d. Provide administrative support for medical services through the use of a health information management system that supports physical examination management, patient scheduling and notification, reception desk operations, and records management with the capability for statistical and analytical data collection and retention. The system shall interface with the NASA Training System for the automatic upload of medical certification data;
- e. Develop, maintain and implement a Medical Quality Assurance Program which evaluates all aspects of medical care provided in compliance with NPR 1800.1, NASA Occupational Health Program. Provide a Medical Quality Assurance Program Plan in accordance with DRD 2.1-001 Plan, Medical Quality Assurance Program;
- f. Comply with requirements of the Health Information Portability and Accountability Act (HIPAA) as directed by the CO;
- g. Develop, operate, and maintain an OM services internet web site to provide customer review of programs and services and provide on-line services requests.

2.2 Training, Certifications and Licensure.

Medical services shall be performed by certified/licensed medical staff as follows:

- a. MESC Contractor provided OM medical services shall be under the management of a Medical Director; Deputy Medical Director; and a third physician with proficiency in stress test interpretation and reading electrocardiograms. These three positions shall be filled by physicians, Board certified in a preventive medicine or a primary care specialty. All other physicians providing OM services shall be Board Certified in or have completed residency in either a preventive medicine or primary care specialty or have completed residency training in a non-preventive medicine or non-primary care specialty, and have a minimum of 2 years experience in occupational medicine or other preventive or primary care field. Board certification in occupational medicine is preferred. All

Board certifications must be provided by a board certifying entity in the United States. All physicians providing OM services shall meet all State of Florida Licensing requirements;

- b. All Physicians shall maintain current American Heart Association (AHA) Basic Cardiac Life Support (BCLS), Course C; AHA Advanced Cardiac Life Support (ACLS) provider, and Advanced Trauma Life Support (ATLS) certifications;
- c. All nurses providing OM services shall be Registered Nurses and maintain current State of Florida licenses, and shall maintain current AHA BCLS, Course C and ACLS provider certifications and obtain certification in Occupational Health Nursing within 2 years of becoming eligible by criteria established by the American Board of Occupational Health Nurses. Nurse Practitioners providing occupational medicine services shall meet the same certifications as required for staff nurses providing occupational medicine services;
- d. Physician Assistants providing OM services shall maintain current State of Florida Physician Assistant licenses. Previous experience in occupational medicine is preferred;
- e. Emergency Medical Technicians shall maintain current State of Florida certifications as an EMT and maintain current AHA BCLS;
- f. Radiological-Laboratory Technologists shall maintain current State of Florida licensure;
- g. Employee Assistance Program Counselors shall possess a Masters Degree in Social Sciences, Psychology, or a related field, or the equivalent education/experience; and achieve EAP certification within 1 year after becoming eligible;

(Section 2.2(h)–(j) to be effective October 1, 2009)

- h. Physicians providing Aerospace Medicine (AsM) shall be Board Certified in or have completed residency in either a preventive medicine or primary care specialty or have completed residency training in a non-preventive medicine or non-primary care specialty, and have a minimum of 2 years experience in aerospace medicine or other preventive or primary care field. Board certification in aerospace medicine is preferred. All Board certifications must be provided by a board certifying entity in the United States. All physicians providing AsM services shall meet all State of Florida Licensing requirements;
- i. All nurses providing AsM services shall be Registered Nurses and maintain current State of Florida licenses, and shall maintain current AHA BCLS, Course C and ACLS provider certifications. Nurse Practitioners providing aerospace medicine services shall meet the same certifications as required for nurses providing aerospace medicine services;
- j. Physician Assistants providing AsM services shall maintain current State of Florida Physician Assistant licenses. Previous experience in aerospace medicine or flight nursing is preferred;
- k. Athletic Trainers shall be certified by the National Athletic Trainers Association and Licensed by the State of Florida.

2.3 NASA KSC Occupational Medicine.

2.3.1 Occupational Medicine Services.

The MESC Contractor shall provide comprehensive OM Services designed to enhance the health and well-being of the work force. Services shall be provided to NASA and KSC contractor activities (including special events), personnel, and facilities (including ships/boats, when moored to the dock that are operated by the U.S. Government) on or in the vicinity of KSC and CCAFS.

The MESC Contractor shall:

- a. Provide health examinations at the Occupational Health Facility. Health examinations shall be administered in accordance with KBM-ST-2.1 A and B, Medical Standards and are required to satisfy various programs such as the Federal Employee Health Program (FEHP) and OSHA standards;
- b. In coordination with the NASA-KSC medical officers, develop and maintain NASA-KSC health examination classifications in accordance with current NASA-KSC health examination classification standards (see KBM-ST-2.1 A and B, Medical Standards);
- c. Operate medical facilities at K6-1145 (Launch Area Clinic) first shift Monday through Friday, except MESC Contractor holidays, and in M6-495 (Occupational Health Facility) 10 hours per day, 5 days per week, Monday through Friday, except MESC Contractor holidays and the First Aid Station at the KSC Visitors Center Complex (KSC VC) for one 10-hour shift per day during the open hours of the KSC VC, or as otherwise agreed to with the KSC VC;
- d. Evaluate, treat, and provide appropriate recommendations for disposition of all occupational injuries and illnesses;
- e. Provide Workers' Compensation Program medical case management for NASA civil servants that are permanently assigned, or while on temporary assignment to KSC/CAFS, to ensure injured workers receive appropriate medical services as quickly as possible in order to reduce time lost from work, including, if necessary, limited duty recommendations;
- f. Provide a registered nurse to support visitor and employee activities at the KSC VC. This nursing support shall operate under the direction of the MESC Contractor medical director and by protocols established by the MESC Contractor medical department and shall provide evaluation of medical problems and treatment/disposition of minor medical problems for visitors at the KSC VC. The nursing support shall also provide OM services to the KSC VC employees at levels comparable to that provided by nurses at other KSC OM facilities. The nurses shall also provide OM consultative services to the KSC VC management;
- g. Identify trends associated with all injuries or illnesses that may be related to the work environment, investigate those trends, and recommend actions required for prevention;
- h. Evaluate any patient presenting with minor non-occupational illnesses and injuries. If the diagnosis is apparent and minimal treatment without release from work is appropriate, requiring no follow-up, then treatment shall be rendered and the individual returned to duty. If these conditions warrant diagnostic or consultative services beyond that available at the on-site medical facility, or if a private physician's services shall be necessary to ensure comprehensive evaluation and/or treatment following first care necessary for

stabilization and transport, the individual shall be referred to the private physician rather than being given further treatment at the on-site medical facility;

- i. Provide appropriate return to work clearance or duty limitations to patients and their employers;
- j. Perform laboratory, x-ray, or other tests within the scope and capability of the on-site medical facility at the request of a private physician if the conditions under evaluation or treatment are job-related;
- k. For non-occupational related illnesses or injuries, requests for laboratory or x-ray procedures that are received from private physicians shall only be conducted at the time of scheduled physical examinations and within the scope and capability of the clinic. Exceptions to this may be made for military and military reservists on active duty located at KSC and CCAFS who may come to the OM facilities instead of going to other U.S. Government Medical Facilities, where they are authorized full care. Other exceptions may include NASA retirees with medical disabilities whose continued medical surveillance by NASA is requested by the Government;
- l. Administer treatments, medications, or tests (such as shots, blood pressure checks, hormonal therapy, or other tests as directed by the Government) prescribed by the employee's private physician if these on-site activities enable the employee to remain at work for the balance of the normal work shift or are otherwise in the best interest of the Government. Services requested by the employee's private physician must be in writing. An MESC Contractor physician shall evaluate and approve, as appropriate, the written request. The employee shall furnish any of the necessary medications and required specialized equipment;
- m. Refer patients to their personal physician when significant abnormal conditions are discovered at the time of scheduled certification physical examinations or in the course of treatment for occupational illnesses or injuries, but which in themselves are not related to the patient's employment. Information on the evaluation and treatment shall be requested from the private physician to determine any effect on employment or need for work limitations;
- n. Supply medications not classified as controlled by the Drug Enforcement Administration for the Astronaut Health Program for KSC spacecraft launch and landings;
- o. Perform semi-annual Drug Enforcement Administration (DEA) classified controlled medication inventories in accordance with NPR 1800.1, NASA Occupational Health Program;
- p. Serve as the Automated External Defibrillator (AED) Program Coordinator (AED-PC) as per TA-POLICY-012, KSC AED Policy. The AED-PC shall be the MESC Medical Director, or his/her delegate. The AED-PC shall be responsible for being the physician-of-record for the KSC AED Program and will assure training of all personnel designated as NASA/KSC AED Providers or Responders. The AED-PC will monitor maintenance and quality assurance for NASA/KSC AED's and evaluate, along with the Government, any deployment of a NASA/KSC AED.

(Section 2.3.1(q) to be effective October 1, 2009)

- q. Supply medications classified as controlled by the DEA for the Astronaut Health Program for KSC spacecraft launch and landings.

2.3.2 Preventive Services.

The MESC Contractor shall provide a preventive medicine program to promote, maintain, and improve the physical and psychological well being of the worker in the work place. The MESC Contractor shall:

- a. Provide health maintenance examinations to NASA civil service employees. The scope and schedule of these FEHP examinations shall be in accordance with KBM-ST-2.1 A and B, Medical Standards. Examinations or reasonable tests, such as serum thyroid studies and lipoprotein fractionation, may be required by the Government for designated employees;
- b. Provide annual physical examinations to civil service personnel assigned to tenant organizations at KSC as identified by the Government, such as the National Park Service and Defense Contract Audit Agency. These physical examinations shall be completed according to the directives and benefits prescribed by their agency or department policies;
- c. Provide OM support services to KSC workforce for official travel to include:
 - Traveler briefings with up to date information on destination environmental issues and infectious outbreaks;
 - Travel related medical reviews prior to authorization of overseas travel to include: identifying the need for vaccinations (such as yellow fever), providing standard immunizations (such as tetanus-diphtheria, polio, measles mumps and rubella (MMR), hepatitis A and hepatitis B), reviewing and evaluating pre-existing medical conditions, personal medications, and destination medical capabilities;
 - Travel packets to employees traveling to overseas sites. Packets to contain some basic medical supplies, such as Tylenol, Band-Aids, antibiotic ointment, anti-diarrheal medication, allergy medication, throat lozenges, antacids, lip balm, and sunscreen;
 - Prescriptions for malaria medications for travel to those countries that the Centers for Disease Control recommends malaria prophylaxis. OM physicians shall discuss the need for malaria prophylaxis individually with the traveler and prescribe the most appropriate anti-malarial medication;
 - Information on other aspects of travel related medical concerns such as jet lag, stress, travelers' diarrhea, motion sickness, hypoxia, high altitude illness, decompression illness, and blood clots.
- d. Provide a Health Education and Wellness Program in coordination with NASA-KSC medical officers, including:
 - Health Education Topics
 - Medical Screening
 - Health Risk Reduction Counseling
 - Promotion of Healthful Lifestyles

- Participation in Government-sanctioned health related support groups;
- e. Provide on-site Health Training Programs for the KSC workforce to include, at a minimum, the following services:
 - First aid for KSC job certification requirements;
 - Job required basic life support (BLS), including cardiopulmonary resuscitation (CPR) skills per American Heart Association National Standards;
 - Advanced Cardiac Life Support (ACLS) for physicians, nurses, and emergency service personnel in accordance with state and local governmental requirements;
 - OSHA directed programs for physicians, nurses, and emergency service personnel and other health care providers, e.g. Bloodborne pathogen training.

2.3.3 OM Support to Solid Rocket Booster (SRB) Retrieval Ships.

The MESC Contractor shall provide medical oversight, medical logistics (medications, medical supplies and equipment) and consultative service to SRB retrieval ship personnel. The MESC Contractor Medical Director, in consultation with the Government, and in conjunction with the SRB ship Captains, shall determine which medications and items will be supplied. This will include over-the-counter medications as well as prescription items. The ship's Captains will have responsibility for storage, security, disposition, inspection, and inventory of these medications. The MESC Contractor shall conduct semiannual inventories of all ships controlled medications and supplies. Between semiannual inventories, the ship's Captains will conduct inspections of supplies and medications to determine expiration status and quality, returning any questionable supplies and medications to the MESC Contractor for verification and replacement.

2.3.4 OM Support to Non-KSC Sites.

The MESC Contractor shall provide medical personnel and support to provide emergency medical and occupational medical care to members of the Rapid Response Team and Recovery Team for space craft operations at non-KSC landing sites and to communicate with and provide liaison between the teams and local health care providers. The MESC Contractor shall provide and maintain the appropriate medications, equipment, and supplies. The MESC Contractor shall also provide, as required by the Government, medical personnel and support to other NASA Centers following a disaster or contingency. Deployment and specific composition of the support teams shall be determined in coordination with the Government on a case by case basis.

2.3.5 Medical Review Officer Services.

The MESC Contractor shall provide Medical Review Officer (MRO) services in support of NPR 3792.1B, Plan for a Drug-Free Workplace Program for NASA civil servants. The MESC Contractor shall provide a physician who is certified as an MRO qualified to interpret results of work-place drug testing. The MESC Contractor's MRO shall review all test results and shall refer any non-negative results to the NASA-KSC Medical Review Officer for final interpretation and disposition.

2.3.6 Employee Assistance Program Services.

The MESC Contractor shall provide counseling and intervention services as part of the KSC Employee Assistance Program (EAP), in accordance with KNPD 3792.1, the KSC Employee Assistance Program (EAP) Policy. The MESC Contractor shall provide Employee Assistance Program Counselors. It is the expectation of the Government that there will be more than one

EAP Counselor due to the size of the KSC workforce. The EAP shall include services related to alcohol and drug abuse prevention. The EAP shall also focus on initial management training and education in the identification and treatment of employee stress including Critical Incident Stress Management (CISM) and Critical Incident Stress Debriefing (CISD) in accordance with KNPR 3792.1, Employee Assistance Program (EAP) Psychological Support Preparedness Plan in the Event of a Disaster. These shall be followed by emphasis on a consultation, evaluation and referral approach to the services provided. The MESC Contractor shall coordinate with community health resources to maintain a KSC Disaster Mental Health Services Support Team in support of CISM and CISD activities.

2.4 Emergency Medical Services Medical Support.

The MESC Contractor shall:

- a. Provide Medical Director services to oversee the emergency medical services (EMS) response. Ambulance vehicles and their staffing will be Government furnished;
- b. Provide a physician to be available either on-site (KSC/CCAFS) or on-call at all times;
- c. Provide ambulance medications;
- d. Determine the ambulance service destination of any patient to either on-site medical facilities or to local hospitals. This determination shall be made by the on-site or on-call MESC Contractor physician or on-duty registered nurse in consultation with a physician but this determination can also be made by the responding ambulance personnel if the physician or nurse is not available with consideration to the seriousness of the patient illness or injury, closest appropriate facility, and patient request;
- e. Coordinate with Fire Rescue Services provided by the Government in the provision of Triage Site and Transportation zone management and Triage Site treatment when a Triage Site is utilized for mass casualties or space vehicle contingencies;
- f. Operate, manage, and staff with trained, certified personnel the KSC Triage Sites in accordance with the KSC EMS Plan;
- g. Operate and stock a Triage Vehicle capable of bringing basic emergency provisions to a contingency scene;
- h. Coordinate with local medical resources in the event of mass casualties or operational contingencies;
- i. Provide plans that provide for coordination of medical emergencies such as epidemics, pandemics and mass casualty events;
- j. Provide physician and nursing emergency medical services to include astronaut flight crew contingency care and first aid coverage for NASA guests and KSC VC visitors, during launch and landing operations;
- k. Provide medical participation in KSC-medical contingency exercises and KSC-wide contingency exercises. Contingency exercise participation may require some or all of the bulleted items in this section.

2.5 Specialized Physician Support for Human Spacecraft Launches and Landings.

The MESC Contractor shall provide Specialized Physician Medical Support for launches and launch attempts and landings and landing attempts at NASA-KSC to include all medications,

supplies, and equipment. The Specialized Physician support personnel shall attend On-Site Simulations and an annual Spaceflight Medical Support Training Course. The detailed requirements are provided in Section J, Attachment J-3, Specialized Physician Support for Human Spacecraft Launches and Landings.

(Section 2.6 to be effective October 1, 2009)

2.6 Aerospace Medicine Services.

The MESC Contractor shall assist the NASA medical officers in planning, monitoring, and implementing the KSC MOSIP, and KSC EMS Plan. The MESC Contractor shall:

- a. Assist in spaceflight medical operations planning and document preparation. Review the Johnson Space Center (JSC) Medical Operations Requirement Document (MORD) and ensure that the KSC MOSIP contains current MORD requirements in accordance with DRD2.6-001 Plan, Aerospace Medicine Medical Operations Support;
- b. Review and maintain the KSC EMS Plan outlining the KSC response to a Shuttle medical contingency in accordance with DRD2.6-001 Plan, Aerospace Medicine Medical Operations Support;
- c. Prepare medical briefing packages for each Terminal Countdown Demonstration Test (TCDT), launch and landing and Mission Reports for each human spaceflight mission accordance with DRD2.6-001 Plan, Aerospace Medicine Medical Operations Support;
- d. Assist the NASA-KSC medical officers in planning, implementing, and analyzing emergency exercises, simulations and medical training;
- e. Provide spaceflight medical services in accordance with the KSC EMS plan such as “EMS”, “KMD”, “KRN” and medical technologist as directed by the Government. In the event of an actual contingency, all MESC Contractor medical forces shall be utilized to provide medical care to ill or injured crew members, KSC workforce, guests and visitors;
- f. Provide services to the JSC Flight Medicine personnel such as pre- and post-flight astronaut crew physicals, pre-flight Prime Crew Contact physicals, and medical monitoring for all Life Sciences Flight Experiments Program human experiments;
- g. Maintain the physical examination facilities in the Biomedical Laboratory, the KSC Baseline Data Collection Facility, and the KSC Crew Examination Facility and provide medical care and medical monitoring as needed. The MESC Contractor shall maintain medications, medical supplies, and emergency medical crash carts located in these facilities, as well as similar medical provisions for the Crew Transport Vehicle and the portable helicopter kits;
- h. Plan, arrange all logistics for, and provide teaching for the annual Spaceflight Medical Support Training Course and the NASA/DOD Space Operations Medical Support Training Course. These courses are provided to MESC physicians providing medical services under paragraph 2.5, Specialized Physician Support for Human Spacecraft Launches and Landings, medical personnel in the local community and DOD who might provide on-site medical care at KSC and/or would be likely to receive ill or injured astronauts and/or KSC workforce. This training familiarizes the participants with NASA and KSC operations and provides them with training on diagnosis and treatment of

problems peculiar to spacecraft and spaceflight (e.g., Hypergolic fuel exposures, dysbarisms, micro-gravity deconditioning). The Spaceflight Medical Support Training Course shall also include an Orientation and Security briefing. The contractor shall also provide training during "Air Doc" briefings to DOD medical personnel for human spacecraft launches and landings.

2.7 Medical Consulting Services.

The MESC Contractor shall:

- a. Provide consultation services to include evaluation of the workplace to make recommendations with regard to physical examination requirements for specific jobs or generic job categories based on assessment of the demands of the job and the environment in which it is accomplished. Such evaluations also address specific health and safety concerns of the government and MESC Contractor that are unique to the job or work area and supplemented by environmental studies accomplished by Environmental Health (EH) specialists to support appropriate OM recommendations;
- b. Review policies, documents, plans, and procedures as directed by the Government;
- c. Support the biennial Agency Occupational Health Program review of the KSC OH Program, and subsequent development of appropriate corrective action plans;
- d. Support NASA-KSC medical reviews/audits of the KSC OHP;
- e. Provide other OM services as required by applicable State and Federal laws and regulations.

(Section 2.8 to be effective October 1, 2009)

2.8 Fitness Facilities.

The MESC Contractor shall staff and operate two exercise facilities at KSC. The MESC Contractor shall:

- a. Manage and operate the Fitness Facilities and equipment, provide recommendations for new or replacement equipment and provide routine equipment maintenance;
- b. Monitor the clients using the equipment to assure proper use in order to minimize the possibility of injury to the users or damage to the equipment;
- c. Provide fitness assessments to facility clients, advise clients on an appropriate exercise program to help them achieve their fitness goals, and provide clients periodic updates on their fitness levels;
- d. Develop and institute a plan to assure personnel who use the Fitness facilities meet the requirements established by the Government (e.g., are medical authorization for use, after hours policy);
- e. Provide and promote motivational programs to improve the health of the workforce and provide training classes in various exercise areas, such as aerobics, muscle strengthening, and special fitness (e.g., abdominal classes, upper body strength).

(Section 2.9 to be effective October 1, 2009)

2.9 Musculoskeletal Rehabilitation Services.

The MESC Contractor shall provide a musculoskeletal rehabilitation program at KSC. The MESC Contractor shall provide injury assessment and rehabilitation services in order to maximize long-term recovery and reduce lost work time. Treatment is provided for occupational and non-occupational related injuries. The MESC Contractor shall:

- a. Manage and operate the program's facilities and equipment, and provide maintenance of its related equipment;
- b. Coordinate the program's activities and patient care with KSC Occupational Medicine and Environmental Health personnel, offsite health care providers, workers' compensation specialists, and the KSC Fitness Centers to optimize injury reduction, injury rehabilitation, and return to work;
- c. Provide Certified Licensed Athletic Trainers.

2.10 Clinical Laboratories.

The MESC Contractor shall provide College of American Pathologists (CAP) certified clinical medical laboratory services. Laboratory services shall be fully accredited/certified by the State of Florida and meet all regulatory format requirements. The MESC Contractor shall:

- a. Provide, at a minimum, on-site collection of medical samples, on-site laboratory services which are CLIA (Clinical Laboratory Improvement Amendments) exempt (such as urine dipstick or tablet urinalysis, fecal occult blood, blood glucose home monitoring devices); x-rays (interpreted by certified radiologist); and other tests as appropriate to support the OM and Preventive Health Programs;
- b. Provide additional laboratory services, with a valid physician's prescription, to include: clotting factor studies (INR values), blood glucose (fasting blood sugar and glycosolated hemoglobin), and fasting lipid profiles;
- c. Assure calibration and maintenance support for all on-site laboratory instrumentation, and maintain calibration and maintenance records for each instrument;
- d. Coordinate services provided by the Government on calibration of instruments and equipment that require calibration capabilities beyond the test equipment available to the MESC Contractor technical personnel;
- e. Assure that written requests to the Government-provided Calibration Laboratory for calibration of any such items are timely and properly submitted, and that appropriate records are maintained (see Section L, L.18, MESC Reference Document List, KNPR 8730.1, KSC Metrology and Calibration Procedural Requirements).

(Sections 2.10(f)-(j) to be effective October 1, 2009)

- f. Operate an on-site clinical laboratory capable of supporting spacecraft (e.g., Shuttle) medical operations activities providing clinical microbiology, chemistry, hematology, urinalysis, and other specialized studies (e.g., hormonal assays via Radioimmunoassay);
- g. Interface with JSC laboratory personnel in the provision of launch and landing support;
- h. Provide laboratory support to NASA-KSC approved biomedical studies;

- i. Perform clinical analyses on contingent clinical occupational health samples that are received from the Occupational Health Facility (OHF) at the direction of the Government;
- j. Provide clinical microbiological sampling and analysis to pre-, in-, post-flight and fly back samples for the Space Shuttle, Space Station, and other human spacecraft systems.

(Section 2.11 to be effective October 1, 2009)

2.11 Biomedical Studies Support.

The MESC Contractor shall provide support and services for NASA-KSC approved biomedical studies. The MESC Contractor shall:

- a. Provide expertise in grant identification, application, proposal writing and submittal;
- b. Provide support in the planning, development, subject acquisition, subject qualification, test scheduling, and implementation of any NASA-KSC approved biomedical studies;
- c. Provide support in data collection, medical monitoring, clinical sample collection and analysis, data analysis; and publication of any NASA-KSC approved biomedical studies;
- d. Provide staff with qualifications in biomedical sciences to assist principal investigators in providing the above services;
- e. Serve as a principal or co-investigator in support of approved biomedical studies at NASA-KSC as directed by the Government;
- f. Provide administrative support to the KSC Institutional Review Board (IRB). This support shall consist of recording minutes of IRB meetings, and record keeping of IRB files and IRB correspondence. It is the Government's expectation that support personnel are familiar with medical terminology;
- g. Provide medical and life science support to Biomedical Stress Physiology studies for the development and evaluation of advanced forms of breathing apparatus and protective clothing ensembles. The MESC Contractor shall:
 - Plan, investigate, develop, support, implement, analyze data, and publish operational studies focused within the areas of workforce, ground support, and rescue crew protection, as well as evaluate new state-of-the-art technologies;
 - Provide medical support for the qualification and use of human subjects during the development of advanced forms of breathing apparatus and protective clothing ensembles. After qualification, medical services shall be provided for the performance of lab, environmental chamber, and field studies as specified by the KSC Institutional Review Board;
 - Provide and coordinate medical monitoring and record-keeping for all human studies supporting biomedical stress physiology investigations. It is the Government's expectation that staffing support shall include physician, nurse, and clinical laboratory specialties. The MESC Contractor shall also provide assistance with recruitment and scheduling of test subjects;
 - Provide staff with qualifications in biomedical sciences who shall assist in the study of advanced protective equipment, technologies, and strategies as Principal

- Investigator, and/or in collaboration as co-Investigator along with NASA Biomedical Engineering and outside agencies involved in such studies. Through such studies, contribute to the development of new equipment, technologies, and techniques to alleviate or reduce occupationally related risk inherent to the KSC workforce;
- Assist NASA studies in the areas of advanced breathing apparatus and protective clothing ensembles, heat stress mitigation strategies, grant applications, and new proposal submittals. MESC Contractor services include the purchasing of instrumentation, hardware, and supplies.

(Section 2.12 to be effective October 1, 2009)

2.12 Medical Education Program.

The MESC Contractor shall implement the KSC Medical Education Program which assists NASA in supporting its education initiatives. The MESC Contractor shall provide such services as: scheduling participants, providing lectures and tours, preparing participant evaluations, and completing checklists of program activity.

3.0 ENVIRONMENTAL HEALTH SERVICES.

3.1 Administration and General Requirements.

The MESC Contractor shall provide Environmental Health (EH) services to include Industrial Hygiene (IH), Health Physics (HP), Sanitation (SAN), associated laboratory services, and operation of associated computer management systems.

Environmental Health services shall be provided on-site at KSC and at NASA work locations on CCAFS on first shift, excluding MESC Contractor holidays. The MESC Contractor shall also respond to off-shift customer activities requiring MESC Contractor participation, to support scheduled operations and emergency response activities within two hours from notification.

Environmental Health services shall include both recurring and nonrecurring surveys at NASA civil service, NASA contractor, and NASA Tenant work locations. IH and HP surveys are also provided at local off-site locations and to NASA operations at Vandenberg Air Force Base, CA. as specified in the subsequent paragraphs.

The MESC Contractor shall ensure that work is performed in accordance with KNPR 1820.3 KSC Hearing Loss Prevention; KNPR 1820.4 KSC Respiratory Protection, KNPR 1860.1 KSC Ionizing Radiation Protection, KNPR 1860.2 KSC Non-Ionizing Radiation Protection, KNPR 1870.1 KSC Sanitation Handbook, KNPD 1800.1 Environmental Health Program, KNPD 1860.1 KSC Radiation Protection; KNPD 1800.2 KSC Hazard Communication Program, and KNPR 1840.19 Industrial Hygiene Programs (Reference Section J, Attachment J-7, MESC Compliance Document List).

The MESC Contractor shall:

- a. Identify, evaluate and recommend corrective actions for health hazards and non-compliance conditions. The MESC Contractor shall analyze past data and perform trend analysis to develop exposure and hazard assessment strategies;

- b. Work directly with customer organizations to develop work assignments and prioritize its resource allocation based on analysis of factors, such as hazards, operational/mission requirements, regulatory compliance, regulatory changes, and customer needs;
- c. Ensure that reports to customers accurately describe the work performed, including observations, findings, and recommendations;
- d. Maintain electronic document records of all written products, administrative, and operational procedures required for the implementation of its EH functions such as internal operating procedures, reports, records of employee certification and training, fieldwork records, and other auditable activities;
- e. Transition existing electronic EH data provided by the Government into a MESC Contractor provided information management system for storage of EH records and data analysis. The MESC Contractor provided information management system shall include electronic records management to inventory and track identification and abatement of exposure hazards identified in baseline and follow-up surveys. The MESC Contractor may provide either a COTS or self-developed program to satisfy the requirement;
- f. Develop and operate an EH Services web site to provide customer review of Industrial Hygiene, Sanitation, and Health Physics programs and services; online requests for hazard assessments; access to Material Safety Data Sheets (MSDS); and to provide an information resource on topical areas of EH such as heat illness prevention, to customer health and safety organizations and Center employees.

3.2 Environmental Health Consultation Services.

The MESC Contractor shall:

- a. Assist in the development of Center policies, documents, designs, and plans to determine the adequacy of preventive measure and controls, and ensure compliance with applicable federal, state, local, and NASA regulations and requirements;
- b. Review existing and proposed federal, state, and local regulations and NASA policies to determine applicability and potential impact on Center operations;
- c. Assist in the preparation of and review of technical training materials;
- d. Provide technical and administrative assistance to the Government in interfacing with regulatory agencies;
- e. Participate in Agency and third party reviews and audits of the KSC EH Program, and assist in development and implementation of appropriate corrective action plans.

3.3 Emergency Response.

The MESC Contractor shall:

- a. Participate in planning and response for chemical, biological, and radiological emergency activities and participate in exercises at KSC and CCAFS (such as Hazardous Material Incidents and hurricane response and recovery). MESC Contractor participation in local community response activities shall be in accordance with mutual aid agreements (Reference Section L, paragraph L.18, MESC Reference Document List). Special requirements for planning and response to Major Radiological Source Launches are described in PWS Section 3.6.;

- b. Provide a 24-hour on-call response capability;
- c. Participate in KSC Rapid Response Teams and recovery teams for space craft operations at remote locations and disaster support to other NASA centers. Deployment and specific composition of the team shall be determined in coordination with the Government on a case by case basis;
- d. Provide and maintain the appropriate equipment and supplies for emergency response activities.

3.4 NASA KSC Industrial Hygiene (IH) Program.

The MESC Contractor shall provide comprehensive IH Services to NASA civil service and contractor organizations at KSC and CCAFS facilities and at off-Center locations within 75 miles of the Center. The MESC Contractor shall provide annual facility site inspection and on-site consultation to NASA operations at VAFB, as required by the Contracting Officer. *(Note: The MESC Contractor will not be expected to travel to VAFB more than twice a year).*

The MESC Contractor shall assist the NASA Industrial Hygiene Officer in managing the NASA-KSC Industrial Hygiene Program, such as performance of assessment of Center risks, analysis of data and trend analysis to develop exposure and environmental assessment strategies, impact of new regulations and technologies, assessment of NASA and NASA contractor IH-related program elements, oversight of technical training materials and new course content, and the development of Center IH program policy.

IH work shall be under the technical direction of certified Industrial Hygienist(s). The MESC Contractor shall:

- a. Interface with NASA Safety and other NASA organizations and support IH program functions applicable to NASA civil service employees to include implementation of ergonomics programs and management of hazardous materials used in NASA shops and labs;
- b. Work with Occupational Medicine to identify Homogeneous Exposure Groups and provide employee exposure monitoring data, including individual monitoring results, for incorporation into employee medical records;
- c. Provide MSDS record entry and management for the Government-provided KSC MSDS management system. The system provides Centerwide access to all MSDS maintained in the MSDS database and for any new MSDS submitted by NASA or its contractors and tenants. The MESC Contractor shall publish a KSC index of MSDS quarterly;
- d. Provide baseline and follow-on health hazard assessments of operations and procedures, including construction activities for chemical and physical hazards. The MESC Contractor shall schedule surveys in coordination with customers. Conduct follow-on surveys at least annually when baseline data show significant potential for exposures to hazardous agents; when the customer identifies any process or operational changes that may affect the potential or type of exposure; or as required by OSHA regulation;
- e. Investigate reported employee exposures to hazardous materials following employee visits to OH facilities within 24 hours;

- f. Investigate workforce complaints of potential workplace hazards and coordinate with the affected employee and the appropriate organizations to resolve issues where appropriate;
- g. Chair the KSC Indoor Air Quality (IAQ) Working Group, the KSC Ergonomic Working Group, and the KSC Respiratory Protection Panel;
- h. Provide IH consultation and atmospheric testing for confined space entry operations;
- i. Provide IH services to launch, landing, and processing operations such as downwind monitoring of hypergolic propellant transfer operations, hypergolic propellant storage area open-up, oxygen deficiency monitoring and launch pad safing operations;
- j. Perform sampling and analysis of air contaminants associated with hazardous operations and processes using both real time and time-weighted-average sampling methods;
- k. Perform annual inspections of NASA civil service work locations at KSC, CCAFS and VAFB to identify potential health risks/hazards or vulnerabilities in accordance with 29 CFR 1960;
- l. Implement an exhaust ventilation system testing program to include an inventory of all ventilation systems used to control hazardous air contaminants generated by hazardous operations and processes;
- m. Implement a breathing air system testing program, to include an inventory of, testing, and permitting of all KSC/CCAFS-operated compressor-supplied breathing air systems and inspections and testing of supplied air to meet OSHA, and NASA requirements;
- n. Provide expert consultation in confined space hazard assessment; manage the KSC inventory of confined spaces; perform hazard confined space hazard assessments, provide recommendations and requirements for confined space entry and work, and perform atmospheric monitoring in support of confined space entry operations;
- o. Provide expert consultation in heat illness prevention; perform heat illness hazard assessments; provide Center-wide notification of heat stress conditions;
- p. Provide expert ergonomic consultation; conduct musculoskeletal disorder (MSD) hazard assessments; and operate a loaner program for ergonomic furniture and accessories;
- q. Provide expert consultation in respiratory protection and deployment of emergency use respirators; and perform hazard assessment of air contaminants;
- r. Provide expert consultation in noise hazard assessment and hearing loss prevention; assess noise hazards, engineering controls and hearing protection; coordinate a "Buy Quiet" program;
- s. Provide expert consultation on indoor air quality (IAQ); investigate IAQ complaints and identify potential causes; coordinate with affected employees and their employers, and appropriate organizations to resolve issues where appropriate;
- t. Provide services to the KSC asbestos management operations to include:
 - At least one licensed Asbestos Consultant;
 - Bulk sampling and analysis of suspect Asbestos Containing Materials (ACM) to support scheduled on-going construction and operations and maintenance work;

- Inspections to identify suspect ACM; risk analysis of scheduled facilities operations and maintenance where ACM is present; assessment of written asbestos abatement procedures; pre-abatement inspections; surveys and audits of asbestos abatement operations; clearance level air monitoring for abatement projects; and provide asbestos abatement monitoring support to NASA and NASA contractor construction activities;
- Provide data for the update of the KSC Facility Asbestos Management System;
- Coordinate directly with NASA and contractor facilities management organizations responsible for management of Construction of Facilities (CofF) and other facility maintenance activities requiring work with ACM;
- u. Provide environmental microbiology testing of air, surface and water samples as required to support, facilities management (IAQ, cooling towers, potable water sources, dairy products, sewage plants);
(Section 3.4(v) to be effective October 1, 2009)
- v. Provide environmental microbiology testing to support spacecraft operations, research projects, and environmental programs.

3.5 Sanitation and Public Health.

The MESC Contractor shall provide services, which include surveillance and inspections, to evaluate compliance with KNPR 1870.1, KSC Sanitation Handbook, and federal, state, and local laws and regulations for issues related to sanitation and public health. The MESC Contractor staffing shall include registered sanitarians as well as personnel who have been certified by the United States Food and Drug Administration (FDA) in food service inspection. Services shall include:

- a. Sanitary surveys of food service facilities (including preparation sites, storage areas, mobile canteens, and vending machines), day care operations, barber shops, recreation facilities and exercise facilities, launches, special events, and the KSC Astronaut crew quarters;
- b. Testing of bottled water at KSC facilities where this is the sole drinking water source;
- c. Inspection of animal care facilities;
- d. Inspection of chemical toilets;
- e. Investigations of disease vectors;
- f. Identification of training and certification requirements in the aspects of food service sanitation for all food service employees; these training requirements shall be identified for NASA-KSC contractors;
- g. Consultation to the Government and it's contractors in fulfillment of their federal and state regulatory obligations/compliance;
- h. Specialized investigative, sampling and analysis, and advisory support to real-time incidents, and/or complaints to include food borne illness investigations, potable water incidents, and disease vector reports;

- i. Coordination of food recalls to affected organizations at KSC facilities;
- j. Provide specialized consultation to Center food service operators on the development and maintenance of Hazardous and Critical Control Point (HACCP) plan development and implementation;
- k. Investigation of animal bite incidents to ensure appropriate treatment of victim, and coordination with appropriate local authorities.
- l. Interface with the Florida State Regulatory Agencies and the Department of Professional Regulation for licensures, certification, and maintenance.

3.6 Health Physics (Radiation Protection).

The MESC Contractor shall provide comprehensive Health Physics Services to NASA civil service and contractor organizations at KSC and CCAFS facilities and at off-Center locations within 75 miles of the Center. The MESC Contractor shall provide annual facility site inspection and on-site consultation to NASA operations at VAFB, as required by the Contracting Officer. *(Note: The MESC Contractor will not be expected to travel to VAFB more than twice a year).*

The MESC Contractor shall assist the NASA Radiation Protection Officer (RPO) in managing the KSC Radiation Protection Program including assessment of Center risks, analysis of data and trends, impact of new regulations and technologies, maintenance and compliance with the requirements of the KSC Nuclear Regulatory Commission broad scope license, and the development of Center Radiation Protection Program policy.

The MESC Contractor shall provide the following services:

- a. Assessment of personnel hazards in all NASA and NASA contractor radiation use areas at KSC, and NASA facilities at VAFB;
- b. Maintenance of a current inventory (to meet regulatory requirements) for all identified radiation sources and radiation producing devices in use or in storage at KSC, and NASA facilities at VAFB;
- c. Performance of radiation surveys, evaluations, sampling, analysis, and audits as directed by the RPO to ensure compliance with NASA requirements and applicable state and federal regulations;
- d. Maintenance of equipment for use in performing field surveys and analysis of ionizing and non-ionizing radiation hazards;
- e. Management of the KSC personnel ionizing radiation dosimetry program for radiation workers requiring dosimetry. Identify personnel to be monitored, issue appropriate dosimeter, assess and assign radiation dose, and maintain exposure histories as required by applicable regulations. Provide technical expertise and support for special dosimetry applications;
- f. Processing of Radiation Use Requests (RURs) and associated documents, and drafting of Radiation Use Authorizations (RUAs) for appropriate RPO approval for all potentially hazardous radiation sources and devices in accordance with KNPR 1860.1, KSC Ionizing Radiation Protection Program and KNPR 1860.2, KSC Nonionizing Radiation Protection Program.

- g. Collecting, monitoring and storing low-level radioactive waste, and maintain and operate a dedicated storage area for material awaiting disposal or transfer;
- h. Advising NASA personnel and KSC contractors on compliance with federal and state regulatory requirements;
- i. Providing radiation monitoring assistance to the Brevard County Emergency Operations Center when directed by the KSC RPO;
- j. Maintaining appropriate State of Florida and United States Nuclear Regulatory Commission (USNRC) licenses and registrations as referenced in the Section L, L.18, MESC Reference Documents List for radioactive materials and radiation producing machines; and participate in federal and state inspection visits;
- k. Providing a Health Physics representative to the NASA/KSC Radiation Protection Committee (RPC) meetings who will also record the minutes and maintain official copies of RPC meeting minutes;
- l. Participating in ground processing of major radiological source payloads. MESC Contractor participation shall include:
 - Reviewing spacecraft radiation source integration procedures;
 - Providing health physics coverage at storage, payload processing, and launch pad facilities as needed with radiation monitoring;
 - Preparing Radiation Use Authorizations and providing ancillary radiation worker training;
 - Providing non-routine radiation dosimetry service for workforce temporarily assigned to ground processing and;
 - Preparing Dose Assessment Management Plans to forecast worker radiation dose based on time and motion studies of proposed spacecraft source integration activities.
- m. Participating in radiological contingency planning and operations for major radiological source payloads. The MESC Contractor shall:
 - Provide radiological contingency planning support to the KSC Radiation Protection Officer in the development of contingency plans and procedures;
 - Staff the radiological contingency field team and Radiological Control Center;
 - Supply field team kits with routine radiation monitoring equipment and supplies including specialized equipment provided by the Department of Energy for major source launches.

3.7 Environmental Health Laboratories.

The MESC Contractor shall ensure that comprehensive EH laboratory services are provided. Laboratory services can be provided on-site or off-site. In addition, the MESC Contractor shall:

- a. Ensure analyses of samples for Industrial Hygiene are performed by laboratories certified by the American Industrial Hygiene Association;
- b. Provide Polarized Light Microscopy (PLM) evaluation of bulk materials that contain or are suspected of containing asbestos; the asbestos PLM turnaround time will be 10

working days, and the analytical laboratory shall be accredited by the National Institute of Standards and Technology/National Voluntary Laboratory Accreditation Program to analyze asbestos by PLM. The MESC Contractor shall ensure a follow-on evaluation of questionable bulk samples by other appropriate analytical techniques;

- c. Provide analytical services for Phase Contrast Microscopy (PCM) in accordance with AHERA or per industry practices, and conduct follow-up analysis of questionable samples and final asbestos abatement air samples. PCM turnaround time for asbestos abatement clearance samples shall be 24 hours;

(Section 3.7(d) to be effective October 1, 2009)

- d. Provide environmental microbiology laboratory analyses for bacteriological and mycological assays as well as real-time tests for pH, conductivity, chlorine, Iodine, and dissolved gases in the areas of environmental, facilities (including the Center's potable water system), and spacecraft-specific microbiology. The MESC Contractor shall ensure the laboratory meets certification by the State of Florida Department of Rehabilitative Services and other Florida State certifications;
- e. Maintain and operate an onsite health physics laboratory in accordance with applicable U.S. Nuclear Regulatory Commission (USNRC), State of Florida, and other consensus standards, with the following analytical capabilities:
 - Low level alpha/beta counting capable of detecting less than 0.005 microCuries of radioactive material;
 - Gamma spectroscopy analysis with portable field data collection capability; and
 - Liquid scintillation analysis capability;
- f. Ensure calibration and maintenance support for all MESC laboratory and field instrumentation and maintain calibration and maintenance records for each instrument. The MESC Contractor shall coordinate with the KSC base support contractor on calibration of instruments and equipment that require calibration capabilities beyond the test equipment available to the MESC Contractor technical personnel. The MESC Contractor shall assure that written requests to the Calibration Laboratory for calibration of any such items are timely and properly submitted, and that appropriate records are maintained (see Section L, paragraph L.18, MESC Reference Documents List, KNPR 8730.1 Metrology and Calibration Procedural Requirements).

3.8 Training, Certifications, and Licensure.

The MESC Contractor shall ensure that:

- a. Industrial hygienist(s) providing technical direction are certified by the American Board of Industrial Hygiene;
- b. Asbestos Consultant(s) are licensed in the State of Florida;
- c. Industrial hygienists working under the direction of the licensed asbestos consultant meet the State of Florida asbestos training requirements;
- d. IH staff members who oversee technical specialty program areas such as hearing conservation and ergonomics possess recognized technical certifications or a combination of five years of relevant education and experience for those areas of expertise;

- e. Registered sanitarians are accredited by the National Environmental Health Association and have been certified by the United States Food and Drug Administration (FDA) in food service inspection;
- f. Environmental Microbiology staff have a 4 year degree in a biological science, preferably in Microbiology;
- g. At least one health physicist has American Board of Health Physics (ABHP) certification (comprehensive practice) or an equivalent level of training, education, and experience. At least one employee with certification from the Board of Laser Safety as a Certified Laser Safety Officer or an equivalent level of training, education, and experience. Each professional and technical member of the Health Physics staff shall be National Registry of Radiation Protection Technologist (NRRPT) certified or possess an equivalent level of training, education, and experience.

4.0 ENVIRONMENTAL SERVICES.

4.1 Administration and General Requirements.

Environmental services shall be provided on-site at KSC and at NASA work locations on CCAFS on first shift, excluding MESC Contractor holidays. The MESC Contractor shall also respond to off-shift customer activities requiring MESC Contractor participation, to support scheduled operations and emergency response activities within two hours from notification.

The MESC Contractor shall provide administrative and technical services to maintain and update NASA policies, plans, procedures and guidelines (such as KNPR 8500.1, KSC Environmental Requirements).

The MESC Contractor shall coordinate the semiannual review and update of the KSC Spill Prevention Control and Countermeasures (SPCC) Plan (KSC-PLN-1919, Spill Prevention Control and Countermeasures Plan and KSC-PLN-1920, Appendix B: KSC Site Specific SPCC Plans) as follows:

- a. Request changes and updates to the KSC SPCC Plan every six months to all KSC contractor and tenant organizations;
- b. Document administrative and technical modifications to the KSC SPCC Plan by modifying the KSC SPCC Database (provided by the government) for all KSC contractor and tenant organizations;
- c. Incorporate changes for all KSC contractor and tenant organizations to the KSC SPCC site-specific maps using the KSC Geographic Information System (GIS);
- d. Provide Plan amendments to the government in PDF format every six months.

4.2 Training, Certification, and Licensure.

The MESC Contractor shall ensure that:

- a. Visible emissions evaluators are certified by the State of Florida;
- b. Professional Geologist(s) and Professional Engineer(s) are licensed by the State of Florida;

- c. Qualified archeologist is recognized by the State of Florida as set forth in Chapter 1A-46.004, Florida Statutes, "Criteria for Qualifications for Archaeologists";
- d. Qualified Architectural Historian is as set forth in "Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines" (Federal Register, 1983, Vol. 48, No. 190, pp. 44738-44739)).

4.3 Consultative Services.

The MESC Contractor shall provide the following:

- a. Consultative and advisory services in the areas of Section 4.0 of this PWS to the Government and Government contractors and tenants in fulfillment of their federal and state and local regulatory obligations/compliance;
- b. Technical support to meet mission and environmental permit and regulatory requirements as well as environmental permit and requirements development;
- c. Professional engineering services to include the review, sign and sealing of environmental permits in support of the NASA-KSC Environmental Program Branch such as the KSC Treatment Storage and Disposal Facility (TSDF) Resource Conservation and Recovery Act (RCRA) permit modifications and renewal, KSC's Clean Air Act Title V Air Permit modifications and renewal, and modifications to KSC's Spill Prevention Control and Countermeasures Plan. The MESC Contractor will not be required to sign and seal permit applications for KSC construction projects and modifications;
- d. Evaluation of environmental training classes provided by the Government, such as Hazardous Waste Management, Universal Waste Management, and Spill Prevention Control and Countermeasures Plan;
- e. Prepare reports and forms for response to regulatory and permit driven requirements as described in Section 4.0 of this PWS. Individual report due dates will be provided based on the direction of the CO and COTR.

4.4 NASA-KSC Environmental Program Branch (EPB) Support.

The MESC Contractor shall provide the following technical services to the Government in support of the environmental management program at KSC:

4.4.1 Surveillance Services.

The MESC Contractor shall perform inspections of operations and construction sites and provide the Government environmental personnel with written documentation of findings. The inspections are intended to be spot checks of all contractors and tenants operating at KSC and are part of the Government's oversight strategy for ensuring environmental compliance at KSC. (Note: The MESC contractor will not be providing compliance assistance to all contractors and tenants at KSC as part of this WBS.) In order to perform surveillance inspections, the MESC Contractor shall provide personnel with subject matter expertise in the following environmental media such as:

- Hazardous and Controlled Waste
- Stormwater
- Septic tanks

- Potable water
- Domestic waste water
- Industrial waste water
- Air permitting
- Polychlorinated biphenyls (PCB) record keeping and management
- Pesticides
- Solid Waste
- Registered Storage Tanks
- Spill Prevention Control and Countermeasures Requirements

4.4.2 Environmental Support for Construction.

The MESC Contractor shall provide environmental technical expertise to construction projects through all phases of project construction (i.e., project concept, Preliminary Engineering Report, engineering design, contract preparation and project construction phases). The MESC Contractor shall perform the following tasks:

- a. Assist the project manager and/or their contractor Architect and Engineer (A&E) in the preparation of KSC Environmental Checklist (see Section L, L.18, MESC Reference Documents List) identifying potential environmental compliance requirements related to the project;
- b. Participate at design review and pre-work meetings to ensure that environmental requirements, per the KSC Record of Environmental Consideration (REC), are communicated to A&E and construction contractors. This includes review of designs, providing comments, coordinating between the NASA Project Manager and the NASA Environmental Program Branch, and building of pre-work work packages to further document environmental requirements;
- c. Review Government construction contract packages for the applicability of KSC environmental clauses;
- d. Review and track KSC dig permits (KSC Form 26-312NS) and “KSC Siting” requests for potential environmental impacts (see Section L, L.18, MESC Reference Documents List);
- e. Track the environmental requirements for each project assigned and track the transfer of data between the NASA Project Manager and the Environmental Program Branch;
- f. Provide routine field consultation on the technical aspects of environmental requirements such as waste management and storm water pollution prevention plans. Monitor field compliance with NASA and regulatory requirements and best management practices.

4.4.3 National Environmental Policy Act (NEPA) Services.

The MESC Contractor shall provide technical support to the Government in the preparation and review of NEPA documentation as follows:

- a. Review incoming KSC Environmental Checklists, coordinate with the appropriate NASA subject matter experts, and prepare KSC Records of Environmental Consideration (REC) (see Section L, L.18, MESC Reference Documents List);

- b. Maintain, administer and update the KSC Environmental Checklist Database;
- c. Annually review and update the KSC Environmental Resources Document (ERD) for minor changes. Revise the ERD every five years;
(Section 4.4.3(d) to be effective October 1, 2009)
- d. Provide technical review of NEPA documents as directed by the Government;
- e. Assist the Government in the preparation of Environmental Assessments (EA) and Environmental Impact Statements (EIS). *(Note: It is the government's expectation that this work will be subject to future operations and funding sources. This will be handled as an unpriced CLIN# on the contract.)* Specifically:
 - Prepare Notices of Intent;
 - Prepare public meeting materials;
 - Support public meetings;
 - Conduct field surveys;
 - Conduct impact analyses and prepare mitigation plans;
 - Prepare draft and final documents, including printing;
 - Maintain appropriate Administrative records;
 - Prepare draft Findings of No Significant Impact (FONSI) and Records of Decision (ROD).

4.4.4 Energy Program Services.

The MESC Contractor shall support the KSC Energy Manager with the following:

- a. Administer, maintain and update the Automated Utility Database Reporting & Information System (AUDRIS) as required by changes in the KSC Energy Program. Changes may be the result of new energy laws, changes in reporting requirements, or improved capability of AUDRIS;
- b. Track and report energy audits being performed by KSC Programs at all KSC facilities;
- c. Update the KSC Energy Metric quarterly based on information provided in the Energy Utilization and Consumption Report (EUCR) and/or in AUDRIS;
- d. Update the KSC Energy Management Five Year Plan to reflect changes in energy regulations, energy goals, and changes taken place within KSC Programs that will impact energy consumption;
- e. Analyze energy data and generate respective charts, as required by KSC Energy Manager;
- f. Provide technical and administrative support to the KSC Energy Working Group.

4.4.5 Air Program Services.

The MESC Contractor shall provide personnel with subject matter expertise in Air Quality permitting and compliance and support the NASA-KSC Environmental Program Branch activities associated with the Air Program. The MESC Contractor shall provide services for the

Center-wide air permitting program such as regulatory interpretation and policy development; air permitting and operational consultations; permit preparation, renewals and maintenance; annual permit reporting requirements; risk management plan updates and audits.

(Section 4.4.6 to be effective October 1, 2009)

4.4.6 Remediation Program Services.

The MESC Contractor shall provide technical services to the NASA-KSC Remediation Group in the EPB. The MESC Contractor shall perform the following tasks:

- a. Production of maps and figures from KSC's GIS required for remediation projects/reports. Personnel performing these services shall be proficient in GIS software identified in PWS Section 4.8;
- b. Assist remediation managers in the management of project documentation;
- c. Manage investigative derived wastes generated by remediation contractors in accordance with KNPR 8500.1, KSC Environmental Requirements;
- d. Perform quarterly site inspections for compliance with land use controls;

4.4.7 Cultural Resources Services.

4.4.7.1 Historic Property Management.

The MESC Contractor shall conduct specific historic property management studies as directed by the Government, such as performing ad hoc cultural resources surveys and analysis to include performing field surveys of historic properties to determine their integrity, performing records (photo and engineering drawing files) searches to support historic property reviews, inspect work sites to ensure Historic Property integrity is maintained during facility modifications and conduct interviews. The MESC Contractor shall annually update the KSC Cultural Resources Management Plan (CRMP).

4.4.7.2 Archeological and Historic Property Surveys.

The MESC Contractor shall conduct archeological and historic property surveys, as required by the Government. *(Note: It is the government's expectation that archeological and historic property surveys will be subject to future operations and funding sources. This will be handled as an unpriced CLIN# on the contract.)* Activities include:

- a. Phase I, II and III archeological surveys conducted by a qualified archeologist;
- b. Historic Property surveys conducted by a qualified Architectural Historian;
- c. Coordinate archeological and historic survey results with the Florida State Historic Preservation Office (SHPO);
- d. Prepare mitigation plans for historic properties adversely affected by NASA activities;
- e. Conduct mitigation actions including:
 - Preparation of Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) documentation;
 - Develop final mitigation reports;
 - Develop educational materials regarding historic properties.

4.5 Hazardous and Controlled Waste.

4.5.1 Hazardous and Controlled Waste Management.

The MESC Contractor shall provide hazardous and controlled waste management (Reference Historical Hazardous Waste Information in Section L, L.18, MESC Reference Document List) for the Government and KSC tenants and contractors on KSC and CCAFS to include:

- a. Waste characterization services. The MESC Contractor shall:
 - Provide waste characterizations for the Government and NASA-KSC contractor and tenant organizations on KSC and CCAFS on a routine and emergency basis, using the existing Process Waste Questionnaire (PWQ)/Technical Response Package (TRP) process (Section L, L.18, MESC Reference Document List), to determine if wastes generated at KSC are hazardous or controlled wastes in accordance with applicable federal regulations and to determine the proper method of disposal for those wastes (e.g., off-site disposal, recycling, on-site disposal in a Federally Owned Treatment Works (FOTW));
 - Maintain a database of all waste characterized and disposed of under NASA's Environmental Protection Agency (EPA) ID number;
 - Review and update established Waste Determinations as needed to meet regulatory requirements or changes in handling requirements. Provide NASA waste generators an updated waste determination as required;
 - Respond to a routine waste characterization within 14 workdays from the date of request;
 - Respond to an emergency waste characterization within one workday from the date of request.
- b. Provide Industrial Wastewater Discharge Authorization for use of the KSC domestic waste water system for industrial waste water disposal using the existing PWQ/TRP process. The MESC Contractor shall coordinate pre-treatment standards and authorizations with the Air Force's contractor responsible for the operation of the Cape Canaveral Air Force Station domestic wastewater plant. The MESC Contractor shall ensure that only those discharges that meet pre-treatment standards and authorizations are allowed to be discharged into the KSC domestic waste water system;
- c. When provided by the Government, operate a less than 90 day accumulation site for NASA-KSC Construction of Facilities projects;
- d. Operate the NASA-KSC Treatment, Storage and Disposal Facility (TSDF) and PCB storage facility ensuring compliance with permit conditions;
- e. Work with onsite contractors and Government subject matter experts to explore, communicate and maintain options for less than 90 day treatment;
- f. Pick-up services for hazardous and controlled wastes. The MESC Contractor shall:
 - Provide routine and emergency pick-up services for hazardous and controlled wastes generated at KSC and NASA facilities on CCAFS. Controlled wastes include materials which cannot be disposed as domestic sewage or without constraints in a Resource Conservation & Recovery Act (RCRA) Subtitle D Landfill. Radioactive

- materials, bulk hypergolic fuel wastes and sanitary wastes are excluded from support under this WBS;
- Deliver to and manage hazardous and controlled waste at the NASA-KSC TSDF until off-site shipment;
 - Use the existing Waste Support Request process (Reference Section L, L.18, MESC Reference Document List);
 - Respond to routine pickup/removal requests within 10 calendar days from the time the request was received;
 - Respond to emergency pickup/removal requests within 2 hours from the time the request was received;
 - Ensure packaging, labeling, marking and manifesting of waste containers to be removed are in accordance with applicable US Department of Transportation (DOT) and RCRA regulations prior to removal from the generating site;
 - Ensure hazardous waste destined for delivery to the on-site TSDF meet all permit requirements including the waste codes allowed to be stored;
 - Use existing "internal" manifesting system to document all on-site movement of hazardous and controlled waste.
- g. Provide pick-up services for drums of dilute hypergolic fuel wastes for delivery to Fuel Storage Area #1 (Building 1047) for consolidation, treatment and/or disposal by the KSC base support contractor;
- h. Provide pick-up and disposal services for biomedical waste;
- i. Provide pick-up and disposal services of waste alodine from all waste alodine tanks or containers at KSC;
- j. Provide pick-up, management, and recycling services for used oil, oily waste water and petroleum products, universal wastes, shop rags, coolant and other waste streams. *(Note: It is the government's expectation that the MESC Contractor will seek out opportunities for recycling for these types of waste streams);*
- k. Pickup and crush empty drums at the TSDF generated by the Government and NASA-KSC contractor and tenant organizations on KSC and CCAFS. Palletize, shrink-wrap, and turn-in for scrap metal recycling crushed drums that can be recycled;
- l. Provide off-site treatment or disposal of hazardous and controlled waste. The MESC Contractor shall:
- Provide off-site disposal of hazardous and controlled wastes including wastes generated at the Fuel Storage Area #1 (Building 1047) requiring off-site disposal;
 - Complete waste profiles required by the off-site TSDF;
 - Ensure packaging, labeling, marking and manifesting of wastes are in accordance with applicable Department of Transportation (DOT) and RCRA regulations prior to off-site shipment of wastes for treatment or disposal;
 - Sign manifests for off-site disposal.

- m. Provide guidance, authorization and tracking for on-site disposal services for hazardous wastes (e.g., propellant related waste) that include:
- Interpretation of regulation and regulatory guidelines applicable to hazardous waste disposal on-site (e.g. FOTW) to determine if specific waste streams qualify for on-site disposal;
 - Maintaining a written record of the determination;
 - Communication to the Government of any potential regulatory notifications (including one-time notices) as they are required for on-site treatment/disposal of hazardous waste;
 - Providing authorization of on-site treatment;
 - Maintaining records of dates and quantities disposed/treated and providing to the Government an annual report, in accordance with DRD4.5.1-001 Report, KSC On-site Hazardous Waste Disposal, of the types and quantities of hazardous wastes disposed/treated on-site that the MESC Contractor authorized for disposal.
- n. Maintain NASA-KSC waste management records, prepare RCRA biennial report for the Government, and provide assistance for all internal and external waste management inspections;
- o. Provide at least one Certified Hazardous Materials Manager;
- p. Provide a quarterly waste management report, in accordance with DRD4.5.1-002 Report, KSC Waste Management, to the Government to support Center Metrics;
- q. Provide an annual report in the form of three Excel spreadsheets for transfer of NASA-KSC hazardous waste disposal information into the NASA Environmental Tracking System (NETS) in accordance with DRD 4.5.1-003 Report, NETS Hazardous Waste Data Call;
- r. Provide EPA ID numbers and copies of all required permits for off-site hazardous and controlled waste transporters and TSD facilities in accordance with DRD 4.5.1-004 Report, Off-site Hazardous Waste Transporters and Facilities.

4.5.2 Post-Emergency Spill Clean-up.

The MESC Contractor shall provide post-emergency spill clean-up, decontamination, neutralization, and disposal of wastes generated from clean-up activities at KSC and NASA operations at CCAFS with the exception of domestic waste water spills. The MESC Contractor shall provide 24 hour, 7 day a week on call response. The MESC Contractor shall interface directly with NASA-KSC emergency response personnel on hazardous material incidents. Post-emergency spill clean-up shall commence within one work day of notification. The MESC Contractor shall provide spill response for releases to both land and water. The MESC Contractor shall also perform mercury spill cleanup under the direction of Environmental Health. If the cleanup requires heavy-equipment or additional support the MESC Contractor shall coordinate with the KSC base support contractor or an outside vendor. The MESC Contractor shall notify the Government of the status of clean-up actions.

4.6 Environmental Sampling, Analysis and Monitoring (ESAM) Program.

4.6.1 Environmental Compliance Sampling, Analysis, and Monitoring (ECSAM).

Provide Environmental Compliance Sampling, Analysis, and Monitoring (ECSAM) services. Evaluate permit and/or regulatory compliance requirements for facilities covered by site specific monitoring plans. Parameter analytical data shall be maintained for each site. Generated parameter data shall be submitted on the appropriate permit analytical report form. Evaluate environmental monitoring data to identify trends in environmental quality and environmental compliance and preparation of associated reports. ECSAM services shall include the development and implementation of sampling, analysis and monitoring requirements for items such as the following:

- Potable water supplies (Note: As the operators of the potable water system, the ISC will perform monthly microbiological compliance sampling and reporting. All other chemical compliance sampling will be performed by MESC (e.g. TTHMs, HA005, lead and copper, asbestos);
- Limited Use Wells;
- Air pollution sources;
- Surface water, and groundwater;
- Storm water;
- Industrial waste water;
- Sediment, soil and sludge;
- Underground and Aboveground storage tanks.

4.6.2 Waste Characterization Sampling.

The MESC Contractor shall provide waste sampling and analysis services for analysis of potentially hazardous or controlled wastes. The MESC Contractor shall provide a customer request process for waste sampling services on a routine and emergency basis. The sampling for a routine request shall be performed within 5 workdays from date of request. The sampling for an emergency request shall be performed within 2 hours from time request was received. Analysis for routine requests shall be provided within 14 days from sampling date. Analysis for emergency requests shall be provided within 72 hours from sampling date.

4.6.3 RCRA Corrective Action Sampling and Support.

(Note: This does not include the implementation of RCRA Facility Investigations, Corrective Measures Reports, Statements of Basis, Corrective Measures Implementation Design, and Corrective Measures Implementation. It is the Government's expectation this effort will be coordinated with other on-site contractors performing RCRA Corrective Action work.) Support shall include:

- a. Assisting the Government in the identification of Potential Release Locations (PRLs). (term used at KSC for potentially contaminated sites);
- b. Generating Solid Waste Management Unit (SWMU) Assessment Reports by conducting background investigations and personnel interviews, and reviewing facility drawings and records;
- c. Developing Confirmatory Sampling Work Plans;

- d. At the direction of the Government, implementing sampling in accordance with Confirmatory Sampling Work Plans;
- e. Presenting and discussing findings with the KSC Remediation Team;
- f. Drafting Confirmatory Sampling Report preparation and submittal;
- g. Preparing, certification by a Professional Engineer or Professional Geologist and submit final reports.

4.6.4 Investigative Environmental Services.

The MESC Contractor shall provide the following services:

Specialized investigative, monitoring, sampling and laboratory analysis, and advisory support to real-time requests, incidents, and/or complaints, such as:

- Drinking water complaints;
- Potable water line breaks;
- Potable water construction line monitoring;
- KSC Visitor's Center Water Features;
- KSC Retrieval Ships potable water;
- Domestic waste water effluent;
- Operational investigations;
- Evaluation of environmental monitoring data to identify trends in environmental quality and;
- Spill response locations.

4.6.5 Operational ESAM Requirements.

The MESC Contractor shall:

- a. Maintain sampling equipment in a certified, calibrated, ready to support posture;
- b. Utilize Florida Department of Environmental Protection (FDEP) Standard Operating Procedures;
- c. Perform visible emissions evaluations;
- d. Develop and maintain sampling and analytical procedures;
- e. Conduct sampling and analysis activities in accordance with sample chain of custody documentation and control as documented in the FDEP Standard Operating Procedures.
- f. Develop, maintain and coordinate an environmental compliance sampling plan annually with NASA-KSC EPB and update as required as sampling requirements are added or changed. Plan shall include sampling locations, frequency, analytes, and required sampling protocols. Plan shall include potable water operational samples being performed by the operators of the drinking water system;
- g. Prepare and provide to the Government laboratory analysis reports documenting sample history, analytical results versus specification limits by sample control number and maintaining records in accordance with regulatory and quality requirements;

- h. Provide in-field analytical tests such as moisture, pH, conductivity, dissolved oxygen, temperature;
- i. Maintain capability to provide Rapid Quantitative Determination on the potable water system;
- j. Provide at least one registered Professional Geologist on staff.

4.6.6 Environmental Laboratory Analysis.

The MESC Contractor shall ensure that comprehensive environmental laboratory services are provided. Laboratory services can be provided on-site or off-site. Laboratory services shall be fully accredited/certified by the State of Florida per DOH 64E-1 and meet all regulatory format requirements. In addition, the MESC Contractor shall ensure that all other accreditations/certifications required for laboratory operations are maintained. Waste characterization analysis shall be performed per EPA Solid Waste Manual SW 846.

The MESC Contractor shall operate and maintain laboratories for receipt, preparation and storage of field samples. The MESC Contractor shall handle all samples with positive identification and labeling and shall store them under appropriate conditions.

The MESC Contractor shall provide a microbiological services laboratory providing human bacteriological assays in the area of environmental for facilities, including the Center's potable water system (Note: The ISC will be responsible for monthly microbiological sampling and reporting. Analysis of the ISC samples shall be provided by the MESC Contractor upon request.). The MESC Contractor shall ensure that this laboratory meets certification by the State of Florida Department of Rehabilitative Services and other Florida State certifications. Sample results shall be made available to the requester within 48 hours of receiving the sample.

Equipment Calibration and Maintenance Requirements: The MESC Contractor shall:

- a. Assure calibration and maintenance support for all laboratory instrumentation, and shall maintain calibration and repair reports for each instrument;
- b. Coordinate with the KSC Calibration Laboratory on instruments and equipment that require calibration capabilities beyond the test equipment available to the MESC Contractor technical personnel;
- c. Assure that written requests to the KSC Calibration Laboratory for calibration of any such items are timely and properly submitted, and appropriate records are maintained (see Section L, L.18, MESC Reference Documents List, KNPR 8730.1, KSC Metrology and Calibration Procedural Requirements).

(Section 4.7 to be effective October 1, 2009)

4.7 Ecological Monitoring Program Services.

The MESC Contractor shall support the ecological program at KSC. The goals of the ecological program are to both ensure that NASA-KSC operations are conducted in compliance with Federal and State Regulations, Executive Orders, and NASA policies, as well as to ensure that activities at KSC have minimal adverse impacts on local and regional natural resources. The MESC Contractor's role will include operations support, maintaining and updating long term monitoring and studies and special project support to the Government and local agencies.

(Section 4.7.1 to be effective October 1, 2009)**4.7.1 Launch Monitoring.**

The MESC Contractor shall provide the following services:

- a. Operate the Environmental Evaluation Console (EEC) in support of Shuttle Launch Operations in accordance with OMI S0007, Shuttle Countdown;
- b. Operate and maintain computer models such as the *Rocket Exhaust Effluent Diffusion Model*, recognize and recommend corrective measures for problems in the models, interface with USAF Range Safety personnel conducting catastrophic launch vehicle modeling, provide real-time predictions to the launch team and emergency response personnel on model outputs, and maintain computer and display systems associated with the EEC to ensure readiness to support launch milestones;
- c. Perform *in-situ* examination and sampling of vegetation, soils, and surface waters to determine the extent of impact to flora and fauna, both acute and chronic, resulting from Space Shuttle, Constellation Program launches at KSC and expendable launch vehicles at CCAFS. The MESC Contractor shall enter the results of monitoring activities into an existing environmental database (reference section 4.8) for the ecological assessment of long-term trends and chronic impacts, including bioaccumulation. The MESC Contractor shall provide written assessments to the Government of environmental/ecological impacts associated with each Shuttle or Constellation Program launch in accordance with DRD4.7.1-001 Report, Post Launch Ecological Impact.

(Section 4.7.2 to be effective October 1, 2009)**4.7.2 Ecological Monitoring and Assessment.**

The MESC Contractor shall monitor, evaluate, and report on ecosystem health Center-wide ensuring trends and recommendations for improving ecosystem health are documented. The MESC Contractor shall develop an annual Ecological Monitoring Plan, as described in DRD4.7.2-001 Plan, Ecological Monitoring. The MESC Contractor shall provide the following services for aquatic and terrestrial environments:

- a. Threatened and endangered species work:
 - Conduct surveys of the threatened and endangered species and other species of interest identifying any behaviors, territorial size by telemetry tracking, reproductive capacity, and report unusual findings such as significant changes in productivity, different location sites, and potential disease problems. Survey work shall utilize low altitude flights, field investigations, and the use of Global Positioning System (GPS);
 - Record all survey data into the earth systems modeling and data management tool as described in Section 4.8.;
 - Collect and report population demographics including mortality figures, and any potential fatal diseases, such as the respiratory disease in gopher tortoises. Determine the root cause of significant mortality rates;
 - Identify significant habitat characteristics for threatened and endangered species;
 - Define suitability of various habitats to sustain populations of these threatened and endangered species. Define and map habitat of threatened and endangered species

- utilizing the earth systems modeling and data management operations tools as described in Section 4.8.
- b. Perform biological assessments and preliminary biological assessments for all projects that may impact threatened and/or endangered species or their habitats. Assessments are performed in a manner that satisfies the requirements under Section 7 of the Endangered Species Act (16 U.S.C. §1531). Explain/defend the technical conclusions of the assessments with the appropriate regulatory authorities when required. Prepare biological assessment documentation appropriate for submittal to the United States Fish and Wildlife Service (FWS). Biological assessments and surveys shall be conducted and reported in such a manner as to satisfy regulatory requirements associated with threatened and endangered species protection;
 - c. Develop and maintain a spatially explicit population model for Florida scrub jays adapted to the specific needs of Kennedy Space Center/MINWR. In particular, the model should be able to utilize multiple GIS layers representing temporal changes in landscapes. These GIS layers will be linked back to the demographic performance of scrub jays within affected areas, providing a quantitative framework for evaluating impacts;
 - d. Monitor sea turtle nesting success, population trends and densities, as well as lighting impacts. Prepare Disorientation Event Report Forms every time a disorientation is noted and in coordination with the Government, submit directly to the Florida Fish and Wildlife Conservation Commission;
 - e. Conduct routine surveys of manatee population, distribution, and habitat quality;
 - f. Continue existing long term ecological monitoring. Current long term ecological studies include: sea grass mapping and transect monitoring, manatee population monitoring, marine mammal and sea turtle nesting and hatchling survey, terrestrial vegetation survey, eagle nest monitoring, scrub jay population demography, wading birds, and small mammal surveys. Prepare an annual summary of animal use in accordance with DRD4.7.2-002 Reports, Annual Summary on Animal Use;
 - g. Conduct special studies in support of documenting the Government's stewardship of the environment and support outside scientific investigations. Current special studies and primary interfaces include: remote sensing of land cover types, Mosquito Lagoon resource utilization study (boaters and fisherman), wetland restoration monitoring, indigo snake survey methods development, fire management applications and vegetation response;
 - h. Maintain records and inventories on controlled substances used in conduct of animal research activities in accordance with applicable State and Federal laws and regulations, including the requirements as set forth by the United States DEA. These records shall include proper receipt, records of storage and inventory and proper disposal;
 - i. Evaluate wildlife habitat issues associated with construction, facility Siting, line-of-sight, and right of ways;
 - j. Determine effects of water level, salinity, and fire on the local ecology. Place significant emphasis on understanding fire ecology;

- k. Coordinate with and provide technical input into the habitat management activities of the FWS and the National Park Service (NPS);
- l. Manage and update the Center's vegetation databases, referenced in Section 4.8, in conjunction with obtaining low-altitude and satellite remote sensing, along with various historical photographs to identify change in Center ecosystems or land uses and report potential environmental/ecological impacts;
- m. Conduct long term air quality monitoring, in accordance with DRD4.7.2-003 Plan, Long-term Air Quality Monitoring, to assess local and regional trends in atmospheric criteria pollutants and support development of NEPA documentation. The MESC Contractor shall operate one existing permanent air monitoring station;
- n. Conduct spatial and temporal rainfall monitoring program to compile long term trends in rainfall patterns, regional and local variability estimates, runoff modeling, fuel moisture estimates, wildfire potential estimates and data for the FIREMAN web site. The MESC Contractor shall operate one existing permanent National Atmospheric Deposition Program (NADP) site;
- o. Operate and maintain long-term ecological sampling sites for monitoring selected pollutants in surface and ground water;
- p. Maintain the spatial and temporal lightning database identifying long term trends and spatial patterns of lightning strikes, wildfire potential models, fire ignition probability estimates and correlations with known wildfires;
- q. Maintain the USAF and KSC Wind Tower and Rawinsonde Database to provide near-time information on wind speed, wind direction, temperature and humidity for dispersion, fire and noise modeling, storm documentation and spatial and temporal trends across the region;
- r. In coordination with the Government, publish research findings in nationally and internationally known peer-reviewed publications.

(Section 4.8 to be effective October 1, 2009)

4.8 Earth Systems Modeling and Data Management Operations.

The MESC Contractor shall continually enhance, operate, and maintain existing comprehensive data management and visualization systems (e.g., geographic information system (GIS), aerial and satellite imagery) to be used to evaluate ecological and environmental monitoring data. These systems include multiple platforms and shall allow multiple users to access the data for input and manipulation (Reference Section L, L.18, MESC Reference Document List). Facility GIS data will be provided by the Government. The systems shall be maintained in such a manner as to ensure environmental, ecological, remote sensing, and model data can be used in a cohesive environmental decisions support tool that provides users real-time information about KSC's environment. The MESC Contractor shall ensure timely and accurate data is available to users. Data sets will include threatened and endangered species habitat, submerged aquatic vegetation, soils, surface waters, terrestrial land cover, etc. Document models that are developed and used as part of these systems. All data associated with the system shall be protected and backed-up to prevent losses to Ecological Program Data.

(Section 4.9 to be effective October 1, 2009)

4.9 Agency Support for Recycling and Affirmative Procurement (RAP).

The MESC Contractor shall provide services to implement the Principal Center for Recycling and Affirmative Procurement for the Agency at KSC. Agency agreements set requirements annually, however, at a minimum service includes:

- a. Conducting assistance visits to a negotiated number of NASA centers to review recycling and affirmative procurement programs annually;
- b. Assisting in the preparation of NASA center and Agency documentation and guidance in these program areas (data calls and report preparation);
- c. Provide technical support to NASA center and Agency personnel related to new developments and technologies, resources, best practices and new regulatory or Agency requirements pertaining to recycling and affirmative procurement;
- d. In coordination with the Government, plan and implement an annual RAP Conference. The MESC Contractor shall survey and select conference locations, plan and arrange speakers and events, provide onsite staff support, and prepare and publish conference proceedings;

(Section 5.0 to be effective October 1, 2009)

5.0 AGENCY OCCUPATIONAL HEALTH PROGRAM SUPPORT OFFICE.

The MESC Contractor shall staff and operate the Agency Occupational Health Program Support Office at the Kennedy Space Center. The MESC Contractor shall provide support services to the Office of the Chief Health and Medical Officer (OCHMO) to include: Occupational Health Program (OHP) Administration Management Services, Occupational Health Program Assessments, implementation of the Electronic Health Records System (EHRS), International Space Medicine Support, Occupational Health Response to Manmade or Natural Disasters, and Healthcare Promotion and Education.

The MESC Contractor's staff in this Section 5.0 shall be separate and independent from other Sections in this PWS to avoid any organizational conflict of interest. *(Note: There is no Government expectation for sharing resources between this Agency-wide Section and services at KSC).*

5.1 Occupational Health Program Administration Management Services.

The MESC Contractor shall:

- a. Assist the Government in the administration, execution, and operational management of the Agency OHP, in accordance with NPD 1800.2, NASA Occupational Health Program;
- b. Provide personnel with expertise in occupational medicine, environmental health, and health information management. The MESC Contractor shall provide oversight and assistance to the NASA centers Occupational Health Programs. This requires periodic NASA center site visits, and the solicitation, compilation, and reporting of required summary data for NASA Headquarters offices and external organizations in accordance with DRD5.1-001 Report, Occupational Health Program (OHP) Management;

- c. Assist in development of occupational health initiatives, programs, and policy drafts. The MESOC Contractor shall make recommendations for enhanced future OHP operation and management. The MESOC Contractor shall monitor and research emerging health care concerns, regulatory changes, and best practices;
- d. Maintain an occupational health technical library;
- e. Maintain and make enhancements to the OHP web site. The MESOC Contractor shall update the website for emerging occupational health issues within four hours during normal working hours as directed by the OCHMO.

5.2 Occupational Health Program Assessment.

The MESOC Contractor shall assist the OCHMO in performing assessments of NASA centers' implementations of the OHP. The assessments require visits to each of the fourteen NASA sites. Assessments shall occur on a two year cycle and shall include; inventory and evaluation of facilities, resources, and practices at each site; essential data documentation and reporting; and individual program evaluation. The MESOC Contractor shall prepare assessment reports in accordance with DRD5.2-001 Report, Center Occupational Health Program (OHP) Assessment. The MESOC Contractor shall maintain and operate the Agency Health Enhancement Database (AHED) for program data and evaluation reporting. The MESOC Contractor shall ensure the independence of audit functions.

5.3 Electronic Health Records System (EHRS).

The MESOC Contractor shall provide personnel with skills in information technology, clinical informatics, and design of flow processes and forms for agency-wide EHRS implementation. The MESOC Contractor shall:

- a. Administer the implementation of the Agency Electronic Health Records System (EHRS) at the direction of the OCHMO. The MESOC Contractor shall provide the Agency OHP IT interface with the NASA Data Center (NDC) at Marshall Space Flight Center which will host the EHRS;
- b. Assist in developing and implementing the NASA-specific occupational health module for the RPMS;
- c. Maintain a help desk for the NASA developed portions of the EHRS;
- d. Develop and maintain the EHRS IT Security Plan for the Agency.

5.4 Aerospace Medicine Support.

The MESOC Contractor shall provide a physician to assist the Agency Chief Health and Medical Officer in his interfaces with NASA's international partners. It is the Government's expectation that the MESOC Contractor shall participate in the NASA Multi-lateral Medical Policy Board meetings, and meetings with the Russian Space Agency, European Space Agency, and Japanese Space Agency.

5.5 Occupational Health Response to Manmade or Natural Disasters.

The MESOC Contractor shall assist the OCHMO in the development of Agency occupational health policy for threats from natural disasters, such as hurricanes, or Weapons of Mass Destruction. The MESOC Contractor shall provide medical, environmental health, and emergency medical consultation to evaluate policies and resources at each NASA site for their response to chemical, biological and radiological events. The MESOC Contractor shall interface between

medical, environmental health and other emergency preparedness organizations to verify lines of communications and responsibilities; and verify the incorporation of medical disciplines in center emergency response policies.

5.6 Healthcare Promotion and Education.

The MESC Contractor shall:

- a. Plan and implement an annual NASA Occupational Health Conference and other specialized occupational health meetings as directed by the OCHMO. The MESC Contractor shall survey and select conference locations, plan and arrange speakers and events, arrange for continuing education credit, provide onsite staff support, and prepare and publish conference proceedings;
- b. Perform training needs assessment of the NASA sites and assist the OCHMO in planning and implementing technical training provided by the OCHMO;
- c. Maintain a Health Risk Appraisal (HRA) for the Agency;
- d. Prepare quarterly health topics for centers and procure promotion and education materials for those designated topics and other healthcare events using a Standards of Care working group;
- e. Assist the OCHMO in developing and implementing its Travel Medicine policy and programs.

5.7 Training, Certifications, and Licensure.

The MESC Contractor shall provide:

- a. At least one physician fluent in the Russian language and knowledgeable of Russian flight medicine;
- b. At least one Occupational Health Nurse certified by the American College of Occupational Health Nursing;
- c. At least one Industrial Hygienist certified by the American Board of Industrial Hygiene (ABIH);
- d. At least one Health Physicist certified by the American Board of Health Physics (ABHP).

6.0 AIR FORCE SERVICES.

6.1 Administration and General Requirements.

The MESC Contractor shall:

- a. Ensure that all MESC Contractor employees providing services to the United States Air Force (USAF) meet all training, certification, and licensure requirements as dictated by applicable sections of this Performance Work Statement;
- b. Maintain internal document records of all administrative and operational procedures such as records of employee certification and training, clinic certifications, reports, and other auditable activities.

6.2 Air Force Medical Services.

The MESC Contractor shall provide Medical Services to the USAF and USAF contractor organizations and USAF guests and specified personnel described in specific paragraphs below, and USAF tenant personnel resident at CCAFS and KSC and provide a report on these provided services in accordance with DRD6.2-001, Report, Medical Services Provided to the USAF.

6.2.1 Air Force Occupational Medicine.

The MESC Contractor shall provide the USAF health examinations at the NASA-KSC Occupational Health Facility, and utilize the medical record system referenced in section 2.1. All health exam requests must be approved by the USAF. Health examinations shall be administered in accordance with KBM-ST-2.1 A and B, NASA-KSC Medical Standards and are required to satisfy various programs such as the Federal Employee Health Program (FEHP), and Occupational Safety and Health Administration (OSHA) standards. The MESC Contractor shall:

- a. In coordination with the NASA-KSC and USAF medical officers, develop and maintain NASA-KSC physical examination classifications for USAF provided health examinations in accordance with current NASA-KSC health examination classification standards in accordance with KBM-ST-2.1 A and B, Medical Standards;
- b. Transition existing USAF electronic medical data provided by the Government into an MESC Contractor provided health information management system and maintain and utilize the system for storage of medical records and data analysis of medical information. When NASA implements an Agency-wide system, the MESC Contractor shall transfer the medical data and implement that system at KSC. The MESC Contractor shall ensure the portability of any medical data to allow its transfer to other systems if required by the USAF;
- c. Provide appropriate return to work clearance or duty limitations to patients and their employers;
- d. Refer patients to their personal physician when significant abnormal conditions are discovered at the time of scheduled certification physical but which in themselves are not related to the patient's employment. Information on the evaluation and treatment shall be requested from the personal physician to determine any effect on employment or need for work limitations.

6.2.2 Medical Consulting Services.

The MESC Contractor shall:

- a. Provide consultation services to the 45 MDG/CC or designee to include evaluation of the workplaces identified by 45 MDG/CC or designee to make recommendations with regard to physical examination requirements for specific jobs or generic job categories based on assessment of the demands of the job and the environment in which it is accomplished. Such evaluations also address specific health and safety concerns of the government and MESC Contractor that are unique to the job or work area and supplemented by environmental studies accomplished by Environmental Health (EH) specialists to support appropriate OM recommendations;
- b. Review policies, documents, plans, and procedures as directed by the USAF;

- c. Support USAF Medical Inspections and Health Program review/audits, including OSHA onsite Voluntary Protection Program readiness and on-site reviews, and subsequent development of appropriate corrective action plans;
- d. Review occupational exam results and track and trend findings and report to 45 MDG at least quarterly;
- e. Provide other OM services as required by applicable state and federal standards and regulations.

6.2.3 Clinical Laboratories.

The MESC Contractor shall provide College of American Pathologists (CAP) certified clinical medical laboratory services in accordance with Section 2.10 to the USAF.

6.3 Air Force Environmental Health Services.

The MESC Contractor shall provide Environmental Health services to the 45th SW, USAF contractor organizations, and 45th SW Tenants located at the Cape Canaveral Air Force Station (CCAFS) and at off-station locations within 75 miles of NASA-KSC and the Jonathon Dickinson Missile Tracking Annex (JDMTA). The MESC Contractor shall:

- a. Provide EH services on first shift, excluding MESC Contractor holidays. The MESC Contractor shall also respond to off-shift customer activities requiring MESC Contractor participation, to support scheduled operations and emergency response activities;
- b. Work directly with the 45th SW Bioenvironmental Engineering Office to develop work assignments, assess risks, recommend engineering controls, quantify exposures, and analyze impact of new regulations and technologies;
- c. Identify, evaluate and recommend corrective actions for identified health hazards and non-compliance conditions. The MESC Contractor shall analyze past data and perform trend analysis to develop exposure and environmental assessment strategies;
- d. Generate and maintain documentation for the EH program including reports for compliance requirements. The MESC Contractor shall ensure that work is performed in accordance with applicable USAF Air Force Instructions (AFIs), Space Wing Instructions (SWIs), and Technical Orders (TOs);
- e. Maintain internal document records of all administrative and operational procedures required for the implementation of it's EH functions such as records of employee certification and training, fieldwork, reports, and other auditable activities;
- f. Provide consultation services to review policies, documents, and plans to determine the adequacy of preventive measure and controls, and ensure compliance with applicable USAF and OSHA regulations and requirements;
- g. Provide technical and administrative assistance to the 45th SW in implementing its regulatory interface requirements;
- h. Participate in Environment, Safety, and Occupational Health Compliance Assessments (ESOH CAMP) and other program audits, and assist in development and implementation of appropriate corrective action plans;

- i. Participate in 45th SW Occupational Health Working Group as required based on shops surveyed.

6.3.1 Emergency Response.

The MESC Contractor shall:

- a. Participate in planning and response for chemical, biological, and radiological emergency activities and participate in exercises at CCAFS (such as Hazardous Material Incidents);
- b. Provide a 24-hour on-call response to unscheduled operations including emergency response requirements for hazardous material incidents;
- c. Participate in 45th SW Rapid Response Teams for spacecraft operations. Deployment and specific composition of the team shall be determined in coordination with the 45th SW;
- d. Provide and maintain the appropriate equipment and supplies for required EH services.

6.3.2 Industrial Hygiene.

The MESC Contractor shall:

- a. Provide baseline and follow-on health hazard assessments of operations and procedures, including construction activities for chemical and physical hazards. The MESC Contractor shall schedule surveys in coordination with customers. Conduct follow-on surveys at least annually when baseline data show significant potential for exposures to hazardous agents; when the customer identifies any process or operational changes that may affect the potential or type of exposure; or as required by OSHA or USAF regulation;
- b. Investigate workforce complaints of potential workplace hazards and coordinate with affected employees and the appropriate organizations to resolve issues where appropriate;
- c. Provide expert consultation in confined space hazard assessment; manage the 45th SW inventory of confined spaces located at CCAFS and offsite 45th SW locations, excluding PAFB; perform hazard confined space hazard assessments, provide recommendations and requirements for confined space entry and work, and perform atmospheric monitoring in support of confined space entry operations;
- d. Provide IH services to launch and processing operations such as downwind monitoring of hypergolic propellant transfer operations, hypergolic propellant storage area open-up, oxygen deficiency monitoring and launch pad safing operations;
- e. Perform sampling and analysis of air contaminants associated with hazardous operations and processes using both real time and time-weighted-average sampling methods;
- f. Perform annual inspections of USAF civil service work locations at CCAFS to identify potential health risks/hazards or vulnerabilities in accordance with 29 CFR §1960;
- g. Implement an exhaust ventilation system testing program to include an inventory of all ventilation systems used to control hazardous air contaminants generated by hazardous operations and processes;

- h. Implement a breathing air system testing program, to include an inventory of, testing, and permitting of all CCAFS-operated compressor-supplied breathing air systems and inspections and testing of supplied air to meet OSHA, and USAF requirements;
- i. Provide expert consultation in heat illness prevention; perform heat illness hazard assessments;
- j. Provide expert ergonomic consultation; conduct musculoskeletal disorder (MSD) hazard assessments;
- k. Provide expert consultation in respiratory protection; deployment of emergency use respirators; and perform hazard assessment of air contaminants;
- l. Provide expert consultation in noise hazard assessment and hearing loss prevention; assess noise hazards, engineering controls and hearing protection PPE;
- m. Provide expert consultation on indoor air quality (IAQ); investigate IAQ complaints and identify its potential causes; coordinate with complainants and appropriate organizations to resolve issues where appropriate;
- n. Provide bulk sampling and analysis of suspect Asbestos Containing Materials (ACM) to support scheduled on-going construction and operations and maintenance work;
- o. Provide inspections to identify suspect ACM; risk analysis of scheduled facilities operations and maintenance where ACM is present; assessment of written asbestos abatement procedures; pre-abatement inspections; surveys and audits of asbestos abatement operations; clearance level air monitoring for abatement projects;
- p. Provide data for the update of the 45th SW Facility Asbestos Management System.

6.3.3 Sanitation and Public Health.

The MESC Contractor shall provide the following services in accordance with AF standards:

- a. Sanitary surveys of food service facilities (including vending machines), barber shops, recreation facilities and exercise facilities, special events;
- b. Inspection of chemical toilets;
- c. Conduct disease vector investigations;
- d. Identification of training and certification requirements in the EH aspects of food service sanitation for all food service employees; these training requirements shall be identified for AF contractors;
- e. Consultative services to USAF, and USAF contractors in fulfillment of their federal and state regulatory obligations/compliance;
- f. Specialized investigative, sampling and analysis, and advisory support to real-time incidents, and/or complaints to include foodborne illness investigations, potable water incidents, disease vector reports;
- g. Coordination of food recalls to affected 45th SW organizations;

- h. Specialized consultation to food service operators on the development and maintenance of Hazardous and Critical Control Point (HACCP) plan development and implementation;
- i. Investigate animal bite incidents; ensure appropriate treatment of victim, and coordination with appropriate local authorities;
- j. Provide mosquito surveillance support for the 45th SW.

6.3.4 Health Physics.

The MESC Contractor shall provide the following services in accordance with AF standards:

- a. Assessment of personnel hazards in USAF (including tenants) radiation use areas;
- b. Maintenance of a current inventory (to meet regulatory requirements) for all identified radiation sources and radiation producing devices in use or in storage;
- c. Performance of radiation surveys, evaluations, sampling, analysis, and audits as directed by the 45th SW Bioenvironmental Engineering Office to ensure compliance with USAF regulations;
- d. Maintenance of equipment for use in performing field surveys and analysis of ionizing and non-ionizing radiation hazards;
- e. Assist in the management of the USAF personnel ionizing radiation dosimetry program for radiation workers requiring dosimetry. Identify personnel to be monitored, issue appropriate dosimeter, assess and assign radiation dose, and maintain exposure histories as required by applicable regulations. Provide technical expertise and support for special dosimetry applications;
- f. Processing of Radiation Use Requests (RURs) and associated documents, and drafting of Radiation Use Authorizations (RUAs);
- g. Collecting, monitoring and storing low-level radioactive waste, and maintain and operate a dedicated storage area for material awaiting disposal or transfer;
- h. Advising USAF personnel and USAF contractors on compliance with federal and state regulatory requirements;
- i. Providing radiation monitoring assistance to the Brevard County Emergency Operations Center when directed by the 45th SW Bioenvironmental Engineering Office;
- j. Participate in federal and state inspection visits;
- k. HP services to launch and spacecraft processing operations.

6.4 Air Force Hazardous and Controlled Waste Management.

The MESC Contractor shall provide waste management services to the Air Force and Air Force tenants/contractors organizations at Cape Canaveral Air Force Station, Patrick Air Force Base, Melbourne Beach, Malabar Transmitter Annex (MTA) and Jonathon Dickinson Missile Tracking Annex (JDMTA). Services are provided as follows:

- a. Waste characterization services. The MESC Contractor shall:
 - Provide waste characterizations on a routine and emergency basis, using the existing Process Waste Questionnaire (PWQ)/Technical Response Package (TRP) process, to

- determine if wastes generated are hazardous or controlled wastes in accordance with applicable federal regulations and to determine the proper method of disposal for those wastes (e.g. off-site disposal, recycling, on-site disposal in a Federally Owned Treatment Works (FOTW));
- Maintain a database of all waste characterized and disposed of;
 - Provide waste generators an updated waste determination as required;
 - Respond to a routine waste characterization within 14 workdays from the date of request;
 - Respond to an emergency waste characterization within one workday from the date of request.
- b. Provide Industrial Wastewater Discharge Authorization for use of the domestic waste water system for industrial waste water disposal using the existing PWQ/TRP process. The MESC Contractor shall coordinate pre-treatment standards and authorizations with the Air Force's contractor responsible for the operation of the Cape Canaveral Air Force Station domestic wastewater plant. The MESC Contractor shall ensure that only those discharges that meet pre-treatment standards and authorizations are allowed to be discharged into the domestic waste water system;
- c. Pick-up services for hazardous and controlled wastes. The MESC Contractor shall:
- Provide routine and emergency pick-up services for hazardous and controlled wastes for all 45th Space Wing generators from satellite or controlled waste accumulation sites and deliver them to a <90 day accumulation site and/or from satellite, controlled waste or <90 day accumulation sites and deliver them to on-installation TSDFs at CCAFS and PAFB. Controlled wastes include materials which cannot be disposed as domestic sewage or without constraints in a Resource Conservation & Recovery Act (RCRA) Subtitle D Landfill. Radioactive materials, bulk hypergolic fuel wastes and sanitary wastes are excluded from support under this WBS;
 - Use the existing Waste Support Request process;
 - Respond to routine pickup/removal requests within 10 calendar days from time request was received;
 - Respond to emergency pickup/removal requests within 2 hours from time request was received;
 - Ensure packaging, labeling, marking and manifesting of waste containers to be removed are in accordance with applicable DOT and RCRA regulations prior to removal from the generating site;
 - Ensure hazardous waste destined for delivery to on-installation TSDFs at CCAFS and PAFB meet all permit requirements including the waste codes allowed to be stored;
 - Use existing "internal" manifesting system to document all on-site movement of hazardous and controlled waste.
- d. Provide pick up/disposal services for non hazardous petroleum solids generated at CCAFS to be managed at the KSC TSDF;

- e. Provide off-site treatment or disposal of hazardous and controlled waste. The MESC Contractor shall:
- Provide off-site disposal of hazardous and controlled wastes;
 - Complete waste profiles required by the off-site TSDF;
 - Ensure packaging, labeling, marking and manifesting of wastes are in accordance with applicable Department of Transportation (DOT) and RCRA regulations prior to off-site shipment of wastes for treatment or disposal;
- f. Provide pick-up, management, and recycling services for used oil, oily waste water and petroleum products, universal wastes, shop rags, coolant and other waste streams. It is the government's expectation that the MESC Contractor will seek out opportunities for recycling for these types of waste streams
- g. Provide guidance, authorization and tracking for on-site disposal services for hazardous wastes (e.g. propellant related waste) that include:
- Interpretation of regulation and regulatory guidelines applicable to hazardous waste disposal on-site (e.g. FOTW) to determine if specific waste streams qualify for on-site disposal;
 - Maintaining a written record of the determination;
 - Communication to the Government of any potential regulatory notifications (including one-time notices) as they are required for on-site treatment/disposal of hazardous waste;
 - Providing authorization of on-site treatment;
 - Maintaining records of dates and quantities disposed/treated and provide an annual report, in accordance with DRD6.4-001 Report, USAF On-site Hazardous Waste Disposal, of the types and quantities of hazardous wastes disposed/treated on-site that the MESC Contractor authorized for disposal.
- h. Provide Waste Sampling Services for analysis of potentially hazardous or controlled wastes. The MESC Contractor shall provide a customer request process for waste sampling services on a routine and emergency basis. The sampling for a routine request shall be performed within 5 workdays from date of request. The sampling for an emergency request shall be performed within 2 hours from time request was received. Analysis of routine samples shall be provided within 14 days from sampling date. Analysis of emergency samples shall be provided within 72 hours from sampling date.
- i. Provide the following quarterly reports:
- The number of waste removals requested/processed, requesting organizations, waste stream number(s) assigned to waste removed (e.g. HA0015), the number of containers removed from each location, the response time from receipt of request to the date the waste was removed from the generating site and the number of drums moved each day in accordance with DRD6.4-002 Report, USAF Waste Pick Up Services;

- Cost Report for hazardous and controlled wastes shipped off-site for treatment/disposal. The Cost Report must include: description of waste stream (including any hazardous waste codes associated with the waste stream), number and size of containers by waste stream, total weight shipped and total (burdened) treatment/disposal cost per waste stream shipped within the quarter DRD6.4-003 Report, USAF Waste Cost Report;
- The amount of waste recycled to include used antifreeze, used industrial wipes (rags), and used oil in accordance with DRD6.4-004 Report, USAF Waste Recycled.