NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Armstrong Flight Research Center
Edwards, CA 93534

Performance Work Statement
For
Safety and Environmental Support Services

May 7, 2015

Neil A. Armstrong Flight Research Center (AFRC)
Edwards, California 93523

1.0 Introduction

This document defines Contractor requirements for On-Site Safety and Environmental Support at the National Aeronautics and Space Administration (NASA) Armstrong Flight Research Center (AFRC). AFRC is NASA's premier installation for aeronautical research and flight-testing and its main campus is located on Edwards Air Force Base, California (80 miles north of Los Angeles). Additional component facilities, Aero Institute and Building 703, are located in Palmdale, CA (50 miles north of Los Angeles). Together, these campuses (referenced as AFRC) employ 1,300 people, both Government and contractors, engaged in space exploration support, aircraft operations, and aerospace research and testing. On January 16, 2014, Dryden Flight Research Center (DFRC) was renamed Armstrong Flight Research Center (AFRC) and the Western Aeronautical Test Range (WATR) was renamed the Dryden Aeronautical Test Range (DATR). Use of DFRC or WATR at the Center infer AFRC and DATR, respectively.

AFRC occupies 880 acres and consists of buildings with approximately 900,000-square feet of structural floor space. Building construction dates range from 1954 to the present. Building 703 occupies 16 acres and primarily consists of two buildings with approximately 428,000 square feet of structural floor space. Building 703 was originally constructed in the early 1980s to accommodate assembly of the B-1 Bomber and has since been modified to support AFRC's Science Mission Directorate aircraft. Structures include aircraft hangars, motor pool, industrial shops, fuel stations, and office buildings. Due to the research nature of the AFRC mission, hazardous activities that are conducted include operation of air, wastewater, and noise emitting equipment, petroleum consuming equipment, ionizing and non-ionizing radiation emitting equipment, and processes that generate hazardous wastes. In addition, there are on going programs involving the restoration of the subsurface environment, and the occasional abatement of asbestos and lead paint.

The Safety and Environmental Office (Code SH), is responsible for safety and environmental (S&E) institutional and operational risk management at AFRC. Code SH monitors the facility for hazards and risks. Code SH also monitors the risks of noncompliance to safety and environmental regulations. Code SH provides the above risk information and consultation to the responsible AFRC managers allowing informed decisions, which maximizes the protection of AFRC personnel, property, and environment. Code SH also coordinates the management of hazardous materials/waste and regulatory permitting at AFRC.

1.2 SCOPE

The functional areas to be supported under this contract are:

- Institutional and Operational Safety
- Environmental Management

The Contractor shall provide S&E technical support to ongoing requirements and special projects (e.g. studies, information systems development, or other required projects in support of AFRC's mission). This support shall include, but not be limited to, supervision, administration, labor, materials, supplies, and equipment (except installation provided property) necessary to assist AFRC Code SH in assuring implementation and maintenance of S&E programs. These support services include both routine and recurring services and non-routine special studies and services. All services shall focus on ensuring the protection of personnel, resources, and the environment, while maintaining the facility's compliance with applicable Federal, State and local law, rules, and regulations, permits and permit conditions, Presidential Executive Orders, NASA

Policy Directives, NASA Procedural Requirements, NASA regulations, instructions, plans, and programs, and Armstrong (Dryden) Management System Procedures and requirements.

The Contractor shall provide on-site personnel for management and shall be responsible for the administration of the entire contract personnel assigned to support this PWS. The Contractor is solely responsible for the techniques used to fulfill the terms of the PWS. The Contractor will be allowed flexibility in performance of the contract and shall be required to fulfill all performance requirements. On-site business management is not a requirement for this effort.

Broad duties for functional categories are provided in this PWS. The Contracting Officer's Representative (COR) will provide clarification for the specific technical requirements to the Contractor if needed. These include the priority, quantity and quality of work to be provided for each functional area. The work requires contractor coordination among the diverse yet related S&E disciplines. Close coordination with the COR and Task Monitors (TMs) is essential. Consultation and coordination with AFRC managers, field personnel, plant operating personnel, and Air Force organizations are required.

The Contractor must be prompt, diligent, responsive, maintain a high level of quality, and shall work within Federals, State, and NASA safety and environmental practices and procedures. Each of these tasks can potentially impact the safety and environment of the entire Center. The Contractor's failure to comply with regulations or guidelines could result in project or mission delay or stoppage.

General functions that shall be performed by the Contractor include, but are not limited to, the following:

Serve as a technical expert on general S&E issues and act as subject matter expert for assurance of compliance with all Federal, State, Local, and NASA rules, regulations, directives, and various other instructions issued by higher authorities. The Contractor shall monitor regulatory activities and notify Code SH of new and proposed regulations and their potential impact on AFRC operations. Examples of applicable regulations include those listed in Appendix 5. This list is not all inclusive, and contractor shall stay informed of new and modified laws and regulations.

Provide technical consultation services, including reviewing and commenting on various technical documents and reports, engineering design drawings, plans, health and safety plans, aircraft ground safety and test plans, hazardous material licenses, material safety data sheets, specifications, policies, procedures, guidelines, handbooks concerning proposed construction projects, aircraft research projects, environmental remediation or other projects, for soundness and compliance with applicable safety and environmental requirements. Historic workload indicators are outlined in Appendix 2.

Provide necessary professional support to assure implementation and documentation of the AFRC Safety and Environmental Program requirements.

Management commitment and employee involvement in the safety and environmental programs. This requirement includes the following:

- Documented worksite safety policy
- Established, communicated, and clear safety and environmental goals
- Full management involvement in the safety and environmental program implementation

- Full employee involvement in the safety and environmental program
- Safety and environmental responsibilities assigned and communicated
- Authority assigned and resources provided
- Access to professional safety and environmental staff
- Management and employee accountability
- Annual self-evaluation reviews
- Safety and environmental management system documentation and implementation (e.g., ISO 14001, OHSAS 18001)

System and worksite hazard analysis. Specific Contractor tasks under this requirement include:

- Perform and/or review hazard analysis of new work occurring on the Center
- Conduct hazard analysis of all jobs, i.e. job hazard analysis (JHA)
- Conduct safety and environmental inspections and track findings to closure
- Establish and/or maintain existing hazard reporting system
- Investigate and report on all hazards, close calls, and mishaps and assure corrective and preventive action
- Analyze all injury, illness, and “close calls” and trend the data for identification and resolution of negative trends
- Attend daily safety tail gate meetings for construction contractors

Hazard prevention and control. Under this requirement, the Contractor shall:

- Establish a hazard identification process and measurements
- Conduct emergency preparedness and response planning and training

Safety and environmental training. The Contractor shall offer and provide training to:

- All employees to identify, understand, resolve, and prevent hazards, and certify employee qualifications to perform tasks when required by 29 and 40 Code of Federal Regulations and NASA Standards (i.e. Agency and AFRC)
- Supervisors and managers to identify and resolve hazards, report employee work-related injuries and illnesses, and ensure a safe and healthy work environment free of recognized hazards

Develop and assure implementation of various policies, plans, procedures, and guidelines, as directed. Track the status of processes and tasks including, but not limited to: inspections, studies, reports, and surveys, by developing and maintaining appropriate methods and metrics. This includes entering data into databases or other appropriate information technology, and interpretation of information to ensure that all program tasks are scheduled as needed to ensure identification and compliance with all regulatory requirements. The Contractor shall also generate ad-hoc and custom computer reports as required. Current databases that shall be maintained by the Contractor are listed in Appendix 6. The Government may modify this list as needed.

Maintain Government records including, but not limited to the following:

- S&E facility activity schedules
- Compliance documentation
- Site inspection schedules
- Survey schedules
- Survey documentation
- Reports

- Minutes of designated meetings
- Hazardous waste/hazardous materials (HW/HM)
- Pollution prevention
- Air emissions
- Safety records
- Statistics
- S&E metrics
- Equipment maintenance schedules
- Equipment calibration schedules
- Permits
- Mishap Investigations

Records shall be maintained on-site in an organized, accessible manner, in accordance with Federal, State, and Local regulations and NASA policy. The Government shall have joint access to these records at all times.

Coordinate with outside vendors to provide 1) safety and environmental analytical laboratory services, 2) hazardous waste cleanup, transportation, and disposal services, or 3) other products or services as required to facilitate AFRC operations. These services will be at the Government's expense.

Provide professional support to employee safety and environmental awareness programs, which may include open houses, fairs, etc. Support shall include planning, coordination, and implementation as directed, and development and distribution of fact sheets, information bulletins, or other documents as needed.

Document projects and work assignments, develop reports, plans, and Armstrong Management Directives (AMDs), as required by the Contracting Officer (CO) or Contracting Officer's Representative (COR). The contractor shall prepare and maintain, at a minimum, an electronic Continuity Folder (CF) in each functional area, listing the AMDs to be used and a plan of how information/records are organized and where they are kept (i.e., a file plan). The CF shall be a "living" document, and kept current by those performing the requirements. These electronic CFs are subject to inspection by the CO/COR. No folder shall contain classified material or information.

The Contractor shall comply with all Federal, State, Local, and NASA policies, procedures, and regulations in effect during the performance of the contract.

The Contractor shall participate in various committees and represent Code SH on various on-site and off-site boards as required by the CO or COR.

2.0 Contract Management

The Contractor shall provide the planning, coordination, technical direction, and surveillance of the activities necessary to ensure disciplined performance of work and timely application of resources for the accomplishment of this PWS. The Contractor shall be responsible for maintaining communication with each supported organization and alerting the COR immediately of any problems that would prevent meeting established performance standards. AFRC participates in a synchronized 9/80 work schedule in support of weekday Center core hours (currently 7:30 to 3:30). Deviation for this work schedule will be on a case-by-case basis, and

require prior approval from the COR. Deviations may include support of projects occurring outside of the Center core ours. Some positions may require the traditional 8-hr workday support.

The Contractor shall provide overall management and administrative functions to ensure that the proper resources are available and allocated, that required reports and documentation are prepared, and that the overall environment supports the Government's requirements.

The Contractor shall:

1. Provide a well-defined, stable organizational structure with clear lines of authority and clearly identified interfaces to the Government.
2. Provide on-site management of the Contractor staff and meet with the CO and/or COR, as necessary, to keep the Government informed of ongoing operations and any problems or issues associated with meeting the requirements of each task order. The on-site manager, or designated alternate, shall be available on-site to Government personnel during the Center core (7:30 - 3:30).
3. For IDIQ Tasks, provide detailed task proposals to the Government, including labor categories necessary to perform the work, number of hours necessary for completion by labor category and by task element, technical approach, and milestone schedule.
4. Manage the resources identified in IDIQ tasks allocated by NASA in a manner to ensure that performance milestones are met.
5. Submit special technical, administrative, contract, and financial management reports.
6. Provide a monthly cost, schedule, and technical performance report for all task orders, identifying accomplishments, progress, major milestones reached, and risks and mitigations, as well as problems and issues that may affect contract performance.
7. Utilize NASA furnished databases or other NASA-authorized software (i.e. chemical management, air emissions, facility inspection databases). The Contractor shall also input data, maintain data, and generate reports.
8. Create, generate and maintain Standard Operating Procedures (SOPs) to ensure positions and routine tasks are performed consistently and that comprehensive evaluations are conducted. The SOPs shall describe the methods to be used, data to be collected, standardized formats to be used for presentation of data and results, etc. SOPs shall be submitted to NASA for review and approval. SOPs shall be reviewed and updated as appropriate, at least annually. Where existing SOPs have been developed, NASA will make them available during Phase-In.
9. Provide oral or written technical presentations, as requested by NASA, concerning any safety and/or environmental topics covered in this PWS.
10. Ensure all NASA policies and procedures are followed, including NASA record retention requirements, the NASA Correspondence manual, NASA Data Quality Act requirements, and other applicable data quality requirements (e.g., US EPA).
11. Ensure that appropriate staff attends meetings, seminars, and other administrative functions (i.e. Center required training, All-Hands meetings, etc.). Contractor employees shall clearly identify themselves as contractor employees when attending such events.
12. Local travel will not be reimbursed under this contract. Examples of local travel that will not be subject to reimbursement are: travel to and from normal job site; supervisory personnel traveling to a Government site or alternative facility to oversee operations. Personnel temporarily working at a Government site or alternative facility will consider such facility his/her normal job site.

13. The Contractor shall provide on-site personnel that satisfy the qualification requirements for performing the scope of work. If personnel turnover occurs, positions shall be filled with an equally qualified replacement as soon as practical, including a temporary backfill replacement if necessary. For all vacant positions, contractor shall provide a plan or approach to the COR to accomplish the work until vacancy is filled.
14. Provide a Contractor Site Manager (SM) that shall provide overall technical management for the Contractor's on-site staff. The SM acts as a focal point for technical direction requirements from the CO/COR and a coordination point with the COR, and shall ensure that procedures are established for accomplishing all aspects of the PWS. The desired experience of the SM should meet the experience of the Project Manager position description as listed in Appendix 1. The SM shall be responsible for the Contractor's overall performance, including any subcontracted activities. The SM shall be located at the main AFRC campus during the standard business hours and serve as the POC for resolving conflicts involving daily activities and the planning of future operations.
15. The SM shall ensure that the personal appearance of employees is neat and professional. Personnel shall wear appropriate Personal Protective Equipment (PPE) as necessary to perform the job. AFRC-issued identification badges shall be worn as prescribed by AFRC regulations at all times on site, except in situations and locations where they can be a work place hazard.
16. In the performance of this contract, the Contractor's personnel may be required to fly or serve onboard Government-owned aircraft and may be required to support deployments and off-site recovery of aircraft
17. The Government or the Contractor may identify additional work requirements (not covered in this PWS) or special projects that are within the general scope of the contract. Any additional work or special projects, requiring additional labor hours or staffing, shall be accomplished only if a Task Order (TO) or modification to an existing TO is issued by the CO.
18. All work will normally be accomplished during a standard eight or 9/80 hour work shift; however, certain situations may require Contractor support at times other than the standard shift, such as weekends, holidays, second, third or split shift operations or a non-standard work week. In some instances, overtime or compensatory time may be required with advance approval with the COR and CO, which may include work during federal holidays and/or late night/early morning hours. An 8-hour workday is observed for all federal holidays. The Contractor can, with COR or CO approval, adjust work shifts or working hours to meet mission requirements within the scope of this PWS.
19. The Contractor shall maintain appropriate metrics to demonstrate the performance of all S&E programs. Metrics shall be measurable with reasonable effort, relevant to the key goals of the programs, and reveal when actions are necessary to maintain the defined level of performance. S&E program metrics shall be measured on a monthly basis with actions identified and taken by the Contractor to reverse any negative performance trends. The Contractor shall present these metrics in various graphical forms and media to Government S&E personnel and Center Management, as necessary.
20. The Contractor shall provide ongoing specific recommendations for continual improvement of AFRC Safety and Environmental programs. The goal is to increase the efficiency and effectiveness of S&E programs within available resources. This will include benchmarking similar sites and industries, documenting and/or streamlining existing processes, creating and documenting new processes, incorporating information technology tools, partnering with other internal and/or external organizations, increasing communication and coordination between organizations, etc.

2.1 Risk Management and Acceptance

Final management decisions for all of the functional areas and priorities will be the responsibility of the Government in situations involving Center wide policies, procedures and major events that have significant impact to the environment. The Contractor shall provide services in a variety of ways to constructively help manage or eliminate risk. On a daily basis, the Contractor is expected to manage and execute typical risk management decisions commensurate with the technical level of expertise of their personnel. For example, a Senior Safety Specialist is expected to be capable of making risk management decisions for matters involving routine safety related issues. However, if the technical expert becomes involved in risk management issues that are beyond their scope of expertise and/or involve significant impact to Center operations, the Contractor shall request the Government to lead the risk management process. Contractors may also be requested to help the Government in risk management decisions through the gathering of technical information, program management, and subcontract management, as needed.

2.2 Required Knowledge

The Contractor shall have and maintain current working knowledge of all relevant and applicable Safety and Environmental policies, procedures, and regulations. The Contractor is responsible for providing their professional employees with training to maintain credentials and certifications necessary to perform this PWS. The Government will not directly reimburse the Contractor for this type of training, unless specifically itemized in Contract Task Orders (CTOs). Contractor shall provide evidence of qualifications, certifications and experience prior to contract start date.

The Contractor shall utilize qualified employees to perform the work of this contract in a professional manner which will not endanger the health, life, safety, security, or general well-being of others or damage associated property and facilities. The Contractor shall ensure that the Contractor's personnel are proficiently trained and have the work experience to perform the PWS requirements. Appendix 3 lists examples of required training/certifications and identifies whether the cost of such training is borne by the Contractor or reimbursed by the Government. For off-site training exceeding three days, the contractor may be required to provide backfill support while current contract staff is away at training in order to meet Appendix 3 Contractor required training. The Contracting Officer (CO) may authorize and fund, by issuing a written notice, special training and/or travel necessary to meet mission requirements. Please note that the training listed in Appendix 3 is not all inclusive and additional training may be required. Additional training may be reimbursed at the determination of the CO.

The level and type of Contractor responsibilities are of a diverse nature, requiring adoption of rapidly changing guidelines and standards emanating from AFRC, NASA Headquarters, as well as Federal, State, and Local regulatory agencies. Personnel will be required to use prescribed forms and procedures or develop new forms and procedures depending on the need.

2.3 General Technical Requirements

The Contractor shall:

- Review and evaluate chapters in the AFRC Procedural Requirements (DCPs) listed in Appendix 5.
- Meet as often as necessary with NASA and/or Contractor employees and provide consultation on all types of safety and environmental issues. Prepare briefing materials, take meeting minutes and prepare meeting summaries, as requested.
- Respond to requests for inspections, visitor escorts, evaluations, assessments, and provide Safety and Environmental advice to individuals and projects within each Directorate.
- Contract personnel that are assigned the 911 radios will respond immediately to the emergency site and provide assistance to the incident commander as needed. This may require the contractor to respond to simultaneous emergencies at multiple locations.
- Ensure environmental impacts are thoroughly assessed, documented, and mitigated to the extent practicable.
- Ensure facility wide operations are carried out in compliance with applicable Federal, State, and Local laws, regulations, and Executive Orders, and NASA policies and procedural requirements.
- Raise awareness among Center personnel, Resident Agencies, tenant partners, and applicants for grants, leases, use permits, and other Federally-funded or approved actions, and the public of applicable Federal, State, and Local and NASA environmental policies and procedural requirements and environmental program activities.
- Ensure effective interagency cooperation, communication, and consultation.
- Identify opportunities for reducing cost, delay, and paperwork, and consider safety in all tasks.
- Review existing databases and tracking programs to identify streamlining and labor reducing methods.

2.4 Level of Supplies & Materials

The Government will supply the contractor with all the administrative materials needed to perform the tasks with the exception of PPE.

2.5 Deliverables

The Contractor shall submit contract deliverables in accordance with the Data Requirements List and as delineated on CTOs. In addition, the Contractor shall prepare correspondence for NASA signature to be submitted to various regulatory agencies, to internal NASA organizations, and to Resident Partners. The Contractor shall prepare all reports and plans required by environmental regulations for NASA signature. All data obtained or developed during this contract must be provided to the Government upon request and in the format specified by the Government.

3.0 Training

For the training classes identified in Appendix 4, the Contractor shall:

- Develop, implement and maintain the Center's occupational safety and environmental training programs, which provide instruction for personnel in relevant policies, procedures, guidelines, and regulations. The Contractor shall manage all aspects of safety and environmental training.

- Audit training activities, develop and present various training courses, and prepare training plans and reports as requested.
- Develop, update, and standardize course curricula annually unless specified otherwise.
- Acquire additional expertise, courses, and/or materials for training as requested.
- Track and update records of all training activities and the database of trained and certified personnel.
- Verify that AFRC personnel performing specific safety and environmental activities have the proper training and certifications.
- Obtain COR's concurrence on all training materials in advance of training events and all materials and associated data rights shall become the property of the Government.

4.0 Occupational Safety

The Contractor shall ensure compliance with Occupational Safety & Health Standards, National Fire Protection Association, Life Safety Code, Uniform Building Code, National Electric Code and other applicable safety and fire protection standards. The Contractor shall provide qualified personnel. Safety professionals must be knowledgeable of the regulations contained in the Uniform Building Code, Uniform Fire Code, OSHA standards including Voluntary Protection Program, and National Fire Protection Association (NFPA) standards.

Review and issue site-specific maintenance permits for NASA in-house contractor prior to the start of each facility project. The number of permits has averaged approximately three per week. Including, but not limited to Hot Work, Confined Space, Fall Protection, etc.

4.1 Construction Safety

Multiple construction activities are ongoing requiring daily oversight inspections. On average there are three to five active construction sites and/or major preventative maintenance activities occurring simultaneously per day. The types of construction activities include new construction of facilities, rehabilitation and modification of existing facilities, repair, renovation, demolition, excavation, etc.

The Contractor shall:

- Provide annual regulatory status reports, such as the OSHA 300 Log.
- Provide technical consultations to construction project managers.
- Verify that written safety plans are submitted for all projects and that they are site-specific, job-specific or otherwise contain Activity Hazard Analysis (AHA) pertaining to the work.
- Review all Safety Plans, Code of Safe Practices, AHAs and training records.
- Review all outage plans prior to all utility outages and facility closures. Including in-house and construction contractor work plans and AHAs.
- Verify that each construction project has a designated site safety officer, a site-specific safety plan and where applicable, specialized work procedures. In addition, verify that there is oversight by a competent person for fall protection, material lifting, asbestos control, electrical safety, and lockout/tagout.

- Verify that Construction site employees are trained in recognition of job site-specific hazards, procedures for protecting themselves, and first aid procedures in the event of injury.
- Coordinate with the AFRC Safety Task Monitor, AFRC Facilities Project Manager and AFRC Facilities Contract COR to ensure that construction hazards are identified and abated in a timely manner.
- Review and issue construction permits prior to the start of each construction project. The number of permits has averaged approximately three to ten per week. Permits include but are not limited to Hot Work, Confined Space, Fall Protection, etc.
- Inspect all construction sites at least daily (may include holidays, weekends, and/or evenings) for compliance with appropriate safety and health standards and specify appropriate corrective action, as necessary, to the construction project managers. Notify responsible parties of construction safety hazards.
- Prepare briefing materials, take meeting minutes and meeting summaries as requested.

4.2 Confined Space Program

Manage and provide hazard evaluations, identify, classify and label confined spaces, monitor entry procedures, and train personnel who perform entries. Currently, AFRC has identified approximately 118 permitted and 88 non-permitted confined spaces

The contractor shall:

- Provide all services to administer and manage a Confined Space program for NASA AFRC in accordance with the requirements of 29 CFR 1910, 1926 and NASA Procedural Requirements (NPR) 8715.3B.
- Identify, classify, and manage all confined spaces at NASA AFRC.
- Provide technical consultation and assistance for major projects where confined space entries are a component of the project.
- Review entry plans and issue entry permits for all confined space entries.
- Provide oversight of owner-host coordination support to entry organizations to ensure entrants are made aware of all hazards prior to operations.
- Assure that Confined Space Evaluations per 29 CFR 1910.146(d)(2) are provided prior to each entry.
- Manage and coordinate program documentation.
- Develop program metrics that effectively measure the effectiveness and quality of the Confined Space Program.
- Review the program annually in accordance with 29 CFR 1910.146(d)(14) and document this review in an annual status report.
- Maintain confined space database and map of all confined spaces in coordination with Center Facilities Group
- Coordinate with Center Industrial Hygiene Group for confined space respiratory requirements

4.3 Pressure Vessels

The contractor shall be familiar with the American Society of Mechanical Engineers (ASME) and the American Petroleum Institute (API) requirements and guidelines in order to adequately inspect an assortment of Pressure Vessels and systems. The contractor shall be able to provide

safe design review, installation monitoring, operation functional checks, and reviews of the maintenance of pressure vessels in accordance with the appropriate codes and standards.

4.4 Fall Protection Safety

The Contractor shall ensure current compliance with Federal Occupational Safety & Health Standards, ANSI/ASSE/ASI, NPRs, AFRC procedures/plans and other applicable safety, health, and standards. The contractor shall provide the assistance of the competent persons to assist the AFRC Fall Protection Program Manager in developing fall protection surveys for building and structures, fall hazard identification/elimination & controls, plan reviews, related training/development and presentation, assessments, inspections, inventory, and reports for all facets of fall protection hazards.

Provisions shall be made by the Contractor to ensure there is at least one Competent person, at a minimum, available at both main campus and Building 703 during normal business hours at each site.

Fall Protection Systems included, but are not limited to:

- Guardrail
- Positioning, restraint and arrest
- Horizontal life line
- Monitoring and warning line
- Covers
- Falling objects
- Mobile aerial and working platforms
- Scaffolding
- Towers
- Excavations Vehicles and trailers
- Ladders
- Roofs
- Aircraft

4.5 Lifting Devices and Equipment

The Contractor shall ensure compliance with Federal Occupational Safety & Health Standards, ANSI/ASSE/ASI, NPR's, AFRC procedures/Plans and other applicable safety, health, and standards. The contractor shall provide the assistance of the experienced persons to assist the AFRC Lifting Device Equipment Manager (LDEM) in identification/elimination & controls, operational plan reviews, act as safety observers during LDE activities, related training/development and presentation, assessments, inspections, inventory, and reports for all facets of fall protection hazards.

Provisions shall be made by the Contractor to ensure there is at least one LDE experienced person available on site at both main campus and Building 703 during normal business hours.

LDE included, but are not limited to:

- Mobile and overhead cranes
- Hoists, winches, and jacks

- Rigging hardware
- Mobile aerial platform
- Powered industrial trucks

4.6 Fire Protection (FP)

The contractor shall provide on-site technical personnel during normal business hours on all Government workdays throughout the duration of the Contract period of performance to perform the following requirements:

The Contractor shall:

- Assist AFRC Authority Having Jurisdiction (AHJ) with fire protection support for NASA Programs and Projects, as requested.
- Assist in the enforcement of NASA Standard NASA-STD-8719.11, Safety Standard for Fire Protection.
- Monitor work processed by the AFRC Configuration Control Board (CCB).
- Monitor fire protection water supply and fire system maintenance programs and provide inspection (primarily for special projects/facilities).
- Assist AHJ with final facility inspection after construction completion and witness systems acceptance testing for all new fire alarm and automatic suppression installations. Document each acceptable test with memo to the Safety Division. Follow up on deficiencies noted for subsequent correction.
- Perform fire safety audits as requested by the Government.
- Perform a survey of all facilities annually identifying fire protection and life/safety deficiencies. Document deficiencies in a report. Survey and report will include, but not be limited to, the appropriate Worksheets for Evaluating Fire Safety in NFPA 101A.
- Assist the system safety organization on analyses of hazardous operations.
- The Contractor may occasionally work with the local Fire Department to address, mitigate or consult on special fire issues.
- Disseminate and publicize fire protection information and educational material annually to AFRC personnel using NFPA Fire Prevention Week promotions and other materials as necessary.
- Assist in performing annual fire drills for occupied buildings. Document fire drill findings and lessons learned.
- Prepare or update pre-incident plans in accordance with NFPA 1620, Standard for Pre-Incident Planning.
- Keep logs, written or electronic documentation of all fire protection review comments and recommendations made by the Contractor and submit materials to the Government when requested.

4.7 Emergency/Urgent Responses/Mishap Investigation/Data Analysis

On average, there are approximately 15 to 20 Emergency/Urgent responses and 80 to 140 mishap investigations occurring per year, several simultaneously. The Contractor shall:

- Assist Center On Scene Commander with scene safety, mitigation advice, and control by:

    - Responding to all 911 emergencies and urgent requests to assist in the investigation, mitigation of unsafe conditions, and documentation of findings for all Safety and Environmental incidents.
    - Providing response coverage during weekday Center core hours for simultaneous multiple locations
- Investigate all occupational injuries, illnesses, and mishaps occurring at AFRC in accordance with NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigation and Recordkeeping.
- Maintain data for the Contractors Monthly Accident Reporting (CMAR) database and the NASA Mishap Information System (NMIS) database and supporting files to ensure records are accurate and readily retrievable at all times.
- Calculate and chart the illness and injury rates for Civil Service and Contractor populations.
- Provide statistical summaries, safety performance charts, and metrics updated monthly.
- Generate and post the OSHA 300A log for NASA AFRC.

5.0 Environmental

The Environmental Program is responsible for AFRC's environmental compliance, management, conservation, and sustainability programs. These responsibilities include coordination and integration of all environmental programs, interpreting environmental regulations as they apply to AFRC activities, providing guidance on regulatory requirements, acting as the formal point of contact with all environmental regulation agencies, development assistance and review of environmental permits, remediation of contaminated sites, cease and desist authority for all polluting activities, and compliance monitoring and surveillance. The Contractor shall be responsible for providing support to the Center's environmental program.

5.1 Environmental Management System (EMS)

The Environmental Management Division requires comprehensive support in implementing the Center's EMS required by best management practices and Federal regulation (e.g. Executive Order 13693, Planning for Federal Sustainability in the Next Decade). An EMS is a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals. The Center's EMS is built on the "Plan, Do, Check, Act" model. Civil Servant and Contractor employees are asked to consider how they affect the environment every day. An EMS offers a structured way to incorporate environmental considerations into day-to-day operations to reduce risk to mission success, health and safety, the environment and lower long-term environmental liability.

The Contractor shall maintain the Center's Environmental Management System (EMS) by completing the following requirements:

- Promote continual improvement of the environment and human health, support EMS outreach and training, track performance metrics, obtain customer feedback, and support internal and external audits and follow-up on findings and corrective actions.
- Support briefings to the Center's Senior Management and other management levels, participate in Agency-wide and Center-wide EMS meetings, teleconferences, Video Teleconferencing System (ViTS) conferences.

- Identify priority environmental aspects and impacts essential to developing the Center's EMS.
- Prepare for and conduct quarterly EMS meetings and audits to review/update the Center activities, aspects, impacts, objectives, targets, and environmental management programs. The Contractor shall maintain the EMS elements per the most current version of NPR 8553.1B.
- Establish and maintain procedures to identify all relevant legal, regulatory and other requirements applicable to the environmental aspects of the Center's activities, products, and services.
- Recommend measurable objectives and targets for the Center that demonstrates commitment consistent with the intent of the Center's environmental policy and aspects. If approved by the appropriate NASA authority, the Contractor shall implement the objectives and targets.
- Provide recommendations and assist in the development, implementation, and maintenance of operational controls and procedures for activities associated with high priority environmental aspects. Environmental aspects are elements of the Center's activities, products, or services that can interact with the environment and over which the Center has control and can manage.
- Establish, implement, and maintain a procedure for identifying, handling, and investigating nonconformities which are failures to meet NASA or Center EMS specified requirements.

5.2 Pollution Prevention/Recycling/Affirmative Procurement and Sustainability Practices Programs

The Environmental Management Division requires comprehensive support for the Pollution Prevention (P2)/Recycling (R)/Affirmative Procurement (AP) Programs and Sustainability Practices program under a number of applicable Federal, State, and local laws, regulations, and Executive Orders, including EO 13693. The P2/R/AP and Sustainability Practices Programs are characterized by leadership, collaboration, and customer service in effectively and efficiently reducing pollutants, increasing waste diversion, and maximizing opportunities for affirmative procurement and environmental sustainability to meet Federal and NASA goals, targets and objectives, and performance metrics.

The Contractor shall:

- Identify pollution prevention opportunities and implement sustainable processes to avoid increasing NASA and the Federal Government's long-term environmental liability and to demonstrate corporate leadership.
- Participate in Agency-wide and Center-wide P2/R/AP meetings, teleconferences, ViTS and related activities on emerging P2/R/AP and sustainability principles and practices.
- Lead P2/R/AP and Sustainability practices awareness activities and training.
- Conduct research on alternative products or practices, provide advice and guidance, for example, on conducting environmental life cycle cost analyses if requested by the Government.
- Monitor implementation of P2/R/AP and Sustainability Practices activities.

- Gather P2/R/AP and Sustainability Practices data, prepare reports and briefings.
- Support implementation of corrective actions.
- Disseminate information to Center personnel regarding procurement of sustainable materials, including bio-based items and materials containing recycled or post-consumer content in accordance with Federal Acquisition Regulation (FAR) Part 23 and Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade.
- Evaluate purchase requests/requirement documents, project specifications, design submittals, and other project and/or procurement documentation for the elimination of virgin material requirements, use of recovered materials, reuse of products, life cycle analysis, energy and water efficiency, recyclability; and the use of EPA and USDA designated items or other environmentally preferable products. The Contractor shall disseminate information to Center personnel to ensure environmental requirements are met during the acquisition process.
- Conduct quarterly audits of AFRC purchase orders, contracts, task orders, etc. to ensure affirmative procurement compliance.
- Coordinate Earth Day activities, prepare suitable materials for presentation and participate in Earth Day activities to be held at AFRC. Participation shall include activities such as manning a booth, giving a lecture or training.

5.3 National Environmental Policy Act (NEPA)/Environmental Justice (EJ) Program

The Environmental Management Division requires comprehensive support for the NEPA/EJ program to support the Center in completing the NEPA or EO 12114, Environmental Effects Abroad of Major Federal Actions, process prior to its taking any action that could have an adverse environmental impact; limit the choice of reasonable alternatives; or affect known or potential historic/cultural resources or sensitive populations as defined under Federal laws, regulations, and Executive Orders such as EO 12898 on Environmental Justice

The Contractor shall:

- Participate in Agency-wide and Center-wide NEPA/EJ meetings, teleconferences, and Video Teleconferencing System (ViTS) conferences on emerging principles and practices.
- Provide recommendations on the development of policies and procedures.
- Conduct NEPA/EJ awareness activities and training.
- Conduct research and studies as needed, providing advice and comment to applicants and proponents, Resident Agencies and tenant partners if requested by the Government.
- Coordinate interagency meetings and public notice and provide recommendations for comment responses.
- Maintain Administrative Record of NEPA documents.
- Facilitate associated environmental permit applications and disclosures.
- Prepare Environmental Assessments, Environmental Impact Statements, Environmental Baseline Surveys and Executive Order 12114 reports and associated studies and surveys.
- Monitor and evaluate implementation of mitigation, gather data, prepare reports and briefings.

- Conduct implementation of corrective actions.
- Maintain NEPA/EJ Program mailing list and support distribution of documents if requested by the Government.
- Monitor construction and demolition projects weekly to ensure compliance with project mitigation measures. On average there are three to five active construction sites and/or major preventative maintenance activities occurring simultaneously.

5.4 Air Quality Program

The Contractor shall review AFRC facility operations to gather air emissions data, provide recommendations to minimize or eliminate emissions, and compile and maintain the records required by AFRC Air Permits. AFRC has approximately 91 permitted sources. Records include operational usage, product usage, fuel consumption, and equipment lists. The Contractor shall calculate quarterly hour usage totals and review the data to evaluate compliance with applicable permit requirements and limits. The Contractor shall calculate annual air emissions for AFRC and review the data to evaluate compliance prior to submittal to applicable Local and California air pollution control regulations. The Contractor shall assess air emission levels, evaluate potential risks of noncompliance, and provide Code SH with written recommendations to maintain compliance

The Contractor shall:

- Participate in Agency-wide and Center-wide air quality meetings, teleconferences, Video Teleconferencing System (ViTS) conferences.
- Recommend Air Quality policies and procedures for implementation.
- Conduct air quality compliance awareness activities and training.
- Conduct air quality research and studies, as needed.
- Provide advice and comment to applicants and proponents, Resident Agencies and tenant partners if requested by the Government.
- Coordinate interagency and public notice and comment.
- Monitor and evaluate implementation of permit terms and conditions and maintain records of Center air quality permits.
- Investigate air quality releases, gather data, and prepare reports and briefings.
- Conduct implementation of corrective actions.
- Prepare air program regulatory correspondence, permit amendment requests, permit applications and required reports and submit to Environmental Task Monitor for concurrence and signature.
- Inspect permitted air emission sources and associated air pollution control equipment to ensure proper installation and operation when performing Multi-Media Environmental Audits.
- Recommend air pollution control technology to Environmental Task Monitor including cost considerations, effectiveness and regulatory requirements.
- Review license request submittals for new chemical authorizations to verify compliance with local regulatory requirements.
- Prepare and maintain an updated equipment list.

5.5 Water Program

The Environmental Management Division requires comprehensive support for the Water Program. The Water Program manages all discharges of water into the environment.

The Contractor shall:

- Ensure Water Program is compliant with Federal, State, and Local regulatory requirements.
- Participate in Agency-wide water conservation and management meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related programs on emerging principles and practices.
- Conduct water discharge research and studies.
- Provide environmental advice and comments to applicants and Center proponents, Resident Agencies and tenant partners if requested by the Government.
- Monitor and evaluate implementation of permit terms and conditions.
- Investigate unauthorized releases, gather data, and prepare reports and briefings.
- Coordinate implementation of corrective actions.
- Prepare Air Force and Los Angeles County industrial wastewater discharge permit application and collect associated samples, as necessary.

5.6 Hazardous Materials Management

The Environmental Management Division requires comprehensive support for Hazardous Materials Management. The Hazardous Materials Management supports the Center by preparing and submitting the annual Hazardous Materials Business Plan, Hazardous Materials Contingency Plans, and Biennial Report to the local administering agency, maintaining the Chemical Management System (CMS) and by managing the permits and associated inspections resulting from hazardous materials storage.

The Contractor shall:

- Report releases or threatened releases of a hazardous material to the Environmental Task Monitor.
- Provide advice and regulatory guidance to ensure proper management of hazardous materials in order to prevent harmful exposures to the public and the environment through proper materials handling.
- Participate in Agency-wide and Center-wide meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related activities on emerging principles and practices.
- Conduct awareness activities and training, conduct research and studies as needed, provide advice and regulatory guidance to applicants and Center proponents, Resident Agencies and tenant partners if requested by the Government.
- Monitor and evaluate implementation of permit terms and conditions.
- Investigate releases, gather data and prepare reports and briefings.
- Conduct implementation of corrective actions.

- Serve as the local administrator to the Center's chemical management program software by providing upkeep, configuration control, and reliable operations.
- Ensure accountability and distribution of AFRC chemicals in accordance with DCP for Chemical Management.
- Manage oversight of the AFRC HM program, including management of the AFRC Chemical Crib processes and audits of chemical crib operations. Currently there are four chemical cribs at AFRC Main Campus and Building 703.
- Perform internal compliance/quality assurance assessments at AFRC chemical storage sites.
- Monitor the AFRC CMS and provide standard and custom reports (e.g., inventory shelf life, chemical expiration dates, employee status, zone transfers, issue denials) with the CMS electronic reporting tool.
- Incorporate data into the AFRC CMS that allows the evaluation of chemical purchase requests by S&E personnel.
- Hold quarterly meetings with AFRC satellite chemical storage/distribution site managers to communicate new or existing CMS practices as necessary.
- Hold monthly Chemical Crib team meetings with environmental staff to ensure communication of best practices and consistent application of CMS practices.
- Perform data Quality Assurance/Quality Control (QA/QC) evaluations within the AFRC Chemical Management system.
- Evaluate chemicals prior to disposal to determine if suitable for chemical sharing program with the Edwards AFB and the Air Force Research Lab (AFRL)

5.7 Hazardous Waste Management Program

The Environmental Management Division requires comprehensive support for the Hazardous Waste Management program characterized by effective management of hazardous waste and including universal.

The Contractor shall:

- Ensure the Hazardous Waste Program is compliant with regulatory requirements.
- Participate in Agency-wide and Center-wide meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related activities on emerging principles and practices.
- Conduct Hazardous Waste Program awareness activities and training.
- Conduct hazardous waste research and studies as needed.
- Provide advice and regulatory guidance to applicants and proponents, Resident Agencies and tenant partners to ensure proper management of hazardous waste.
- Collect and process hazardous waste for disposal.
- Monitor and evaluate implementation of permit terms and conditions.
- Investigate releases, gather data and prepare reports and briefings.
- Conduct implementation of corrective actions.
- Oversee or perform air, water, soil, and material sampling and analysis as required to assess compliance with environmental regulations. Sampling and

analyses may be required to provide characterization of the magnitude and extent of released chemicals, or as otherwise directed. The Contractor shall be responsible for developing and submitting sampling plans, coordinating laboratory analyses, record keeping, maintaining logs, and written reports where required. Sampling requirements average one to two per year.

- Facilitate implementation of the AFRC hazardous waste program and provide the following hazardous waste services; pick-up from generators and transport between facilities, handling, storage, selection of appropriate waste containers, labeling, and packaging.
- Assist in completing appropriate hazardous waste manifests and related documentation in compliance with Department of Transportation (DOT), Environmental Protection Agency, and California Department of Toxic Substance Control regulations, and provide manifests for Government approval and signature.
- Conduct audits of off-site treatment, storage, and disposal facilities and provide audit reports. A minimum of two to four facilities shall be audited per year.
- Operate and maintain all AFRC hazardous waste accumulation points and the HM/HW Bulk Storage Facility, perform weekly inspections of these facilities, prepare required inventories, coordinate waste profiling with off site Treatment, Storage and Disposal Facilities, and coordinate with HW transportation contractors for the pick up of HW for disposal. There are four hazardous waste accumulation points and two HM/HW Bulk Storage Facilities.
- Arrange for clean out (semiannual at a minimum) of AFRC oil/water separators, perform inspections, and transfer waste/recyclable fuels as required. The Contractor shall operate the vacuum pump trailer and be responsible for compliance with all DOT placarding requirements.
- Provide a minimum of three people with current Hazardous Waste Operator Emergency Response training who may be required to clean up or assist in minor HM/HW spills and releases.

  Note: If necessary to contain/clean up larger HM/HW spills or releases, AFRC will request assistance from the local fire department.

- Maintain and operate various HM and field monitoring and sampling equipment/instrumentation, and maintain all associated logs and records. The Contractor shall operate forklifts, large trucks, tugs, and powered lifts. Operation of this equipment is required at AFRC and Building 703 locations.
- Provide appropriate professional response to AFRC emergencies, declared or undeclared, to assist in supporting on-scene management and documentation of the emergency for the purpose of effective response, mitigation of severity, and prevention of additional loss from scene hazards.
- Provide Waste Management training for required AFRC. This training shall emphasize waste regulations, policies and responsibilities as described in the DCP. The Contractor shall maintain participant information.

5.8 Petroleum, Oils, and Lubricants (POL)/Spill Prevention Control and Countermeasures (SPCC)/Aboveground Storage Tank (AST) Program

The Contractor shall be required to manage the Center Aboveground Storage Tank (AST) regulatory compliance program. There are currently 34 ASTs at AFRC. The Contractor shall be responsible for maintaining an up-to-date storage tank inventory, preparing updated registration forms when necessary, providing training for tank operators and ensuring that all tanks located on the Center are in compliance with all Federal and State regulatory requirements.

The Contractor shall:

- Participate in Agency-wide and Center-wide meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related activities on emerging principles and practices.
- Conduct POL/SPCC/AST awareness activities and training. This training shall emphasize regulations, policies and responsibilities as described in the SPCC Plan. The Contractor shall maintain participant information.
- Conduct surveys, research, and studies as needed, provide advice and comment to applicants, Center proponents, Resident Agencies, and tenant partners.
- Communicate, coordinate, and consult with other agencies and Center divisions if requested by the Government.
- Monitor, evaluate and provide oversight to ensure compliance with permit terms and conditions.
- Gather and maintain data, prepare reports and briefings.
- Conduct implementation of corrective actions.
- Prepare permit applications for signature by NASA.
- Maintain an up-to-date inventory of ASTs in service at the Center. This inventory will include all “bulk storage containers” as defined in the Spill Prevention, Control, and Countermeasure (SPCC) Regulations (40 CFR Part 112.2)
- Perform monthly spot inspections of ASTs, using the NASA AFRC Monthly AST Inspection Checklist
- Evaluate changes associated with ASTs on a quarterly basis to determine if updates to the Spill Plan are required. The Contractor shall update the Center SPCC as necessary to reflect changes in Center operations and environmental regulations. If a change at the Center impacts the Plan and requires an amendment, the update must occur within 6 months of the change. The contractor shall update the plan once every 5 years. The current plan expires on December 2019. Each update or change other than minor or administrative shall be reviewed and certified by the contractor’s California licensed Professional Engineer (PE), then submitted to the Government for final approval
- Be responsible for monitoring and documenting compliance with applicable regulatory requirements related to AST systems and reporting deviations to Environmental Management TM

5.9 Cultural Resources Management (CRM) Program

The Environmental Management Division requires comprehensive support for the Cultural Resources Management program. The Agency-wide CRM program provides the policies and procedures to ensure NASA complies with applicable CRM regulations, such as the National Historic Preservation Act (NHPA) to implement a Section 110 program, the Archeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act, and EO 13007, Indian Sacred Sites. The AFRC Historic Preservation Officer, in coordination with the NASA Federal Preservation Officer, completes the consultation process required under the NHPA to minimize the risk CRM issues pose to the Agency's mission and implements mitigation, including, e.g., curation, recordation, outreach, and reporting.

The Contractor shall:

- Participate in Agency-wide and Center-wide CRM meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related activities on emerging principles and practices.
- Conduct CRM awareness activities and training.
- Conduct or participate in CRM surveys, research, and studies.
- Provide advice and comment to applicants, Center proponents, Resident Agencies, and tenant partners if requested by the Government.
- Upon concurrence with the Environmental Task Monitor, communicate, coordinate, and consult with regulatory agencies and Center management on cultural resource items.
- Monitor, evaluate and provide oversight to ensure compliance with agreement terms and conditions.
- Participate in the updates and development of Center management plans including but not limited to Programmatic Agreements, Section 106 Consultation, Integrated Cultural Resources Management Plan, etc.
- Assist in the investigation of CRM site vandalism or looting.
- Gather and maintain data and prepare reports and briefings.
- Conduct implementation of corrective actions.
- Ensure that contractors providing recommendations for NHPA compliance have completed the required training and work experience identified in the PWS.

5.10 Natural Resources Management Program

The Environmental Management Division requires comprehensive support for the Natural Resources Program to support the Center in carrying out its Federal stewardship responsibilities in NASA-approved or assisted actions on and off the Center. The Natural Resources program lead has primary responsibility for the Wildlife, Plants, Ecosystems program.

The Contractor shall:

- Participate in Agency-wide and Center-wide meetings, teleconferences, Video Teleconferencing System (ViTS) conferences.
- Conduct Natural Resources awareness activities and training.
- Conduct surveys, research, and studies and prepare reports and briefings.

- Provide advice and comment to applicants, Center proponents, Resident Agencies, and tenant partners if requested by the Government.
- Upon concurrence with the Environmental Task Monitor, communicate, coordinate, and consult with other resource agencies, and Center management on Natural Resources issues.
- Assist in the investigation of harassment, destruction, or poaching of wildlife and poaching and/or destruction of protected plant species.
- Humanely collect and transport or arrange humane transport of sick or injured, threatened, endangered, and sensitive or otherwise protected species of wildlife found on the Center for evaluation and treatment, or if dead, send for forensics analysis.
- Coordinate carcass disposal with Logistics, Protective Services, Facilities Maintenance and regulatory agencies of the threatened, endangered, and sensitive or otherwise protected species of wildlife.
- Obtain Center permits (e.g., banding, salvage, and depredation), and monitor and evaluate implementation of permit terms and conditions.
- Support and conduct implementation of corrective actions.
- Prepare and update plans as needed, for example, under the Endangered Species Act.
- Maintain documentation for pesticide program

5.11 Restoration Program

The Environmental Management Division requires support for the Restoration program to pursue environmental initiatives designed to remediate, restore, protect and enhance mission resources. The goal of the Restoration program is to reduce NASA's long-term environmental liability by cleaning up chemicals released to the environment from past activities and to restore environmental conditions. The Division prepares multi-year plans for Agency-wide review and prioritization to ensure that the highest priority liabilities are addressed first to protect human health and the environment and preserve natural resources for future Agency missions.

The Contractor shall:

- Participate in Agency-wide meetings, teleconferences, Video Teleconferencing System (ViTS) conferences, and related programs on emerging principles and practices.
- Conduct restoration awareness activities and training.
- Conduct or participate in surveys, investigations, analyses, and studies.
- Prepare plans, as needed, for example, under the Comprehensive Environmental Restoration, Compensation and Liability Act (CERCLA), the Resources Conservation and Recovery Act (RCRA), and the Clean Water Act.
- Maintain Administrative Record required under CERCLA, RCRA, and the Clean Water Act.
- Provide recommendations and comment to Center proponents, Resident Agencies, and tenant partners, for example, for excavation or vapor intrusion.
- Communicate, coordinate, and consult with regulatory agencies and Center divisions, for example, in providing disclosure to prospective applicants for leases or agreements.
- Support interagency and public notice and comment process.
- Manage Center permits or permit equivalents.

- Monitor, evaluate and provide oversight to ensure compliance with agreement terms and conditions.
- Gather and maintain data, prepare reports and briefings.
- Conduct implementation of corrective actions.
- Maintain Restoration Program mailing list and support distribution of documents if requested by the Government.

5.12 Other Services

The Contractor shall maintain the Code SH website by ensuring information is current and reflects current information. As requested by the Task Monitors, the Contractor shall make updates and minor improvements to the web pages, such as updates to documents and text via request to the Center Intranet Webmaster.

Participate in all external environmental inspections and audits and prepare all reports and corrective action plans as needed. External audits and inspections may be performed by agencies including, but not limited to the following.

- NASA Headquarters - Environmental Functional Review (Every three years)
- California Department of Toxic Substances Control (Annually)
- Certified Unified Program Agency (Annually)
- Lahontan Regional Water Quality Control Board (Determined by Agency)
- Kern County Air Pollution Control District (Annually)
- Antelope Valley Air Quality Management District (Annually)

Appendix 1 - SERVICES POSITION DESCRIPTION TITLES GUIDELINES

The following list of qualifications reflects the minimum desired personnel requirements associated with the safety and environmental activities in this contract. The contractor personnel performing multiple functions shall be certified for all the disciplines they are supporting and should meet the minimum personnel qualifications listed below.

Project Manager (On-Site):

Bachelor's Degree from an accredited school in Environmental Management or Institutional Safety Management or comparable. Project Manager should have a minimum of 10-years experience in institutional safety, occupational health and/or environmental fields; include leading tasks, projects or programs related to the technical areas described in the Performance Work Statement with desired experience in multidisciplinary environmental programs, and a minimum of 5-years serving in a strategic role with oversight in project or program execution including planning, communication, resource allocation, etc.

Environmental Specialists (On-site AFRC and 703 locations)

Senior Environmental/Scientist:

Bachelor's Degree from an accredited school in an environmentally related field and a minimum 10-years of progressive environmental management experience. Collective experience should be in waste management, Resource Conservation and Recovery Act (RCRA) requirements, pollution prevention assessments, analytical services, environmental training, Air regulations and permitting, Storage Tanks and environmental compliance auditing, Environmental Management Systems, NEPA, Cultural/Natural Resources. Provide regulatory analysis and environmental consultation.

Mid-Level Environmental/Scientist:

Bachelor's Degree from an accredited school in an environmentally related field and a minimum 6 years progressive experience in pollution prevention, recycling, solid waste/hazardous management, water compliance/permitting, hazardous materials, environmental audits, natural/cultural resource management, EMS, training and sustainable acquisition. Personnel should have 6-years experience in environmental planning, data collection and analysis, training, and regulatory review and compliance requirements.

Environmental Coordinator:

Personnel shall have at a minimum a high school diploma and/or equivalent and a minimum of six years experience in chemical management. Experience shall include ensuring compliance with established control procedures, maintaining and updating chemical management policy and procedures, collecting, reviewing, filling and inputting data into government provided chemical management system. Personnel shall be familiar with standard concepts, practices and procedures for chemical management.

Environmental Technician:

Personnel shall have a high school diploma or equivalent, possess a valid driver's license and HAZWOPER training required and experience in conducting field investigations to obtain data and samples needed for determining sources and methods in water, soil and waste management principles as applied to RCRA. Experience in conducting field tests to determine physical characteristics of solid and liquid materials and substances. Experience shall include collecting and preparing samples of liquids and solids from chemical research laboratories, industrial processes and any associated pollution control activities. Personnel should have a comprehensive knowledge of waste management operations involving waste handling and preparation of waste for disposal and shall include data recording and maintaining related records. Work performed shall include forklift and transfer pump operations.

Safety Specialists (On-site AFRC and 703 locations)

Senior Safety Specialist (On-Site):

Bachelor's Degree from an accredited school in an Safety and Health related field and 10 years of multidisciplinary experience; or a (CSP) Certified Safety Specialist or equivalent and 10 years of multidisciplinary experience; or Specialized Safety training and Certifications and 15 years of multidisciplinary experience. Multidisciplinary experience should include areas of expertise in Fall Protection; Aircraft Fueling/Fuel Farm Management; Mishap Investigation; Construction Safety; Explosive Safety; Cryogen Management Safety; Electrical Safety; Life Safety (Life Safety Code); Hazard Identification and Abatement. Work Experience and or training in Pressure Vessel Systems. Experience should include leading tasks, projects and sustainability of a proactive safety program.

Mid-level Safety Specialist:

Bachelor's Degree from an accredited school in a Safety and Health related field and 5-years of multidisciplinary experience; or Specialized Safety training and Certifications and 10-years of multidisciplinary experience. Multidisciplinary experience should include training and work experience in Fall Protection; Fire Safety/Fire Suppression Systems; Facility Inspection; Hazard Identification; Construction Safety; Pressure Vessel Systems; Explosive Safety; Electrical Safety; Aircraft Fueling; Life Safety.

Junior Safety Specialist:

Bachelor's Degree from an accredited school in a Safety and Health related field and 2-3 years of multidisciplinary experience; or Specialized Safety training and 5-7 years of multidisciplinary experience. Multidisciplinary experience should include instruction/training and work experience in Fall Protection; Fire Safety; Facility Inspection; Hazard Identification; Construction Safety; Electrical Safety; Life Safety.

Appendix 2 – Past Five Years Estimated Workload Indicators

Task	2009	2010	2011	2012	2013	2014*
911 Responses	17	19	23	21	16	20
Mishap Investigations	122	108	92	102	109	101
Facility Inspections	183	183	183	183	184	183
Critical Lifts			141	123	137	187
*Confined Space Permits				335	335	335
Fire Drills	23	22	20	20	20	20
Document Reviews	165	230	208	301	252	357
Bill of Ladings	23	24	30	24	19	13
Oil Pump Outs	6	6	6	3	5	4
Fuel Pump Outs	0	3	4	6	9	4
Safety Data Sheets Reviews	533	354	446	410	182	176
Average Staffing						
Environmental			7	6	6	5
Safety			9	8	7	7

As of August 2014

*Trends are reflecting this to increase substantially over the next few years. Estimates for 2015/2016 are approximately 500 annually.

Appendix 3
CONTRACTOR PERSONNEL REQUIRED TRAINING/CERTIFICATION

TRAINING/CERTIFICATE DESCRIPTION	FREQUENCY	COST BORNE BY		APPLICABLE REGULATION
		The Contractor	NASA AFRC	
Resource Conservation and Recovery Act (RCRA) and Hazardous Waste in CA	1 Year	X		40 CFR 262.34 and 22 CCR
Confined Space Competent Person	2 Years	X		29 CFR 1910.146
DOT Regulations	1 Year	X		49 CFR Subpart H
Elevating Work Platforms & Aerial Devices	4 Years		X	NASA STD 8719.9
Emergency Action Plan	One Time and refresher as needed	X		29 CFR 1910.38
Fall Protection Competent Person	One Time	X		29 CFR 1910
Fire Extinguisher	1 Year		X	29 CFR 1910.157(g)(1)
First Aid & CPR	2 Years		X	NPR 8715.3
Fork-lifts, Tugs, Powered Lifts	1 Year		X	AFFTCI 10-2; NASA STD 8719.9
Hazard Communication	1 Year	X		29 CFR 1910.1200
Hazardous Waste Operators and Emergency Response (HAZWOPER) One Time	One Time	X		22 CCR 66260.10 22 CCR 66260.16 29 CFR 1910.120
HAZWOPER Refresher	1 Year	X		29 and 40 CFR
Historic Preservation	One Time	X		36 CFR Part 800
Lockout/Tagout	4 Years	X		29 CFR 1910.147
NEPA	One Time	X		42 U.S.C. 4321 et seq.
Personal Protective Equipment	1 Year	X		29 CFR 1910.132/133
Visible Emissions Evaluation	1 Year	X		8 CCR 341.15(h)(1)

Appendix 4
TRAINING PROVIDED TO AFRC PERSONNEL BY THE CONTRACTOR

TRAINING DESCRIPTION	FREQUENCY	DURATION	NUMBER OF SESSIONS PER YEAR
Affirmative Procurement	As Necessary	0.5 Hours	As Necessary
Compressed Gases & Pressure Systems Safety	3 Years	2 Hours	1
Confined Space for Users and Supervisors	2 Years	3 Hours	6
Desert Tortoise	One Time	0.5 Hours	As Necessary
Armstrong Chemical Management System	As Necessary	3 Hours to 3 Days	As Necessary
Electrical Safety Awareness	One Time	0.5 Hours	2
Electrical Safety, Qualified Personnel	One Time	1 Hour	2
Environmental Management System	3 Years	0.5 Hours	As Necessary
Fall Protection	3 Years	2 hours	4
Fire Extinguisher and other Related Fire Safety Training	1 Year	0.5 Hour	6
Fire Warden Responsibilities/Emergency Action Plan	1 Year	2 Hours	As Necessary
Hazard Communication – Chemical and Non-Chemical Office	One Time	1 Hour	One Time and As Necessary
Heat Stress	As necessary	1 Hour	As necessary
Lifting/Back Safety	1 Year	0.5 Hour	2
Lockout/Tagout	1 Year	2 Hour	3
Machine Guarding	One Time	1 Hour	As Necessary
Personal Protective Equipment	One Time	0.5 Hour	As Necessary
Power Presses	One Time	3 Hours	As Necessary
General Safety Training for Supervisors	One Time	1 Hour	As Necessary
Scaffolding for Users	One Time	1 Hour	As Necessary
Spill Prevention Control and Countermeasure Plan	1 Year	1 Hour	As Necessary
Storage Tank and Oil/Water Separator Manager	1 Year	1 Hour	2
Regulated Carcinogens	As Necessary	As Necessary	As Necessary
Welding, Cutting, Brazing (Hot Work)	4 Years	3 Hours	As Necessary

The following are the minimum regulations Armstrong must abide by. This list is not all-inclusive. NASA and Contractor are required to follow all Federal, State, and local regulations.

Appendix 5
PERTINENT LAWS, REGULATIONS, REQUIREMENTS, DIRECTIVES, ETC

AGENCY	REFERENCE	TITLE / TOPIC
ACGIH	ACGIH (1998, 23rd Edition)	Industrial Ventilation
ACGIH	ACGIH 2000 TLV and BEI Booklet	American Conference of Governmental Industrial Hygienists (ACGIH) 1998 TLV and BEI – Threshold Limit Values for Chemical Agents and Physical Substances
ANSI	ANSI A10.3-2006	American National Standard-Construction and Demolition Operations- Safety Requirements for Powder-Actuated Fastening Systems
ANSI	ANSI A117.1-2003	Buildings & Facilities Accessible and Useable Buildings and Facilities
ANSI	ANSI A14.1 to A14.5	General Ladder Safety
ANSI	ANSI Z 400.1	Hazardous Industrial Chemical-Material Safety Data Sheets
ANSI	ANSI Z117.1	Safety Requirements for Confined Spaces
ANSI	ANSI Z535.1, .2, & .3	Environmental and Facility Safety Signs
ANSI	ANSI Z244.1 -2003 (R2008)	Control of Hazardous Energy - Lockout/Tagout and Alternative Methods
ANSI	ANSI/ASSE A10.44-2006	Control of Energy Sources (Lockout/Tagout) for Construction and Demolitions Operations
ANSI	ANSI Z358.1 -2009	Emergency Eyewash and Shower Equipment
ANSI	ANSI Z89.1-2009	American National Standard for Industrial Head Protection
ANSI	ANSI/Z400.1 (Guideline)	Hazardous Industrial Chemicals-Material Safety Data Sheets
ANSI/ASME	ANSI/ASME B30.2,.4,.7,.9,.10,.11,.16,.17	Lifting Devices
ANSI/ASME	ANSI/ASME B30.2 - 2005	Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
ANSI/ASME	ANSI/ASME B30.3 - 2009	Tower Cranes
ANSI/ASME	ANSI/ASME B30.4 - 2010	Portal and Pedestal Cranes

ANSI/ASME	ANSI/ASME B30.5 - 2007	Mobile and Locomotive Cranes
ANSI/ASME	ANSI/ASME B30.6 - 2010	Derricks
ANSI/ASME	ANSI/ASME B30.7 - 2006	Base-Mounted Drum Hoists
ANSI/ASME	ANSI/ASME B30.9 - 2006	Slings
ANSI/ASME	ANSI/ASME B30.10 - 2009	Hooks
ANSI/ASME	ANSI/ASME B30.11 - 2010	Monorails and Underhung Cranes
ANSI/ASME	ANSI/ASME B30.12-2006	Handling Loads Suspended From Rotorcraft
ANSI/ASME	ANSI/ASME B30.16 - 2007	Overhead Hoists (Underhung)
ANSI/ASME	ANSI/ASME B30.17 - 2006	Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)
ANSI/ASME	ANSI/ASME B30.20 - 2010	Below-the-Hook Lifting Devices
ANSI/ASME	ANSI/ASME B30.22-2005	Articulating Boom Cranes
ANSI/ASME	ANSI/ASME B56.1-2004	Safety Standard for Low Lift and High Lift Trucks
ANSI/EEE	ANSI/IEEE 18-2002	Shunt Power Capacitors
ANSI/EEE	ANSI/IEEE 484-2002	Recommended Practice for Installation Design and Installation of Vented Lead-Acid Batteries for Stationary Applications
ANSI/IEEE	ANSI/IEEE 516-2003	Guide for Maintenance Methods on Energized Power Lines
ANSI/IEEE	ANSI/IEEE STD 450-2002	Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications
Antelope Valley Air Quality Management District	ALL	Rules and Regulations of the Antelope Valley Air Quality Management District
ASME	ASME B30.1-2009	Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries - Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME	ASME B30.21-2005	Manually Lever Operated Hoists
ASME	ASME B30.23-2005	Personnel Lifting Systems

ASME	ASME B30.26-2010	Rigging Hardware -Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME	ASME B30.27-2009	Material Placement Systems (Concrete Pumpers)
ASME	ASME Boiler and Pressure Vessel Code, Section VIII	*BPVC-VIII - 2010 BPVC Section VIII-Rules for Construction of Pressure Vessels Division 1*
ASTM	ASTM D120 – 09	Standard Specifications for Rubber Insulating Gloves
Bureau of National Affairs	CCR Title 8, Subchapter 5, Group-2	High Voltage Electrical Safety Orders
Bureau of National Affairs	CCR, Title 8	Cal OSHA Standards
Bureau of National Affairs	Title 8, Chapter 3.2, Article 5	Hazardous Substances
Bureau of National Affairs	CCR, Title 17	CAL-OSHA Radiation Control
Bureau of National Affairs	CCR, Title 18	CAL-OSHA Industrial Relations
Bureau of National Affairs	CCR, Title 14, Chapter 3, Sections 15000 et seq.	California Environmental Quality Act
Bureau of National Affairs	CCR, Title 24	California Building Standards Code
Bureau of National Affairs	22 CCR	California Hazardous Waste Management.
CA Environmental Protection Agency	Health and Safety Code sections 25100 et seq.	Hazardous Waste Control Act
California Fire Code	Title 24 Part 9	California Fire Code
California Mechanical Code	Title 24 Part 4	California Mechanical Code
CA Unified Protection Agency	AB1130	Aboveground Petroleum Storage Act
CA Air Resources Board	AB2588	Air Toxic Hot Spots Information and Assessment Act
CA Water Resources Control Board	Water Code sections 13000–13999.16	Porter-Cologne Water Quality Control Act and Amendments Safe Drinking Water Act
Compressed Gas Association (CGA)	CGA G-7.1—2004	COMMODITY SPECIFICATION FOR AIR
Crane Manufacturers Association of	CMAA Specification No. 70	Specifications for Electric Overhead Traveling Cranes.

America, Inc. (CMAA).		
CMAA	CMAA Specification No. 74	Specification for Top Running and Under Running Single Girder Electric Overhead Traveling Cranes.
Council on Environmental Quality	42 USC	National Environmental Policy Act
Department of the Interior	PL 89-665; 16 U.S.C. 470 et seq.	National Historic Preservation Act
Department of the Interior	43 CFR 3	Preservation of American Antiquities
Department of the Interior	43 CFR 7	Protection of Archaeological Resources
Department of the Interior	36 CFR 800	Protection of Historic Properties
Department of Toxic Substances Control	SB 14	Hazardous Waste Source Reduction and Management Review Act
Armstrong Flight Research Center	DCP-S-101	Environmental Management System Air Resources Management
Armstrong Flight Research Center	DCP-S-102	Environmental Management System Chemical Management
Armstrong Flight Research Center	DCP-S-103	Environmental Management System Cultural Resources Management
Armstrong Flight Research Center	DCP-S-104	Environmental Management System Environmental Impact Analysis Management
Armstrong Flight Research Center	DCP-S-105	Environmental Management System Natural Resources Management
Armstrong Flight Research Center	DCP-S-054	Environmental Management System Emergency Preparedness and Response for Hazardous Material Releases
Armstrong Flight Research Center	DCP-S-060	Shop Safety
Armstrong Flight Research Center	DCP-S-061	Fire Safety
Armstrong Flight Research Center	DCP-S-062	Lockout-Tagout
Armstrong Flight Research Center	DCP-S-063	Electrical Safety
Armstrong Flight Research Center	DCP-S-064	Lifting Operations, Devices, and Equipment

Armstrong Flight Research Center	DCP-S-066	Hazard Communication
Armstrong Flight Research Center	DCP-S-067	Confined Space Safety
Armstrong Flight Research Center	DCP-S-071	Heat Stress Measurement, Notification, & Response Procedure
Armstrong Flight Research Center	DCP-S-031	Facility Operational Readiness Review (ORR)
Armstrong Flight Research Center	DCP-S-044	Aboveground Storage Tanks & Fuel Dispensing Facilities
Armstrong Flight Research Center	DCP-S-059	Code SH Document Review Process
Armstrong Flight Research Center	DOP-S-101	Environmental Management System High Priority Aspects and Impacts
East Kern County Air Pollution Control District	All	East Kern County Air Pollution Control District Rules and Regulations
Executive Branch	Executive Order (EO) 12148, 3 CFR	Federal Emergency Management (Coordinated Natural and Technology Disaster Preparedness)
Executive Branch	EO 12656, 3 CFR	Assignment of Emergency Preparedness Responsibilities (National Security)
Executive Branch	EO 12580	Superfund Implementation
Executive Branch	EO 11514	Protection and Enhancement of Environmental Quality Amended by Executive Order 11991
Executive Branch	EO 12898	Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
Executive Branch	EO 12969	Federal Acquisition and Community Right-to-Know
Executive Branch	EO 13287	Preserve America
Executive Branch	EO 13693	Planning for Federal Sustainability in the Next Decade
Executive Branch	EO 12856, 3 CFR	Federal Compliance with Pollution Prevention and Community Right-to-Know Laws
Executive Branch	EO 13186	Responsibilities of Federal Agencies To Protect Migratory Birds

Executive Branch	EO 11593	Protection and Enhancement of the Cultural Environment
Executive Branch	EO 11988	Floodplain Management
Government Accounting Office	GAO/HEHS-97-163	Worker Protection
Lahontan Regional Water Quality Control Board	All	Water Regulations
NASA	MIL-HDBK 454	General Requirements for Electronic Equipment
NASA	14 CFR 1216	Environmental Quality for Aeronautics and Space Administration
NASA	NPD 8710.1	Emergency Preparedness Program
NASA	NPD 8710.5	Policy for Pressure vessels and Pressurized Systems
NASA	NPD 8500.1	NASA Environmental Management
NASA	NPR 8530.1	Affirmative Procurement Program and Plan for Environmentally Preferable Products
NASA	NPR 8553.1B	NASA Environmental Management System
NASA	NPR 8580.1	Implementing The National Environmental Policy Act And Executive Order 12114
NASA	NPR 8590.1A	NASA Environmental Compliance and Restoration Program
NASA	NPR 8715.1	NASA Occupational Safety and Health Programs
NASA	NPR 8715.3	NASA General Safety Program Requirements
NASA	NASA STD 8719.7	Facility Systems Safety Guidebook
NASA	NASA STD 8719.9	Lifting Devices and Equipment Safety
NASA	NASA STD 8719.11	Safety Standard for Fire Protection
NASA	NASA STD 8719.17	NASA Requirements for Ground-Base Pressure Vessels and Pressurized Systems
NASA	NPR 8820.3	Pollution Prevention
NASA	NPD 1820.1	NASA Environmental Health Program
NASA	NPD 1820.1A	NASA Environmental Health Program
NASA	NPD 8710.2	NASA Safety And Health Program Policy

NASA	NPR 8621.1	NASA Procedures and Guidelines for Mishap and Close Call Reporting, Investigating, and Recordkeeping
NASA	NPD 8700.1	NASA Policy for Safety and Mission Success
NASA	NPR 1441.1D	NASA Record Retention Schedules
NASA	ULS UL746C	Polymeric Materials for use in Electric Equipment
NASA	HQOWI 8715 GE000 024D	Manage NASA Operation and Engineering Panel (OEP) Review
NASA	HQOWI 8700 GE000 036	Institutional/Facility/ Operational (IFO) Safety and Mission Assurance (SMA) Audit Program Requirements
NEMA	NEMA 250-2008	Enclosures for Electrical Equipment (1000 Volts Maximum)
NFPA	NFPA 30B	Aerosol Products, Manufacture, and Storage
NFPA	NFPA 422	Aircraft Accident/Incident Response Assessment
NFPA	NFPA 407	Aircraft Fuel Servicing
NFPA	NFPA 408	Aircraft Hand Portable Fire Extinguishers
NFPA	NFPA 409	Aircraft Hangars
NFPA	NFPA 410	Aircraft Maintenance
NFPA	NFPA 402	Aircraft Rescue and Fire Fighting Operations
NFPA	NFPA 403	Aircraft Rescue and Fire Fighting Services at Airports
NFPA	NFPA 414	Aircraft Rescue and Fire-Fighting Vehicles
NFPA	NFPA 415	Airport Terminal Buildings, Fueling Ramp Drainage, Loading Walkways
NFPA	NFPA 101A	Alternative Approaches to Life Safety
NFPA	NFPA 85	Boiler and Combustion Systems Hazards
NFPA	NFPA 1989	Breathing Air Quality for Emergency Services Respiratory Protection
NFPA	NFPA 5000	Building Construction and Safety Code
NFPA	NFPA 900	Building Energy Code

NFPA	NFPA 1402	Building Fire Service Training Centers
NFPA	NFPA 12	Carbon Dioxide Extinguishing Systems
NFPA	NFPA 720	Carbon Monoxide Warning Equipment in Dwellings
NFPA	NFPA 1710	Career Fire Departments, Organization and Deployment
NFPA	NFPA 211	Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances
NFPA	NFPA 260	Cigarette Ignition Resistance of Components of Upholstered Furniture
NFPA	NFPA 1145	Class A Foams
NFPA	NFPA 499	Classification of Combustible Dusts and of Hazardous (Classified)
NFPA	NFPA 497	Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations of Electrical Installations in Chemical Process Areas
NFPA	NFPA 2001	Clean Agent Fire Extinguishing Systems
NFPA	NFPA 1122	Code for Model Rocketry
NFPA	NFPA 484	Combustible Metals
NFPA	NFPA 1221	Communications, Emergency Services
NFPA	NFPA 472	Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents
NFPA	NFPA 55	Compressed Gases and Cryogenic Fluids Code
NFPA	NFPA 423	Construction and Protection of Aircraft Engine Test Facilities
NFPA	NFPA 241	Construction, Alteration, and Demolition Operations
NFPA	NFPA 306	Control of Gas Hazards of Vessels
NFPA	NFPA 16	Deluge Foam-Water Sprinkler Systems and Foam-Water Spray Systems
NFPA	NFPA 51	Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes
NFPA	NFPA 34	Dipping and Coating Processes Using Flammable or Combustible Liquids
NFPA	NFPA 850	Electric Generating Plants

NFPA	NFPA 70B	Electrical Equipment Maintenance
NFPA	NFPA 73	Electrical Inspection for Existing Dwellings
NFPA	NFPA 70E	Electrical Safety in the Workplace
NFPA	NFPA 79	Electrical Standard for Industrial Machinery
NFPA	NFPA 731	Electronic Premises Security Systems
NFPA	NFPA 110	Emergency and Standby Power Systems
NFPA	NFPA 450	Emergency Medical Services and Systems
NFPA	NFPA 1561	Emergency Services Incident Management System
NFPA	NFPA 1071	Emergency Vehicle Technicians
NFPA	NFPA 560	Ethylene Oxide for Sterilization and Fumigation, Storage, Handling , and Use of
NFPA	NFPA 412	Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment
NFPA	NFPA 555	Evaluating Potential for Room Flashover
NFPA	NFPA 265	Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls
NFPA	NFPA 551	Evaluation of Fire Risk Assessments
NFPA	NFPA 285	Evaluation of Flame Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies
NFPA	NFPA 275	Evaluation of Thermal Barriers Used Over Foam Plastic Insulation
NFPA	NFPA 91	Exhaust Systems for Air Conveying of Gases, etc.
NFPA	NFPA 69	Explosion Prevention Systems
NFPA	NFPA 68	Explosion Protection by Deflagration Venting
NFPA	NFPA 495	Explosive Materials Code
NFPA	NFPA 80A	Exterior Fire Exposures
NFPA	NFPA 26B	Exterior Wall Assemblies
NFPA	NFPA 801	Facilities Handling Radioactive Materials
NFPA	NFPA 705	Field Flame Test for Textiles and Films
NFPA	NFPA 61	Fire and Dust Explosions in Agricultural and Food Processing Facilities

NFPA	NFPA 1250	Fire and Emergency Services Organization Risk Management
NFPA	NFPA 921	Fire and Explosion Investigations, Guide for
NFPA	NFPA 1	Fire Code
NFPA	NFPA 1581	Fire Department Infection Control Program
NFPA	NFPA 80	Fire Doors and Other Opening Protectives
NFPA	NFPA 291	Fire Flow Testing and Marking of Hydrants
NFPA	NFPA 1965	Fire Hose Appliances
NFPA	NFPA 1963	Fire Hose Connections
NFPA	NFPA 1961	Fire Hose
NFPA	NFPA 1033	Fire Investigator Professional Qualifications
NFPA	NFPA 45	Fire Protection for Laboratories Using Chemicals
NFPA	NFPA 914	Fire Protection in Historic Structures
NFPA	NFPA 820	Fire Protection in Wastewater Treatment and Collection Facilities
NFPA	NFPA 312	Fire Protection of Vessels During Construction, Conversion, Repair, and Lay-Up
NFPA	NFPA 1401	Fire Protection Training Reports and Records
NFPA	NFPA 170	Fire Safety and Emergency Symbols
NFPA	NFPA 550	Fire Safety Concepts Tree
NFPA	NFPA 251	Fire Tests of Building Construction and Materials
NFPA	NFPA 252	Fire Tests of Door Assemblies
NFPA	NFPA 257	Fire Tests of Window and Glass Block Assemblies
NFPA	NFPA 664	Fires and Explosions in Wood Processing and Woodworking Facilities
NFPA	NFPA 1124	Fireworks and Pyrotechnic Articles
NFPA	NFPA 2010	Fixed Aerosol Fire-Extinguishing Systems
NFPA	NFPA 287	Flammability of Materials in Cleanrooms
NFPA	NFPA 30	Flammable and Combustible Liquids Code
NFPA	NFPA 288	Floor Fire Door Assemblies, Fire Tests of

NFPA	NFPA 1150	Foam Chemicals for Fires in Class A Fuels
NFPA	NFPA 102	Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures
NFPA	NFPA 12A	Halon 1301 Fire Extinguishing Systems
NFPA	NFPA 329	Handling Releases of Flammable and Combustible Liquids and Gases
NFPA	NFPA 400	Hazardous Materials Code
NFPA	NFPA 99	Health Care Facilities
NFPA	NFPA 271	Heat and Visible Smoke Release Rates for Materials and Products Using and Oxygen Consumption Calorimeter
NFPA	NFPA 418	Heliports
NFPA	NFPA 221	High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls
NFPA	NFPA 1127	High Power Rocketry
NFPA	NFPA 851	Hydroelectric Generating Plants
NFPA	NFPA 99B	Hypobaric Facilities
NFPA	NFPA 704	Identification of the Hazards of Materials
NFPA	NFPA 1026	Incident Management Personnel Professional Qualifications
NFPA	NFPA 289	Individual Fuel Packages Fire Test
NFPA	NFPA 2113	Industrial Personnel, Care of Flame-Resistant Garments
NFPA	NFPA 2112	Industrial Personnel, Flame-Resistant Garments
NFPA	NFPA 90A	Installation of Air-Conditioning and Ventilating Systems
NFPA	NFPA 780	Installation of Lightning Protection Systems
NFPA	NFPA 31	Installation of Oil-Burning Equipment
NFPA	NFPA 13	Installation of Sprinkler Systems
NFPA	NFPA 20	Installation of Stationary Pumps
NFPA	NFPA 90B	Installation of Warm Air Heating and Air-Conditioning Systems
NFPA	NFPA 115	Laser Fire Protection
NFPA	NFPA 101	Life Safety Code
NFPA	NFPA 1983	Life Safety Rope and Equipment for Emergency Services
NFPA	NFPA 59A	Liquefied Natural Gas
NFPA	NFPA 58	Liquefied Petroleum Gas Code
NFPA	NFPA 1992	Liquid Splash-Protective Ensembles and Clothing for

		Hazardous Materials Emergencies
NFPA	NFPA 1403	Live Fire Training Evolutions
NFPA	NFPA 11	Low-, Medium-, and High-Expansion Foam
NFPA	NFPA 35	Manufacture of Organic Coatings
NFPA	NFPA 501	Manufactured Housing
NFPA	NFPA 270	Measurement of Smoke Obscuration Using a Conical Radiant Source
NFPA	NFPA 301	Merchant Vessels
NFPA	NFPA 261	Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes
NFPA	NFPA 262	Method of Test for Flame Travel and Smoke of Wires and Cables
NFPA	NFPA 225	Model Manufactured Home Installation Standard
NFPA	NFPA 140	Motion Picture and TV Production Facilities and Locations
NFPA	NFPA 30A	Motor Fuel Dispensing Facilities
NFPA	NFPA 70	National Electrical Code
NFPA	NFPA 72	National Fire Alarm and Signaling Code
NFPA	NFPA 54	National Fuel Gas Code
NFPA	NFPA 1852	Open-Circuit Self-Contained Breathing Apparatus
NFPA	NFPA 1670	Operations and Training for Technical Search and Rescue Incidents
NFPA	NFPA 86	Ovens and Furnaces
NFPA	NFPA 53	Oxygen-Enriched Atmospheres
NFPA	NFPA 88A	Parking Structures
NFPA	NFPA 290	Passive Protection Materials for Use on LP-Gas Containers, Fire Testing
NFPA	NFPA 1982	Personal Alert Safety Systems
NFPA	NFPA 274	Pipe Insulation Test to Evaluate Fire Performance Characteristics
OSHA	41 CFR 101-20.1, Subsection 103-4	General Services Administration, Federal Property Management Regulations Occupant Emergency Program
OSHA	29 CFR, Series 1910 & 1926	Occupational Safety and Health
OSHA	42 U.S.C. 2473(c), Subsection 203(c)	The National Aeronautics and Space Act of 1958, as amended
OSHA	42 CFR 84	Approval of Respiratory Protection Devices

OSHA	49 CFR	Department of Transportation
OSHA	Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. 5121, et seq.	Federal Emergency Management Agency (FEMA), Federal Response Plan
US Air Force	DOD Document 316	Laser Range Safety
USAF	AFOSH STD 161-10	Health Hazard Control for Laser Operation
US Army Corp of Engineers	EM 385-1-1	US Army Corps of Engineers Safety and Health Requirements Manual
United States Code	PL 91-190, 42 USC 4321-4347	National Environmental Policy Act
USC	USC Title 42, Chapter 85	Clean Air Act
USC	16 USC 431-433	American Antiquities Act
USC	33 U.S.C. §1251 et seq.	Clean Water Act
USC	42 USC, 9601-9675	Comprehensive Environmental Response, compensation, and Liability Act
USC	16 USC 461-467	Archaeological and Historic Preservation Act
USC	PL 96-95 16 USC 47aa-mm	Archaeological Resources Protection Act
USC	PL 89-665, 16 USC 470 et seq.	National Historic Preservation Act
USC	PL 101-601, 25 USC 3001 et seq.	Native American Graves Protection and Repatriation Act
USC	15 U.S.C. §2601 et seq.	Toxic Substances Control Act
USC	16 USC 1531-1544	Endangered Species Act
USC	7 U.S.C. §136 et seq.	Federal Insecticide, Fungicide, and Rodenticide Act
USC	16 USC 703-712	Migratory Bird Treaty Act
USC	Title 40 Chapter 1 Part 300	National Oil and Hazardous Substances Pollution Contingency Plan
USC	USC Title 42 Chapter 133	Pollution Prevention Act
USC	42 USC 6901 et seq.	Resource Conservation and Recovery Act
USC	15 U.S.C. §2601 et seq.	Toxic Substances Control Act
USC	49 U.S.C. 5101-5127	Hazardous Materials Transportation Act
US EPA	40 CFR	Environmental Protection
US EPA	SARA Title III	Emergency Planning and Community Right-to-Know Act
US DOT	49 CFR	Hazardous Waste Transportation
US NRC	10 CFR	Nuclear Regulatory Commission
US OSHA	29 CFR	Safety and Health

Appendix 6
DATABASES TO BE MAINTAINED BY THE CONTRACTOR

FUNCTIONAL AREA	TITLE	UPDATE FREQUENCY
General	Program Metrics	As Required
General	Video/CD/Reference Materials Libraries	As Required
General	File Plan (Electronic and Hard Copy)	As Required
General	Document Review Contract Comments	As Required
General	Document Review Monthly Tracking Log	As Required
General	Equipment Inventory	As Required
Safety	Accident Investigation Reports	As Required
Safety	Annual Fire Drill Report	As Required
Safety	Incident Reports	As Required
Safety	Close Call Reports	As Required
Safety	Inspection Reports	As Required
Environmental	Air Emissions Inventory	As Required
Environmental	Diesel Equipment Hours	As Required
Environmental	Record of Environmental Consideration	As Required
Environmental	Hazardous Materials Management System (Material Safety Data Sheets, chemical inventory, personal protective equipment, training, chemical licenses, users, zones, chemical purchase, etc.)	As Required
Environmental	NASA Environmental Tracking System (hazardous waste, hazardous materials, pollution prevention, air emission equipment, costs, records of environmental consideration, environmental assessments, cultural resource data, etc.)	As Required
Environmental	Hazardous Waste Manifests/Labels	As Required

Appendix 7
REQUIRED INSPECTIONS AND EXERCISES

FUNCTIONAL AREA	DESCRIPTION	FREQUENCY
General	Multi Media Compliance Inspections of all Armstrong structures and facilities	As Required
General	Emergency Preparedness and Response	As Required
General	Disaster Preparedness and Response	As Required
Safety	NASA Institutional, Facilities, Operational Audits	3 Years
Safety	Pre-construction Job Walks	As Required
Safety	Crane Inspections	As Required
Safety	Welding Operation Inspections	As Required
Safety	Institutional Facility Operations Audit	Approximately 184 annually
Fire Protection	Fire Safety Audits	As Required
Fire Protection	Fire Drills	Annually
Fire Protection	Witness and document acceptance testing of all new and modified fire protection systems	As required
Fire Protection	Perform final facility fire inspections after construction.	As required
Fire Protection	Conduct fire safety audits, complete report forms, maintain files	As Required
Environmental	NASA Environmental Functional Review Audits	3 Years
Environmental	Environmental Functional Review Pre-Audit	As Required
Environmental	Aboveground Storage Tanks	As Required
Environmental	Permitted Equipment Inspections	As Required
Environmental	Pollution Prevention Opportunity Assessments	As Required
Environmental	Hazardous Waste Accumulation Point Audits	As Required
Environmental	Hazardous Waste Accumulation Point Inspections	Weekly
Environmental	Hazardous Material Bulk Storage Facility Inspections	As Required
Environmental	Hazardous Material Bulk Storage Facility Audits	As Required
Environmental	Non-Permitted Air Emitting Equipment/Activities	As Required