

**NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION**

**Ames Research Center
Moffett Field, CA 94035-1000**

**Statement of Requirements
for
Safety, Environmental, and Mission Assurance
Support**

August 4, 2008

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STATEMENT OF Requirements (SOR)

SAFETY, ENVIRONMENTAL, & MISSION ASSURANCE SUPPORT (SEMAS)

1. Introduction

Ames Research Center (ARC) is one of 10 NASA field centers. ARC is located on Moffett Field, a 2000-acre property that includes Moffett Federal Airfield and NASA Research Park. ARC operates within an aggressive regulatory framework involving Federal, State and County regulations.

2. Work Location

ARC consists of a variety of facilities, including: offices, airport/hangars, research laboratories (including ceramics and material development, aerospace/aeronautics facilities (e.g., wind tunnels, arc jets, simulators, etc.), computer laboratories, ballistic ranges, general testing facilities, machine shops, metal shops, model shops, motor pools, test chambers; and storage facilities.

3. Scope of Requirements

This Statement of Requirements (SOR) describes the functions to be performed by the Contractor in support of the ARC's Safety, Environmental, and Mission Assurance programs. The Contractor shall be responsible for all functions described in this SOR. The Government shall provide facilities except as otherwise noted in the SOR.

The Office of the Director of Safety, Environmental and Mission Assurance is comprised of three (3) divisions: the Environmental Services Division; the Occupational Safety, Health, & Medical Services Division; and the System Safety & Mission Assurance Division as discussed below:

- The Environmental Services Division is dedicated to sustaining an effective environmental protection culture at ARC in a cost-effective manner that is characterized by pollution prevention, compliance, restoration, and conservation.
- The Occupational Safety, Health, and Medical Services Division is responsible for maintaining occupational safety and industrial hygiene, and providing medical services to ARC. It also develops and implements policies and procedures to minimize the risk of harm to personnel.
- The System Safety and Mission Assurance Division supports the execution and administration of safety, reliability, maintainability, risk management, and quality disciplines throughout ARC. The division is responsible for System Safety, Quality Assurance, Software Assurance, Risk Management, and Reliability and Maintainability (R&M) for various programs and projects.

3.1 Risk Management and Acceptance

Final management decisions for all of the functional areas 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 Certified Hazardous Materials Manager is expected to be capable of making risk management decisions for matters involving routine hazardous materials management. 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.

3.2 Required Knowledge

The Contractor shall have and maintain current working knowledge of all relevant and applicable Safety, Health, Environmental, and Mission Assurance policies, procedures, and regulations.

4.0 Contract Management

The Contractor shall provide the planning, coordination, technical direction, and surveillance of the activities necessary to insure disciplined performance of work and timely application of resources for the accomplishment of this SOR. The contractor shall be responsible for maintaining communication with each supported organization and alerting the COTR immediately of any problems that would prevent meeting established performance standards.

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 provide overall management and administrative functions.

The Contractor shall:

- Manage the contract in a fiscally responsible manner, fulfilling all requirements of this SOR.
- Provide a well-defined, stable organizational structure with clear lines of authority and clearly identified interfaces to the Government.
- Provide on-site management of the contractor staff and meet regularly with the CO and COTR 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 to Government personnel during normal business hours.
- The Contractor shall comply with the Ames Management System (AMS) requirements as necessary.
- The Contractor shall manage the resources allocated by NASA for specific tasks in a manner to ensure that performance milestones are met.
- The Contractor shall submit periodic, demand and event-driven technical, administrative, contract management, and financial management reports, by functional area as described in

this SOR. Reporting periods vary from daily to annually, depending on the task. Reporting requirements are subject to change.

- The Contractor shall provide monthly cost, schedule, and technical performance reports of the state of all tasks, identifying accomplishments, progress, and major milestones reached as well as problems and concerns over issues that may affect contract performance.
- The Contractor shall prepare technical reports for all ongoing work and any work completed within the report period, including progress for the report period, any problems encountered or foreseen, and schedule summary.
- The Contractor shall either utilize NASA furnished databases or other NASA-authorized software, or provide software if requested by NASA. The Contractor shall also input data, maintain data, generate reports, train NASA employees on its use and furnish the software and its contents, and supporting documentation to NASA. The software and its data contents are considered NASA property.
- The Contractor shall document and obtain concurrence of the COTR and CO for all deviations, waivers and non-compliance to the requirements specified in this SOR.
- The Contractor shall generate and maintain Standard Operating Procedures to ensure that 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.
- The Contractor shall provide oral or written technical presentations, as requested by NASA, concerning any topic covered in this SOR.
- Appropriate staff shall attend meetings, seminars, and other administrative functions. Contractor employees shall clearly identify themselves as contractor employees when attending such events.
- All requests for travel and training (including attendance at meetings and seminars) shall be approved by the CO.

5.0 Supplies, Materials and Equipment

5.1 Level of Supplies & Materials

Contractor shall purchase and maintain a level of consumable supplies and materials sufficient to ensure performance of the contract excluding items that are furnished by the Government.

5.2 Required Equipment

The Contractor shall purchase new equipment or replacement equipment, such as replacement or new medical and exercise equipment, and instruments necessary for the proper operation of the Ames' Health Unit and Fitness Center and emergency response apparel/clothing for the Safety, Environmental, and Mission Assurance Directorate hazmat team members. The Contractor shall provide on written request of the Government a comparative analysis of specific medical equipment or devices being considered for purchase. Furthermore, the Contractor shall inform the Government of any equipment deterioration and the resulting need for replacement or repair. The Contractor shall provide the Government with repair or supply sources and arrange for any necessary repairs to equipment after obtaining approval.

6.0 General Functions

The Contractor shall provide general support in the areas discussed below for the Safety, Environmental, and Mission Assurance Directorate.

6.1 Computer Services Support

- The Contractor provides computer services for Code Q computer systems that are not a part of NASA's ODIN (Outsourcing Desktop Initiative for NASA) which provides desktops, workstations, laptops, office automation software, printers, peripherals, PDAs, BlackBerrys, cell phones, pagers, and associated services.
- Computer systems operations support to include, at a minimum, performing periodic system and user backups, archiving and restoring files as needed, performing file directory cleanups, maintaining orderly operational areas, monitoring printers, maintaining an adequate supply of consumable items, etc.
- System Administration of computing resources to include, at a minimum, organizing file structures, including data and database administration, maintaining system and user accounts, managing disk storage, coordinating with support organizations for system preventive maintenance and repairs, trouble-shooting system problems, preparing system status reports on performance and utilization, maintaining system configuration records, assisting with hardware and software installations, etc. The administrator is to make use of internal support organizations to the maximum extent possible so that administration costs are minimized.
- System management of the computing environment to include, at a minimum, monitoring and tuning performance of systems, managing system resource allocations, trouble-shooting system problems, developing command procedures and tools as required, planning/monitoring/performing installation of hardware and software upgrades/products, preparing system management reports, establishing and implementing system security procedures as required, anticipating growth needs and assisting in plans to meet those needs, etc. The manager is to make use of internal support organizations to the maximum extent possible so that management costs are minimized.
- User support and assistance for approximately 80 users through consultation, training in the use of automated resources, trouble-shooting user problems, and responding to user queries.
- Network operations support to include, at a minimum, monitoring communications equipment, coordinating with support organizations for network equipment maintenance and repairs, maintaining communications configuration records, trouble-shooting network problems, maintain security in accordance with NASA policy.
- Development, maintenance, operation and web-implementation of 4D™ database for the safety/industrial hygiene programs, training, and environmental programs.
- Maintenance of the Health Unit's medical records database using Occupational Health Manager™ software.
- Maintain, update, and administer Code Q website, including division webpages.
- Provide written documentation for all databases, including file structures, code, data dictionaries, user manuals, etc.

6.2 Training

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

aspects of safety, health and environmental training. Courses currently offered under the training program are listed in Attachment A.

- 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.
- Maintain records of all training activities and a database of trained and certified personnel. Database to include fields as defined by the COTR.
- Verify that ARC personnel performing specific safety, environmental, or health activities have the proper training and certifications.
- Provide certified trainers as required (e.g., CPR/AED, crane training).
- Maintain three training rooms in a clean and organized manner.

6.3 Emergency Response (ER)

Emergency responses are typically chemical, biological, and/or radiological in nature. For example, these responses may be related to gas odors, spills, safety and health issues, tank alarms, toxic gas alarms, etc. The contractor will be required to interface and cooperate with other Emergency Response teams at the Center.

- The Contractor shall provide 24-hour emergency response coverage, 365 days a year.
- From 8:00 a.m. to 4:30 p.m., Monday through Friday, except government holidays, the contractor shall:
 - return all phone or pager calls within 5 minutes to the NASA dispatch personnel or Code Q on-call civil servant
 - respond physically to the ER site and the incident commander (typically the Ames Fire Chief) within 15 minutes of the first call from the NASA dispatch or the Code Q on-call civil servant.
- At all other days and times, the contractor shall:
 - return all phone or pager calls within 10 minutes to the Code Q on-call civil servant or NASA dispatch
 - respond physically to the ER site and the incident commander (typically the Ames Fire Chief) within 60 minutes of the first call from the Code Q on-call civil servant or NASA dispatch, which ever is first.
- The contractor shall evaluate hazardous materials release scenes and shall:
 - Notify the Code Q on-civil servant of regulatory reporting requirements and make all required notifications in absence of the government.
 - Provide appropriate technical personnel, as necessary, to the scene within 90 minutes of request by the Incident Commander.
 - Provide trained personnel to participate in the response and clean-up in the case of an unusually large or complex release.
- The contractor shall assist the Ames Fire Department and Plant Engineering in performing confined space rescues during an ER event, by providing typical safety and health duties that would support such an entry.
- The contractor shall participate in quarterly emergency preparedness planning activities, training, and practice drills.
- The contractor shall ensure that at least ten on-site personnel are trained to wear respirators and trained to the First Responder Operations level and the Hazardous Materials Industrial Technician level.

- The contractor shall develop safety plans for hazardous material incident response for Hazmat Levels A, B, C and D.
- The contractor shall purchase and maintain emergency response equipment as needed to support 10 qualified responders.

6.4 General Technical Requirements

The Contractor shall:

- Provide review, evaluation and implementation of chapters in the Health and Safety Manual APR 1700.1, annually or as specified.
- Develop, implement and/or maintain various integrated technical databases for key programs. Data shall be maintained in data systems owned by the Government. All data, database systems, and database documentation obtained or developed during this contract shall be provided to the COTR upon request and in the format specified by the Government.
- Develop graphics, provide and post appropriate labels and signs, as necessary, for the various technical areas described in this SOR.
- Meet as often as necessary with NASA and/or Contractor employees and provide consultation on all types of occupational safety issues. Prepare briefing materials, take meeting minutes and prepare meeting summaries as requested.
- Provide a written plan of action that describes how the Contractor will implement and manage each technical program related to this SOR at NASA ARC. Identify means and methods, operating procedures, personnel assignments, customer base, project controls, inspection goals, applicable criteria, injury prevention goals, status reports and documentation records.

6.5 Special Studies

The contractor shall perform special studies and/or analyses in the areas of environmental management, safety, industrial hygiene, medical services, system safety, and mission assurance.

7.0 Environmental Services

The Environmental Services Division values concern for the environment, flexibility, effective written and verbal communication, accountability, critical thinking, understanding of database systems, and responsiveness, in addition to technical expertise.

The contractor shall support the following objectives:

- Ensure environmental impacts are thoroughly assessed, documented, and mitigated to the extent practicable
- Ensure operations are carried out in compliance with Federal, State, and local regulations and NASA policies
- Prevent pollution and implement sustainable practices
- Remediate contaminated soil and groundwater; and
- Manage wildlife and habitat resources in an integrated manner

7.1 Environmental Assurance

The Contractor shall:

- Manage the industrial waste water discharge permit program, the Spill Prevention, Control and Countermeasures (SPCC) plan, the industrial storm water discharge permit and any other site-wide and/or NASA ARC related environmental requirements. All site-wide services that are provided to ARC as described below must also be made available to Resident Partners working on the Center, on an as needed basis as directed by CTOs. Provision of oversight to ensure that the Partners operate in compliance with environmental regulations is part of the baseline requirement.
- Provide training and expert interpretation for each environmental program, as requested.
- Conduct routine environmental outreach programs (e.g., Earth Day, environmental forums, brown bag lunches, etc.).
- Serve as a technical expert on environmental issues, act, in conjunction with Civil Servants, as a Center focal point for coordination of environmental compliance, and notify the Center of new and proposed regulations that may impact ARC operations.
- Provide technical consultation services including review of projects, documents, plans, policies, procedures, guidelines, handbooks, etc.
- Develop, revise, and implement environmental policies, plans, procedures, and guidelines.
- Provide consultation on all types of environmental issues. Prepare briefing materials and meeting summaries as requested to NASA and/or Contractor employees.
- Ensure environmental compliance permit conditions are followed and corrective actions are in the best interest of the Government.
- Conduct air, water, soil, and material sampling and analysis as required to assess:
 - ARC compliance with environmental regulations
 - Environmental impact of chemical release or spill
 - Environmental permit requirements; and
 - Other potential environmental impacts not covered under regulations
- Maintain Government records including physical maintenance of environmental facility records and compliance documentation. Records shall be maintained in an organized, accessible manner, in accordance with Federal, State, and local regulations and NASA policy. The Government shall be afforded access to these records at all times. Existing Government databases shall be used and maintained, except as specifically approved by the Government.
- Track the status of environmental programs, including, but not limited to: permits, inspections, studies and reports, spills, surveys, and corrective actions using databases and other appropriate information technology.
- Conduct full-scale sample analysis services. Laboratories providing these services must meet applicable Federal, State, and/or local certification requirements.
- Serve as technical point of contact and interface with Federal, State, and local regulatory agencies as needed.
- Represent the Environmental Division on the ARC Construction Permit Review Board. The Contractor shall provide qualified environmental professionals as members of the ARC Construction Permit Review Board. This board reviews all construction plans on the Center to ensure compliance with applicable codes, standards, regulations, and policies. Prior to construction, the Board issues construction permits. Number of permits has averaged approximately three per week.
- Implement as necessary employee awareness and community participation programs including, open houses, fairs, and public meetings; and develop and distribute fact sheets,

information bulletins, etc. Maintain up-to-date mailing lists for various environmental programs.

- Provide environmental labels and signs.

7.1.1 Supplemental Information

NASA ARC contains approximately:

- 2 PCB transformers and 1 PCB-contaminated transformer
- 3,200 PCB-containing capacitors and transformers
- There are about 150 air pollution sources on the Center. These include boilers, solvent cleaning sources, spray booths, sawdust sources, and fuel tanks.
- The Center's wastewater discharges to two separate Publicly Owned Treatment Works (POTWs). Combined there are about 200 industrial wastewater discharge sources, the largest volume consisting of cooling water. Other sources include photo processing, equipment washing, boiler blowdown, and aircraft washracks. An industrial wastewater pre-treatment plant is currently in operation.
- The Santa Clara Valley general NPDES permit covers the entire Center for industrial storm water discharges. There is also an NPDES permit for treated groundwater. ARC is subject to MS4 permitting requirements.
- There are over 8000 different chemicals in over 100 different storage locations at ARC facilities.

7.2 Hazardous Waste Management

The Contractor shall:

- Manage the facility-wide hazardous waste management program and inform NASA management of required program changes and/or opportunities for improvement.
- Properly characterize waste for reuse, recycling, or disposal, subject to review and concurrence by the ARC Environmental Division. Maintain organized file of waste characterization analyses.
- Collect, package, transport, and dispose of hazardous wastes for ARC. Separate CTOs will be provided for hazardous waste generated by Resident Partners. NASA is not a permitted Treatment, Storage and Disposal Facility (TSDF). The Contractor shall provide all services up to, and including transporting the waste to a permitted TSDF. Those services, at a minimum, include:
 - Obtaining all required materials associated with the program (e.g., waste containers, labels, and packaging materials).
 - Picking-up hazardous waste within 3 days of request and providing appropriate packaging for shipment and recycling, reuse, treatment, or disposal. Depending on classification of waste, pretreatment, neutralization, consolidation, recycling, or other disposition may be required. Hazardous waste shall be reclaimed, recycled, or treated whenever possible. Deep well injection shall not be used.
 - Manifesting of hazardous waste in order to comply with applicable regulations.
 - Providing a properly executed Uniform Hazardous Waste Manifest signed by a NASA representative from the Environmental Services Division every time hazardous waste is removed from the Center. The Contractor shall maintain records of all such manifesting documentation. The Contractor shall also manage the manifest file, including sending the appropriate copies and discrepancy reports to the state Department of Toxic Substances Control.

- Providing qualified personnel, equipment, and packaging materials to identify, classify, package, document, and transport all reclaimable unwanted chemicals for recycling and all non-reclaimable hazardous chemical wastes for treatment or disposal at permitted sites.
- Auditing off-site treatment, storage, and disposal facilities used by the Contractor, and any other treatment, storage, and disposal facilities as requested by NASA, and provide an audit report in format specified by NASA.
- Providing advice to waste generators regarding proper labeling, storage and management of hazardous waste.
- Preparing and updating a Center-wide hazardous waste contingency plan, which includes all 90 day accumulation sites.
- Pick up and deliver unused chemicals to the Ames Chemical Exchange (ACE) program. This program makes available to the ARC community excess, but usable, chemicals.
- Maintain a computer database for tracking of hazardous waste pickups and management costs (including labor, materials, transportation, analytical lab costs, disposal site charges, etc.). Enter data into HQ Government tracking systems as required.
- Provide hazardous waste labels and signs.

7.2.1 Supplemental Information

There are over 200 hazardous waste pickup locations at ARC. Approximately 350 tons of hazardous waste is generated annually. Types of hazardous waste include oils, solvents, acids, laboratory chemicals, and contaminated soil. These details are subject to change because operations change regularly.

7.3 Pollution Prevention and Sustainability

The contractor shall:

- Manage and implement the Ames Pollution Prevention and Hazardous Waste Minimization programs.
- Conduct pollution prevention opportunity assessments and report findings, and advise the government of specific ways to minimize hazardous waste generation at ARC.
- Determine specific substitutes for hazardous materials use at ARC, and assist in their implementation.
- Track and report target chemical usage and implement phase-outs in 4D Database.
- Manage the Ames Chemical Exchange (ACE) program, which includes proper storage and tracking of reusable hazardous materials. This program makes available to the ARC community excess, but usable, chemicals.
- Coordinate Ames Pollution Prevention Award program.
- Prepare EPCRA Form R, Pollution Prevention, and other related reports. Enter data into Government tracking systems, as specified.
- Support Center-wide recycling; provide recycling reports and literature.
- Advocate and track affirmative procurement across the Center.
- Support ARC participation in the Federal Network for Sustainability, the Sustainable Silicon Valley Project, and similar programs as directed by ARC.
- Conduct pollution prevention and sustainability outreach activities.

7.3.1 Supplemental Information

ARC is a member of the Federal Network for Sustainability (FNS), which includes the following initiatives: electronic products stewardship, environmental management systems, green power procurement, and greening federal copier paper.

7.4 Wildlife and Habitat Conservation and NEPA Compliance

The Contractor shall:

- Provide services for analysis, documentation preparation, and implementation of programs related to NEPA, the Environmental Justice Executive Order, cultural resources laws, the Endangered Species Act, the Coastal Zone Management Act, and other natural resources laws.
- Coordinate with the government in planning and management decisions regarding its natural and cultural resources. Prepare and implement an Integrated Natural Resources Management Plan.
- Use and maintain the ARC's Geographic Information System (GIS) to manage and track natural and cultural resource data.
- Conduct biological and cultural resource surveys and evaluations as needed.
- Prepare and implement habitat management plans.
- Improve on-site habitat for the Western burrowing owl, the Western pond turtle, and other species as specified by the Government.
- Update the Ames' Environmental Resources Document, which describes existing ARC activities and programs and their impact on the environment.
- Analyze impacts of proposed ARC activities using a NEPA checklist, and prepare a Record of Environmental Consideration for signature by the Government. Review and provide comments on Environmental Assessments and Environmental Impact Reports. Enter data into Government tracking systems as required.
- Track implementation of mitigation measures that the NASA has committed to in NEPA documents.
- Support NEPA public participation requirements.
- Participate in ecological assessments to determine the effects of contaminants on environmental receptors and establish appropriate monitoring and remedial actions.
- Participate in, and review, studies regarding tidal restoration.

7.4.1 Supplemental Information

- There are several species which are endangered, threatened, or of local concern at ARC. These currently include the California clapper rail, the salt-marsh harvest mouse, the Western burrowing owl, and the Western pond turtle.
- Wetlands and historical buildings are present. No archeological sites on the property have been deemed eligible for the National Register of Historic Places.

7.5 Site Investigation and Restoration

The Contractor shall support NASA Restoration Program Manager by providing management of the site investigation and restoration program including:

- Site investigation and remediation activities
- Review and evaluation of regional and Navy Superfund reports, Corrective Action Plans, etc. including provision of comments and recommendations in writing.
- Underground storage tank compliance

- Installation and survey of groundwater monitoring wells
- Conduct sampling and analysis of soil, soil vapor, sediment, surface water, and groundwater including preparation of Work Plans, study designs, and reports, as required.
- Operate remediation, treatment, and other engineered pollution control systems as directed by the Government.
- Maintain and operate ARC's Geographic Information System for management and reporting of subsurface contamination information.
- Attend meetings with regulators, other responsible parties and the public.
- Provide site investigation and restoration fact sheets, display posters and other public participation materials as specified by the Government.
- Prepare and update a working schedule of all reviews, investigations, and remedial actions; detailing tasks and deliverable dates.

7.5.1 Supplemental Information

- Approximately 100 groundwater-monitoring wells require sampling 1 to 4 times a year for fuels and solvents. Several of the wells are also analyzed for PCBs and lead. The wells are approximately 30-60 feet deep. Two groundwater-monitoring wells, approximately 200 feet deep, also require annual sampling. Occasionally agricultural wells may require sampling.
- Approximately 10 to 20 soil borings and/or monitoring wells may need to be installed per year. Shallow soil sampling is required at various locations where releases may occur during the year. Various sampling methods may be required.
- NASA is down-gradient from the Middlefield-Ellis-Whisman (MEW) Superfund site. NASA is also down-gradient from the Naval Air Station Moffett Field Superfund site.
- For the NASA sites that are not located over the combined MEW and Navy regional plume, NASA has signed voluntary cleanup agreements with the California Department of Toxic Substance Control.
- One groundwater pump and treat system is currently in operation.
- An air sparge/soil vapor extraction system is currently under construction.

7.6 Environmental Management Systems

The contractor shall:

- Maintain and update the Ames Environmental Handbook (Ames Procedural Requirements [APR] 8800.3) and the Environmental Management System (EMS) aspects and impacts.
- Conduct timely and accurate annual compliance self-assessments in an approved format, using a NASA-specified protocol. Currently, ARC uses the CERL protocol. Each Directorate is assessed every 3 years. Track findings and corrective actions in the Government database system, or other NASA approved standard database.
- Prepare and conduct EMS briefings for ARC line management. Prepare EMS outreach materials for ARC personnel.
- Track and implement corrective actions resulting from the NASA Headquarters Environmental Functional Review every 3 years. Use Government tracking systems as specified.
- Prepare, implement, and track adherence to Corrective Action Plans for instances of non-conformance identified in annual self-assessments and facility inspections, using government tracking systems as specified.
- Track ARC status in achieving EMS and Environmental Performance Track goals and objectives. Assist the Center in achieving these goals.

- Provide ARC with recommendations for improving Center-wide environmental management programs.
- Assist the Center in implementation of environmental life cycle analyses.

7.6.1 Supplemental Information

- ARC is a member of the EPA's National Environmental Performance Track Program
- ARC has a formal EMS that meets the requirements of Executive Order 13148. We are not ISO 14001 certified.

8.0 Systems Safety and Mission Assurance

The Systems Safety and Mission Assurance Division is responsible for ensuring that system safety, software assurance, risk management, reliability, maintainability, and quality assurance requirements are met by programs, projects, and facilities.

8.1 General SS&MA Requirements

The contractor shall:

- Maintain a working knowledge of SS&MA requirements and tailor these requirements to match the project risk. At a minimum, these requirements include current revisions of:

Number	Description
NPD 2820.1	NASA Software Policies
NPD 7120.4	Program/Project Management
NPR 7120.5C	NASA Program and Project Management Processes and Requirements
NPR 7120.5D	NASA Space Flight Program and Project Management Requirements
NPR 8000.4	Risk Management Procedural Requirements
NPD 8070.6	Technical Standards
NPR 8621.1	NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping
NPD 8700.1	NASA Policy for Safety and Mission Success
NPR 8705.6	Safety and Mission Assurance Audits, Reviews, and Assessments
NPD 8710.2	NASA Safety and Health Program Policy
NPD 8720.1	NASA Reliability and Maintainability (R&M) Program Policy
NPR 8715.2	NASA Emergency Preparedness Plan Procedural Requirements - Revalidated
NPR 8715.3	NASA General Safety Program Requirements
APR 1700.1	Ames Health and Safety Procedural Requirements
APR 8705.1	System Safety and Mission Assurance
QS.0006	Control of Quality System Documents and Data

- Develop new techniques, methodologies, and tools that will improve services to our customers.

- Review Agency-wide SS&MA documents and provide recommendations for revisions as appropriate. Recommend and provide improved SS&MA implementation techniques including the preparation of specifications and standards, for inclusion by the Government in current SS&MA procedures and manuals.
- Prepare and/or review data for, participate and add value to design, pre-ship, pre-test, pre-launch/flight and other reviews.
- Prepare engineering documents for each of the SS&MA disciplines.

8.2 System Safety Engineering

System Safety Engineering is a discipline that provides a systematic approach to the identification of potential hazards associated with hardware or software failure or human error. System safety participates in the risk management process by identifying hazards, analyzing hazards (determining probabilities and severity), and recommending appropriate and effective controls for tracking of hazards to closure.

The contractor shall:

- Maintain a working knowledge of system safety engineering, and apply system safety requirements and specifications, and tailor the requirements to match the project risk. As a minimum, these requirements include current revisions of:

Number	Description
NPR 8705.2	Human-Rating Requirements for Space Systems
NPR 8715.6	NASA Procedural Requirements for Limiting Orbital Debris
NPR 8715.7	Expendable Launch Vehicle Payload Safety Program
NSTS 1700.7	Safety Policy and Requirements for Payloads Using the Space Transportation System
NSTS/ISS 13830	Payload Safety Review and Data Submittal Requirements
NASA-STD 8719.7	Facilities System Safety Guidebook
NASA-STD 8719.13	NASA Software Safety Standard
NASA-STD 8719.14	Process for Limiting Orbital Debris
NSTS/ISS 18798	Interpretations of NSTS/ISS Payload Safety Requirements
NSTS 22254	Methodology for the Conduct of Space Shuttle Program Hazard Analyses
SSP 30309	Safety Analysis and Risk Assessment Requirements Document
APD 7170.1	Protection of Human Research Participants
APR 1760.1	Certifying Test Facilities for Human Occupancy
APR 8735.2	Deviation/Waiver Process
QS.0011	Safety Hazard Report Preparation, Tracking and Closure

- Perform and/or review system safety analyses on a wide variety of aeronautical and aerospace research projects and facilities, including high risk projects and facilities, spaceflight projects, spaceflight payloads, and payload elements. The types of analyses to be performed may include preliminary hazard analyses, system/subsystem hazard analyses, operational hazard analyses, failure modes and effects analyses, fault tree analyses, software hazard analyses, and quantitative risk assessments.

- Prepare and/or review safety data packages and conduct briefings to the Design Reviews, Operational Readiness Reviews, Payload Safety Review Board for spaceflight.
- Recommend appropriate and effective controls for identified hazards and provide tracking of these hazards to closure.
- Provide system safety services to the System Safety and Mission Assurance Office for a variety of research projects and operations at ARC. These services may include recommending to the Government those system safety requirements that are appropriate for a given project, tailoring these requirements to match the project risk, and formulating a Systems Safety Program Plan (SSPP) to incorporate into the project SS&MA plan.
- Provide consultation services to ARC staff on how to conduct system safety analyses and provide review services to ARC staff on system safety analyses (of the types shown in item 2 above).

8.3 Reliability and Maintainability Engineering

Reliability Engineering is an engineering assessment of a system, and any element thereof, expressed as a probability that the system will perform its required function in specified environments and operating times. The reliability function is accomplished as an integral part of the program/project life cycle. The function focuses on the prevention, detection, and correction of design deficiencies, weak parts, and workmanship defects. The reliability program stresses early investment in reliability engineering tasks to avoid subsequent additional costs and schedule delays.

Maintainability shall also be considered as part of a project. Maintainability is the development and implementation of specific design criteria to facilitate maintenance or repair actions in predicted environments and the development of optimum preventative maintenance schedules that minimize the amount of manpower required to sustain system performance and minimize down time.

The contractor shall:

- Maintain a working knowledge of and apply reliability & maintainability requirements and specifications and tailor the requirements to match the process risk. These requirements and specifications include, as a minimum, current revisions of:

Number	Description
NASA-STD 8729.1	Planning, Developing and Managing an Effective Reliability and Maintainability Program
NASA/TM-1999 4322	Reliability Preferred Practices for Design and Test
NPD 8720.1	NASA Reliability and Maintainability (R&M) Program Policy
NPD 8730.2	NASA Parts Policy
NPR 8735.1	Procedure for Exchanging Parts, Materials, and Safety Problem Data Utilizing the GIDEP and NASA Advisories
NPD 8831.1	Maintenance and Operations of Institutional and Program Facilities and Related Equipment
NPR 8831.2	Facilities Maintenance Management
NASA-RCM-IIG	NASA Reliability Centered Maintenance Guide for Facilities and Collateral Equipment, Initial Revision, Dated 12/96

- Perform and/or review reliability analyses, such as failure mode, effect, and criticality analysis/critical items list (FMECA/FMEA/CIL); fault tree analysis; trend analysis; and part stress analysis.
- Maintain a complete documentation system for failure reporting, discrepancy control, nonconformance disposition, corrective action review, and trend analysis for in-house and contractor projects.
- Provide independent design analysis (IDA) and maintainability analysis for mechanical, electrical, structural, and electromechanical systems.
- Maintain and update the electrical, electronic, and electromechanical preferred parts and materials program, the parts information file and retrieval system, and the fastener integrity program.
- Maintain the official ARC repository for Government Industry Data Exchange Program (GIDEP) data and provide electronic access to reports. Provide assistance in locating and obtaining copies of GIDEP Alert reports and data.
 - Review failure data, perform failure analysis, determine the need for GIDEP Alert reports for failures associated with ARC projects, and generate Alerts when required.
 - Review all Alerts for applicability to ARC programs/projects and make appropriate distribution.
 - Evaluate responses to Alerts relative to applicability to equipment and adequacy of closeout action.
 - Maintain contact with other NASA Centers, Department of Defense (DOD), and GIDEP and participate in the GIDEP Alert system in order to maintain awareness of manufacturing techniques and new parts technology and reliability through contact with parts and materials information sources.
- Prepare/review maintainability and logistics support requirement plans including limited life item lists and preventative maintenance schedules.
- Perform and/or review reliability, maintainability and availability demonstrations and allocation predictions.
- Interface with projects to identify and establish specific reliability and maintainability requirements tailored to and consistent with project risk and objectives.

8.4 Quality Assurance

Quality Assurance is a planned and systematic verification process that assures supplies and services comply with system designs and specifications. This is achieved through a program of early involvement in project planning and design and continued analysis, review, audit, and test throughout the life of the project.

The contractor shall:

- Maintain a working knowledge of and apply up-to-date quality assurance requirements and specifications and tailor the requirements to match the project risk. These requirements and specifications include, as a minimum, current revisions of:

Number	Description
NPD 1280.1	NASA Management System Policy
NPD 8700.3	Safety and Mission Assurance (SMA) Policy for NASA Spacecraft, Instruments, and Launch Services
NPR 8705.4	Risk Classification for NASA Payloads
NASA-STD 8709.2	NASA Safety and Mission Assurance Roles and Responsibilities for Expendable Launch Vehicle Services

NPD 8730.1	Metrology and Calibration
NPD 8730.5	NASA Quality Assurance Program Policy
NPR 8735.2	Management of Government Quality Assurance Functions for NASA Contracts
NASA-STD 8739.1	Staking and Conformal Coating of PWBs and Electronic Assemblies
NASA-STD 8739.2	Surface Mount Technology
NASA-STD 8739.3	Soldered Electrical Connections
NASA-STD 8739.4	Crimping, Interconnecting cables, Harnesses, and Wiring
NASA-STD 8739.5	Fiber Optic Terminations, Cable Assemblies and Installation
ANSI/ESD S20.20	Electrostatic Discharge Control
AS 9100	Quality Management Systems - Aerospace - Requirements
IPC-2221	Generic Standard On Printed Board Design
APR 8730.1	Metrology/Calibration
APR 8735.1	Control of Nonconforming Products and Services
APR 8735.2	Deviation/Waiver Process
APD 8735.3	Verification of Product/Service Conformance to Requirements
QS.0017	Receiving Inspection at Center for Engineering Innovation (CEI)
QS.0018	In-Process Inspection and Test
QS.0019	Control of Nonconforming Product at CEI

- Develop new or draw upon existing quality assurance provisions for practical integration into NASA projects and contracts to meet specific objectives.
- Prepare and/or review project plans, test plans and procedures, procurement documentation (SORs, purchase requests, and specifications), and other similar documents for ARC projects.
- Interface with projects to identify and establish specific quality assurance requirements tailored to and consistent with project risk and objectives.
- Participate in the review and disposition of non-conformances, including Material Review Board (MRB) activities.
- Witness tests, both at contractor plants and on site, and verify compliance with contract requirements, test plans, and procedures.
- Provide and review inspection activities for projects at ARC and at contractor facilities. Quality assurance inspections and reviews shall include but not be limited to inspection planning for shop work orders, preparation of inspection instructions, provisions for documentation of inspection results, and evaluation of inspection data.
- Prepare letters of delegation for ARC issuance to other Government agencies to perform Government source inspection and support requirements.
- Provide quality assurance services associated with facilities construction activities as requested.

8.5 Software Assurance

Software Assurance (SWA) is the planned and systematic set of activities that ensure software processes and products conform to requirements, standards, and procedures. Processes include all of the activities involved in designing, developing, enhancing, and maintaining software. Software assurance activities applied shall be consistent with sound engineering and risk management practices as determined by cost, size, complexity, life span, risk, and consequences of failure.

The contractor shall:

- Maintain a working knowledge of and apply software assurance requirements and specifications and tailor the requirements to match the project risk. These requirements and specifications include current revisions of:

Number	Description
NPR 7150.2	NASA Software Engineering Requirements
NASA-STD 2202-93	Software Formal Inspections Standard
NASA STD 8719.13	NASA Software Safety Guidebook
NASA STD 8739.8	Software Assurance Standard
NASA STD 2100	NASA Software Documentation Standard
NSTS 1700.7	Safety Policy and Requirements for Payloads Using the Space Transportation System (STS)
CMU/SE1-93-TR-24	Capability Maturity Model for Software
IEEE Series	Software Engineering Standards

- Prepare and participate in the development, review and/or implementation of SWA plans/documentation for projects, facilities, and operational areas.
- Participate with ARC technical organizations in the establishment and implementation of ARC software policy instructions and standards.
- Interface with projects to identify and establish specific software assurance and configuration management requirements tailored to and consistent with project risk and objectives.
- Monitor and audit software development for conformance to software assurance requirements and review project software plans, designs, and other software development documentation.
- Provide consultation services to ARC staff on how to prepare software assurance plans and on software assurance processes.
- Develop and/or evaluate tools that would facilitate software assurance.

8.7 Quality Management System

ARC operates with a Quality Management System that is compliant with ISO 9001 and AS-9100 for space flight projects at ARC. The Contractor provides support to the Ames Management System (AMS) office. The AMS undergoes annual external audits sponsored by Headquarters and periodic internal assessments sponsored by the AMS office. The Contractor upon request shall provide support as an assessor for internal assessments and for external audits.

The contractor shall:

- Maintain a working knowledge of AMS requirements. These requirements and specifications include current revisions of:

Number	Description
NPD 1280.1	NASA Management System Policy
APR 1220.1	Management Objectives and Accountability
APR 1280.1	Ames Management System
APR 8700.2	Continuous Improvement Action
APR 8700.3	Internal Assessments of the Ames Management System
QS.0003	Management of Quality Status Stamps

- Lead or perform independent AMS audits as requested, prepare and submit audit reports/corrective actions and associated documentation of audit results.
- Provide Assessor capabilities to conduct internal assessments at ARC and external audits elsewhere as tasked. The Assessor shall possess experience leading assessment and audit teams. The Assessor shall lead or perform independent assessments/audits in accordance with the ARC approved schedule. The Assessor shall also prepare and submit assessment/audit reports/corrective actions and associated documentation of assessment/audit results
- Provide consultation services to ARC staff on quality management systems.

8.7 Risk Management

Risk Management (RM) is a continuous process that identifies risks throughout a project's life cycle. This process analyzes and prioritizes risk impact; develops and carries out plans for risk mitigation or acceptance; and tracks the mitigation of these risks to closure. SS&MA activities form a part of the overall Risk Management Program. SS&MA assists that Program/Project in development of the Risk Management Plan, integrating safety, reliability, and quality assurance functions into the risk management process. The plan also addresses the process for early identification of risks, types of analyses to be used, and reduction or elimination of these SS&MA risks.

The contractor shall:

- Maintain a working knowledge of government, academic and industrial RM standards and practices while maintaining an expert knowledge of Agency RM standards and practices. As a minimum, the contractor shall have expert knowledge of:

Number	Description
NPR 7120.5	NASA Program and Project Management Processes and Requirements
NPR 8000.4	Risk Management Procedural Requirements
NPR 8705.5	Probabilistic Risk Assessment (PRA) Procedures for NASA Programs and Projects
NPD 8700.1	NASA Policy for Safety and Mission Success
ISBN 0-967-2601-0-8	Continuous Risk Management Guidebook, Carnegie Mellon University, 1996

- Gain and maintain expert knowledge of existing Center RM tools, processes, forms and requirements.
- Classify and/or assist programs/projects in classifying their overall risks in accordance with Center policy and guidelines.
- When requested, assist in preparation of program/project RM plans in accordance with the above references and program/project risks.
- Ensure the implementation of all elements of programs/project RM plans.
- Prepare RM sections of program/project plan reviews.
- Review program/project RM plans prepared by others and ensure their compliance with Center policy and guidelines.

- Provide Continuous Risk Management (CRM) training as required utilizing CRM certified instructors. (Certification requires attending NASA CRM training, and a week-long certification course presented by NASA).
- Develop or expand current RM tools and processes such that the Center remains in the forefront of RM and efficiently implements/practices RM.
- Provide and maintain expert knowledge of quantitative and qualitative risk assessment and prioritization techniques.
- Perform and/or review probabilistic risk analyses and event/fault tree analyses.

8.8 Workmanship Training Program

The NASA Workmanship Training Program provides workmanship training, based on NASA Technical Standards, to meet the certification requirements for those involved with the fabrication, inspection and handling of electronics hardware.

The contractor shall:

- Maintain a working knowledge of Workmanship Standards and practices. As a minimum, these requirements include current revisions of:

Number	Description
QS.0026	ARC Program Plan for Electrostatic Discharge (ESD) Control
QS.0022.1	ESD Work Area Survey Methods
QS.0022	ESD Training and Certification, Survey of ESD Work Areas
ANSI/ESD S20.20	Protection Of Electrical And Electronic Parts, Assemblies And Equipment
NASA STD 8739.3	Soldering of Electrical Connections
NASA STD 8739.4	Crimping, Interconnecting Cables, Harnesses & Wiring

- Operate the Ames Workmanship Training Center providing workmanship classes for technicians, engineers, and inspectors. Courses may include training in electrostatic discharge control, surface mount technology, soldered connections, crimping, wire wrap and cable harness manufacturing to NASA approved specifications.
- Support the NASA HQ Workmanship Committee by maintaining a working knowledge of the latest workmanship processes and techniques. Attend and participate in Workmanship Committee meetings as requested by the NASA Ames Workmanship Technical Committee Representative.
- Maintain the ESD Workstation Certification program by evaluating and attesting to the proper operation of workstations for electrostatic sensitive devices throughout the center.

9.0 Occupational Safety, Industrial Hygiene, and Medical Services

ARC objectives for this effort are to obtain technical expertise in Occupational Safety, Industrial Hygiene, Health Physics and Occupational Medicine such that we can:

- Implement programs that assure the safety and health of all employees
- Provide oversight to ensure that all ARC operations are carried out in compliance with applicable Federal, State, and local regulations and NASA policies
- Implement the NASA Safety Accountability Program at ARC
- Maintain OSHA Voluntary Protection Program certification at the Star level

- Maintain Joint Commission for the Accreditation of Health Care Organizations certification of the Ames health Unit.

9.1 Industrial Hygiene

The Contractor shall:

- Provide program development, implementation, coordination and training for programs such as exposure monitoring, hearing conservation, respiratory protection, chemical hazard communication, confined space entry, gas detection, biohazards, lead, asbestos, mold, mercury, formaldehyde, ethylene oxide, regulated carcinogens, toxic gases, indoor air quality, chemical hygiene programs, ventilation programs, sanitation (food safety) inspections, nano-materials safety and other types of typical industrial hygiene programs.
- Provide professional analytical services for all types of known and unknown chemicals, metals, fibers, etc., and microbiological materials (e.g., bacteria, fungi, and Legionella) by laboratories that are accredited by the American Industrial Hygiene Association (AIHA), when such accreditation exists. Quality control programs such as the National Institute of Occupational Safety & Health (NIOSH) Proficiency Analytical Testing (PAT) program and the National Voluntary Laboratory Accrediting Program (NVLAP) must be utilized as required by NASA or regulatory agencies.
- Review new and existing projects and facilities for industrial hygiene concerns, recommend appropriate controls and work with NASA management, NASA employees, Resident Partner management, or other contract management and contract employees, to resolve various health issues.
- Provide review, evaluation and implementation of all chapters in the Ames Health and Safety Manual Ames Procedural Requirements (APR) 1700.1, annually or as specified by the Government.
- Perform risk assessments for chemicals including those that do not have published exposure limits, and recommend appropriate controls.
- Develop, implement and complete annual noise and chemical monitoring surveys of all ARC operations and facilities.
- In a technical capacity, attend meetings, participate in negotiations, and work to resolve union safety and health issues, concerns, grievances, and complaints associated with the Ames Federal Employees Union.
- Perform industrial hygiene monitoring as required by OSHA and NASA, and properly maintain and calibrate industrial hygiene monitoring equipment.
- Participate in or perform overall industrial hygiene program and/or facility audits and provide specific corrective action recommendations and follow-up.
- Participate in all audits and assessments including, but not limited to: VPP self-assessments, Headquarters' evaluations, and OSHA reviews.
- Develop, implement and/or maintain various integrated industrial hygiene databases for key programs (e.g., material safety data sheets, air monitoring data, hearing conservation/noise survey data, respiratory protection training, and asbestos hazard assessment data). Data shall be maintained in data systems owned by the Government. All data, database systems, and database documentation obtained or developed during this contract must be provided to the Government upon request and in the format specified by the Government.
- Use air dispersion models, acoustic models and sound IH calculations to predict exposures and hazard boundaries.
- Provide monthly reports to NASA regarding new and/or proposed Safety & Health regulations.

- Participate in emergency and non-emergency mitigation, abatement, cleanup and decontamination of hazardous materials such as lead and lead-based paint, asbestos, bloodborne pathogens, PCBs, and other hazardous materials as requested.
- Develop, provide and post industrial hygiene labels and signs.
- Notify ARC personnel of results of any personnel sampling in a timely manner as required by OSHA regulations.

9.1.1 Supplemental Information

At ARC, there are approximately:

- 104 laboratory fume hoods and 94 local exhaust hoods
- 1,000 confined spaces
- 75 fixed gas detection systems
- 50 users of regulated carcinogens
- 80 respirator users
- 250 people in the Hearing Conservation Program
- 30 facilities that may have potentially high noise exposure levels
- Over 8,000 different chemical materials used at various locations at the NASA facilities
- Over 300 specific tasks for basic tasks are requested by NASA of the Industrial Hygiene group annually
- Most of the facilities contain asbestos containing materials (ACM) and lead-based coatings.

9.1.2 Workload Estimates for Industrial Hygiene

- Estimates of annual workload are provided in the table below.

Item Description	Annual Approximate Number
Noise Evaluations	100 (buildings)
Noise Dosimetry	300+ (persons)
Industrial Hygiene Baseline Surveys	100
Workplace Exposure Assessments	60
Asbestos/Lead surveys	250
Ventilation Measurements	200
Respirator Fit Tests	80
Workplace Exposure Monitoring Events	40
Indoor Air Quality Surveys	50
Exposure Incident Investigations	12
Informal Consultations	2,000
Confined Space Permits	200
New chemical or process evaluations	50
Develop/Update Training Courses	50
Health Related Training Courses	80

9.2 Health Physics

The Contractor shall perform the following functions:

- Review of radioactive materials applications, renewals, and modifications.
- Inspections/surveys of laboratories to ensure compliance with NRC regulations.
- Management of dosimetry, bioassay, and calibration programs including film badge and dosimetry services.
- Monitoring, including surveying of field radiographies. This may include work on nights, weekends, and holidays.
- Development and implementation of training programs for ionizing and non-ionizing radiation workers.
- Maintenance, renewal and payment of the Center's radioactive materials licenses (License Cost Range: approximately \$10K-\$20K/year).
- Compliance with EPA and National Emission Standards for Hazardous Air Pollutants (NESHAPS) requirements with respect to use of radioactive materials.
- Managing, packaging, transporting and disposing of radioactive waste and "mixed waste streams," by qualified personnel as required by Federal (DOT, NRC, EPA), State and Local regulations.
- Paying transportation and disposal fees for radioactive waste.
- Performing receipt, pick-up and delivery of radioactive materials from NASA Receiving section.
- Participating in NRC and other outside agency correspondence, documentation requests and inspections of NASA facilities.
- Operating monitoring equipment, including but not limited to, survey meters for exposure and fixed contamination surveys, anemometers for measuring hood flows, and laboratory equipment described below. Contractor shall perform surveys and sealed source leak tests. Personnel shall also be experienced in the monitoring of radioactive materials and the preparation of radioactive materials for shipment.
- Providing analytical services, as well as equipment repair and calibration. On-site laboratory analytical capabilities shall include a proportional detection system for low-level alpha and beta measurements, gamma spectrometers, and liquid scintillation counters. The Contractor shall ensure that all off-site calibration facilities utilized by the Contractor have appropriate licenses. All laboratory analyses and calibrations shall conform to appropriate American National Standards Institute or other recognized standards. All laboratories conducting analyses of whole body dosimeters shall have National Voluntary Laboratory Accreditation Program (NVLAP) accreditation.
- Supporting the non-ionizing radiation safety program to conform to APR 1700.1, Chapter 8, including functioning as Non-ionizing Radiation Safety Committee member, conducting laser/microwave/radio frequency project inspections, surveys, safety calculations per applicable standards (e.g. ANSI, IEEE) and providing expert information and training to employees.
- Planning, coordinating and implementing Ionizing and Non-ionizing Radiation Safety Committee activity.
- Meeting, as often as necessary, with NASA and/or Contractor employees and providing consultation on all types of health physics issues. Preparing briefing materials and meeting summaries, as requested.

9.2.1 Supplemental Information

- There are approximately 140 sealed sources (some may require NRC increased controls procedures), more than 14 isotopes, 10-15 isotope projects using unsealed sources, more than 55 isotope users, and 30 X-ray users. These do not include human diagnostic x-rays.
- There are approximately 37 sealed sources that require quarterly alpha radiation leak tests.
- Periodically radioactive sources greater than 100-200 Curies are used for nondestructive testing by radiographers. The HP Group is required to monitor each field radiography for compliance with NASA and NRC requirements. This may include nights, weekends, and holidays.
- There are approximately 30 laser users. The laser inventory includes 150 lasers of all classes, including approximately 29 Class 3B and 50 Class 4 lasers.
- There are approximately 20 radio frequency sources; several capable of exceeding American Conference of Governmental Industrial Hygienists (ACGIH) recommended exposure limits.
- NASA periodically operates a decay-in-storage facility for radioactive waste, and processes quarterly shipments of radioactive waste for off-site disposal.

9.3 Occupational Safety

The Contractor shall:

- Provide program development, implementation, coordination and training for safety programs, such as electrical safety (including high voltage electrical power safety), lock-out/tag-out, heavy equipment safety, fall protection, facility safety, ergonomics, machine guarding, house keeping, office safety, explosive safety, mishap reporting, safety postings/signs, safety committee management, and other types of typical safety programs.
- Participate in all VPP self-assessment audits, Headquarters' audits/visits and OSHA audits/visits.
- Perform one (1) to four (4) safety and health surveys (inspections) per year of all NASA facilities at ARC for compliance with OSHA, National Fire Protection Association (NFPA), Life Safety Code, Uniform Building Code, National Electric Code and other applicable safety, health and fire protection standards and track findings and recommend corrective actions.
- Provide preventive ergonomic evaluations to new ARC employees, ARC employees moving into new workspaces, and anyone who calls requesting to be evaluated, including Health Unit referrals.
- Provide consultation for assessing personnel ergonomic equipment needs in the Ergonomics Demonstration Room.
- Support each Centerwide Safety/Health Committee. Committee support may include membership, technical support and/or preparation of meeting materials.
- Respond to Center requests for safety information and provide safety expertise.
- Review Center and Directorate policies and prepare safety plans and procedures.
- Review, research, and provide interpretation of safety standards, specifications, and criteria.
- Develop, implement and manage safety awareness programs, such as safety accountability, VPP, etc.
- Provide safety and health coordination, support and expertise for NASA and/or resident partner sponsored events, such as for NASA open house (220,000 visitors), air shows, community events, educational events with children, etc.

- Respond to notifications of unsafe and unhealthy conditions in a timely manner as specified by the Government, provide recommendations for and maintain records of corrective actions.
- Support ARC in maintaining and retaining OSHA VPP certification.
- Operate and maintain Ames Safety Accountability Program as specified by the Government.
- Participate in and provide technical expertise to accident investigations and/or mishap boards.
- Maintain all safety and health notices and postings on Center bulletin boards on a monthly basis.
- Ensure hazard-warning notices as required by OSHA are posted on every floor of every building and checked monthly to ensure they are posted.
- Conduct and complete the annual 29 CFR1960 review and implement corrections as needed.
- Complete the OSHA Process Safety Management Report quarterly and implement corrections as needed.
- Maintain and operate the Safety Hotline, including response and follow-up to Hotline calls.
- Maintain and operate the Close Call/Hazard Reporting System, including response and follow-up to all Close-call and Hazard Reports.

9.3.1 Supplemental Information

The total area of indoor space at ARC is approximately 2.5 million square feet.

9.3.2 Work Load Estimates for Occupational Safety

Estimates of annual workload are provided in the table below:

Description	Annual Approx. Number
Building Safety Inspections (OSHA)	400
Construction Site Inspections	1,000
Construction Work Permits	200
Prepare and submit Injury/Illness data base data to HQ (loss time injury data)	12
Investigate and document all Close Calls and Recordable Lost Time injuries	100
Respond to Employee Complaints (Respond within 8 hrs of request)	30
Coordinate safety for all ARC Major Events (100 to 200,000 persons)	18
Provide all OSHA required Training Courses (approximately 30)	160
Fire Protection System Test on all new systems	50
Fire Protection System Maintenance Tests	20
Develop lessons learned for all significant close calls	50

9.4 Construction Safety

The Contractor shall provide all services required to ensure effective oversight of construction, including:

- Provide annual status reports.
- Provide technical consultations to construction project managers.
- Verify that written safety plans are submitted for all projects and that these are site-specific, job-specific or otherwise contain Activity Hazard Analyses (AHA) pertaining to the work.
- Review all Safety Plans, Code of Safe Practices, AHAs and training records.
- 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 Systems Engineering Branch to ensure that construction hazards are identified and abated in a timely manner.
- Review and evaluate construction permits and Contractor Safety Plans prior to the start of each construction project. The number of permits has averaged approximately three to ten per week.
- 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.

9.4.1 Supplemental Information

- Multiple construction activities are ongoing at all times requiring daily oversight inspections.
- The types of construction activities include new construction of facilities, rehabilitation and modification of existing facilities, repair, renovation, demolition, excavation, etc.
-

9.5 Fire Protection Engineering (FPE)

The Contractor shall:

- Enforce NASA-STD-8719.11, Safety Standard for Fire Protection.
- Monitor work processed by the Ames Permit Review Board at least weekly.
- Review and provide recommendations on specifications and drawings for new construction and modifications for fire safety adequacy, including egress, alarm systems, fire suppression systems, and hazards associated with occupant use. Provide timely reviews of projects throughout planning, design and construction phases of work.
- Monitor fire protection water supply and fire system maintenance programs and provide inspection and consultation upon request (primarily for special projects/facilities).
- Perform 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.

- Support the system safety organization on analyses of hazardous operations.
- Provide fire extinguisher equipment selection, installation, maintenance, and annual servicing for the Center.
- The Contractor may occasionally work with the on-site Fire Department to address and consult on special fire issues.
- Create Construction of Facilities (C of F) project proposals to address fire protection deficiencies. Develop a minimum of two (2) project scopes for C of F on Project Information Forms (PIF) complete and acceptable to the Government.
- Investigate fires when Fire Protection Engineering services are requested.
- Disseminate and publicize fire protection information and educational material annually to ARC personnel using NFPA Fire Prevention Week promotions and other materials as necessary.
- Review fire inspection and fire drill reports (approximately 15 per month) from the Fire Department and recommend engineering corrections by the 30th of each month. Provide a tracking system for identified engineering corrections.
- Provide annual status report of all corrections recommended in the NASA Ames Fire Protection Engineering Survey and Assessment report.
- Provide revision recommendations for the NASA 8719.11 standard and for the Ames Standard Construction Specifications.
- Provide FPE support for NASA Programs and Projects, as requested.
- Keep logs, written or electronic documentation of all fire protection engineering review comments and recommendations made by the Contractor and submit materials to the Government when requested.

9.5.1 Supplemental Information

An on-site fire department exists under separate contract to respond to emergency situations and conduct annual building fire inspections.

There are approximately 100, 150-pound halon fire-extinguishers for aircraft use and approximately 1800, 5- to 20-pound dry powder chemical extinguishers for a variety of uses.

9.6 Injury/Illness Program

The Contractor shall:

- Investigate all occupational injuries and illnesses occurring at ARC.
- Immediately respond to Health Unit for all reported occupational injuries or illnesses.
- Investigate and generate reports on all mishaps close calls, and hazards occurring at ARC.
- Maintain and update Contractors Monthly Accident Reporting (CMAR) database.
- Maintain and update NASA Incident Reporting Information System (IRIS) database and supporting files to ensure records are accurate and readily retrievable at all times.
- Track and update corrective action implementation / lost time information.
- Update the status of all open cases every 30 days (e.g., days away, restricted Duty, corrective action).
- Attend all IRIS related meetings and conferences, as requested.
- Maintain and update Ames Safety Status (Statistics).
- Develop, maintain and update safety performance charts. Update all (approx. 25) required Excel Spreadsheets/Charts by the 5th of each month.
- Update and maintain an Excel spreadsheet listing of all ARC mishaps.

- Provide custom charts and spreadsheets related to safety statistics, upon request.
- Generate and post the OSHA 300A log for NASA ARC.
- Maintain and update four (4) Safety statistic bulletin boards located in buildings N200, N235, and two in N237 by the 5th day of each month.
- Collaborate with Health Unit, NASA Ames Safety Office, and NASA Ames Human Resources on EAP issues.
- Maintain cognizance of NPR 8621.1, NASA Procedural Requirements for mishap and close call reporting, investigation and recordkeeping. Investigate any missing or questionable information on mishap and close call reports, safety suggestions and hazard reports; update records as needed.

9.7 Voluntary Protection Program (VPP)

The Contractor shall:

- Produce and finalize a schedule and agendas for Monthly VPP Leadership meetings.
- Assist in formulating Continuous Improvement Program Goals.
- Monitor progress meeting goals.
- Coordinate VPP activities with Directorates, Union, Center Director and Safety Office.
- Schedule, prepare for, and conduct Performance Evaluation Profile (PEP) Survey
- Prepare protocols and checklists for inspectors.
- Train inspectors on protocols and checklists.
- Manage the VPP Communication Program.
- Maintain the VPP Library.
- Prepare updates for VPP Web Site.
- Coordinate and organize ASAP II Program with Directorate leaders and the Safety Office.
- Develop and monitor programs to encourage ARC employee involvement in Health and Safety.
- Mentor other NASA sites or Federal agencies on VPP if requested.
- Draft VPP-related Centerwide emails
- Collect and document success stories for employee involvement
- Recommend changes to Employee Safety Guide in Ames Safety and Health Manual

9.8 Medical Services

The purpose of the medical services function is to provide emergency and other professional medical services for NASA employees, contractors, and visitors. In addition, on-site physical fitness programs, employee assistance services, supplies and equipment to maintain and improve the health of the Center's employees shall be provided. The emphasis will be on the prevention, diagnosis, treatment, and care of illness and injuries caused or aggravated by the work environment.

This portion of the SOR describes the functions to be performed by the Contractor in order to maintain and operate the Ames' Health Unit and Fitness Center, and consult in matters of occupational health and safety. The primary function of the Ames' Health Unit is to provide initial emergency medical treatment for Civil Service personnel, NASA contractor personnel, or visitors who become ill or who are injured on ARC property. The secondary function of the Ames Health Unit is to provide required occupational and job-related examinations and general health maintenance medical evaluations for Civil Service employees. Occupational and job-related examinations may be performed for ARC resident and support contractors at the Government's discretion.

The Contractor shall advise the Government of desired development or changes of any policy or programs for the Health Unit operations. The tasks to be performed by the Contractor shall include, but not be limited to, the following items:

9.8.1 Initial On-Site Medical Treatment, Occupational Injury

- The Contractor shall provide initial on-site medical treatment within the capabilities of the Ames' Health Unit for Civil Service, contractor employees, visitors, and students incurring an occupational injury or illness during normal working hours. This also includes any injury or illness sustained while participating in a physical fitness activity on-site. When the patient requires treatment beyond the scope of the Ames' Health Unit's capabilities and functions, the patient shall be referred to an appropriate facility, or to a physician, with advice that the patient may be liable for costs for such treatment.
- The Contractor shall have established procedures to allow for the immediate treatment of all occupational injuries at the injured employee's work site, unless initial treatment at the Ames' Health Unit is more appropriate.
- The Contractor shall inform employees reporting to the Ames' Health Unit with an occupational injury or illness of their rights to claim possible treatment and compensation by the Government for their injuries, pursuant to the Federal Employees' Compensation Act. The Contractor shall provide such employees with information regarding the established procedures for reporting the circumstances of on-the-job illness or injury. The Contractor Responsible Physician shall interface with the employee's private physician as necessary, including assistance with any forms required by the Office of Worker's Compensation Program (OWCP).

9.8.2 Initial On-Site Medical Treatment, Non-Occupational Injury

The Contractor shall provide initial on-site treatment for Civil Service personnel having non-occupational illnesses when this is within the capabilities of the Ames' Health Unit, and when these services do not interfere with the treatment of occupational-related illnesses or other primary functions. The Contractor physician will refer employees to physicians in the private medical community for further treatment when necessary.

9.8.3 Health Hazards

The Contractor physicians and nurses, in coordination with the Safety, Health and Medical Services Division, shall respond to medical inquiries and complaints relative to health hazards.

9.8.4 Ambulance Services

The Contractor shall provide emergency and non-emergency transportation operations on-site and may be required to transport patients off-site by special request from the Government or during emergencies. This will require operation of a Government owned ambulance by personnel certified to drive and respond to emergency medical calls.

9.8.5 Emergency Medical and Hazardous Materials Response and Training

The contractor (Physicians, Nurses and Medical Assistants) shall participate in a medical capacity in Emergency Medical and Hazardous Materials responses, drills and training courses to maintain proficiency in emergency response events.

9.8.6 Administration of Prescribed Medication

The Contractor physician or appropriate medical staff shall administer medications:

- Furnished by the employee and prescribed in writing by his/her personal physician as reasonably necessary to maintain the employee at work; or
- Prescribed by a physician providing medical care in treatment of duty injury or illness cases under the Federal Employees' Compensation Act; or
- Any medication associated with, or in conjunction with an Employee Assistance Program (EAP) approved rehabilitation program.

In cases such as the above, the Ames' Health Unit shall obtain a signed release of liability from the requesting patient. The release shall specify the type of medication, purpose, amount, frequency, length of administration, and name of private physician prescribing medication.

9.8.7 Travel Immunizations

- The Contractor shall provide to Civil Service personnel immunizations required by local, state, federal and international laws or regulations. Other immunizations compatible with good public health and preventive medicine will be administered by the Health Unit to Civil Service personnel and resident or support contractor personnel.
- The Contractor shall also provide immunizations, when required, for official overseas travel for both Civil Servants and contractors. If vaccines cannot be kept in stock, employees will be referred to local clinics.

9.8.8 Types of Typical Employee Physical Exams, Exam Content and Exam Frequency

The following medical surveillance requirements in addition to OSHA requirements apply:

Federal Employees Health Program (FEHP) Exam Contents

Exam Frequency: Comprehensive examination is offered every three years with a limited exam in the interim years.

Exam Specifications:

Comprehensive exam includes:

1. Evaluation of medical, occupational and exposure history.
2. Vital signs including height, weight, blood pressure, pulse rate and rhythm.
3. Laboratory testing for complete blood count, fasting blood chemistry profile including glucose and complete lipid profile (total cholesterol, HDL, LDL, triglycerides and total cholesterol / HDL ratio), urinalysis, thyroid profile including TSH (with T3 and T4 if TSH abnormal or clinically indicated), PSA test for males 50 years and older.
4. Tuberculosis screening
5. Hemocult screening
6. Visual Acuity and ocular tonometry
7. 12-lead electrocardiogram
8. Baseline examinations with follow-up exams as clinically indicated for audiogram, chest x-ray, and spirometry including FVC, FEV1, and FEF 25-75.
9. Examination by, or under the auspices of a physician including an offer of a total body skin examination, and prostate and testicular or breast and pelvic examination.

10. Mammograms are offered according to the following guidelines:

<u>Age</u>	<u>Frequency</u>
35-40	Baseline
40-49	Biennial
>50	Annual

11. Baseline cardiac stress test is offered, with follow up as clinically indicated.
12. Sigmoidoscopy or colonoscopy recommendation with referral to Primary Care Provider are indicated for employees who are 50 years and older, or who have increased risk for colon cancer with follow up as clinically indicated.
13. Optional tests offered if clinically indicated may include skin fold or Body Mass Index (BMI) evaluation.

Limited exam includes:

1. Evaluation of medical, occupational and exposure history
2. Vital signs including height, weight, blood pressure, pulse rate and rhythm
3. Laboratory testing for complete blood count, fasting blood chemistry profile including glucose and complete lipid profile (total cholesterol, HDL, LDL, triglycerides and total cholesterol / HDL ratio), urinalysis, thyroid profile including TSH (with T3 and T4 if TSH abnormal or clinically indicated), PSA test for males 50 years and older
4. Tuberculosis screening
5. Hemocult screening

Examination by, or under the auspices of a physician including an offer of a total body skin examination, and prostate and testicular or breast and pelvic examination, with mammography according to guidelines indicated above.

Examples of physical examinations performed based on NASA guidelines:

Evaluation and / or surveillance for exposure to identified hazardous substances and toxic chemicals, Chemical Laboratory Workers, Hazardous Waste Operations, Hearing Conservation, Insect and Pest Control Workers, Spray Painting, Water and Sewage Workers, Air Traffic Control, Confined Space / Tank Entry, Lift Operators, Divers, Down Range / Shipboard Workers, Remote Assignments, FAA exams, Fire Fighters, Cafeteria Workers, DART, HAZMAT / ERT, Heavy Ordnance / Explosives Handlers, Heavy Equipment Operators, Multiple Passenger Vehicle Operators, DMV / Commercial Drivers, Non-Crew Flying, SCAPE Suit Certification, Security Personnel, Disability Retirement, Fitness for Duty: Civil Servant, Fitness for Duty: Contractor, Return to Work, Console Color Spectrum, Dye Penetrant, Microscopic Color Spectrum, Solderers and Welders, Bloodborne Pathogens, Laser Workers, Animal Handlers, Radiation Workers, Respirator (Non-SCAPE), Tuberculosis Control, Federal Employee Health Program, KC 135 Aircraft, Childcare Workers, Fitness Center Releases

9.8.9 Health Programs

The Contractor shall support a diverse spectrum of health programs, for example: hearing conservation, respiratory protection, safety and computer glasses, ergonomics, annual blood pressure clinic, annual flu clinic, EAP, and stress reduction. Counseling of employees and supervisors on the medical aspects/problems of alcoholism and drug abuse by qualified members of the Ames' Health Unit shall be provided in participation and cooperation with EAP as described below.

Additional specific health programs may be implemented as deemed necessary by the Government and approved by the Contracting Officer.

9.8.10 Health Maintenance & Job Fitness Evaluations

- The Contractor shall perform health maintenance and job fitness evaluations for all Civil Service personnel according to the specified exam frequency.
- The Contractor shall provide the following additional Health Services:
 - Results of the medical evaluation to the employee's personal physician upon the written request of the employee.
 - Additional tests or examinations at more frequent intervals, if required, by medical findings, hazards in the work environment, or return to duty evaluations requested by Human Resources Division or employee supervisor.
 - At the discretion of the Human Resources Division, complete evaluations on newly appointed NASA employees, or employees transferring from other agencies or NASA installations at the time of their entrance for duty.
 - For supervisor-referred employees, return to work interviews and/or medical evaluations by the Health Unit physician.
 - Qualified Ames' Health Unit staff members who will provide guidance, assistance and limited counseling to employees and managers in conjunction with the EAP.
 - Preparation of the medical sections of accident, insurance, and health reports as required by Occupational Safety and Health Administration, Office of Workers' Compensation Program, and/or the State of California.
 - Maintenance of usage, disposal, and order records for medical supplies and medicines.
- The Contractor physicians shall perform special evaluations when:
 - Medical findings indicate a need for further extensive evaluations,
 - Duties are located in hazardous areas, in which hazardous or toxic materials are handled
 - Employee's duties include participation in a Hazardous Materials Response team
 - Necessitated by job assignment and related regulations.
- The Contractor shall provide follow-up monitoring of abnormal findings detected as a result of NASA health maintenance examinations within the scope and schedule as follows:

Employees Diagnosed With Hypertension: Offer weekly blood pressure evaluation and referral, as well as consultation with their private physician until adequate therapeutic control has been established.

Employees Diagnosed With Hyperlipidemia: Offer quarterly review with referral to and consultation with their private physician until adequate therapeutic control has been established.

Employees With Substance Abuse Problems: Provide counseling and/or referral to EAP for employees where possible substance abuse is suspected through medical observation, interview or supervisor recommendation.

Employees With Other Conditions: Conduct follow-up and supplemental medical histories of employees having conditions requiring treatment by the private medical community.

Medical Evaluations For Extended Absenteeism: The Contractor physician shall conduct interviews and/or perform return-to-work medical evaluations for Civil Service employees whose absences are in excess of five working days, or at the request of Human Resources Division or employee's supervisor.

9.8.11 Clinical Laboratory Support

The Contractor shall provide clinical laboratory support as required for implementation of the health maintenance evaluation program and the injury and illness treatment program. Tests shall include but not necessarily be limited to:

LABORATORY TESTING

COMPLETE BLOOD COUNT (CBC)

1. White Cell Count with Differential
2. Red Cell Count
3. Hemoglobin
4. Hematocrit
5. MCV
6. MCH
7. MCHC
8. Platelets

URINALYSIS – complete w/microscopic

CHEMISTRY PROFILE

1. Glucose
2. Blood Urea Nitrogen (BUN)
3. Creatinine
4. Calcium
5. Sodium
6. Potassium
7. CO₂
8. Chloride
9. Total Protein
10. Albumin
11. Globulin
12. A/G Ratio
13. Bilirubin – Total, Direct, and Indirect
14. Alkaline Phosphatase
15. AST (SGOT)
16. ALT (SGPT)
17. Iron
18. Phosphorus
19. Uric Acid
20. LDH
21. GGT
22. Cholesterol – Total, Triglycerides, VLDL, LDL, HDL, Cholesterol / HDL Ratio, LDL/HDL Ratio
23. Thyroid Stimulating Hormone (TSH)
24. T3 Uptake (T3RU)
25. Prostate Specific Antigen (PSA) – males 50 yrs. and older
26. PAP smear
27. Lead level / Zinc Protoporphyrin (ZPP) as indicated

9.8.12 Medical Advice & Assistance to Committees, Programs, Activities & Center Management

The Contractor physicians and qualified staff shall provide medical advice and assistance to committees, programs, activities and Center management. The Contractor shall implement health requirements and maintain standards (inspections, monitoring, abatements, training, etc.) as specified in:

- Executive Order 12196, "Occupational Safety and Health Programs for Federal Employees"
- 29 CFR 1960, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs"
- APR 1700.1, Ames Safety & Health Manual
- 29 CFR 1910/1926, OSHA Safety and Health Standards.
- Joint Commission (JCAHO) Requirements.

9.8.13 Audiometric Analysis

The Contractor physician, in adherence to the Ames Hearing Conservation Program set forth in APR 1700.1, shall be responsible for conducting audiometric analysis on Civil Service personnel who are exposed to high noise levels. Audiometric analysis is not normally available to contract personnel who are similarly exposed. The Contractor physician shall confer with private physicians, as required, regarding exposed personnel, participate in training sessions, confer with and advise the Safety, Health and Medical Services Division in coordination with the above. Audiometric testing is performed annually on employees working in areas exposed to high noise levels, and retesting is done after 30 days when a threshold change is noted.

9.8.14 Personal Protective Equipment

- The Contractor physicians shall medically review personnel prior to measuring and fitting of respiratory protective gear in order to meet the requirements of APR 1700.1, Chapter 28 and OSHA Standard 1910.134.
- As required, the Contractor shall provide to federal employees American National Standards Institute (ANSI)-compliant safety glasses and computer glasses, including a basic eye exam and vision test, fitting, and adjustment by a qualified optometrist or ophthalmologist. In addition, the contractor shall provide a selection of at least 40 different styles of glasses in plastic and at least 40 different styles of glasses in metal. At least 25 different styles of computer glasses shall be provided to protect employees from potential vision related ergonomic hazards.

9.8.15 Medical Surveillance of Exposed Personnel

- In the absence of OSHA health standards, the Contractor physician shall utilize NIOSH criteria documents as guides for medical surveillance of exposed personnel. Medical testing to evaluate Biological Exposure Indices published by ACGIH may be required to evaluate specific exposures.
- The Contractor shall coordinate with safety professionals and industrial hygienists to take appropriate corrective action following the receipt of alerts relative to newly recognized health hazards, carcinogens, mutagens, etc.

9.8.16 Drug Enforcement Administration (DEA) Registration

Contractor physicians shall be required to maintain a current DEA registration to order, prescribe and administer controlled substances under the Center auspices. Controlled substances will be handled in accordance with applicable regulations.

9.8.17 Employee Assistance Program (EAP)

NASA's EAP is a comprehensive educational and diagnostic system that establishes and provides appropriate assessment and referral services for an organization, its civil servant employees and dependents, primarily in the areas of: Substance abuse, Psychological difficulties, Personal relationship problems, Work-related problems, Legal or financial difficulties, Stress-related illnesses

9.8.17.1 EAP Goals and Objectives

The goals of the Center's EAP are to restore employee job performance to acceptable standards through therapeutic services, and to ensure that civil servants and their dependents receive the same consideration and offer of assistance that is extended to employees having other health problems or illnesses. In order to achieve these program goals:

- Employees will be familiarized through training sessions with the concepts, functions and accessibility of NASA's EAP.
- Supervisors and managers will have training every three years to inform them of their responsibilities to their employees and emphasize their roles with respect to substandard job performance and the use of the EAP as a management tool.

9.8.17.2 Statement of Functions and Requirements

- The Contractor shall: (a) meet the applicable requirements of NPR 3792.1A Plan for a Drug-Free Workplace; (b) have accumulated an overall EAP experience of at least 1,000 cases; and (c) be affiliated with a chemical dependency unit on a consultant basis.
- The Contractor shall provide the following:
 - An off-site location for employee consultations with minimum daily working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, and emergency counseling available 24-hours/day, 7-days per week with access to a psychiatrist. These services shall be available to the employee through self-referral, supervisor referral, Ames' Health Unit referral or EAP Officer referral.
 - Association with and access to a hospital, detoxification/care unit and access to such units in various cost categories in order to place an employee consistent with health insurance and financial status.
 - Up to five visits per problem per employee for short-term counseling. The number of visits will be determined on a case by case basis. In unusual circumstances, substance abuse cases, or formal supervisor referrals, the number of visits are not limited to five (5) and will be determined by the counselor.
 - Assistance in an on-site program of limited counseling and advice in the resolution of individual employee problems when requested by the employee, supervisor or civil service EAP Officer.
 - Assurance that employee record confidentiality shall be maintained at the on-site and off-site locations as in the Privacy Act of 1974, NASA Privacy Act System of Records

(NASA 10HIMS), and NP 1830.1A NASA Employee Assistance Program and their subsequent replacements.

- Access to a wide range of professional services in the community for referral of employees.
- Counselors currently licensed by the State of California.
- In coordination with and approval of the EAP Officer, the Contractor shall:
 - Conduct a comprehensive program and a monthly report for management initiated assessments, employee and family referrals for problems including, but not limited to, emotional, personal relationship, work, financial, stress or conflict, and chemical dependency issues.
 - Provide information/training sessions for employees on the nature and scope of the Employee Assistance Program.
 - Accompany EAP Officer to meet with the Center Deputy Director quarterly to apprise him or her of any pertinent issues occurring at the Center.
 - Provide quarterly 1-2-hour supervisor training sessions for management personnel addressing subjects such as, but not limited to, identifying poor work performance, confronting a troubled employee, accessing the EAP and using the employee assistance program as a management tool.
 - Provide a monthly 1-hour EAP training for all employees on current EAP topics. Topic list is to be reviewed and approved by EAP Officer at the start of each calendar year.
 - Provide one EAP table/display in the ARC cafeteria once per month during lunch (11:30am to 1:00pm) to distribute educational materials and interact with employees to both advertise the employee assistance program and to explain how to utilize the EAP services.
 - Provide verbal and written communication with the EAP Officer to aid in the exchange of information on program status and visibility.
 - Provide documentation of management referred cases indicating completion or non-completion of prescribed treatment.

9.8.18 Fitness Center

- Maintain and manage Fitness Center operations, under the general supervision of a physician.
- Coordinate exercise programs, group exercise classes, and provide exercise prescriptions for individuals or groups.
- Verify that each client who participates at the Fitness Center maintains an updated Medical Clearance form on file with the Fitness Center. This form must be updated every year. New clients are required to attend a 15-minute introductory session before using the Fitness Center.
- Provide a 15-minute introductory session to new Fitness Center clients to inform them about the classes, programs, and weight room etiquette. If the clients are interested in a personal fitness evaluation or exercise routine, appointments are made at that time.
- Provide personal fitness evaluation or exercise routines, by appointment.
- Maintain up-to-date knowledge in the areas of exercise equipment and exercise physiology
- Maintain equipment and area to provide a safe, clean, exercise facility. This includes monitoring the fitness facilities and the Par Course and reporting and coordinating needed equipment maintenance and repairs.

- Publicize exercise programs, group exercise classes, fitness programs, and running events that are available to employees. All material to be printed must be approved by the Government prior to submission of originals for copying and distribution.
- All Contractor Fitness Center employees shall maintain current certification in CPR/AED and First Aid.
- Fitness Center staff shall be familiar with the College of Sports Medicine requirements.
- The Contractor shall operate the Fitness Center from Monday through Friday (excluding Government holidays) according to the following schedule:

Session Start	Session End	Average Monthly Attendance
6:00 AM	9:00 AM	1,000
11:00 AM	2:30 PM	2,000
4:00 PM	7:00 PM	1,200

Individual tests available for fitness evaluations shown in table below.

Weight	Resting Heart Rate
Resting Blood Pressure	Body Measurements
Fat Percentage	Cardiovascular Measurements (Step Test or Rockport Walking Test)
Grip Strength	Upper Body Endurance (Bench Press)
Abdominal Endurance (Curl Ups)	Flexibility (Sit and Reach)

9.8.18.1 Supplemental Information

- An average of 40 classes/week are held at the Fitness Center throughout the year. The following classes are examples that are offered biweekly or weekly basis throughout the year and rotated quarterly: Step-Kick-Boxing, Cardio Step, Aerobics, Back Ball, Circuit Training, Muscle Toning, Step and Muscle Toning, Ski Conditioning, Martial Arts, Tai Chi, Yoga, and other specialized classes offered quarterly.
- Examples of Quality of Life Fitness Programs:

Fat Loss Program (12-weeks):

Up to 40 individuals per session are accepted into this program. This 12-week program expects the client to: weigh in weekly; attend monthly lectures given by a registered nutritionist; modify and monitor their eating habits to a low fat; lower calorie diet and exercise a minimum of 3 times/week. The introductory session (where clients are measured, goals are determined, and nutritional materials are distributed) takes ~60 minutes/client. Follow up sessions take ~20 minutes/client.

Individual Exercise Programs:

Qualified personnel prepare a written program based on the client's needs, limitations and goals. Most clients require ~60 minutes to teach the proper exercising techniques required for the routine. The written program takes ~15 minutes of the staff time to complete prior to the teaching session. Approximately 3-5 clients receive new programs each week.

5K Run/2-mile Walk-Run:

The third Tuesday of each month a 5K run/2 mile walk-run is held. Approximately 75 runners and walkers participate per event.

Fall and Spring Fun Runs:

These 2-mile and 10K runs, usually held in May and October, draw approximately 400 participants from the Center. This event requires solicitation and coordination of approximately 25 volunteers.

Rock Climbing Training Wall Instruction:

- Each client desiring to use the Training Wall for rock climbing is required to complete introductory training. Typically this is offered the first Tuesday of each month. After completing this training, the client receives a Training Wall card that must be displayed prior to climbing on the wall.

9.8.19 Interface with Public Health Agencies

The Contractor shall support the Government in the interface with Public Health Agencies on specific problems that may arise.

9.8.20 Information & Reference Sources

The Contractor shall fund the necessary subscriptions and literature searches to provide the staff with up-to-date information and reference sources.

9.8.21 Additional Services

Consultants

Based on the physician's recommendation, the contractor will obtain services of consultant physicians or other medical specialists. For example, consultants may include: Occupational Health Specialists in Toxicology, Cardiologists, Radiologists, Ophthalmologists, Psychiatrists, Pathologists, Dentists, Otolaryngologists, Internists, Audiologists, Dietitians, Laboratory Technicians, Optometrists, Dermatologists, primary care physicians, ER physicians and other Health Care Specialists.

Medical Services for Human Research Program

- Provide medical evaluations for human subjects participating in human research experiments, as needed. The extent of the medical evaluation is determined by the Medical Services Officer and may include some, or all of the following:
- Complete Medical History
- Complete Physical Examination
- Resting Electrocardiogram and/or Stress Electrocardiogram
- Pulmonary Function
- Laboratory tests including: CBC, complete chemistry panel, blood coagulation studies, and specialty laboratory tests, as required
- Review research protocol for each project
- Certify that subject is able to participate in the study

9.8.22 Health Unit

9.8.22.1 Schedule of Operation

Operating Hours

The Contractor shall operate the Health Unit from 7:30 a.m. to 4:30 p.m. Monday through Friday (excluding Government holidays). Physician shall cover either 7:30 a.m. to 4:00 p.m. or 8:00 a.m. to 4:30 p.m. with the remaining half-hour covered by the Nurse Practitioner.

9.8.22.2 Standards of Performance

The Contractor shall be responsible for providing and maintaining standards of performance (professional, ethical, and technical) in accordance with the standards of the local medical community for the conduct of the Occupational Health Program, and shall assign and use only those personnel whose performance conforms to such standards.

9.8.23 Supplemental Information

Based on recent data, the following ranges of services have been typically experienced annually:

Occupational Health Program	Average
• Health Screening Exams	2,000
• Job-Related Exams	2,000
• Immunizations	1,900
• Occupational Injury/Illness	450
• Consultations	3,000
• 911 Response	48
• Safety Glasses/Vision	150
• Non-Occupational Treatment	2,000
• Fitness Center Visits	43,000
• EAP Cases	150

10.0 Deliverables

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, database systems, and database documentation obtained or developed during this contract must be provided to the Government upon request and in the format specified by the Government.

Attachment A- List of Courses Offered Under Training Program

CPR INTRO.	4 HR
AED INTRO.	0.5 HR
FIRST AID	3.5 HR
CPR REFRESHER	2 HR
AED REFRESHER	0.5 HR
ASBESTOS AWARENESS	2 HR
BACK INJURY PREVENTION	2 HR
BLOODBORNE PATHOGENS	2 HR
BLOODBORNE PATHOGENS REFRESHER	1 HR
CHEMICAL HYGIENE FOR LABORATORY WORKERS	3 HR
COMPRESSED GAS	.5 HR
COMPRESSED GAS REFRESHER	.5 HR
CRYOGENIC	.5 HR
CRYOGENIC REFRESHER	.5 HR
CONFINED SPACE ENTRY INTRO.	12 HR
CONFINED SPACE ENTRY REFRESHER	4 HR
DECONTAMINATION PROCEDURES	1 HR
ERGONOMICS FOR INDUSTRIAL WORKERS	2 HR
ERGONOMICS FOR OFFICE WORKERS	2 HR
ERGONOMICS FOR LABORATORY WORKERS	2 HR
EXPLOSIVE SAFETY MANAGEMENT AND ENGINEERING	8 HR
FALL PROTECTION INTRO.	8 HR
FALL PROTECTION REFRESHER	4 HR
FIRE EXTINGUISHER SAFETY	2 HR
FORKLIFT SAFETY	16 HR
FORMALDEHYDE OPERATIONS	1 HR
HAZARD COMMUNICATION FOR CHEMICAL WORKERS	3 HR
HAZARD COMMUNICATION FOR OFFICE WORKERS REFRESHER	3 HR
HAZARDOUS WASTE, ENVIRONMENTAL ESSENTIALS, & SPILL RESPONSE	3 HR
HAZARDOUS WASTE, ENVIRONMENTAL ESSENTIALS, & SPILL RESPONSE REFRESHER	1 HR
HEARING CONSERVATION	1 HR
HEARING CONSERVATION REFRESHER	.5 HR
LABORATORY BOOTCAMP FOR STUDENTS	4 HR
LEAD AWARENESS	2 HR
LOCKOUT/TAGOUT	4 HR
MANLIFT (AERIAL LIFT)	8 HR
METHYLENE CHLORIDE	1 HR
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)	2 HR
OVERHEAD CRANE non-critical lifts	8 HR
OVERHEAD CRANE critical lifts	16 HR
OVERHEAD CRANE REFRESHER	4 HR
PCB AWARENESS	1 HR
PERSONAL PROTECTION INTRO.	2.5 HR

PERSONAL PROTECTION REFRESHER	1 HR
RESPIRATORY PROTECTION INTRO.	4 HR
RESPIRATORY PROTECTION REFRESHER	1 HR
RADIATION SAFETY, ANCILLARY	CBT
RADIATION SAFETY, EXCEPTED PACKAGE SHIPPING	CBT
RADIATION SAFETY, INDUSTRIAL RADIOGRAPHY	CBT
RADIATION SAFETY, INTRO.	CBT
RADIATION SAFETY, LASERS	CBT
RADIATION SAFETY, MEDICAL PERSONNEL	CBT
RADIATION SAFETY, MICROWAVE AND RF	CBT
RADIATION SAFETY, RADIOACTIVE WASTE HANDLERS	CBT
RADIATION SAFETY, REFRESHER	CBT
RADIATION SAFETY, X-RAY	CBT
SMOKE HOOD	4 HR
SOLDERING OF ELECTRICAL CONNECTIONS/RECERTIFICATION	16 HR
SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC)	2 HR
STORM WATER POLLUTION PREVENTION	1 HR
WILDLIFE AWARENESS	1 HR

*CBT- Computer Based Training