ATTACHMENT A -- PERFORMANCE WORK STATEMENT

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ATTACHMENT A -- PERFORMANCE WORK STATEMENT

C.1. General Intention

The intention of this work statement is to provide all facility operations, maintenance, repair, janitorial services, grounds-keeping services, and other directly related miscellaneous services for all facilities (buildings, utilities, structures and related systems) and assets (equipment and utility infrastructure) at National Aeronautics and Space Administration's (NASA) Dryden Flight Research Center (DFRC) and Dryden Aircraft Operations Facility (DAOF).

For the purpose of this requirement, “DRYDEN” herein refers to the entire NASA Dryden Center, including both DFRC on Edwards Air Force Base, CA; and DAOF in Palmdale, CA.

C.1.1. Dryden’s Mission

Dryden is NASA's premier flight research and test center. Located at Edwards, California in the western Mojave Desert, DFRC is uniquely situated to take advantage of the excellent year-round flying weather, remote area, and visibility to test some of the nation’s most exciting air vehicles. For sixty years, Research projects at Dryden have led to major advancements in the design and capabilities of many state-of-the-art civilian and military aircraft. The newest, the fastest, the highest – all have made their debut in the vast, clear desert skies over Dryden. To further advance in-flight science and to accommodate the increasing number of aircraft, Dryden also operates the DAOF – its largest aircraft hangar facility, located 35 miles southwest of DFRC.

Dryden’s mission is “advancing technology and science through flight.” Elements of this research mission include pioneering aerospace technology, validating space exploration concepts, conducting science missions, and supporting the Shuttle and the International Space Station.

C.1.2. Facilities Engineering and Asset Management Mission

The Facilities Engineering and Asset Management Office (FEAMO) is the organization responsible for the stewardship of Dryden’s facilities and assets.

The FEAMO mission is to “provide our customers and partners with safe, high quality, cost effective facilities and assets that are consistent with those required for a world-class flight research organization.”

The FEAMO vision is: “When Dryden Flies, Dryden Facilities and Assets are ready.”

C.2. Purpose

The Contractor shall provide a proactive management approach to operate, maintain, and repair all Dryden facilities, utilities, and grounds. The Contractor shall implement a management philosophy and plan that incorporates and complies with the NASA Procedural Requirements

The Contractor is responsible for initiating all maintenance and repair actions to ensure that Dryden facilities and assets are available and reliable to support the mission. The Contractor shall furnish all management, labor, supervision, tools, materials, equipment and incidental engineering necessary for fulfillment of this contract in accordance with the requirements specified herein. This contract is a Firm Fixed Price (FFP) contract and includes all estimation and proposal efforts to propose Indefinite Delivery Indefinite Quantity (IDIQ) work as well as all close-out package services for any awarded IDIQ work. IDIQ work may be awarded per section C.6 “IDIQ Repair Work Requirements and Procedures”.

Attachment J-C01 lists the real property (facilities) to be maintained. Attachment J-C02 lists the collateral equipment (assets) to be maintained.

C.2.1. Limitations

Facility alteration, construction, and renovation are not included within the scope of this contract. This work will be accomplished by separate contract. In the event damage is caused by the Contractor's negligence, the Contractor will be responsible for all costs to correct that damage and this exclusion will not apply to those activities.

The Contractor is not responsible for:

1. Maintenance on NB-119, the Space Shuttle Mate-Demate-Device (MDD), except the fire protection and grounding systems
2. Maintenance on communication cables not associated with the equipment listed in Attachment J-C02
3. Daily administration of the fuel station and fuel management
4. Purchase and delivery of generator fuel
5. Work on automotive vehicles; aircraft vehicles
6. Air Field sweeping unless specifically directed by the Contracting Officer’s Technical Representative (COTR)
7. CONEX boxes not listed in Attachment J-C01
8. Governmental permit fees and regulatory fees
9. Servicing, cleaning, moving, or dusting business machines, personal computers, or office equipment of similar nature
10. Cleaning or maintaining personal items such as microwaves, refrigerators, or water coolers

C.2.2. Definitions – Technical

Attachment J-C04 identifies commonly used Acronyms and Definitions.

Where “as directed,” “as required,” "as permitted,” “approval,” “acceptance,” or words of similar import are used, it shall be understood that direction, requirement, permission, approval, or acceptance of the Contracting Officer (CO) is intended unless stated otherwise.

NASA Procedural Requirement (NPR) documents are referenced throughout this contract. These are publicly available at: http://nodis3.gsfc.nasa.gov/ .

C.3. Dryden Facility Operations

The contractor shall operate all Dryden utilities, and facilities equipment and systems. This includes but is not limited to monitoring, inspecting and servicing per the requirements set forth in the “Operations” job plan of Attachment J-C02 “Asset Maintenance Requirements”.

The purpose of operations is to operate utilities and facilities within proper parameters and conditions to ensure reliability, and to correct faulty operating conditions before they adversely impact the Center. The operations include inspections, monitoring, and services for the following:

1. Weekly water treatment of closed and open loop heating and cooling systems
2. Weekly Aboveground Fuel Storage Tank Inspections
3. Daily chiller and boiler plant operations and inspections
4. Weekly electrical substation operation and inspections
5. Weekly uninterruptible power supply operations and inspections
6. Weekly fire suppression systems operations and inspections
7. Daily sewage lift stations operations and inspections
8. Weekly fuel station inspections
9. Weekly inspection and test of emergency eyewash and showers
10. Quarterly inspection and pumping of manholes as needed

Within the 60 day transition period the contractor shall develop and submit operating logs for the above systems and equipment for government review and approval. Operating logs shall be maintained at the equipment location and shall be updated daily or weekly depending upon the inspection requirement in the “Operations” job plan of Attachment J-C02. The Site Supervisor or Site Manager shall be responsible for reviewing and signing the operating logs to determine if there are abnormal or out of range conditions that require corrective action and to ensure that the logs are current, complete and accurate. The Site Manager or Site Supervisor shall ensure operating deficiencies are corrected upon discovery.

C.3.1. Daily Assignment & Activity Reports

The government will perform surveillance of the activities of the contractor for quality, timely completion, and accurate status reporting. Within the 60 day transition period the contractor shall develop and submit a Daily Assignment & Activity Report to the government for approval. The report will be used by the Government to randomly inspect the work and work activities of the contractor. The Contractor shall fully cooperate with the Government Inspectors performing the inspections.

Within the first hour of every work day the contractor shall provide the Government approved daily assignment and activity report to the COTR and COTR designees. The report shall show all assigned work order activity for the current day, and the status of work orders assigned from the previous day. The report shall include the following information:

1. Date
2. Employees Name
3. Assignment Number
4. Building Number
5. Asset Number
6. CMMS Work Order Number
7. Work Type (PM, TC, SR, etc)
8. Labor Hours Worked on Assignment
9. Material Cost incurred On Work Order
10. Work Order Status (Complete, In Progress, Waiting Materials, etc)
11. Equipment Status (Operating / Out of Service / Operating at Reduced Capacity)

The report includes assigned activities of all field employees, including janitors.

C.3.2. Status of Operating Assets / Equipment

The contractor shall record the real time status of Operating Assets / Equipment in the CMMS “Report Downtime” Module. The status shall be updated daily to show all assets that have been removed from service, and assets that have been returned to service due to equipment breakdowns and failures. The estimated date and time of the breakdown or failure shall be recorded.

The Downtime “Type” shall be recorded as either “Operational or Non-Operational and the Downtime Code shall be recorded as one of the following:

1. <u>Breakdown - O&M</u> (breakdowns pending Contractor action only to resolve)
2. <u>Breakdown - Government</u> (breakdowns pending Government action to resolve)
3. <u>Reduced Capacity - O&M</u> (equipment operating at reduced or partial capacity pending Contractor action only to resolve)
4. <u>Reduced Capacity – Government</u> (equipment operating at reduced or partial capacity pending Government action to resolve)

C.3.3. Utility Outages

Utility Outages are the shutdown, de-energizing, isolation, and lock out / tag out of utility energy sources, facilities equipment and facilities systems, so that Facilities Operations, Maintenance, Construction Work, and other facility related services can be performed safely without risk to personnel and property, and without impact to the NASA DFRC Mission and Operations. The Contractor shall conduct Utility Outages and Utility Outage Support for work performed by others at DFRC and DAOF. All Utility Outage work is included in the Firm Fixed Price of the contract. Outage support shall be provided using Service Requests and / or the Outage CLIN of the contract.

C.3.3.1. Utility Outage Requirements

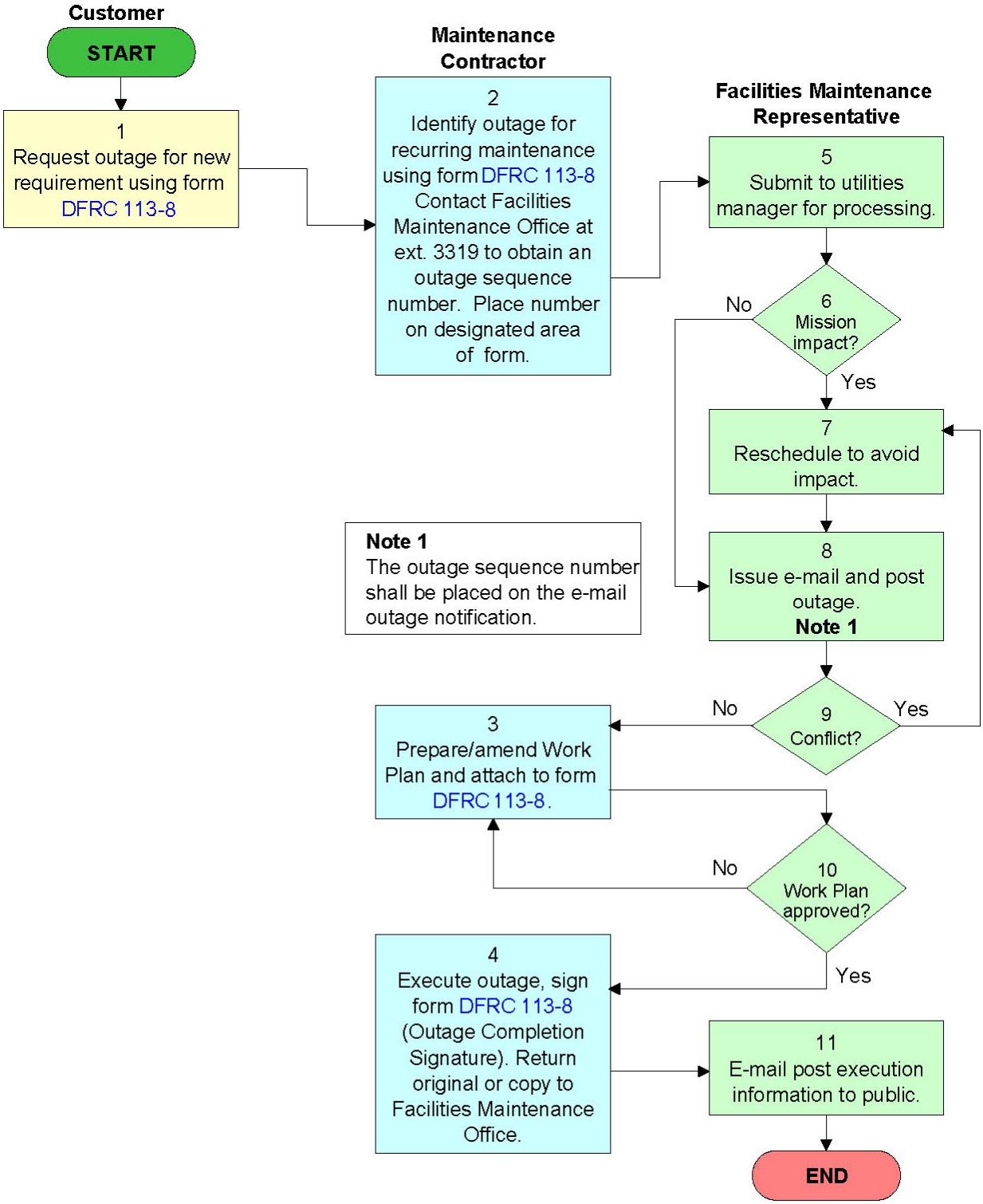
The Contractor shall be an active participant and member of the DFRC Utility Outage Committee. The Contractor shall attend weekly Utility Outage Meetings and participate in outage planning that will affect utilities, facilities and systems for which the Contractor is responsible and outages required by others which require the support of the Contractor.

C.3.3.2. Outages Required for Operations, Maintenance & Repair

Many maintenance and repair activities performed by the Contractor will require utility outages. The Contractor shall plan and schedule maintenance and repair work requiring outages to ensure the work is completed on time. The Contractor shall properly plan to minimize the number and duration of outages and to minimize the impact on DFRC Mission and Operations. The Contractor shall prepare and submit to the COTR a 6 month look-ahead schedule for PM / PT&I of assets assigned criticality codes of 1 and 2. The first 6 month schedule is due within the first 60 days of the contract and every 6 months thereafter. The Contractor shall attend weekly Facilities Most Hazardous Activities Meetings and shall notify the meeting chairperson of all Operations, Maintenance and Repair Utility Outages scheduled for the week.

Per the requirements of Dryden Operational Procedure DOP-F-604 (Attachment J-C14) the Contractor shall provide 14 working days advance notice for utility outages to the DFRC Outage Committee. Prior to conducting utility outages the Contractor shall complete a DFRC 113-8 “Utility System Outage Approval” form and obtain all required form approvals.

The Utility Outage approval requires a shut-down/start-up plan, Activity Hazard Analysis, and Center Impact Analysis. The Contractor shall inform all DFRC personnel impacted by utility outages and shall prepare a DFRC Center Utility Outage Notification Matrix for approval and distribution by the Government. The Contractor is responsible to ensure adequate time is allowed for the outage approval process. The Outage planning process and Utility System Outage Approval form are shown below to provide a general idea of the planning level of effort.


Customer
START
1
Request outage for new requirement using form DFRC 113-8
Maintenance Contractor
2
Identify outage for recurring maintenance using form DFRC 113-8 Contact Facilities Maintenance Office at ext. 3319 to obtain an outage sequence number. Place number on designated area of form.
Facilities Maintenance Representative
5
Submit to utilities manager for processing.
6
Mission impact?
No
Yes
7
Reschedule to avoid impact.
Note 1
The outage sequence number shall be placed on the e-mail outage notification.
8
Issue e-mail and post outage.
Note 1
9
Conflict?
No
Yes
3
Prepare/amend Work Plan and attach to form DFRC 113-8.
10
Work Plan approved?
No
Yes
4
Execute outage, sign form DFRC 113-8 (Outage Completion Signature). Return original or copy to Facilities Maintenance Office.
11
E-mail post execution information to public.
END

Clear

Facility Outages and Closures Approval

OUTAGE NUMBER

SYSTEMS: _____ DATE: _____

PROJECT: _____

PROJECT MANAGER: _____

SYSTEM OUTAGE PERIOD: FROM - _____ TIME - _____

TO - _____ TIME - _____

BUILDING OR AREA AFFECTED: _____

REASON FOR OUTAGE: _____

PLANS:

- ☐ 1. Outage requestor work plan attached.
- ☐ 2. Outage requestor activity hazard analysis attached.
- ☐ 3. O&M contractor shut-down/start-up plan attached.
- ☐ 4. O&M contractor activity hazard analysis attached.
- ☐ 5. O&M contractor center impact analysis attached.
- ☐ 6. Project Manager Communication Matrix

TECHNICAL SECTION APPROVAL:

TECHNICIAN: _____

NOTIFICATIONS:

CIO OFFICE: _____

MAINTENANCE CONTRACTOR MANAGEMENT: _____

NASA-DFRC SECURITY: _____

APPROVAL:

DANIEL F. MULLEN, AUTHORITY HAVING JURISDICTION *(Signature required for all Fire Protection System Outages exceeding 4 hrs duration)*:

_____

CFO OFFICE: _____

TROY S. SPIGER, FIRE PROTECTION ENGINEER *(Signature required for all Fire Protection System Outages)*:

_____

BUILDING/AREA MANAGER: _____

PROJECT MANAGER: _____

CONCURRENCE:

SH/SAFETY, HEALTH, AND ENVIRONMENTAL OFFICE: _____

MAINTENANCE COTR: _____

CHIEF, FACILITIES ENGINEERING AND ASSET MANAGEMENT OFFICE: _____

OUTAGE COMPLETION SIGNATURE: _____

DFRC 113-8
Rev: 1.8
Only the current revision will be accepted.

C.3.3.3. Utility Outage Support for Others

The Contractor shall provide Utility Outage Support for other contractors and Government Organizations. Utility Outage Support includes the development of Work Plans, Activity Hazard Analysis, and Center Impact Analysis to perform the shutdown, switching, de-energizing, isolation, lock out / tag out of utilities, facilities equipment and facilities systems; and the restoration thereof to normal operation and service. The Government Organizations and contractors requiring Outage Support will provide a minimum of 7 days notification to the Utility Outage Committee to allow the O&M Contractor sufficient time to plan the support. The O&M Contractor shall provide impact analysis within 2 working days of notification of the outage.

The 7 day notification does not apply in the event of emergency circumstances as identified in C.5.1. In emergency circumstances the Contractor shall respond immediately. Occasionally there may be urgent circumstances that require Outage Support sooner than 7 days, the Contractor shall work with the Government in good faith to accommodate Outage Support of an urgent nature as identified in C.5.1.

The Government estimates that the annual level of effort for Utility Outage Support will be 1,000 hours annually. The Government anticipates that 75% of Utility Outage Support will be required during DFRC non-core hours after 5 PM and on weekends.

C.3.3.4. Unscheduled Utility Outages

The Contractor shall immediately inform the COTR of all emergencies requiring unscheduled utility outages. The Contractor shall respond to unscheduled outages in accordance with the requirements for “Emergency Trouble Calls”. All affected systems shall be returned to service in order of importance according to the Mission Criticality rating listed in attachment J-C02. The Contractor shall immediately inform the COTR after all services are restored.

C.3.3.5. Notice of Equipment Shutdowns

The Contractor shall notify the Facility Managers and building occupants of all equipment shut downs at least three (3) business days in advance. The Contractor shall coordinate the shut-down with the Facility Manager or other designated representative in that affected building.

C.3.4. Operations & Maintenance Energy Efficiency & Sustainability Best Practices Plan

The Contractor shall implement an Operations & Maintenance Energy Efficiency & Sustainability Plan within the first 90 days of the contract. The plan will identify O&M Practices that comply with the attached NPR 8570.1, Dryden Energy Policy (J-C52), NPD 8500 (J-C50), and LEED O&M practices for Existing Buildings. The plan shall increase awareness of energy efficiency, equipment and systems optimization, conservation, and environmental protection and stewardship.

The contractor shall ensure that all employees that operate and maintain facilities equipment that utilize electricity, natural gas, water or other forms of energy are trained and knowledgeable on the operation and maintenance of the equipment and building systems. The employees shall understand how to operate and maintain the equipment and building systems in a way that optimizes energy efficiency.

The contractor shall operate building systems and equipment to maximize energy efficiency and ensure compliance with environmental regulations. This includes following best energy efficiency and conservation practices in the operation of chillers, air conditioning systems, energy management systems, boilers, heating systems, lighting and lighting control systems. The Contractor's Energy Efficiency & Sustainability Best Practices Plan shall include but not be limited to the following, many of which are requirements in maintenance job plans and operations job plans.

The Contractor shall perform the requirements of the O&M Contract to ensure that the design life expectancy of the equipment will be achieved or exceeded.

The contractor shall set up and maintain chill water and hot water reset schedules that optimize the energy efficient performance of chillers and boilers.

The contractor shall maintain onsite trained personnel who can demonstrate proficiency in the operation of the SIEMENS Energy Management System. The contractor shall maintain seasonally updated operating schedules in programmable thermostats and the SIEMENS Energy Management System to control scheduled start and stop times of HVAC equipment, chillers, boilers, pumps, air handlers and fan coils in an effort to maintain optimum energy efficiency. The contractor shall ensure that the schedules meet the operational requirements of the DFRC facilities and shutdown the operation of equipment on weekends, holidays and during hours when the facilities are not being used. The contractor shall take precautions to freeze protect building systems during freezing weather conditions.

The contractor shall maintain HVAC controls, enthalpy and economizer controls, actuators and dampers in proper working condition to maximize energy efficiency. This includes maximizing the use of OSA for free cooling, disable mechanical cooling systems equipped with economizers when OSA temperatures are below 55 degrees, disable heating systems when outdoor temperatures are above 68 degrees. The contractor shall advise the COTR of any adverse conditions associated with these operating requirements that may impact Mission Capabilities or Center Operations.

The contractor shall ensure that lighting controls are properly operated to minimize energy consumption. This includes maintaining schedules in lighting control panels, checking the operation of occupancy sensors, photocells, time clocks and other lighting controls to ensure that lights are turned off when buildings are not occupied other than is required to ensure emergency egress and safety.

During the course of maintenance and IDIQ work the contractor shall replace failed components such as lamps, ballasts, light fixtures, compressors, flush valves, faucets, shower heads, air conditioning equipment, thermostats, etc with the most energy / water efficient device applicable to the application. The parts, materials and equipment shall conform to the standards, requirements, and specifications set forth in Energy Star, Watersense, Federal Energy Management Program, USDA bio-based products, and Electronic Product Environmental Assessment Tool as applicable. Where replacement components are expected to deviate from energy and water efficient use the contractor shall obtain COTR approval to make the change.

The contractor shall operate cooling towers at the maximum cycles of concentration and minimum bleed-off with appropriate water treatment without causing scaling and fouling of heat exchangers that could adversely impact the operation of equipment.

The contractor shall perform annual flue gas and combustion testing on hot water boilers to ensure proper combustion and reduced emissions of CO2 and NOX.

The Contractor shall perform annual testing of Indoor Air Quality CO2 levels to ensure buildings are properly ventilated but not over ventilated.

The Contractor shall properly operate, inspect and maintain variable frequency drives used on fan and pump systems.

The Contractor shall trend the SIEMENS EMCS at least once per quarter to determine if building equipment and systems are operating and shutting down as scheduled, and maintaining heating and cooling set points.

The Contractor shall use data loggers or inspect building systems that are not controlled via an EMCS on a quarterly basis to determine if building equipment and systems are operating and shutting down as scheduled, and maintaining heating and cooling set points.

The Contractor shall support efforts as directed by the COTR or the COTR’s designated representative to reduce Center-wide electricity load in the event of a utility company Demand Response call. Demand Response calls can occur during peak summer months when there is a potential risk of an area wide grid overload. Demand Response calls may require short notice or immediate response to open circuits and systematically shutdown systems.

The Contractor shall propose the use of effective green cleaning products for Janitorial & Maintenance Services for Government approval.

The Contractor shall maximize recycling efforts by recommending the use of recycled consumable products such as paints and lubricants. Products must be accepted for use by equipment manufacturers where applicable, and approved by the Government prior to use.

C.3.5. Utility Meter Reading

The Contractor shall record readings of all utility (electric, water, gas) meters on a regular monthly schedule. This is recurring work that is included in the firm fixed-price portion of the contract. The meter readings shall be recorded on forms developed by the Contractor and approved by the COTR. The form shall contain such items as kilowatt hours, peak demand, meter serial number, meter type, last calibration, date, time, general condition, turns ratio of current transformers (CT), multiplying factor, and meter reader's name. Where voltage and current meters are connected to the same line, the Contractor shall read and record both voltage and current. A copy of the form shall be turned in to the Energy Manager and COTR at the end of each month. Monthly readings shall be coordinated with EAFB/AFFTC Civil Engineering. The Contractor shall maintain the forms and record the information in the CMMS.

C.3.6. Facility Condition Assessments

The Contractor shall perform annual facility condition assessments of Dryden Facilities and Utilities in accordance with the job plan requirements in attachment J-C02. The facility condition assessments shall include inspections of the interior and exterior of facilities to identify deficiencies. Trouble Calls (TC) and Service Request (SR) shall be initiated to correct deficiencies valued at under $2,000. IDIQ Repair task order requests shall be initiated for COTR approval consideration to correct deficiencies valued from $2,000 - $50,000.

All deficiencies identified during the facility condition assessments which exceed the funding available for corrective action shall be classified as priority 6 “Deferred Maintenance” work in the CMMS.

C.3.7. Commissioning & Decommissioning Facilities

Upon request from the Government the contractor shall provide an estimate for decommissioning facilities identified to be removed from service. This will include de-energizing power panels, placing cooling and heating systems into a mothballed condition, and other actions as specified by the Government.

The Government has identified 25 facilities and 8 emergency generators as non-core assets. The Contractor shall propose a cost to maintain these assets prior to contract award by completing a J-C39 “Non-Core Facility Bid Sheet”. The J-C39 document shall be used in the evaluation of Operations & Maintenance proposals submitted in response to this solicitation and in cost negotiations to remove non-core assets from the Operations & Maintenance Contract upon notification from the Government that a facility is planned for decommissioning.

Upon commissioning of a new facility or re-commissioning of a facility the contractor shall provide a proposal for performing maintenance that will be negotiated for inclusion into the O&M Contract.

C.4. Dryden Facility Maintenance

C.4.1. General Requirements and Procedures for Recurring Work

The Contractor shall perform recurring work in accordance with the provisions of this subsection. Recurring work includes all PM, PTI, PGM, and other scheduled maintenance and repair work requirements. All recurring work is included in the FFP portion of the contract. The Contractor shall perform the maintenance work listed in Attachment J-C02. It is the Government's intent that all equipment and systems supporting DFRC and DAOF be maintained as part of the preventive maintenance program.

The testing, maintenance and repair of major facilities systems including Fire, Electrical, HVAC and Mechanical Systems must not interrupt the operations of the building occupants and are therefore predominantly required to be performed during non-core DFRC working hours. Non-core working hours are generally after 5 PM Monday-Friday, or weekends and holidays.

Maintenance job plans in attachment J-C02 provide guidance on the tasks to be performed to maintain the building systems and equipment. It is the contractor's responsibility to perform all work in a manner that results in a quality finished work product that ensures the building systems and equipment operate and perform reliably per manufacturer's design.

A requirement of all J-C02 maintenance job plans whether stated in the job plan or not is that contractor shall correct all maintenance deficiencies found during the performance of preventive maintenance. Maintenance deficiencies are small incidental repairs that may be beyond the scope of preventive maintenance that require a labor and material effort less than $200 in value. Repairs or item replacements recommended by manufacturers in the equipment O&M Manuals, O&M technical bulletins, advisories, and items specifically identified in the job plans are part of the preventive maintenance requirement and do not fall under the classification of minor repairs or maintenance deficiencies. A record of all observed and corrected maintenance deficiencies shall be reported to the COTR and the COTR Designees as part of the daily assignment and activity report.

Maintenance job plans also require the contractor to initiate corrective action for major deficiencies that are found during the performance of preventive maintenance. Major deficiencies are repairs beyond the $200 value. Major deficiencies valued up to $2,000 shall be reported immediately and corrected using trouble calls upon approval by the COTR. Major deficiencies valued from $2,000 - $50,000 shall be reported immediately and corrected by the contractor as IDIQ Repair Work upon approval by Government as described in the "Requirements and Procedures for Non-Recurring (IDIQ) Work" section of this contract. All major deficiencies not approved by the COTR to be corrected by the contractor shall be submitted by the contractor as a Discrepancy Report (DR) to the Dryden Configuration Change Board (CCB).

Assets which fail to a condition where they are not operational or not safely operational, and which have open PM, PGM and PTI work orders which are beyond the targeted completion date will be evaluated to determine if the failure to perform maintenance was a factor in the failure of the equipment. Maintenance failures are included in the J-C06 “Performance and Deduction Metrics”. Maintenance failures will be determined by investigating the condition of the failed assets and reviewing the maintenance history performed on the assets. Maintenance failure deductions will be based upon the findings of the Government’s investigation.

Technical standards and regulations are frequently updated by the sponsoring organizations (such as NFPA, OSHA, ASTM and IEEE). Often the update year is part of the standard number. This PWS and CMMS Maintenance Job Plans may reference standards and regulations that have subsequently changed. It is the contractor’s responsibility to fully comply with the latest standards and regulations.

C.4.1.1. Materials, Equipment and Planning

The Contractor shall maintain sufficient off-the-shelf materials and equipment on hand to support work requirements. Lack of materials, equipment, or planning shall not relieve the Contractor from the requirement to complete work within the specified time limits and shall not be considered an acceptable cause for non-performance. All materials procured for maintenance and services shall conform to the requirements, standards and specifications of the Federal Energy Management Program (FEMP), DOE Energy Star, EPA Watersense, USDA Bio-Based Products, and Electronic Product Environmental Assessment Tool (EPEAT) as applicable.

C.4.1.2. Communication

The Contractor shall escalate all critical failures and potential critical failures to the COTR, Facility Manager, and FEAMO Management Team immediately. This includes reporting alarms and emergency response to life-safety and critical building system alarms. It is mandatory that the Contractor obtain positive notification acknowledgement of this communication.

C.4.1.3. Performance Metrics, Deductions & Equipment Criticality

The Contractor shall perform per the requirements stated in Attachment J-C06 “Performance and Deduction Metrics. The Government will use the MAXIMO CMMS “DFRC Monthly Work Order O&M Deduct” Report”, MAXIMO CMMS queries and random field inspections to determine monthly work order completion percentages and to measure other performance criteria. After review of the Monthly Performance Metric the Government will notify the Contractor of any intention to take deductions based upon Attachment J-C06 “Performance and Deduction Metrics” and will request the Contractor to adjust the following months invoice accordingly. The Contractor shall have an opportunity to dispute any deductions and request consideration to waive the deduction before sending the next month’s invoice to the Government for payment.

The J-C02 “Asset Maintenance Requirements” document, MAXIMO CMMS and the J-C06 “Performance and Deduction Metrics” distinguish between critical and non-critical

equipment assets. The criticality codes are based upon the impact of the equipment on safety, environment, and mission. Equipment assets with criticality codes of 1-4 are classified as “critical.” Equipment assets with criticality codes 5-9 are classified as “non-critical.” Failure to complete maintenance and repair of equipment in either criticality category within the time requirements of this contract will result in deductions; however the failure to perform critical assets maintenance and repair carries a higher level of deduction.

Maintenance failures are included in the J-C06 “Performance and Deduction Metrics”. Maintenance failures will be determined by investigating the condition of the failed assets and reviewing the maintenance history performed on the assets. Assets which fail to a condition where they are not operational or not safely operational, and which have open PM, PGM and PTI work orders which are beyond the targeted completion date will be evaluated to determine if the failure to perform maintenance was a factor in the failure of the equipment. Maintenance failure deductions will be based upon the findings of the Government’s investigation.

C.4.1.4. Quality

Quality PM will be assured through the Contractor’s QCP and Government Quality Assurance. To facilitate Government verification of inspections, the Contractor shall date stamp or mark all replacement items such as filters, belts, etc. with the date changed. Quality PM includes visual inspections, site clean-up, debris removal, and completion of specified reports such as input to CMMS.

The Contractor shall assure quality PT&I through the use of instruments that are calibrated and effective for the condition being monitored and ensuring PT&I is performed by qualified personnel. The Government will assess PT&I quality by evaluation of the analyst’s interpretation and diagnosis of equipment condition, inspection of the PT&I equipment, and review of the analyst’s qualifications.

C.4.1.5. Records & Reports

The Contractor shall submit a copy of the Monthly Performance Report (DRD14) five (5) business days prior to the monthly invoice date. The Monthly Performance Report shall report all elements identified in DRD14. The Monthly Performance Report shall also include:

> C.4.1.5.1. A list of equipment deficiencies noted during the inspections and testing that are beyond the scope of recurring work, as defined in *Section C.4.3 “Preventive Maintenance”* and *Section C.4.4 “Predictive Testing & Inspection (PT&I).”* These reports shall provide a detailed description of identified deficiencies, including PT&I data. If at the time of the inspection, the Contractor feels it would be more economical to make such repairs while conducting the inspection, such as while a valve is open for cleaning and inspection, the Contractor may notify the COTR of the defect and request approval to make the repair at that time. In all cases, PT&I data and analysis software is NASA property and must be accessible to facilitate Government verification of work.

C.4.1.5.2. All reports required as part of Recurring work in Attachment J-C07.

C.4.1.5.3. The Contractor shall complete and maintain records for each item of equipment and system listed in Attachment J-C02. The Contractor shall maintain completed records in CMMS throughout the term of the contract.

C.4.1.6. Anticipated Repairs

Based on the PM and PT&I inspections, the Contractor shall submit a monthly performance report (DRD14) and a list of needed repairs with estimates for facility items that that require corrective measures. The list shall be submitted five (5) business days prior to the monthly invoice date. Information submitted will be used to plan, prioritize and prepare repair projects.

C.4.2. Reliability Centered Maintenance

The DFRC RCM program is managed by the Government. The Government will continuously improve this program based on the RCM philosophy to provide the optimum mix of preventive maintenance, performance testing and evaluation, predictive test and inspection, programmed maintenance, and reactive maintenance necessary to minimize repair requirements and maximize the life span and performance of the Center's utilities, facilities, and facilities equipment.

During the term of this contract the Government will continuously improve the facilities maintenance job plans in the J-C02 "Asset Maintenance Requirements" document to improve conformance with:

1. NPR 8831.2E
2. NASA Reliability Centered Maintenance Guide
3. Manufacturers Recommendations and Requirements
4. Regulatory Agencies Requirements
5. Energy Efficiency Best Practices

The Contractor shall participate in the RCM Program Improvements and shall assign a RCM Associate that is trained, skilled and experienced in RCM and Predictive Test and Inspection to work with the Government Team to improve the program. Changes to the maintenance job plans may result in the addition or elimination of tasks, reduce or increase tasks frequencies, and add or eliminate predictive test and inspection requirements. The government or the contractor may request an equitable adjustment for changes that result in a cost increase of 10% or more, changes with less than a 10% cost increase are part of the firm fixed price of the contract.

C.4.3. Preventive Maintenance

The Contractor shall perform the preventive maintenance on the buildings and the equipment and systems listed on Attachment J-C02 "Asset Maintenance Requirements." PM work is a part of the firm fixed-price portion of the contract. PM consists primarily of: inspection, cleaning, lubrication, adjustment, calibration, and minor

part and component replacement (e.g., filters, belts, hoses, fluids, oil and grease) as required to minimize malfunction, breakdown, and deterioration of equipment; and the identification of and/or performance of any repairs required to bring the equipment up to the manufacturer's operating standards. PM shall be performed as specified in this section and shall include all of the applicable check-points and services indicated in the J-C02 Maintenance Requirements document. The Contractor shall complete all minor repair requirements to fix maintenance deficiencies identified during the performance of a PM inspection as part of the PM (See Section C.4.1). However, if the total cost required to complete identified repairs exceeds the trouble call threshold established in Section C.5.1, a request for IDIQ Repair Work may be initiated according to the procedures outlined in Section C.6. The cost limitations defined in Section C.5.1 apply to each PM inspection for each individual piece of equipment or equipment system.

C.4.4. Predictive Testing & Inspection (PT&I)

PT&I are inclusive in the firm fixed price of the contract. The Contractor shall provide all resources required to perform PT&I including test equipment, software, personnel, and contracted services. The Contractor shall perform all PT&I identified in the J-C02 “Asset Maintenance Requirements” including Infrared Thermography, Vibration Analysis, Lubricant Oil Analysis, Transformer Oil Analysis, Fuel Analysis, and Eddy Current Testing. The Contractor shall comply with the recommended procedures, processes and standards described in the 2008 NASA Reliability Centered Maintenance (RCM) Guide (Attachment J-C10). Personnel performing PT&I shall be certified per section C.4.4.

Future PT&I requirements on revised job plans referenced in section C.4.1 may require PT&I tasks to be performed which are not currently part of this contract but are identified in Table 6-1 “PT&I Applications” below. If the Contractor determines new “state-of-the-art” or alternate technology is available that is not listed in this section, the Contractor may use this technology provided it improves the prediction of equipment and system conditions and is approved by the COTR.

Table 6-1. PT&I Applications

TECHNOLOGIES / APPLICATIONS	Pumps	Electric Motors	Diesel Generators	Condensers	Heavy Equipment/Cranes	Circuit Breakers	Valves	Heat Exchangers	Electrical Systems	Transformers	Tanks, Piping
Vibration Monitoring/Analysis	√	√	√		√						
Lubricant, Fuel Analysis	√	√	√		√					√	
Wear Particle Analysis	√	√	√		√						
Bearing, Temperature/Analysis	√	√	√		√						
Performance Monitoring	√	√	√	√				√		√	
Ultrasonic Noise Detection	√	√	√	√			√	√	√	√	
Ultrasonic Flow	√	√		√			√	√			
Infrared Thermography	√	√	√	√	√	√	√	√	√	√	
Non-Destructive Testing (Thickness)				√				√			√
Visual Inspection	√	√	√	√	√	√	√	√	√	√	√
Insulation Resistance		√	√			√			√	√	
Motor Current Signature Analysis		√									
Motor Circuit Analysis		√				√			√		
Polarization Index		√	√						√		
Electrical Monitoring									√	√	

The Contractor shall perform the PT&I, document the PT&I findings, maintain a PT&I database(s), trend and monitor PT&I conditions, and provide analyses of findings and trends. The analyses shall include root cause failure analysis and identify patterns of distress or abnormal operating parameters. The Contractor shall recommend changes to RCM job plans based upon PT&I findings, analyses, and evaluations of equipment performance and failure history.

The Contractor shall repair and correct PT&I Findings up to the TC limit ($2,000). If the cost to correct defects and deficiencies exceeds $2,000 the Contractor shall provide an IDIQ Repair Proposal for Government consideration to correct the deficiencies.

All PT&I results and reports are Government property and shall be accessible to the Government at all times during the course of this contract. All PT&I data collected (including finds and cost avoidance) shall be documented in the RCM / PT&I database. The Contractor shall generate reports for all PT&I activities and submit copies to the COTR. The PT&I report shall include, but is not limited to, PT&I performed, PT&I Finds, PT&I alerts, and recommended corrective actions.

C.4.5. Facility Interior & Exterior Maintenance & Repair Requirements

The Contractor shall be responsible for interior and exterior maintenance and repair requirements. This work includes maintenance and repairs to the interior and exterior of facilities to ensure the building systems are safe and aesthetically in a good state of repair. Facility interior and exterior work will be addressed through TC, and approved SR and IDIQ Repair Tasks. Examples of this type of work include the following.

C.4.5.1 Doors and Door Hardware

The Contractor shall maintain, adjust and repair all doors and door hardware including locks, latches, panic devices, and strikes. Lock cores, keys, and all Security Locking Systems are maintained by others. The Contractor shall replace cracked or broken glass in doors.

C.4.5.2 Windows and Window Hardware

The Contractor shall replace cracked or broken glass in windows. Replacement glass shall be of the same size, type, and quality as the existing glass. Damaged, deteriorated, missing, or inoperative windows, screens, blinds, shutters, window coverings and hardware shall be repaired or replaced to provide operable, serviceable, and weather-tight window installations. Damaged or deteriorated weather stripping shall be replaced.

C.4.5.3 Floors and Floor Coverings and Finishes

Damaged or deteriorated flooring, subflooring shall be repaired to provide a structurally sound, uniform, and aesthetic surface which is free of cracks, breaks, chips, tears, gouges, stains, and buckling. The Contractor shall inspect exposed portions of subfloor during repair activity. Any evidence of structural damage or deterioration shall be immediately reported to the COTR before proceeding. Some flooring material, baseboard, or adhesive may contain asbestos, which will require special handling and disposal in accordance with NASA DFRC Management of Lead and Asbestos Materials, CFR, EPA Regulations, and DOT Regulations.

Repair damaged carpet, replace or install transition strips, tighten loose carpeting, repair seams, and other related items as required to reasonable match or fix existing carpeting. Complete room carpet replacement is not a part of the fixed priced portion of this contract.

Cracked, broken, or chipped areas of concrete floors shall be patched with a non-shrinking cement mortar. Areas shall be cleaned and all loose concrete removed. The

patch shall be finished even with the adjacent surfaces and finished to match existing texture.

Deteriorated or damaged sections of vinyl baseboard shall be repaired or replaced. Loose baseboards shall be re-secured to the wall. Damaged, deteriorated, or missing baseboard sections shall be replaced.

Ceramic tile floors that are broken, missing, cracked, or discolored shall be replaced. When replacement tiles of an exact match cannot be found, the Contractor shall match as closely as possible to minimize the visual effect of the mismatch.

C.4.5.4 Ceilings, Walls, and Wall Coverings and Finishes

Damaged and deteriorated ceilings and walls shall be repaired to provide a surface which is free of noticeable cracks, spalls, raised areas, holes, dents, marks, and stains to match the surrounding surfaces. Ceiling and wall materials may contain asbestos, which will require special handling and disposal in accordance with NASA DFRC Management of Lead and Asbestos Materials, CFR, EPA Regulations, and DOT Regulations.

Broken and stained ceiling tiles shall be replaced with tiles of the same material, style, size, and color. Damaged and broken suspended grid system shall be repaired and/or replaced as necessary to provide a suspended ceiling system as designed.

Damaged or deteriorated exterior wall areas shall be restored to a serviceable, structurally sound, watertight, and weather-tight condition. This includes sealing penetrations in wall openings, replacing damaged or deteriorated siding and repair of other defects which would render an unsightly appearance to exterior walls.

C.4.5.5 Restroom Partitions and Fixtures

Damaged, deteriorated, or missing restroom fixtures and accessories shall be repaired, or replaced if beyond repair. Items shall include, but not be limited to urinals, toilets, flush valves, faucets, partitions, mirrors, soap trays, towel bars, toilet paper rollers, and hardware components.

C.4.6. Mechanical System Maintenance and Repair

C.4.6.1. Critical Facility Equipment & Systems Certification Requirements

The Contractor shall provide inspection, test and certification of the critical facilities equipment and systems as indicated below. Certification, other than backflow devices, shall be by others not responsible for the maintenance and repair of the equipment and systems. Deficiencies identified during the Certification, Inspection and Testing shall not be corrected by the Certifying Contractor in order to preclude any conflict of interest. Third Party Contractors providing certification of equipment and systems shall possess the appropriate Contractors License & Certifications and shall be approved by the Government. The third party shall certify that the inspections, test and certifications are true and factual. The Government reserves the right to hire an impendent third party of

their own to evaluate any test, inspection and certification results that are deemed suspect. The Contractor shall present all tests, inspection and certification documents to the COTR. The COTR will review the report with the Contractor. The Contractor shall correct all deficiencies identified by the independent third party contractor. Maintenance deficiencies that should have been addressed during the performance of PM, PGM and PT&I shall be corrected by the Contractor at no cost to the Government. Other deficiencies shall be completed as Trouble Calls up to the $2,000 limit or IDIQ Repair Work upon approval of the Government and the systems retested and certified. The contractor shall use the attached government certification forms (J-C53, J-C54, J-C55, and J-C56) or an equivalent recognized by the local authority having jurisdiction and approved by the Government.

C.4.6.1.1. Fire Life Safety Systems

The Contractor shall provide independent third party inspection, test and certification of the following fire life safety systems in buildings B703, B4800, B4801, B4802, B4840, B4820, B4826, and B4833 at the frequency intervals specified or in accordance with the requirements of the local authority having jurisdiction. The third party shall be a licensed Contractor that is authorized to perform fire life safety systems testing and certification on behalf of the government agency's fire marshal or authority having jurisdiction. Fire Suppression Systems certification shall be documented on J-C55 or an equivalent form approved by the local authority having jurisdiction and the Government.

FIRE LIFE SAFETY SYSTEM DESCRIPTION	TEST & CERTIFICATION FREQUENCY
Fire Signaling Systems & Devices	Annually
Fire Department Notification System	Annually
Automatic Elevator Systems Phase 1 and 2	Annually
Egress Lighting & Fire Signaling Standby Power Systems	Annually
Fire Pumps	Annually
Fire Hydrants	Annually
Clean Agent Fire Extinguishing Systems (Inergen, Halon, FM200, CO2)	Annually
Dry Chemical Extinguishing Systems	Annually
Wet Chemical Extinguishing Systems	Annually
Gas Detection Systems	Annually
Pressure Regulating Valves (Maintenance Test Only)	Annually
Smoke Management & Evacuation Systems	Annually
Pre-action, Deluge, Dry Pipe and Foam Valve (Trip Test Only)	Annually
Automatic Closing Fire Protection Assemblies (buildings over 75 feet)	Annually
Automatic Closing Fire Protection Assemblies	5 Year

(all buildings)	
Sprinkler Systems	5 Year
Stand Pipe Systems	5 Year
Pressure Regulating Valve Flow Test	5 Year

The third party inspection and test report, and certificate or letter of certification shall be submitted COTR. The COTR will review the report with the Contractor. The Contractor shall correct all deficiencies identified by the independent third party contractor. Maintenance deficiencies that should have been addressed during the performance of PM and PT&I shall be corrected by the Contractor at no cost to the Government. Other deficiencies shall be completed as Trouble Calls up to the $2,000 limit or IDIQ Repair Work upon approval of the Government. The systems shall be retested after deficiencies are corrected in order to obtain certification.

C.4.6.1.2. Hangar Door Systems
The Contractor shall provide independent third party test and certification of the hangar door systems at building B4801, B4802, B4820, B4823, B4833, B4840, and B703 on an annual basis. The third party contractor shall inspect and test the operation of all electrical and mechanical components, safeties and operating controls and certify that the system is free of defects and operating deficiencies. The certification shall use test, measurement and visual criteria in rendering certification of the hangar doors. To the greatest degree possible the contractor shall use test and measurement criteria in the performance of the certification. The third party inspection and test report, and certificate or letter of certification, including Hangar Door Certification form J-C53 (or government approved equivalent) shall be completed shall be submitted to the COTR. The COTR will review the report with the Contractor. The Contractor shall correct all deficiencies identified by the independent third party contractor. Maintenance deficiencies that should have been addressed during the performance of PM and PT&I shall be corrected by the Contractor at no cost to the Government. Other deficiencies shall be completed as Trouble Calls up to the $2,000 limit or IDIQ Repair Work upon approval of the Government. The door systems shall be retested after deficiencies are corrected in order to obtain certification.

C.4.6.1.3. Elevators
Dryden passenger and freight elevators shall be maintained, repaired, and certified by a State of California C11 licensed elevator contractor. Maintenance shall be performed per the requirements of Attachment J-C02 and Section C.4.7. The Contractor shall coordinate the testing, inspection, certification and permitting of all elevators annually. The operating permits will be maintained current and will be posted in the elevator cabs. Certification requires completion and submittal of Elevator Annual Certification form J-C56 or an equivalent approved by the Government.

C.4.6.1.4. Cranes

The Contractor shall provide annual certification of all cranes listed in J-C02 in accordance with the requirements section C.4.8. Copies of the crane reports maintenance and certification reports shall be provided to the Safety Office Lift Manager and COTR. The contractor shall complete and submit Crane Certification Form J-C57, or an equivalent approved by the Government, annually.

C.4.6.1.5. Backflow Devices

The Contractor shall test and certify all backflow devices annually in accordance with the maintenance requirements in Attachment J-C02. The Contractor shall obtain and file the required certification notice with the COTR to be presented to the authority having jurisdiction. The annual test and certification of the backflow devices at the Dryden Aircraft Operations Facility in Palmdale shall be performed by a Los Angeles County Certified Backflow Device Tester. The certification shall be submitted to the COTR for filing with the Los Angeles County Health Department. The backflow devices at the Dryden Flight Research Center (DFRC) at Edwards Air Force Base shall be tested and certified by a backflow device tester certified by the Kern County Health Department. The Certification shall be submitted to the COTR for filing with the DFRC Safety Office. The Contractor shall provide copies of all Backflow Test Reports and Certifications to the COTR and enter the report in the CMMS Data Base.

In addition a Water System Backflow Prevention/ Cross-Connection Survey shall be conducted by a Certified Surveyor every five years. Alternately, an annual survey of 20 percent of the facilities and devices may be performed. An annual survey program must ensure that no facility, system or device goes longer than five years without being surveyed. A survey shall be conducted of new buildings upon completion and prior to acceptance. Surveys shall include as a minimum, a detailed inventory of assemblies, identification of cross connections, a description of water usage, classification of hazard, and selection of proper protection, and shall be performed by a surveyor meeting the qualification requirements of the respective County Health Department.

Certification is essential in meeting the standards of the Safe Drinking Water Act (SDWA), as amended, Title 42 United States Code (USC) Section 300f et seq.

An independent third party may not be required for Backflow Device Certification if the Contractor is a registered backflow device tester and qualified Surveyor for both agencies (Los Angeles County and Kern County Health Department.

C.4.6.1.5.1 Testing and Inspecting Backflow Preventers

C.4.6.1.5.1.1 Inspection Schedule – The Contractor shall ensure that a schedule is developed and used by certified technicians to inspect and test backflow assemblies.

C.4.6.1.5.1.2 Annual Inspection Tasks – A certified backflow technician shall inspect identified cross-connection locations to ensure the following. The contractor shall complete and submit Backflow Annual Certification Form J-C54, or an equivalent approved by the Government, annually.

1. Proper air gaps are maintained.

2. Backflow prevention devices are in good condition and readily accessible.

3. Newly installed devices were installed correctly and are free of debris that could interfere with their testing and functioning.

4. Devices have been properly insulated and protected against freezing weather conditions and that test ports are accessible.

C.4.6.1.5.1.3 Testing Devices – Test all devices in accordance with FCCCHR's Manual of Cross-Connection control, Section 9, or the manufacturer's instructions for the particular device, or using procedures recognized by the tester's certifying agency.

C.4.6.2. Specific Requirements

DFRC mechanical systems include:

1. Air conditioning equipment and systems, including reverse cycle cooling/heating systems, electrical resistance strip heating elements, package units, and split/central system units with factory built-in elements and contained within the evaporator/air handling unit cabinet as an integral part of the system.
2. Centrifugal, screw machine, and reciprocating water chiller systems.
3. Cooling towers, structures, components, and systems.
4. Evaporative cooling systems.
5. Ventilation equipment and systems.
6. Refrigeration equipment and systems.
7. Compressed air plants and systems.
8. Vacuum pumps and systems.
9. Pneumatic, electrical, and electronic controls and systems.
10. Water softening systems
11. Condenser water systems chemical treatment.
12. Chilled water systems chemical treatment.
13. Hot water and steam heating coils.
14. Natural Gas (NG) piping, regulation and distribution system
15. Energy Management Control System
16. Fuel Station Maintenance

17. Any additional equipment that may be added by the Government to Attachment J-C02.

C.4.6.3. Preventive Maintenance

The following general requirements are applicable to and amplify the specific PM inspection requirements contained in the CMMS and Attachment J-C02.

C.4.6.3.1. Regular Adjustment
Regular adjustments, as may be required for efficient, economical, and safe performance of equipment systems, shall be made at the time of each scheduled preventive maintenance action.

C.4.6.3.2. Periodic Cleaning, Sanitation
Routine and scheduled cleaning of work areas and mechanical equipment rooms, systems, drains, drain piping, traps and pans, condenser coils, oil filters, applicable air filters, after coolers, cooling and/or heating coils, blower shields and fans, grills, registers, screens, diffusers, electrical contacts switch boxes, motors, gauges, strainers, dampers, actuators, louvers, safety controls, and any other applicable equipment, shall be accomplished as a part of the regular scheduled PM inspection and service, or more frequently as may be necessary to maintain a clean and sanitary operating condition.

C.4.6.3.3. Lubrication, Oil
Check applicable equipment for excessive bearing temperatures, noise, and inadequate lubrication of bearings and moving parts. Lubricate in accordance with manufacturer's instructions as to type of lubricant/oil and frequency of lubrication. Check oil level and oil quality and change dirty/contaminated oil. Make other adjustments to oil systems as required. Check oil temperatures and pressure.

A laboratory oil analysis shall be conducted annually on all centrifugal chiller systems with capacities of sixty (60) tons or greater. This test will check for acid, moisture, metals content, and other contaminants in accordance with the particular chiller manufacturer's requirements. The Contractor shall submit the name of the proposed testing laboratory not more than sixty (60) days after the start date of the contract for approval. Oil samples shall be drawn during the appropriate PM inspection, and copies of test results submitted to the COTR not more than three (3) weeks later.

C.4.6.4. Equipment Operations

The Contractor shall operate each of the systems in this Section to minimize unscheduled downtime and impacts to Center operations. Operations shall be conducted in accordance with applicable manufacturer's specifications, manuals, brochures, literature, directives, pamphlets, etc., except as may be directed by the COTR for reasons of emergencies, inclement weather, energy conservation, safety, etc.

No liquid discharges shall be directed to the storm sewer. All new connections to the sewage system must first obtain a discharge permit.

C.4.6.5. Specific Requirements for Air Conditioning Equipment

Air conditioning systems to be operated, maintained, and repaired are listed in the CMMS and Attachment J-C02. These systems vary in size from 1.5 tons to 400 tons. Maintenance, repair, and operation of these systems shall be performed in accordance with the recommendations of the manufacturer and the provisions of this contract. The Contractor shall provide certified technicians who test, maintain, service, repair, or dispose of refrigerant or Halon-containing equipment.

The Contractor shall complete a J-C13 HVAC equipment performance sheet for all maintenance and repairs performed on packaged and split air conditioning and heat pump units. The Contractor shall correct all performance deficiencies.

The Contractor shall manage the handling and use of refrigerants in accordance with EPA Rule 608. The Contractor shall submit an annual report that documents the use of refrigerants at Dryden Facilities. The report shall document and include the following.

1. Refrigerant activity by asset including, work order number for the work, pounds of refrigerant added, refrigerant recovered
2. Refrigerant purchased
3. Refrigerant recovered
4. Refrigerant recycled
5. Status of Refrigerant Recovery Equipment Registration with EPA
6. Status of Technician Universal Certifications
7. Identify all equipment with leak rates exceeding federal, state and local limits

C.4.6.6. Specific Requirements for Cooling Tower Systems

The Contractor shall furnish services for the maintenance and repair of cooling tower systems, and for the treatment of cooling tower circulating water. Services shall consist of, but not be limited to, development of a treatment program for each cooling tower; installation of monitoring and treatment equipment; flushing and cleaning of cooling towers; and testing and treatment of circulating water to prevent freezing, accumulation and precipitation of scale, corrosion, biological growths, and other foreign materials. Attachment J-C02 lists the existing cooling towers, all of which require service. Attachment J-C15-1 contains chemical treatment requirements. Within sixty (30) days of the contract start date, the Contractor shall prepare a Cooling Tower Chemical treatment plan for COTR approval.

C.4.6.7. Chemical Treatment of Closed Loop Water Systems

The Contractor shall implement a chemical treatment program to prevent freezing, fouling, scaling, corrosion, and sludge in closed loop heating and cooling systems at B4800, B4820, B4823, B4840, B4838, B4982, B4801, B4802 and B703. The chemical treatment shall be administered to protect all equipment, components and piping

including boilers, chillers, coils and heat exchangers. The Contractor shall provide a Chemical Water Treatment Program within the first 30 days of the contract for Government review and approval.

C.4.6.8. Specific Requirements for Compressed Air Systems and Components

Compressed air systems required to be maintained and repaired are listed in the CMMS and Attachment J-C02 and J-C15-2. These systems vary in size from fractional horsepower units up to 100 horsepower, and pressure ranges up to 150 PSI. Maintenance and repair of these systems shall be performed in accordance with manufacturer recommendations and the provisions of this contract.

C.4.6.9. Specific Requirements for Refrigeration Units and Systems

The refrigeration units and systems to be maintained and repaired are listed in the CMMS and Attachment J-C02. These systems include refrigerated walk-in rooms, walk-in freezer and refrigerated boxes; ice making equipment, medical and immunization supply refrigeration units; and various other miscellaneous equipment. Maintenance and repair of these systems shall be performed in accordance with the recommendations of, and as to meet the rated temperature ranges specified by, the manufacturer and the provisions of this contract.

C.4.6.10. Specific Requirements for Natural Gas Systems

Natural gas systems required to be maintained and repaired are listed in the CMMS and Attachment J-C02 and J-C15-3. The Contractor shall maintain and repair the existing natural gas distribution system, including: underground and aboveground piping, regulators, meters, Temperature-Pressure compensators, and venting. Locations of existing systems are available on as-built drawings.

C.4.6.11. Specific Requirements for Fueling Station Maintenance

The DFRC fueling station is a joint support effort. Daily administration and operation of the fuel station and fuel management is performed by others and excluded from this contract. The Facilities Maintenance Contractor shall provide all inspection, maintenance and repair support for the building structures, vapor recovery systems, fuel transfer pumps, dispenser pumps, fuel storage tanks, grounding, electrical, lock systems, fire systems, and all other related systems as specifically stated in J-C02. Equipment to be maintained is listed in attachment J-C02. The contractor shall perform all regulatory agency required testing and certification required to maintain compliance with operating permit conditions. This includes but is not limited to the annual vapor recovery systems testing.

C.4.6.12. Above Ground Stationary Fuel Tanks

The Contractor shall be responsible for the care and maintenance of all stationary fuel tanks at DFRC and DAOF locations. The Contractor shall comply with all federal, state, and local regulations and DRYDEN's DCP-S-044 (attachment J-C35) requirements when performing required inspection, testing and maintenance procedures. Attachment JC-29 provides the inventory of the Above Ground Stationary Fuel Tanks that are

required to be maintained. The Contractor shall perform a weekly inspection and complete Form D-WK 246-8 (attachment J-C37) on each stationary fuel tank. The Contractor shall perform and document the inspection of each above ground fuel tank berm or secondary containment area after each rain event on Form D-WK 243-8 (attachment J-C36) AST Berm Stormwater Drainage log. During the performance of monthly preventive maintenance the Contractor shall document inspection findings on form D-WK 244-8 attachment J-C38 “Ancillary AST Inspection Checklist”. The Contractor shall file and maintain records of all inspections and maintenance activities and provide upon request to government personnel and auditors.

C.4.6.13. Specific Requirements for Energy Management Control System (EMCS)

DFRC has a proprietary EMCS (Siemens Apogee) for the surveillance, control, and regulation of HVAC and utility systems throughout DFRC and DAOF see Attachment J-C15-4. The Contractor shall be responsible for the overall maintenance and management of the EMCS. The Contractor shall maintain the electrical, mechanical, programming, database management, system updates, system back-ups, and licensing of the EMCS. The Contractor shall monitor the system for abnormal system conditions and/or alarms, including notification through the Remote Emergency Notification (RENO). Alarms from the EMCS shall be logged and responded to as trouble calls at the time alarm notification occurs. The EMCS shall be managed and operated to optimize the energy performance of HVAC Systems and to protect HVAC systems from adverse operating conditions. The Contractor shall operate the EMCS and monitor it daily to ensure schedules and operating parameters are maintained in compliance with DFRC Energy Policy and COTR requirements. The Contractor shall ensure that alarms and programming is set up in the EMCS to protect HVAC Systems from operating outside safe parameters including freezing, overheating, and over pressurization.

C.4.6.14. Miscellaneous Equipment and Systems

Miscellaneous equipment and systems listed in Attachment J-C02 shall be maintained and repaired in accordance with the recommendations of the manufacturer and the provisions of this contract, including the following:

C.4.6.14.1. Ventilating Equipment and Systems
The Contractor shall maintain and repair ventilating equipment consisting of ventilating, exhaust, and utility fans, and those systems associated with the operation of these items of equipment.

C.4.6.14.2. Peripheral Systems
The Contractor shall maintain and repair peripheral systems associated with the equipment included in Attachment J-C02, including the following:

1. Pneumatic and/or electrical/electronic controls shall be maintained and repaired, including air compressors and all related components; air dryers, refrigeration and/or chilled water systems; and timing devices, switches, microprocessors, transformers, relays, sensors, gauges, thermometers,

thermostats, sub-bases, covers, guards, sending units, dampers, wiring, tubing actuators, valves, fittings, piping, regulators, master and sub-master controllers, etc., normally associated with the contracted equipment.

2. All electrical wiring and conduit from the load side of the equipment starter; the equipment starter; the respective electrical drive motor for all equipment with remote magnetic starters, contacts, relays, etc.

3. All insulation of refrigeration and oil piping, chilled water piping, and other piping associated with equipment.

4. All motors, starters, heaters, contacts, relays, fuses, timing devices, switches, transformers, wiring, etc., not specifically included elsewhere in the contract.

5. Condenser water and chilled water circulating pumps, motors, starters, contacts, relays, switches, fuses, wiring, heaters, base mounts, shafts, couplings, drives, guards, valves, seals, gaskets, rupture discs, pressure gauges, strainers, filters, thermometers, and piping between pumps and equipment, etc.

6. Chilled water make-up system to include all piping, valves, filters, strainers, expansion tanks, and other related components thereof that are down-stream from the make-up water regulating valve and/or manual by-pass valves, and to that point where the make-up water enters the chilled water system.

7. On systems that have a magnetic starter, contact, or relay as an integral part of the unit, the Contractor shall maintain the wiring and conduit in between, up to the load side of the disconnect switch and/or circuit breaker, whichever is nearest to the unit. On systems without magnetic starters, contacts, relays, etc., (such as exhaust fans), the Contractor shall maintain the wiring and conduit in between, up to the load side of the disconnect switch, on/off switch, and/or circuit breaker; whichever is nearest to the unit.

8. As required, all incidental materials, hardware panels, boxes, brackets, supports, weather-stripping, caulking, sealing, flashing, connections, etc.

9. Any other equipment, systems, components, and parts relative to the maintenance, repair, and operation of equipment not specifically covered elsewhere in this contract, unless specifically excluded.

C.4.6.14.3. Dehumidification Units and Systems
Dehumidification units shall be maintained and repaired to the recommended standards of the manufacturer and in accordance with the provisions of this contract.

C.4.6.14.4. Vacuum Pump Units and Systems
Vacuum pump units and systems shall be maintained and repaired in accordance with the manufacturer's manuals and procedures and the provisions of this contract.

C.4.6.14.5. Drinking fountains
Water fountains shall be maintained and repaired in accordance with the recommended standards of the manufacturer and in accordance with the provisions of this contract. Water temperatures shall be maintained within design specifications and units will be well adjusted to provide for a suitable and adequate water flow when dispensing. Systems include supply water piping, filters, screens, strainers, and valves from the supply water shut-off valve to the unit; and drain water piping and traps from the unit to the point where water discharges into the floor drain or other drain system, or to that point where the drain piping passes through a wall or floor. The Contractor is not responsible for the maintenance of personal water coolers.

C.4.6.14.6. Eyewash Stations and Emergency Showers
Eyewash stations and emergency showers shall be inspected monthly and maintained in working order. Stations with temperature control shall be inspected for proper operation within specified temperature range. The Contractor is not responsible for mobile eyewash apparatus.

C.4.6.15. Licensing and Qualification Requirements

Personnel specifically qualified and trained to work on mechanical systems and equipment shall perform all work. Evidence of all required licenses, as well as documentation of the qualifications of personnel, shall be provided to the COTR within sixty (60) days of contract start date.

C.4.7. Elevator Maintenance and Repair

C.4.7.1. Preventive Maintenance

The Contractor shall perform Preventive Maintenance work on each of the equipment systems listed in Attachment J-C02. Work shall consist of maintaining these systems in a safe, reliable, and satisfactory operating condition. All work shall comply with the current ASME A4.4.1, ASME A4.4.2, and state standards. As part of PM, the Contractor shall regularly examine and test all safety devices.

C.4.7.2. Inspections, Testing, And Certification

The Contractor shall provide inspection and testing services as required herein to support routine and periodic certification requirements of elevator and dumbwaiter systems. All inspections and tests shall be performed in the presence of a certified inspector. All inspection and testing shall be performed in accordance with ASME

A4.4.1 and ASME A4.4.2. Deficiencies discovered during testing shall be corrected as part of the test.

C.4.8. Built-in Cranes Maintenance and Repair

C.4.8.1. Specific Requirements

All cranes and associated equipment systems, including but not limited to built-in (fixed) cranes, overhead traveling, jib and wall cranes, monorails and hoists are listed in Attachments J-C02.

C.4.8.1.1. Certification and Licensing
Certification of cranes shall be based on the annual condition inspection and load test or other appropriate proof tests. The Contractor shall maintain all documentation concerning certification and licensing. Inspection, testing and certification are part of the fixed-price portion of the contract.

C.4.8.1.2. Preventive Maintenance
The Contractor shall perform Preventive Maintenance work on each of the cranes listed in Attachment J-C02. Work shall consist of maintaining these cranes in a safe and reliable operating condition. All work shall comply with the original equipment manufacturers specifications, recommendations and manuals, *NASA Standard for Lifting Devices and Equipment*, NASA-STD-874.6.9, and applicable OSHA and ASME/ANSI requirements.

C.4.8.1.3. Safety Inspections and Testing
The Contractor shall provide monthly, quarterly, and annual safety inspection and testing services to ensure safety and support certification requirements of crane systems. All inspections and tests shall be performed in the presence of a certified Inspector. All inspection and testing shall be performed in accordance with NASA-STD-874.6.9 and ASME B-30 series.

C.4.8.1.3.1. Scheduling Requirements
The Contractor shall provide the annual inspections/tests to include annual load tests and certification of Critical Lift cranes and load test and certification of Non-critical Lift cranes every four years.

C.4.8.1.3.2. Certification Posting
Upon completion of required testing, the Contractor shall post each certification in the proximity of the crane inspected. The Contractor shall maintain a secondary copy in the Facility History Files. All work performed shall also be recorded in the CMMS.

C.4.9. Electrical System Maintenance and Repair

C.4.9.1. Specific Requirements

DFRC electrical systems include all facility electrical systems such as (1) underground transmission and distribution lines from delivery points to all main service entrance switches in buildings and structures including substations and accessories; (2) exterior lighting systems, including airfield, street, flood, perimeter and security lighting; (3) secondary drops to the building or structure weather head or first connection to the building system; (4) all building interior electrical systems; (5) grounding systems.

C.4.9.2. Operations Program

The Contractor shall ensure safe, reliable, efficient operation of the electrical and emergency generation systems within their rated capacities to continuously deliver stable electric power to all connected loads. The Contractor shall ensure a steady, fault-free power supply during mission support periods and during severe weather, such as lightning phenomena, dust storms, earthquakes, etc. The Contractor shall: keep equipment operating logs; perform operational testing; and measure, record, and report operating data (voltage, current, power demand, kilowatt hours, fuel consumption, etc.).

The Contractor shall test the operation of all Ground Fault Current Interrupters on a monthly basis in accordance with the J-C02 addendum and J-C49 documents.

C.4.9.3. PM Program

The PM program shall include, but shall not be limited to, periodic inspection, testing, cleaning, lubrication, and adjustment; insulating oil testing, insulating oil filtering, treatment and replacement; lubricating oil replacement; filter cleaning and replacement; and minor parts replacement and minor repairs as required to keep systems and equipment in optimum operating condition.

C.4.9.4. Electrical Work

C.4.9.4.1. Work Performance

The Contractor shall operate and maintain the electrical systems and their associated components in accordance with Sections C.11 and C.12. The workmanship shall meet, as a minimum, the requirements as specified by the latest National Electrical Code (NEC) as well as the provisions of this contract, including 29 CFR 1910 Subpart S, and NFPA70E. The Contractor shall first obtain approval in writing from the COTR prior to any deviation from the NEC requirements.

C.4.9.4.2. Electrical Equipment

The Contractor shall maintain electrical equipment listed in Attachments J-C01, J-C02, and J-C04. This includes switchgear, breakers, transformers, motors, generators, battery banks, uninterruptible power supply (UPS) systems, control equipment and instruments associated with electrical power distribution, primary substations, etc. The Contractor shall maintain electrical equipment so as to

eliminate electrical distribution failures and power fluctuations due to Contractor negligence. All activities shall be conducted in accord with applicable sections of the National Electrical Code and other guidance as cited herein. Exact locations are available on as-built drawings.

C.4.9.4.2.1. Primary Substations

1. The Contractor shall maintain primary substations. This includes:

2. Substations involving voltage levels of 34.5 KILOVOLTS (KV) and 12.47 KV lines to point of attachment to incoming overhead lines.

3. All primary substation equipment such as cutouts, disconnect switches, air switches, SF6 switches, fuses, air and oil circuit breakers, current and potential instrument transformers and associated metering and control devices.

4. Oil-filled and dry type transformers, grounding and lightning protection systems, and associated buss work and cables.

C.4.9.4.2.2. Secondary Equipment

The Contractor shall maintain secondary equipment involving voltages of 600 volts and below at nominal voltage levels of 480, 277, 208, and 120 single and three phase, at 60 and 400 hertz. This includes equipment consisting of substation secondary gear involving air circuit breakers, current and potential instrument transformers, fuses, meters, recorders, relays, contactors, magnetic starters, buss ducts, cables, grounding systems, lightning protection systems, ground fault systems, and feeders.

C.4.9.4.2.3. Power and Lighting

The Contractor shall maintain power and lighting distribution systems including circuit breakers, switches, panels, receptacles, lighting fixtures, dimmers, contactors, motors, built-in appliances, emergency lighting systems, static grounding systems, obstruction lighting, re-lamping, fusing, conduits, and conductors.

The Contractor shall test all GFCI receptacles, outlets and circuit breakers on a monthly basis, in accordance with NFPA 70 Articles 110.3 and 210.8 to ensure proper installation and operation. Attachment J-C49 identifies known GFCI locations. The contractor shall test all GFCI devices and provide updates to the government identifying all GFCI devices not listed on J-C49.

All Hangar lighting lamps and interior fluorescent lighting lamps shall be cleaned and replaced on a tri-annual basis. Exterior lighting shall be inspected on a quarterly basis and non-working lamps and fixtures shall be replaced / repaired upon discovery. Attachment J-C24 lists bulb types and an approximate count.

C.4.9.4.2.4. Emergency Power Generation
The Contractor shall maintain standby power generating plants including transformers, circuit breakers, diesel engine-driven generators, associated control systems, batteries, chargers, fuel supply line regulators, valves, controls, distribution systems with associated switchgear and transfer switches, oil-fused cutouts, and unit load centers. The Contractor shall operate these systems as needed to support DFRC's mission. The Contractor shall ensure that emergency generators are maintained in compliance with the local Air Pollution Control permits. The Contractor shall support all inspections of air permitted equipment.

C.4.9.4.2.5. Associated Equipment
The Contractor shall maintain the electrical system of miscellaneous equipment, including parts, such as motors, generators, coils, pumps, solenoid valves, controllers, regulators, back-up and power generation equipment. Equipment such as cathodic protection systems, duct banks, underground conduits, conduits, vaults, and pull boxes shall also be maintained.

C.4.9.4.2.6. Substation Relays
The Contractor shall calibrate all relays requiring calibration bi-annually. Calibration shall be performed by a certified calibration technician.

C.4.9.4.2.7. Buss Bars and Copper Works
The Contractor shall inspect annually all buss bars at the mechanical connecting joints by thermographic and mechanical means. The Contractor shall take corrective measures (i.e. cleaning surfaces and installing new bolts) immediately if the joint is loose or producing abnormal heat.

C.4.9.4.2.8. 400 Hertz Aircraft Power
The Contractor shall maintain the 400 Hz aircraft power supplies listed in Attachment J-C02 in accordance with Sections C.11 and C.12 to minimize unscheduled downtime.

C.4.9.4.2.9. Grounding Systems
The Contractor shall perform scheduled maintenance for grounding systems per DCP-F-613.

C.4.9.5. Licensing and Qualification Requirements

Personnel specifically qualified and trained to work on electrical systems and equipment shall perform all work. Evidence of all required licenses, as well as documentation of the qualifications of personnel, shall be provided to the COTR within sixty (60) days of contract start date.

C.4.10. Fire Protection System Inspection, Testing, Maintenance and Repair

C.4.10.1. Specific Requirements

Equipment will be continuously maintained in complete, reliable, and safe operating condition as originally designed and intended and in compliance with NASA STD-8719.11 and current National Fire Protection Codes to include NFPA 10, 11, 12A, 13, 20, 25, 72, 101 (Life Safety) 409 and 2001. The Facilities Maintenance Requirements document J-C02 and J-C17 describe the systems and equipment to be serviced under this contract section and include.

Fire Life Safety Systems Maintenance shall be documented on forms that comply with the requirements of NFPA 72 and NFPA 25 “Forms for Inspection, Testing & Maintenance. The forms shall be completed during operations inspections and at the time of maintenance and shall be submitted to the COTR on the first business day of the month following completion.

The testing of fire alarm and fire suppression systems must not interrupt the operations of the building occupants and is therefore predominantly required to be performed during non-core working hours. Non-core working hours are generally after 5 PM Monday-Friday, or weekends and holidays.

C.4.10.1.1. Fire Alarm Systems

The contractor shall maintain all fire alarm systems hardware, firmware, software, programming, electrical power supply, network conductors and connections.

C.4.10.1.2. Automatic Sprinkler and Standpipe Systems

Automatic sprinkler and standpipe systems, including fire pumps and fire hydrants shall be maintained back to the main water distribution system, including backflow prevention devices, post indicator valves, check valves, and water flow meters. The Contractor shall maintain the required sprinkler head inventory in the fire box located by each fire riser. The Contractor shall replenish sprinkler heads that are used within fourteen (14) calendar days after the use of any sprinkler head, and shall check and report missing heads and wrenches as part of each PM inspection. Fire pumps shall be maintained up to and including the starting equipment. Fire hydrants shall be maintained up to and including the valves, laterals and, the main firewater distribution system.

C.4.10.1.3. Foam Extinguishing Systems

Foam extinguishing systems shall be maintained up to and including the main water distribution system, including supply valve; and electrical connections back to the main electrical delivery point. All fire suppression system inspection, testing and maintenance shall fully comply with current NFPA requirements including annual foam sample testing. The Contractor shall provide sufficient quantities of AFFF to return systems to operating conditions after performing foam concentration flow tests.

Prior to flow testing, or maintenance on foam extinguishing systems that may inadvertently result in the discharge of foam, the Contractor shall provide a work plan to fully contain the discharge of foam. The plan shall include processes and procedures to prevent the release of foam into sanitary drains, storm drains, sewers and soil. The plan shall be submitted to the COTR for approval by the Fire Protection Engineer and the AHJ.

C.4.10.1.4. Gaseous Extinguishing Systems

Gaseous-extinguishing systems shall be maintained up to and including tanks, cylinders and hoses, including mobile systems used on the flight line. All gas extinguishing systems inspections, testing and maintenance shall be in full compliance with current NFPA requirements. Gaseous extinguishing systems requiring inspection, testing and maintenance are identified in the Maintenance Requirements Document and J-C04.

C.4.10.1.5. Dry and Wet Chemical Extinguishing Systems

Wet and dry extinguishing systems shall be maintained up to and including cylinders, piping, hoses, detectors, and associated alarm systems. All dry and wet chemical extinguishing systems inspections, testing and maintenance shall be in full compliance with current NFPA requirements. Dry and wet chemical extinguishing systems requiring inspection, testing and maintenance are identified in the Maintenance Requirements Document J-C02 and J-C04.

C.4.10.1.6.Annual and Multi-Year Testing & Maintenance Requirements

All multi-year testing and maintenance requirements required by NFPA shall be performed within the base years of the contract, and the expenditure of labor, services, equipment and materials shall be equally spread over the base years of the contract. This includes but may not be limited to NDT of fire tanks wall and floor thickness, adhesion and thickness testing of fire tanks interior coatings, fire tanks interior testing for pinholes and cracks, pressure testing of hoses and nozzles, testing pressure reducing valves, hydrostatic test of risers, calibration of pressure gauges, replacement of fire pump circuit breakers and fuses.

The Contractor shall be responsible for the following fire extinguisher functions:
Track all portable fire extinguishers and locations of fixed fire extinguishing systems.
Perform monthly inspections of fire extinguishers to ensure they are charged and in working order.
Maintain an adequate supply of spare working fire extinguishers, no less than one percent of total units, and replace missing, damaged, or non-working units.
Provide list of possible safety violations regarding placement and protection requirements based on NFPA. Ensure all portable extinguishers and fixed extinguishing systems are tested in accordance with NFPA regulations. Perform

annual portable fire extinguisher maintenance in accordance with the following tasks and refill extinguishers as necessary.

1. Remove the extinguisher from hanger, bracket, or cabinet and visually examine it for damage.
2. Verify that the hanger, bracket, or cabinet is the proper one for the extinguisher.
3. Ensure that the hanger, bracket, or cabinet is secure, undamaged, and properly mounted.
4. Ensure that the nameplate operating instructions are legible and facing outward.
5. Confirm that the extinguisher model is not subject to recall and is not obsolete.
6. Check extinguisher records to determine internal examination and hydrostatic test intervals.
7. Thoroughly examine cylinder for dents, damage, repairs, or corrosion.
8. Remove the pull pin to ensure that it functions properly and is not damaged or corroded.
9. Examine the handle and levers to ensure that they are undamaged and operable.
10. Ensure that the valve stem is correctly extended and not corroded or damaged.
11. Verify that the pressure gauge or indicator is in the operable range.
12. Examine the pressure gauge to ensure that it is not damaged, bent, or cracked.
13. Verify that the gauge-operating pressure corresponds with the nameplate instructions.
14. Verify that the gauge face corresponds with the proper agent type.
15. Verify that the gauge threads are compatible with the valve body material.
16. Remove the nozzle or hose assembly or both and ensure that they are unobstructed.
17. Confirm that the nozzle and hose assembly are correct for the model of extinguisher.
18. Examine exposed thread areas for corrosion, wear, or damage.
19. Ensure that the hose and couplings are not cut, cracked, damaged, or deformed.
20. Examine internal valve port surfaces and threads for signs of leakage or corrosion.
21. Reinstall the nozzle and hose assembly securely.
22. Ensure that the hose retention band is secure and properly adjusted.
23. Weigh the extinguisher to verify that it corresponds to the weight listed on the nameplate.
24. Reinstall the ring pin and install a new tamper inspection seal.
25. Clean exposed extinguisher surfaces to remove any foreign material.
26. Record the maintenance on the extinguisher tag or label.
27. Return the extinguisher to the hanger, bracket, or cabinet.

C.4.10.1.7. Hydrazine Systems

Hydrazine alarm systems shall be maintained in accordance with manufacturer's requirements and J-C02 "Assets Maintenance Requirements". Hydrazine sensors shall be replaced per manufacturer's requirements annually.

C.4.10.1.8 Fire Water Underground Infrastructure

The Contractor shall inspect, exercise and maintain all Post Indicator Valves, Sectional Valves, Pit Valves, Fill Valves, Flow Control Valves, Check Valves, Fire Hydrants, and Piping Systems that are accessible. Accessible includes unobstructed access, access via; vaults, manholes, pipe chases and building cavities. Inspection, exercise, and maintenance shall be in accordance with NFPA 25 and the J-C02 Assets Maintenance Requirements, and the following general requirements:

- Inspect for leaks, corrosion and defects.
- Correct leaks and defects, and preserve all components from corrosion.
- Replace missing components.
- Exercise all valves and make repairs and adjustments to ensure free movement and operation.
- Lubricate valve stems.
- Adjust fill valves to ensure accurate level control.
- The maintenance shall include lubrication of valve stems based upon NFPA 25 and the J-C02 Assets Maintenance Requirements.

C.4.10.2. Licensing and Qualification Requirements

Personnel specifically qualified and trained to work on fire protection systems and equipment shall perform all work. Evidence of all required licenses, as well as documentation of the qualifications of personnel, shall be provided to the COTR within sixty (60) days of contract start date.

C.4.11. General Wastewater System Maintenance and Repair

C.4.11.1. Specific Requirements

Systems include, but are not limited to, wastewater collection systems, pumping stations, and an underground wastewater delivery system (including manholes). Locations of the pumping stations, underground piping and manholes are available on as-built drawings. The Contractor is responsible for the system until the point of entry into the EAFB sewage system. All new connections to the sewage system must first obtain a discharge permit. Attachments J-C01, J-C02, and J-C18 describe the systems and equipment to be serviced under this contract section.

C.4.11.2. Services Provided

The Contractor shall be required to provide the following specific services relating to the wastewater collection and wastewater pumping systems.

C.4.11.2.1. General Services

Wastewater collection and wastewater pumping system operations shall be conducted in order to provide continuous, cost effective, and efficient

conveyance of all DFRC-generated wastewater to the EAFB sewage system. Flow shall be maintained so as to prevent the cause of nuisance odors and to prevent interruptions of service.

C.4.11.2.2. Temporary and Emergency Services
Temporary and emergency collection services may be necessary to accomplish certain repairs, maintenance efforts, and new service connections. Such temporary and emergency services shall be coordinated with the COTR and shall be accomplished using methods to avoid service interruptions, where possible, or to minimize system downtime where such interruptions of service are unavoidable.

C.4.11.2.3. Notice of Violations
Notice of violations of any of the National Pollutant Discharge Elimination System (NPDES) permitted parameters, of any lift station bypassing, and of any discharges of any other type in violation of the NPDES permit shall be prepared by the Contractor and submitted to the COTR within twenty-four (24) hours of the Contractor's identification of the noncompliance. The notice of violation shall be prepared in a manner suitable for COTR signature and submittal to the EPA through Code SH. This notice shall include a description of the discharge, the cause of noncompliance, and the period of noncompliance including exact dates and times (or if not corrected, the anticipated time the noncompliance is expected to continue and steps being taken to reduce, eliminate, and prevent the recurrence of the non-complying discharge). Direct submittals of Contractor supplied notices of violation shall be the responsibility of the COTR. Any similar notice requirements of state and local agencies shall also be prepared by the Contractor and accomplished in a similar manner.

C.4.12. General Potable and Industrial Water System and Fixtures Maintenance and Repair

C.4.12.1. Specific Requirements

C.4.12.1.1. The Contractor shall maintain all water systems include all piping, valves, regulators, and filters from the EAFB potable water supply to the individual fixtures. Fixtures include: faucets, spigots, sinks, toilets, showers, urinals and similar equipment. The work includes distribution, and regulation of potable/industrial water to provide potable/industrial water uninterrupted at DFRC. DFRC is a secondary water distributor. The Contractor shall maintain a qualified, competent and certified California D-1 Water System Operator to perform oversight of water system maintenance repairs and operation. The Contractor shall maintain, inspect, repair, and certify Dryden backflow prevention devices in accordance with California Code of Regulations and local Health Department requirements. Attachments J-C01, J-C02, and J-C19 describe the systems and equipment to be serviced under this contract section. Piping locations are available on As-Built drawings. All work performed shall meet International Plumbing Codes (IPC).

C.4.12.1.2. Exclusions
The contractor does not accomplish water treatment and chemical testing. Potable water is delivered to DFRC through the EAFB systems and is pre-treated to meet EPA water quality standards.

C.4.12.1.3 Potable Water System Disinfection
DFRC is a secondary water distributor. The Contractor shall maintain a qualified, competent and certified California D-1 Water System Operator to perform oversight of water system maintenance repairs and operation. The Contractor is responsible for repairs to the potable water system at DFRC. Within 60 days of the start of the contract the Contractor shall propose a plan for disinfection of potable water systems that are opened for repair, maintenance and construction. The proposed plan shall comply with the American Water Works / ANSI Standard C651-05 for disinfecting water mains. The plan shall include procedures that will be used for flushing, cleaning, disinfecting, sanitizing and sampling the water systems to ensure the water is safe for human consumption prior to returning the system to service. The plan requires the approval of the Dryden Safety Office and COTR prior to implementation. The Contractor shall perform the procedures identified in the plan anytime maintenance, repair or construction work activity involves opening the potable water system to potential sources of contamination.

C.4.13. General Storm Water Drainage System and Signage Maintenance and Repair

C.4.13.1. Specific Requirements

Storm water drainage is approximately 8,000 LF to be maintained in this contract section.

C.4.13.1.1. Inspection of drainage systems
The Contractor shall inspect drainage systems and components semiannually; once in the Spring and once in the Fall. The Contractor shall inspect drainage systems and components after each rainfall event. Inspections shall include the removal and disposal of grass, weeds, brush, sediment, debris, and other accumulations.

C.4.13.1.2. Storm Drainage Systems
The Contractor is only responsible for storm drainage systems to the point where the DFRC systems enter the Edwards storm drainage piping. The Contractor shall inspect, maintain, and repair the drainage systems to function efficiently and as originally designed. Drainage systems include drainage ponds, paved ditches and open channels, drop inlets, culverts, head walls, and concrete box culverts; and are limited to surface drainage. The Contractor shall determine which culvert/drainage systems become obstructed from run-off water. Any time these systems become obstructed, the Contractor shall remove debris and ensure flow has been restored.

C.4.14. General Signage Maintenance and Repair Requirements

The Contractor shall maintain and repair traffic signs and pavement markings. Work shall be performed on roads and streets in strict conformance with the *California Manual of Uniform Traffic Control Devices for Streets and Highways* and on airfields and with approval of the DFRC Traffic Safety Committee.

C.4.14.1. Signs

The Contractor shall furnish, fabricate, and install all types of traffic control signs as ordered by the COTR. All materials used in the design, fabrication and installation of traffic control signs shall conform to the *California Manual on Uniform Traffic Control Devices* issued by the California Department of Transportation.

C.5. Requirements and Procedures for Trouble Call / Service Request Work

The Contractor shall manage, perform and complete all Trouble Calls (TC) and Service Requests (SR) related to Facilities Operations, Maintenance & Repair including calls for services performed by others (e.g. Pest Control). All TC and SR are within the firm fixed price of the contract. Trouble Calls and Service Requests are generally called in by facility occupants, Facility Managers, or maintenance workers.

C.5.1. Trouble Call and Service Request Classification

Trouble Call (TC) work type is defined as an unscheduled request for work of a one-time nature typically issued to correct or repair a minor electrical, HVAC, fire suppression, fire alarm, mechanical, building shell, structural, safety, or environmental deficiency and to restore such service, requiring little detailed management control, and which does not exceed $2000 in total labor and material as determined by R.S. Means® standards (herein referred to as the "limit"). Trouble Calls shall also be used to correct deficiencies found during annual Facility Condition Assessments & Facility Safety Inspections. Most TCs will be prioritized as Routine. Some Trouble Calls may be classified as Urgent. Emergency Trouble Calls shall be prioritized as Emergency.

Service Request (SR) work type is defined as an unscheduled request for minor new work, services, or support that are facility related and which do not exceed the $2,000 limit. All SR require COTR approval prior to the work being performed and shall be completed within 10 days after COTR approval. SR’s include special events support, installation of minor components in facilities, securing facility furnishings, hanging pictures and white boards, and facility related services as approved by the COTR. If delays are encountered, the Contractor must submit rationale to the COTR for approval. SRs include supporting Dryden Community Activities, which are tracked as Special Project (SP) work type.

To gauge the scope, level of effort and skills required for TC and SR work, a listing of historical Trouble Calls and Service Requests are contained in Attachment J-C08.

The responsibility to perform trouble call and service request work ends when the Contractor notifies the COTR that the work is estimated to exceed the $2,000 limit after

having physically exposed and visually inspected the problem area, or determining that the work is clearly over the limit. Adequate justification shall be provided in writing upon request of the COTR demonstrating why the Contractor is unable to complete the work within the limit. The Government reserves the right to reject the justification if it is determined unacceptable. The Contractor and the Government shall negotiate disputed costs in good faith to determine if the work can be performed within the $2,000 limit.

TC & SR Work that exceeds the $2,000 limit may be performed as IDIQ Repair Work at the Governments discretion. Any effort expended and costs incurred by the Contractor prior to notification that the requested TC / SR work exceeds the $2,000 limit is considered part of the original fixed price of the TC / SR and will not be applied toward any Indefinite Delivery Indefinite Quantity (IDIQ) work which may result.

Emergency trouble calls are those calls that require immediate action to prevent loss of or damage to DFRC property, to restore essential services that have been disrupted, to eliminate hazards to personnel or equipment, or affect the operation of critical equipment or systems identified in Attachment J-C02. The Contractor shall notify the COTR and facility manager immediately upon receipt of an emergency trouble call, and when the TC is resolved. If the TC limit is reached during corrective actions, the Contractor shall immediately notify the COTR and CO to obtain authorization to continue work to stabilize the situation to eliminate hazards and risks of further damage to Government property. Upon approval to continue the work the Contractor will be compensated based upon the Government-approved J-C03 IDIQ “Repair Pricing Schedule.” The Contractor shall provide a detailed invoice of all costs for Government approval and payment. Additional work, if required to complete the work, may be accomplished, at the Government’s discretion, under the IDIQ portion of this contract. The Contractor shall respond to emergency trouble calls within ten (10) minutes following notification during regular working hours and within two (2) hours following notification after regular working hours. If further labor and material are required to complete the repair once the emergency is arrested, completion shall be within five (5) working days following notification of the emergency call, unless authorized otherwise by the COTR.

Urgent Trouble Calls are issued for situations which do not immediately endanger personnel or threaten to damage property or the environment, but affect the health or well being of personnel or disrupt operational missions or projects. The Contractor shall contact the customer within 30 minutes following notification, and shall physically respond to urgent TC within four (4) hours following notification of the call both during and after regular working hours. All urgent calls must be completed within five (5) working days following notification of the TC. If the TC limit is reached during corrective actions, the Contractor shall immediately notify the COTR and continue work up to the point at which the urgency is arrested. If costs to stabilize the urgent condition exceeds the $2,000 limit, the Contractor will be compensated based upon the Government approved J-C03 “IDIQ Repair Pricing Schedule.” The Contractor shall provide a detailed invoice of all costs for Government approval and payment. Additional work, if

required to complete the work, may be accomplished at the Government's discretion under the IDIQ portion of the contract.

Routine Trouble Calls are calls that do not qualify as an emergency or urgent call. The Contractor shall complete routine calls within 10 working days following notification. The COTR may escalate completion of routine trouble calls for reasons such as providing special maintenance support for other contractors, and other atypical situations. The Contractor shall notify the COTR if the cost of the work will exceed the TC limit. The Contractor shall not leave work in an unusable or unsafe condition, or any condition that creates a security risk or condition that may cause further damage or destruction. The work may be completed at the Government's discretion under the IDIQ portion of the contract.

C.5.2. Trouble Call and Service Request Reception

A Trouble Call and Service Request line and phone number will be provided to the Contractor for receipt of all Trouble Calls and Service Requests. Trouble Calls shall be considered received by the Contractor at the time and date the telephone call is received by the work control center. Service Requests shall be considered received by the Contractor upon COTR approval of the Service Request.

All Trouble Call and Service Request Work shall be prioritized based on NPR 8831.2 - Figure 5-3 "Sample Priority System" inserted below:

General Maintenance Work Priority System	
Priority/Description	Narrative
1. Emergency	Safety of life or property threatened; immediate mission impact; loss of utilities. Begin immediately; divert resources as necessary; overtime may be authorized.
2. Urgent	Maintenance or repair work required for continued facility operation; should be completed to ensure continuous operation of the facility and to restore healthful environment. Not a life-threatening emergency. Respond upon completion of current work but within a specified period of time (specified by local Center, such as same day or within 4 hours).
3. Priority	Work that is to support the mission on a priority basis or to meet project deadlines. Complete in order of receipt with mission work taking priority.
4. Routine	The facilities maintenance work can be scheduled routinely within the capability of the facilities maintenance organization. Facilities work is subject to availability of resources and may be consolidated by facility or zone or as directed to obtain

	efficiency of operation.
5. Discretionary	Work that is desired but not essential to protect, preserve, or restore facilities and equipment; typically, new work that is not tied to a specific mission milestone.
6. Deferred	Work that may be safely, operationally, and economically postponed. The work should be done, but cannot be scheduled because of higher priority work, funds shortage, work site access, or conditions outside the control of the maintenance organization. The work may be reclassified if conditions permit or included in the DM.

C.5.2.1. During Core Working Hours

During core working hours, an individual fully familiar with the Contractor's work control procedures and the terms and conditions of this contract shall answer all telephone calls within thirty (30) seconds. The Contractor's work control center will receive all calls during core working hours and classify and prioritize each call and respond accordingly. A description of the problem or requested work, facility location, date and time received, caller name and contact information, equipment information, work type, and other appropriate information will be logged into the CMMS immediately and processed by the Contractor. If the call is classified as emergency, the Contractor will immediately notify the COTR that an emergency call has been received and that work is being initiated. For more information on processing trouble calls, refer to the NPR 8831.2.

C.5.2.2. After Core Working Hours

The Contractor Site Manager or Site Supervisor shall be available 24 hours per day, 7 days per week including weekends and holidays to receive emergency trouble calls directly from authorized Government representatives including NASA Security, COTR, Chief of Facilities, Assistant Chief of Facilities and other designated representatives. The Site Manager or Site Supervisor shall immediately notify the COTR of receipt of emergency trouble calls and dispatch craft workers of the appropriate discipline that capable of rectifying the situation. The Contractor shall enter all after hour calls in the CMMS no later than the beginning of the next business day.

C.5.2.3. TC / SR Work Request Duplication

Calls shall be combined for items that are duplicated, received the same day for the same problem or worked the same day for the same problem, or items that are related to the same system located in the same general area and shall only be conducted as one (1) trouble call. Examples of combining work include, but are not limited to, re-lamping or hot/cold calls for a number of rooms on the same floor of a building on the same day or unstopping a sink and a commode in the same restroom on the same day.

At any time the COTR may upgrade or downgrade the classification of any trouble call received by the Contractor.

C.5.3 Trouble Call and Service Request Response and Performance

The Contractor shall have adequate procedures for receiving and responding to Trouble Calls and Service Requests during core working hours, and for receiving and responding to emergency trouble calls twenty-four (24) hours per day, seven (7) days a week, including weekends and holidays.

The Contractor shall maintain sufficient quantities of materials on hand to support Trouble Call and Service Request work or be able to acquire the materials from local vendors in a timely manner that does not delay the completion of the work. Lack of such materials shall not be considered an acceptable cause for non-performance.

Contractor employees responding to TC and SR shall check in with the requestor or facility manager upon arriving at a TC / SR work location. The Contractor shall inform the requestor or facility manager of the reason for their visit. Upon leaving the TC / SR work location the Contractor shall inform the requestor or building manager of the current status of the work. The Contractor shall check in and out with NASA Security during after hours.

C.5.4. Workmanship and Materials

All work shall be performed in a professional and quality manner by technicians that are formally trained, skilled, experienced, and certified or licensed if required. The level of repair provided by the Contractor shall assure that all work is free of missing components or defects which would affect the safety, function, operation, and reliability of facilities and equipment, and appearance and habitability of the facilities.

Electrical, Mechanical, HVAC and Fire systems shall be tested for proper operation and performance after work is completed. The quality of work and the repaired areas shall be fully compatible with adjacent surfaces or equipment. All replacement material shall match existing dimensions, materials, quality of work, finish, color, design, and function, unless otherwise approved by the COTR. During performance of work, debris shall not be allowed to spread unnecessarily into adjacent areas nor accumulate in the work area itself. All such debris, excess material, and parts shall be removed upon completion of work or at the end of each work day, whichever occurs first. Upon completion of work, any fingerprints, stains, surface degradations, and other unsightly visual appearances caused during performance of the work shall be removed.

The Contractor shall thoroughly troubleshoot and repair any incidental and related damage as a result of the initial work being performed. For example, if there is a TC to repair a roof leak, the Contractor shall also replace any damaged ceiling tiles or repair other related items damaged as a result of the leaking roof within the scope and limit of the TC.

C.5.5. Work Beyond the Scope of Routine Trouble Calls and Service Requests

When the Contractor receives/responds to Routine Trouble Call and Service Request and believes that the work is beyond the scope of a routine call, as defined above, the Contractor shall stop work and notify the COTR that a routine Trouble Call and Service Request viewed as exceeding the $2,000 limit has been received. However, the Contractor shall not leave the work in an unusable condition, any unsafe condition, any condition that creates a security risk, or any condition that may cause further damage or destruction. Remaining routine work exceeding the TC limit shall be accomplished at the Government's discretion. TC & SR Work that exceeds the $2,000 limit may be performed as IDIQ Repair Work at the Governments discretion

C.5.6. Data Entry for Completed Trouble Calls and Service Requests

All daily work activity shall be updated in the CMMS no later than the end of the business day on which the activity occurs. This includes entry of all labor activity, costs for parts, services, materials, equipment, and subcontractor costs. The Contractor shall update and record the following information in the CMMS daily:

1. Description of work performed.
2. Description of material and parts used, including quantities and cost.
3. Date and time work was performed
4. Names and classification of employees performing work.
5. Daily labor hours for each employee
6. Current status of the work order
7. Current Operating Status of equipment (asset)
8. Signature or initials of the Contractor's craftsman performing the work (or supervisor), indicating that the work has been completed, or an electronic certification in CMMS.
9. Note if trouble was identified during a PM, PTI, or other inspection.

The Contractor shall respond to questions within two (2) hours of receipt from the COTR as to the status of any TC / SR work.

C.6. IDIQ Repair Work Requirements and Procedures

Indefinite Delivery Indefinite Quantity (IDIQ) Repair Work is non-recurring facilities repair work that exceeds $2,000 in value for the materials, labor and equipment to complete the work.

The contractor shall perform IDIQ Repair Work up to a maximum of $25K per task order. IDIQ Repair Work is limited to the repair of existing building equipment and existing building systems. IDIQ Repair Work includes repair or replacement of building equipment component parts and /or the replacement of building equipment assemblies. IDIQ Repair Work does not include new construction, Construction of Facilities Projects, facility alterations, facility improvements, and facility renovations and modifications.

The contractor shall perform IDIQ Repair Work in accordance with the requirements in this section. The contractor shall use licensed, manufacturer authorized, personnel or contractors that have the skill, experience, training and certifications to effectively provide quality and reliable repairs. The Contractor shall provide an “IDIQ REPAIR PRICING SCHEDULE” J-C03 that shows all proposed labor rates and material and equipment mark-ups that will be used in preparation and submittal of task order proposals. The contractor shall not use the maintenance workforce to perform IDIQ Repair Work unless approved by the COTR. The Contractor may propose a more cost effective alternative to the use of subcontractors. The alternative must not negatively impact the maintenance of facilities equipment and systems, must not decrease the quality of the repair work, must not increase cost to the government, must not cause an increase in facilities equipment failure rates, and must not decrease the reliability of facilities equipment.

The anticipated amount of IDIQ Repair Work to be performed under this contract is estimated at $350,000 annually. However, there is no guarantee of any dollar value stated or implied at this time. The annual IDIQ Repair value may be more or less than the estimated value stated here. Should the requirement be needed, the work to be performed will be identified through the issuance of task orders (TOs).

The Contractor or the Government may initiate a request for the performance of IDIQ Repair Work, but work shall not begin until the Contracting Officer has approved a Task Order and issued a Notice to Proceed. The contractor shall initiate a request to perform IDIQ Repair Work for deficiencies found during the performance of facility condition assessments, scheduled maintenance, and trouble calls, and which is not within the scope of the maintenance or trouble calls and service requests.

When the Government determines that IDIQ Repair Work is necessary, the Government will request a proposal (RFP) from the contractor. The Contractor shall submit a proposal that clearly identifies the scope of work, schedule, and the total proposed cost to perform the work. The contractor shall submit documentation of the following with the proposal.

1. Bare equipment cost
2. Bare material cost
3. Subcontract Labor Cost
4. Subcontract Labor Hours
5. Subcontractor Overhead Markup
6. Subcontractor Profit Markup
7. O&M Contractor Markup
8. O&M Contractor Labor Cost
9. Repair Project Schedule

The Government may require equipment and component specifications and submittals for any equipment and building materials prior to installation. The cost proposal shall be valid for 60 calendar days. The Contractor's proposal will be evaluated by the

Government to determine if the scope of the repair is clearly and accurately identified, and if the estimated costs for labor, material and equipment are reasonable and properly documented.

The planning, estimating and scheduling of all IDIQ Repair Work is part of the Firm Fixed Price of this contract. The Government will evaluate the Contractor's Cost Proposal using the latest R.S. Means® Company Facilities Maintenance and Repair Cost Data and Methods, or vendor cost data. The Contractor shall negotiate the proposed cost in good faith with the Government. Once the Contractor and Government agree upon the negotiated price, the price becomes a Firm Fixed Price and the Government may issue a Task Order and Notice to Proceed for the work.

If the Contractor fails to perform IDIQ Repair Work and negotiate in good faith with the Government, the Government reserves the right to solicit this work from other sources.

The Contractor shall complete IDIQ Repair Work within 30 working days. A completion timeframe greater than 30 days requires reasonable justification and approval by the COTR. Lack of labor, materials, and all necessary equipment, tools and transportation shall not be an acceptable cause for inability to complete the IDIQ Repair Work within the required timeframe.

C.6.1. Changes to Scope of IDIQ Repair Work

If during performance of IDIQ Repair Work, the Contractor encounters unforeseen conditions that impact the work and could not be evaluated during the initial estimating procedures, the contractor shall submit to the COTR a proposed change order to the Task Order and not proceed with the proposed work without first obtaining authorization from the COTR and Contracting Officer. The proposed change order shall contain adequate information for the Government to fully assess the unforeseen condition. After review of the proposed change order, the Government will both modify the contract and direct the Contractor to proceed with the work or exercise other options available to the Government. The Contractor shall not be entitled to any additional compensation for preparing a proposed change order.

C.6.2. Acceptance of IDIQ Repair Work

The Contractor shall notify the COTR within one (1) working day following completion of IDIQ Repair Work to schedule a joint final inspection. The Government will thoroughly inspect IDIQ Repair Work prior to acceptance. IDIQ Repair Work shall be accepted only after all work has been completed and noted discrepancies have been corrected.

A complete Task Order package, including the following shall be submitted to the COTR prior to invoicing for the work.

1. Permit Inspection Records
2. O&M Manuals
3. NASA Dryden New / Replacement Equipment Data Collection Form (J-C25)
4. Warranty Documents

5. Start Up and Performance Documentation
6. Reliability Centered Acceptance Documentation (PT&I Baseline Data, i.e. Vibration, Thermography, Oil Analysis)

The Contractor shall provide a transmittal form to document transfer and receipt of all the above documentation. The Contractor must obtain a signature from the Government Employee accepting the documents.

C.6.3 IDIQ Repair Report

The Contractor shall prepare and submit a monthly Year-to-Date IDIQ Repair Project Report to the COTR. The report shall include all of the following information on the projects:

1. Facility Number
2. Facility Name
3. CMMS Work Order Number
4. Repair Project Description
5. Scheduled Start Date
6. Actual Start Date
7. Scheduled Completion Date
8. Actual Completion Date
9. Repair Project Status
10. Number of Change Orders
11. Proposal Cost
12. Actual Cost
13. Operations & Maintenance Manuals Submitted (Yes / No / NA)
14. Warranty Document Submitted (Yes / No / NA)
15. CMMS Equipment Data Form (Attachment J-C25) Submitted (Yes / No / NA)
16. Start Up and Performance Verification Documentation Submitted (Yes / No / NA)
17. RCM Baseline Data Submitted and logged into PTI Database (Yes / No / NA)

C.7. Janitorial Services

C.7.1. Specific Requirements

Janitorial services include, but are not limited to, ensuring all serviced areas are clean and sanitary. Attachment J-C24 provides information on the facilities and other designated areas to be serviced, with specific tasks and frequencies. J-C24 describes tasks to be performed and frequencies of tasks based upon designated service levels of A, B, C, D, PA, PB, and PC.

Service Levels A, B, and C pertain to personal workstation areas and private office areas, Service Levels PA, PB, and PC pertain to public and common areas. Public and

common areas are those areas that are used by multiple occupants of the building and / or the public. Common and public areas include hallways, entryways, lobbies, restrooms, conference rooms, kitchenettes, dining areas, and other areas where people assemble in groups on a frequent basis. The service levels in J-C24 are further defined as follows:

A = Most frequent service level for personal and private work areas
B = Medium frequency level for personal and private work areas
C = Least frequent service level for personal and private work areas

PA = Most frequent service level for common and public areas
PB = Medium frequency service level for common and public areas
PC = Least frequent service level for common and public areas

The Contractor shall keep all supplies, equipment, tools, and machines out of traffic lanes or other areas where they might create a hazard. At the end of each work period, the Contractor shall secure all supplies, equipment machines, and tools in closets or other areas provided for this purpose. At the completion of work each day, the Contractor shall dispose of any cloths, mops, brushes containing a residue of combustible material subject to spontaneous ignition or combustion in a container which has been approved by the COTR. The Contractor shall dispose of cleaning solutions in accordance with DCP-S-102 (Attachment J-C11).

All basic janitorial work will be performed during core working hours.

Floor work that involves, stripping, waxing, and carpet cleaning shall be scheduled during non-core working hours, with the exception of secure areas that require the presence of a government representative. Schedules require approval of the COTR.

C.7.2. Daily Service Requirements

1. The Contractor shall service restrooms and perform the work necessary to ensure that restrooms are clean, sanitary and aesthetically pleasing. Restroom cleaning in B4800 shall be performed after core working hours.

2. The Contractor shall clean and disinfect restroom surfaces including floors, partitions, mirrors, countertops, fixtures and shower areas to ensure surfaces are free of stains, odors, and dirt.

3. The Contractor shall empty and clean waste containers to ensure containers are clean and odor free. Plastic liners are replaced after container interior is cleaned and wiped dry as necessary. The Contractor shall dispose of items placed adjacent to waste containers marked “TRASH.”

4. The Contractor shall clean and disinfect drinking fountains to ensure fountains are clean and free of stains, smudges and scale.

5. The Contractor shall stock restrooms and showers with sufficient supplies to ensure they will last until the next scheduled service.

6. The Contractor shall perform additional janitorial requirements as defined in Attachment J-C24 to ensure buildings and areas are clean, sanitary and aesthetically pleasing.

7. The Contractor shall remove trash and debris from the buildings.

8. The Contractor shall empty outdoor waste containers and ensure they are clean and odor free. Plastic liners are replaced after container interior is cleaned as necessary.

9. The Contractor shall supply, monitor and service the recycle collection areas. The disposition of the central collection points' material is performed by others.

10. The Contractor shall remove all paper, bottles, cans, and all other trash and refuse from all grounds, sidewalks, and interior courts of the buildings specified in Attachment J-C01. All removed items shall be deposited in the nearest waste container.

11. The Contractor shall inspect all facility lighting during janitorial service to the facility and replace non-working lamps that are accessible from a 6 foot step ladder. Light fixtures that fail to work after the lamp is replaced shall be reported to the trouble call desk to initiate repair by an electrician.

C.7.3. Periodic Service Requirements

C.7.3.1. Recurring services consist of space cleaning, floor care, and restroom services. Furniture and other items will not be moved during the performance of recurring services.

C.7.3.2. The Contractor shall service the floors to ensure they are clean, sanitary and aesthetically pleasing. The Contractor's cleaning techniques and products shall protect the integrity of the floor's surface and finish. The Contractor shall comply with the requirements of ANSI/ESD S7.1-2005 regarding care of floors in ESD areas.

C.7.3.3. Additional janitorial requirements are indicated in Attachment J-C24 for applicable buildings and areas.

C.7.4. Special Service Requirements

C.7.4.1. The Contractor shall perform miscellaneous minor cleaning as a routine service request for services outside the routine requirements performed. These service requests include, but are not limited to: clean up spills; cleaning muddy or wet

entrances, hallways and carpets; clean up of broken glass; clean up of blood and bodily fluids, and clean up of other wet or soiled interior building areas.

C.7.4.2. Snow and ice shall be removed from building walks and entrances so that these areas are clean and safe for pedestrian traffic. The Contractor shall remove snow and ice as required.

C.7.4.3. The carpet in the DFRC food establishment (Flight Line Eatery, a portion of B4825) shall be shampooed at a frequency no less than once every two weeks. Written notification shall be left in the Food Service Manager's office after each shampooing, to notify him or her that such shampooing has been accomplished, and the date on which it was accomplished.

C.7.4.4. The matted floor in the equipment room of Dryden's Fitness Center (B4877) shall be damp mopped weekly. The special hardwood floor in the aerobics room shall be maintained weekly per the manufacturer's recommendations.

C.7.4.5. IDIQ work may be ordered in accordance with Section C.13. The order will specify the exact locations and types of work to be accomplished. The period of performance will be specified in each order.

C.7.4.6. Window cleaning services shall be provided on an as needed basis using service requests.

C.7.5 Recycled Materials

Contractor shall remove all recycled materials (newspaper, paper, cans, plastic bottles, cardboard, and Styrofoam) from building's centralized recycling locations, to the center's recycled materials storage container located by B4820. All cardboard and Styrofoam materials shall be deposited in the white dumpsters located throughout the Center. The Contractor shall continuously monitor the recycle containers located in the buildings and provide this service on an as needed basis to prevent excessive build-up of recycled materials in the facility hallways.

C.8. Grounds Maintenance

C.8.1. Specific Requirements

The Contractor shall maintain all Dryden Grounds as improved, semi-improved, or vegetation free as identified in J-C23. All areas shall be maintained free of trash and debris. Improved Grounds are color coded Green, Semi-Improved Grounds are Pink, and Vegetation Free are color coded Blue. All grounds shall be maintained year round to as specified in this section. Work includes routine, seasonal and cyclical services.

Improved areas are areas that are landscaped and include plants, shrubs, trees, grass, planters, etc. Semi-Improved areas are areas of natural vegetation that require growth control and include areas along roadways and fence lines. Vegetation Free Areas are areas that shall be maintained completely clear of vegetation at all times. Vegetation Free Areas include parking lots, sub-station grounds and perimeters of building to 25', except for landscaped building perimeter areas.

C.8.1.1. Live Vegetation

The Contractor shall develop and implement maintenance services ensuring work is performed in a manner that promotes the health, growth, color and appearance of all vegetation.

Irrigation controllers shall be maintained as follows. Irrigation shall be performed immediately prior to sunrise to reduce evaporation and wind drift.

10	Clean control panel compartment with a vacuum.
20	Inspect wiring/components for loose connections; tighten as necessary.
30	Check set point of controls temperature, humidity or pressure.
40	Check unit over its range of control.
50	Check for correct pressure differential on all position controllers.
60	Check air systems for leaks; repair or replace as necessary.
70	Check relays, pilot valves and pressure regulators for proper operation. Repair or replace as necessary.
80	Replace air filters in sensors, controllers, and thermostats as necessary.
90	Clean around equipment.
100	Note deficiencies.

C.8.1.2. Vegetation Care

Work to be performed includes, but is not limited to, turf care, tree, shrub, and hedge maintenance, planters and beds maintenance, debris removal, control of undesired vegetation, weed and pest control services associated with landscaped areas. The Contractor shall trim trees to prevent hazards and interference with pedestrians, vehicular traffic, security, and building encroachment. Clippings and trimmings shall be removed.

All asphalt and concrete areas are vegetation free grounds that require weed and grass control at all times. This includes removal of weeds, grass and unwanted vegetation growing in parking lots, roadways, walkways and other had surfaced areas.

C.8.1.3. Fertilizing and Weeding

The Contractor shall provide consistent care including weeding, pinching, fertilizing, insecticide, herbicide and fungicide applications.

C.8.2. Irrigation Systems

The Contractor shall ensure that all permanently installed water control devices and irrigation systems are operational, and repairs are made in a timely manner. The Contractor shall maintain the Irrigation Systems identified in J-C23 Grounds Maintenance Inventory. Repairs shall be made utilizing TC and SR to ensure the irrigation system functions properly and provides proper irrigation coverage.

C.8.3. Semi Improved Grounds

The Contractor shall maintain Semi-improved ground areas to control undesirable vegetation and ensure vegetation does not exceed a height of six (6) inches.

C.8.3.1. Semi Improved Grounds Control

Work to be performed includes but is not limited to trimming, debris removal, and control of undesired vegetation.

C.8.3.2. Semi Improved Grounds Clearance

The Contractor shall maintain a minimum ten-foot clearance on both sides of approximately 28,710 linear feet of fence line. Fence lines that run adjacent to roadways shall have the vegetation maintained from the fence to the edge of the roadway. Undesired vegetation in the cleared areas shall not exceed six (6) inches. Removal of vegetation may be by either mechanical or approved chemical methods. Natural debris, (tree limbs, tumble weeds, weeds, leaves, dry brush, etc.), and stray man-made trash/debris shall be removed and properly disposed. Debris generated by fence line maintenance operations shall be removed and disposed of the same working day.

C.8.4. Electrical Substations, Parking Lots & Building Perimeters

The Contractor shall ensure that parking lots, walkways, the entire area surrounding substations, and a 25’ perimeter around buildings (unless landscaped) remain completely free of vegetation and debris. Where applicable, gravel shall be maintained with a vegetation free, smooth and even appearance.

C.9. General Requirements and Other Miscellaneous Services

Dryden is a federal facility. In the performance of this contract, the Contractor shall comply with all federal, state, county and local laws and regulations, as well as all NASA and Dryden policies and directives. The Contractor shall reimburse the Government for any fines and costs incurred due to noncompliance or negligence by the Contractor.

C.9.1. Work Access

Except as may otherwise be specified, all work shall be performed during Dryden's core working hours, which are from 6:00 AM to 5:00 PM, Monday through Friday, except (a) federal holidays and (b) other days specifically designated by the CO/COTR. Historically, the majority of work has been accomplished during core working hours except for high voltage work, major HVAC, fire system and some janitorial. The Contractor may propose alternate work hours for efficiency; however, access to offices and secure facilities shall be coordinated with the Customer.

C.9.2. Work Outside of Core Working Hours

If the Contractor desires to perform work on Saturday, Sunday, holidays, or outside core working hours, the Contractor must obtain COTR approval. The Contractor shall use the Open Room Request form for obtaining customer signatures authorizing room access for services after core working hours. The completed forms shall be maintained by the Contractor and be made available to the COTR upon request.

C.9.3. Access to Locked Areas

The Contractor shall not omit area service due to locked entrances. Key service is available upon request through the DFRC Security Branch. The Contractor shall return on the last effective date of this contract all keys obtained by Contractor personnel for the performance of the contract and shall submit to the COTR a signed receipt for their return.

C.9.4. Staffing

The Contractor shall continuously maintain an adequate qualified staff with suitable technical, trade, management, and professional expertise to assure work is scheduled, performed and completed in accordance with all specifications. The Contractor’s training records shall document thorough, accurate, and complete education levels, certifications, licenses, and any other supplementary training programs or courses, which demonstrate that all personnel employed under the contract have adequate and appropriate qualifications. All personnel shall accomplish PWS requirements in a professional and customer oriented manner which includes understanding the customer’s needs, having the ability to meet those needs, and a commitment by every member of the Contractor’s organization to be responsive, flexible, and provide their best expertise. The Contractor shall maintain an adequate work force to complete work in accordance with the time and quality standards specified. The Contractor shall be responsible for any workforce augmentation needed to accomplish Customer requirements.

Prior to the start of the contract, the Contractor shall provide a list to the CO and COTR of the name or names and titles of the responsible supervisory person or persons authorized to act for the Contractor. The list shall be updated and provided to the CO and COTR within 2 calendar days whenever changes occur.

The Contractor shall remove from the site any individual whose behavior is deemed by the CO or the COTR to be contrary to the public interest or inconsistent with the best interests of the Government.

C.9.4.1. Badges

All Contractor and subcontractor employees shall wear Government identification badges. Security badging for Contractor visitors and subcontractors shall be coordinated by the Contractor and the COTR, through the DFRC Security Branch, by following established Security Branch policies and procedures. All Contractor personnel will be required to submit references, work history, finger prints, and personal data as a part of background check, prior to being authorized to work at DFRC.

C.9.4.2. Drivers License

All Contractor and subcontractor employees who operate Government/Contractor vehicles or other vehicles on or off the facility shall hold a valid driver's license and any other licenses that may be required. A DFRC Flight Line Drivers License is required to operate vehicles on the Air Force and DFRC flight line. No personal vehicles shall be allowed in the operations area of DFRC or Edwards Air Force Base. All Contractor-owned vehicles used in the performance of the contract shall be identifiable (signs) while operating on DFRC.

C.9.4.3. Identification of Employees

The company name and name of employee shall be displayed on the Contractor's trade and janitorial personnel shirts in a manner and size that is clearly visible.

C.9.5. Licensing/Certification/Training

Licenses required of the Contractor to conduct business (for example, local or state business licenses) shall be obtained prior to beginning work on this contract. Personnel licensing and certification shall be complete before that individual performs any work under this contract. The Contractor shall submit verification of all licensing and certifications to the CO and COTR within 30 calendar days after contract award. All licenses and certificates shall be current, and shall be kept current throughout the contract period.

Technicians performing infrared thermography shall be Level I or Level II Certified per standards established by the American Society of Non-Destructive Testing. Field diagnostics and data gathering may be performed by Level I or Level II Certified Technicians. Root cause analysis and recommendations for corrective actions requires Level II Certification.

Technicians performing vibration analysis shall be trained and certified per the standards and guidelines of the Vibration Institute. The Contractor shall also have experience performing oil analysis, motor circuit analysis, ultrasonic testing, and alignment and balancing. The Contractor shall submit the name, qualifications and certifications of testing laboratories to the Government for approved use.

The Contractor shall develop and implement a training program to accomplish specialized and site-specific training and development of Contractor employees to ensure that worker skills, qualifications, certifications and experience are commensurate with the employees' work assignment and consistent with aerospace/industry standards and NASA requirements. The Contractor shall provide training sessions to its employees on Reliability Centered Maintenance (RCM) philosophy, as well as operating the Center's Computerized Maintenance Management System (CMMS) program. Training may include classroom instruction (local or factory), hands-on training, and a practical or written testing and certification program. The Contractor shall establish and maintain a registry of specialized and site-specific Contractor employee qualifications, certifications, and training which shall be part of the Personnel Qualification Report. The register shall be current to within ten (10) calendar days of any change in the employee's training or qualification status.

The Contractor shall ensure employees are trained in environmental compliance, hazardous materials, hazardous waste management, ozone-depleting substances, combustion training, safety, and emergency response, as well as other areas relevant to the areas of work in accordance with applicable laws.

Dryden will be commissioning new facilities over the life of this contract that may require maintenance skills beyond those required for this solicitation. If this occurs, the Government will provide limited training for the Contractor to maintain these facilities. The Government-provided training will be limited to that provided by Construction & IDIQ Contractors per the requirements in their construction contracts. Additional training beyond that provided by the Government shall be the Contractor's responsibility.

Specific training is required to execute some duties at Dryden including the following. The training shall be the responsibility of the Contractor at no expense to the Government.

C.9.5.1. Heating, Ventilating, Air Conditioning, and Refrigeration (HVAC/R)

The Contractor shall provide mechanics or technicians performing work on refrigerated circuits and refrigerant containing devices who all are EPA certified per Section 608 of the Clean Air Act, and shall provide certification that all service practices maximize recycling of ozone-depleting compounds for recovery and containment of refrigerants will be followed, per set requirements. All lead mechanics or technicians working on HVAC/R equipment shall be at the journeyman level. HVAC/R technicians shall hold no less than a "UNIVERSAL" level certification. That certification shall be carried on their person at all times. In addition, at least 50 percent of all HVAC/R technicians shall have certification in the use of Air Purifying Respirators per CFR 29 1910.134. All HVAC/R workers shall be familiar with general RCM practices and procedures.

C.9.5.2. Fire Protection Systems

All facility fire sprinkler technicians shall be trained and formally certified, in writing, as qualified to work on fire sprinkler systems and associated devices. These qualifications shall include, but are not limited to, two years of experience in journey-level testing, repair, inspection, and maintenance of fire sprinkler systems, or NICET Level II Inspection & Testing of Water-Based Systems. Submitted qualifications for fire sprinklers technicians must be approved by the Authority Having Jurisdiction.

All facility alarm technicians shall be trained and certified, in writing, as qualified to work on alarm systems or associated electrical devices. These qualifications shall include, but are not limited to, journey level workers holding current Original Equipment Manufacturer (OEM) training certificates for fire alarm, and gas detection systems. Qualifications submitted for Fire Alarm Technicians must be approved by the Authority Having Jurisdiction.

C.9.5.3. Electrical Distribution

All electrical work shall be performed by a qualified journeyman electrician or accomplished by apprentices, helpers, and limited electrical technicians under the direct supervision, within visual site and guidance, of a documented electrical journeyman at all times. All maintenance and repair work shall be performed by certified electricians. The Contractor shall provide copies of certifications upon request.

Electricians performing operation, maintenance and repair on high voltage systems above 600 volts shall be formally trained, certified and have a minimal of two years experience in high voltage operations, maintenance and repair. Documentation of training and certification must be submitted to the COTR.

C.9.5.4. Energy Management Control System (EMCS)

All HVAC Technicians shall be formally trained in EMCS operation with emphasis placed on expertise using the SIEMENS AGOGEE INSIGHT software and hardware. All HVAC Technicians shall be proficient EMCS Operators capable of at setting up and managing EMCS schedules, set points, and alarms. At least one technician shall have SIEMENS APOGEE INSIGHT experience at a level to be able to troubleshoot and program existing field panels and devices.

C.9.5.5 Elevator License

All elevator work shall be performed by elevator mechanics licensed by the State of California and specifically qualified and trained to work on elevator and dumbwaiter systems and equipment. Evidence of all required licenses, as well as documentation of the qualifications of personnel, shall be provided to the CO.

C.9.6. Standards

All work shall be accomplished in conformance with approved and accepted standards of the industry; equipment manufacturers; all applicable NASA, Dryden, local, county, state, and federal standards; and all applicable facilities and safety codes. NASA uses

the SPECSINTACT system, which is an automated specification processing, storage and retrieval system for preparing contract documents for all NASA repair work. SPECSINTACT includes all of the specifications and standards used at the DFRC for non-recurring maintenance and repair work. This system will be made available to the Contractor for their use in performing similar work.

C.9.6.1. When the Contractor completes work on a facility or system, it shall be free of missing components or defects that would prevent it from functioning as originally intended and/or designed. Corrective or repair/replacement work shall be carried to completion including operational checks and cleanup of the job site. Except where otherwise noted, replacements shall match existing in dimensions, finish, color, and design.

C.9.6.2. During and at completion of work, debris shall not be allowed to spread unnecessarily into adjacent areas nor accumulate in the work area itself. All such debris, excess material, and parts shall be cleaned up and removed at the completion of the job and/or at the end of each day work is in progress.

C.9.7. Replacement, Modernization, Renovation

During the term of the contract, the Government may replace, renovate, acquire, or improve equipment, systems, facilities, components, and fixtures at the Government's expense and by means not associated with this contract. All replaced, improved, updated, modernized, or renovated equipment, fixtures, facilities, components, and systems shall be maintained, operated, and/or repaired by the Contractor at no additional cost to the Government unless such changes result in an increase or decrease in contract requirements.

C.9.8. Equipment under Manufacturer's or Installer's Warranty

All defects in material or workmanship, defective parts, or improper installation and adjustments found by the Contractor shall be reported to the COTR. The Contractor shall coordinate appropriate warranty service on all equipment, parts, and components for the duration of such warranties. The COTR will furnish available warranty information to the Contractor.

Equipment, components, and parts, other than those installed under this contract, shall not be removed or replaced or deficiencies corrected while still under warranty of the manufacturer or the installer without prior approval of the COTR.

C.9.9. Interface with Government Forces and Other Contractors

C.9.9.1. Meetings

Within thirty (30) calendar days following award of this contract, the COTR will provide the Contractor with a list of required meetings. Appropriate contractor personnel shall attend and participate in facility operations and maintenance related meetings. Time commitments for these meetings can vary depending upon missions and operations.

C.9.9.2. Facility Managers

Within thirty (30) calendar days following award of this contract, the COTR will provide the Contractor with a list of Facility Managers. The Contractor shall notify the manager of any work to be performed in a building under the manager's control that would tend to disrupt the conduct of normal Government business. The Contractor shall notify the manager at least three (3) working days in advance of such scheduled work. Notification shall include the location of the work, type of work to be done, impact of work on facility, and the estimated completion date. The Contractor shall reschedule any work that the Facility Manager or COTR deem necessary to avoid unacceptable disruptions in the Government's business.

C.9.9.3. Closures

Facilities, streets, walks, corridors, stairwells, elevators, and other facilities occupied and used by the Customer shall not be obstructed by the Contractor without prior written approval from the COTR. The Contractor shall inform all DFRC personnel impacted by the facility closure. The Contractor shall prepare a Facility Closure Report, to be distributed by the Contractor after approval by the COTR, to all DFRC managers and supervisors. The report shall include a hazard analysis that lists impact(s) to DFRC and shutdown/startup procedures. The Contractor shall provide impacted personnel five (5) working days advance notice for any facility closure. Where emergency conditions preclude the five-day advance notification, the Contractor shall immediately notify the COTR. The Contractor shall not close or block emergency egress routes without prior approval from the COTR.

C.9.9.4. Cooperation with Other Contractors

The Government may undertake or award other contracts for additional work at or near the site of work performed under this contract. The Contractor shall fully cooperate with other contractors and Government employees and shall carefully adapt scheduling and work performance under this contract to accommodate the work by others, heeding any direction that may be provided by the COTR. Under no circumstances shall additional work be performed at the request of another Contractor without approval of the COTR.

C.9.10. Damages Caused by Weather Conditions or Vandalism

Repair work required to facilities or equipment damaged by inclement weather conditions and/or acts of vandalism shall be performed at no additional cost to the Government if such work is within the scope of a trouble call (See Section C.11). Work required beyond the scope of a trouble call must be approved by the COTR and will be dealt with as non-recurring IDIQ (See Section C.13).

C.9.11. Maintaining Safe and Reliable Facilities

The primary focus of this contract is to improve the quality of care and the performance of facilities at Dryden. It is the contractor's responsibility to assure the reliability and availability of critical systems. It is the contractor's responsibility to ensure that systems do not fail due to contractor's negligence. It is the contractor's responsibility to protect personnel and property from the risk of harm, injury and damage. The contractor shall develop a quality improvement program aimed at producing cost effective solutions to

facility related problems. A portion of the program shall include regularly scheduled training to teach field personnel to identify, report, and mitigate deficiencies and discrepancies. Contractor personnel shall be proficient in quality control techniques ranging from observation and reporting to safety and process change.

Any equipment deficiencies noted by the Contractor during operational checks, preventive maintenance inspections, trouble call/service work, or other times shall be reported and documented at the Contractor's work control center.

C.9.11.1. Discovery of Critical Equipment Deficiencies

Deficiencies discovered that could potentially jeopardize the operation of items of equipment in the critical facilities listed in Attachment J-C01 shall be reported immediately to the COTR. Deficiencies noted that could potentially jeopardize the operation of equipment in all other facilities shall be reported within two (2) hours after discovery to the COTR.

C.9.11.2. Equipment Deficiency Report

An equipment deficiency report shall be provided five (5) working days prior to submittal of the monthly invoice. This report shall provide a detailed description of identified deficiencies and recommended actions.

C.9.12. Protection from Adverse Weather Occurrences

Dryden facilities are often subjected to extreme weather conditions typical of the Mojave Desert. Extreme conditions include but are not limited to: high winds, dust storms, heavy rains and flash floods, hail, hot, and freezing temperatures. The Contractor shall monitor weather conditions and anticipate additional support requirements to protect and maintain the availability of Dryden facilities and equipment. The Contractor shall remove snow and ice from building walks and entrances so that these areas are clean and safe for pedestrian traffic as required. The Contractor shall proactively shut down, secure, drain, and warm, cool, etc., all equipment subject to weather damage when questionable weather conditions are forecast, anticipated or imminent. The Contractor is responsible for providing such services whether or not specifically informed or notified of such conditions by the COTR or others. All equipment secured for these reasons shall be returned to normal service as soon as possible when adverse condition(s) have passed. The Contractor shall notify the COTR when equipment or systems are shut down and when returned to service.

C.9.13. Emergency Preparedness

Emergency preparedness and operations is included in the fixed-price portion of the contract. If an emergency condition occurs, the Contractor shall respond according to the DFRC Emergency Preparedness Program. The Contractor may be required to assist NASA, within the general scope of work, but in currently unidentified ways, in preparation for, or in response to emergencies.

C.9.13.1. Emergency Response, Exercises and Recovery

The Contractor shall respond to all emergencies, disasters, and associated exercises at DFRC as directed by the DFRC Facility Emergency Response Team (FERT) Leader. The Contractor shall respond to all support requests on a twenty-four (24) hour, seven (7) day per week basis.

The Contractor shall interrupt work if necessary and reassign the work force to support emergencies as directed by the DFRC Facility Emergency Response Team (FERT) Leader, who reports to the NASA Incident Commander. Work to restore and repair facilities following the emergency, and not performed by personnel while diverted from other fixed-price tasks, shall be performed as trouble calls or IDIQ work depending on the estimated cost. The contractor shall record and report in the monthly report the number and type of emergency calls responded to each month and the number and cost of labor hours expended on each emergency response.

C.10. Management

C.10.1. Contract Management and Administration

The Contractor shall manage the total work effort associated with the operations, maintenance, repair, and all other services required herein to assure fully adequate and timely completion of services in this contract. Included in this function are a full range of management and administrative duties not specifically included elsewhere in Section C. These include but are not limited to such areas as payroll, purchasing, personnel, planning, scheduling, cost accounting, safety and health, environmental compliance, training, financial reporting, establishing and maintaining management records, and quality control. The Contractor will be given the opportunity (See Section C.4.2 “Reliability Centered Maintenance”) to propose changes to the maintenance approach through the application of Reliability Centered Maintenance principles. The Contractor shall provide an adequate staff of personnel with the necessary management expertise to assure the performance of the work in accordance with sound and efficient management practices, this contract, and NPR 8831.2, NASA Facilities Maintenance Management. NPR 8831.2 contains information that can be referenced to clarify terms and concepts used throughout this contract, and is available online at http://nodis3.gsfc.nasa.gov/.

The Contractor shall assign a Site Manager to serve as a single Point of Contact (POC) for the CO and COTR. The Site Manager shall be on-site full time. The Site Manager shall be responsible for all Contractor activities under this contract and for the enforcement of all contract requirements. The Site Manager shall be empowered to make day-to-day decisions related to all on-site performance of this contract. That person shall serve as the focal point for all work and shall be responsible for the coordination of all on site activities. The Site Manager shall delegate a member of the on-site staff as the Alternate Site Manager to assume authority during the primary Site Manager’s absence from Dryden.

Should the Contractor choose subcontracting to accomplish work, the Contractor shall comply with Federal Acquisition Regulations (FAR) requirements. The Contractor shall require technical submittals from its suppliers and subcontractors, in accordance with the project drawings and specifications. The Contractor shall file these submittals with the Work Order records in the Facility History Files.

The management associated with this contract is included in the firm fixed-price portion of the contract except for that approved as part of implementing an item of non-recurring work.

C.10.2. Work Control

The Contractor shall implement all necessary work control procedures to ensure timely processing of work requirements, as well as to permit tracking of work in progress.

The contractor shall schedule the performance of PTI and PM activities to minimize outage requirements to government facilities. This includes performing PTI activities such as infrared thermography, vibration analysis, and oil analysis prior to PM activities in an effort to correct non-urgent PTI finds at the time of the earliest future PM activity. As an example oil analysis should be performed on oil filled transformers prior to provide sufficient time to receive results so that any deficiencies can be addressed during the next earliest PM activity.

Contractor shall manage PM and PTI activities so that the scheduled completion dates are balanced throughout the annual period. PM activities subject to seasonal completion shall be scheduled so that the assets maintenance and availability are completed immediately prior to the seasonal use. As examples scheduled boiler maintenance shall be performed prior to the start of the heating season and air conditioning maintenance shall be performed prior to the start of the cooling season.

C.10.2.1. Processing

The Contractor shall plan, estimate, and schedule work to assure material, labor, and equipment are available to complete work requirements within the specified time limits and in conformance with the quality standards established herein. All requests are to be logged daily and entered into the Computerized Maintenance Management System (CMMS) as described in C.10.5. Electronic access or paper copies of work authorization forms are to be provided to the COTR, Facility Manager and customer within two (2) days of initiation. Work Control will include receipt of trouble/service requests from facilities customers (both NASA and Contractors), recurring work as identified in Section C.12, and non-recurring work as identified in Section C.13.

C.10.2.2. Configuration Control

Dryden employs a facilities and infrastructure configuration control process. The Contractor shall not change infrastructure configuration without review and approval by the Facilities Configuration Control Board (FCCB). The Contractor shall support and participate in the weekly FCCB review meetings.

C.10.2.3. Scheduling

The Contractor shall schedule and arrange work so as to cause the least interference with normal occurrence of NASA business and mission. Work that requires FCCB review shall be scheduled upon approval.

C.10.2.4. Work Status

Verbal status reports shall be provided when requested by the CO and/or the COTR. The status of any item of work must be provided within two (2) hours of the inquiry during regular working hours, and within four (4) hours after regular working hours.

C.10.2.5. Facility Files & Documents

The Contractor shall maintain all drawings, equipment manuals and technical documentation in the Contractor's Technical Library in an organized and indexed order.

C.10.2.5.1. Facility History Files
Files for each building, structure, system or piece of equipment identified by facility number and asset number shall be maintained in the Work Control Center by the Contractor for each facility listed in Attachment J-C01. If the proper manuals, pamphlets, etc are not available, the Contractor is responsible for obtaining the information. The documentation shall include warranty information, PT&I reports data and analyses, and other information pertaining to the facility and/or installed equipment and systems. All documents shall be filed within ten (10) business days of receipt.

C.10.2.5.2. References and Technical Documents
Copies of all available drawings, records, manufacturer's equipment manuals, history files, and other available pertinent data shall be turned over to the Contractor for use and upkeep.

C.10.2.5.3. As-Built Drawings
Existing as-built drawings are available (paper and/or electronically) to the Contractor for information only. All red-line drawings reflecting changes or additions to facilities made by the Contractor shall be submitted to the COTR within fifteen (15) business days of the completed work. Updates shall be in accordance with specific requirements of the FCCB.

C.10.3. Contractor Quality Control

The Contractor shall establish, implement and maintain a proactive quality control program that incorporates the quality elements of ISO 9001:2008. Within sixty (60) days of contract start date, the Contractor shall submit a comprehensive site-specific Quality Control Plan (QCP) to the COTR for approval. The Contractor shall review and update the QCP annually. The Contractor's QCP shall reflect and incorporate quality processes and quality management practices. The Contractor shall identify an on-site employee as the Site Quality Control Officer. The Site Quality Control Officer's resume shall be submitted to the COTR for review and approval. The Site Quality Control Officer shall

be responsible to ensure the QCP is fully implemented and will serve as a focal point for QA related matters to Dryden.

C.10.4. Government Quality Assurance (QA)

All services rendered under this contract are subject to Government inspection. The Government's QA Surveillance Program is not a substitute for QC by the Contractor. All findings of unsatisfactory or non-performed work shall be administered in accordance with the "J-C06 Performance and Deductions" of this contract. All costs associated with rework to make the performance satisfactory are the responsibility of the Contractor and are over and above the deduction made pursuant to the "Consequences of Contractor's Failure to Perform Required Services" clause of Section E. The Government reserves the right to choose the inspection methods and vary the inspection methods utilized during the work, without notice to the Contractor. Additionally, the Government intends to use PT&I methods and results during Government surveillance to assist in documenting Contractor performance of the PM program.

C.10.5. Computerized Maintenance Management System (CMMS)

The Government uses, manages and administers MAXIMO Version 7.5 CMMS. The Contractor shall use the Government's CMMS to manage and fully document all work activity including PM, PT&I, PGM, TC, SR, Repair, IDIQ Work, Janitorial, Grounds Maintenance, and subcontracted work.

The Contractor shall utilize the CMMS system to schedule, track, manage and record work-flow. All data is the property of the Government. The Government will manage all asset inventories in the CMMS including updating asset inventories, decommissioning assets and adding new assets. Upon request by the Government the Contractor shall gather asset inventory data, generate asset barcode labels, and place barcode labels on assets. The Contractor shall also replace existing bar code labels that are weathered or in a deteriorated condition. The Government will provide the asset numbers, and may provide barcode labels or request the Contractor to create them. The Contractor is responsible for the purchase of any label makers required to produce requested labels.

Upon installation of new equipment or the discovery of missing data from existing equipment, the Contractor shall complete a J-C25 "New Asset, Replacement Equipment Data Collection Form" and submit it to the Government so that the Government can create or modify asset data, job plans, and PM schedules.

The Contractor shall enter and report full and accurate cost accounting data into the CMMS for all CMMS work order activity. Work Order activity shall be entered into the CMMS on the same day that the work order activity occurs. The daily updates shall include the name of the technician(s) that performed work on the work order, the regular and overtime hours worked, the status of the work order, the operating status of the equipment / asset on which work was performed, materials and parts used, material and parts cost, and subcontracted labor and materials cost. The Contractor shall ensure that full activity and cost accounting is traceable in the CMMS by building and asset.

The Contractor shall support and enforce any warranties that apply to all equipment the Contractor is responsible for maintaining under this contract, including all equipment installed by the Contractor in performance of this contract and equipment installed by others. The program includes all warranties for facilities, structures, utilities, construction, and equipment that have been transferred to the property accounts of the Government, regardless of the source of the warranty. Data regarding the warranty program shall be maintained by the Contractor in the CMMS. The Contractor shall update the CMMS to reflect all warranties associated with newly installed equipment, including any warranties associated with the installation of replacement parts in existing equipment.

C.10.5.1 Multiple Energy Source Lock Out Tag Out Procedures

During the term of this contract the Contractor shall develop lock out tag out procedures in the Government CMMS for all electrical and mechanical equipment that the Contractor maintains. The lock out tag out procedures shall be completed within the first year of the contract. The Contractor shall coordinate this effort with the Government and shall meet at least monthly with the Government to provide updates on progress.

C.10.5.2 Records and Reports

The Contractor shall provide all data necessary to assist the Government in the preparation of future contracts, reports, studies and analysis related to facilities operation, maintenance and repair. This shall include complete and actual cost accounting of all labor hours, labor cost, material cost, subcontract costs, and equipment cost in the Government CMMS. The contractor shall report these costs as follows and as set forth in Attachment J-C07. All records and copies of reports shall be turned over to the CO within five (5) calendar days after contract completion.

C.10.5.2.1 Facility O&M Cost Profile Report

The Contractor shall prepare and provide an Annual Building Operation, Maintenance, and Repair Cost Profile Report to the COTR. The report shall include the following:

1. Total Operation, Maintenance & Repair Cost by Facility.
2. Scheduled Maintenance & Repair (PM, PTI) Cost by Facility.
3. Unscheduled Maintenance & Repair (TC, IDIQ Repair) by Facility.
4. Operations Cost by Facility
5. Janitorial Cost by Facility
6. Grounds Cost by Facility
7. Cost per SFT by Facility

The report shall be delivered annually on October 10th. The Contractor shall provide (1) hard copy and one (1) electronic copy. All correspondence, reports, plans, processes and contract related data shall be in an electronic format consistent with software versions at DFRC. Plans and processes generated by the Contractor shall not contain Contractor's logo or name. All data and

documents generated by the Contractor under this contract are Government property. The Contractor shall archive electronic copies of all reports.

C.10.5.3. Annual Work Plan

The Contractor shall develop an Annual Work Plan for submittal to NASA HQ at the beginning of every fiscal year. The work plan shall comply with NASA Procedural Requirement 8831.2E Chapter 4. The plan shall be submitted to the COTR for review and approval 30 days prior to the first day of the fiscal year.

C.10.5.4. Data Management

Data management includes maintenance work receipt and classification, scheduling, material inventory control, labor scheduling, work completion (to include labor and material roll up), work status, and report generation. Work will be classified according to the work plan elements listed in NPR 8831.2 Chapter 4. CMMS maintenance and management are a daily, ongoing function supporting work control, preventive maintenance and PT&I, and other M&R activities. Many of the work elements of this solicitation can be effectively and efficiently performed through the CMMS. The CMMS data files are Government property.

C.10.5.5. Inspections

The CMMS will be used by the Government to inspect all work once it is placed in the system in a “completed” status. Once inspections have been completed by the Government, the work order will be closed out.

C.10.6. Customer Liaison

The Contractor shall establish and maintain an efficient and highly visible customer liaison program.

C.10.6.1. Communications

Regardless of the type of work, i.e., trouble/service request, repair work order, etc., the Contractor is responsible for sustaining feedback and direct contacts with all customers. The Contractor shall notify the customer and Facility Manager when the work is completed. The Contractor shall work with Facility Managers in accordance with Section C.9.9.2.

C.10.6.2. Documentation

The Contractor will maintain documentation in a format where work status can be identified. Specific reporting requirements are identified in Attachment J-C07. The Contractor is encouraged to provide information by electronic means.

C.10.7. Safety, Health and Environmental

The Contractor shall develop a Safety, Health, and Environmental Management Plan and program consistent with existing laws, regulations, policies and industry standards. The Safety, Health, and Environmental Management Plan shall effectively identify risks and appropriate mitigation to protect the health and safety of Dryden personnel and the environment.

C.10.7.1. Dryden Safety Culture

The success of this historic agency starts with an unwavering commitment to safety. The culture of this institution is one of safe accomplishment of our missions, and this includes our facility maintenance and construction projects. In the spirit of NASA's commitment to safety, the Contractor shall implement the safety provisions of this section.

C.10.7.2. Safety, Health, and Environmental Management Plan (SHEMP)

Within thirty (30) days of contract award, the Contractor shall submit a comprehensive site-specific SHEMP to the CO for review and approval. Annual updates to the plan shall be submitted to the CO thereafter. The SHEMP shall include and be consistent with the elements listed in Attachment J-C09, containing the NASA Procedural Requirement (NPR) 8715.3C Appendix E 'Sample Safety & Health Plan for Operations or Service Contracts'. The SHEMP shall also meet the requirements of the following attached Dryden Center Procedures (DCP).

1. J-C41, Shop Safety, DCP-S-060
2. J-C42, Fire Safety, DCP-S-061
3. J-C43, Lockout / Tag-out Program, DCP-S-062
4. J-C44, Electrical Safety, DCP-S-063
5. J-C45, Lifting Operations, Devices & Equipment, DCP-S-064
6. J-C46, Pressure Vessels & Pressurized Systems Safety, DCP-S-065
7. J-C47, Communication of Chemical Hazards, DCP-S-066
8. J-C48, Confined Space Safety, DCP-S-067

The Contractor shall meet with the CO, COTR and the Dryden Safety, Health and Environmental Office to develop a mutual understanding relative to administration of the approved Contractor's safety plan.

The Contractor shall proactively take safety and health measures in performing work under this Contract. The Contractor shall comply with all applicable NASA, Dryden, local, state, and federal occupational safety, health, and environmental requirements and standards. The Contractor shall take all precautions in the performance of work under this contract to protect the safety and health of the Contractor's employees, to protect the safety and health of all persons in or near the jobsite, and to prevent damage to property, materials, supplies and equipment. The Contractor shall comply with Federal OSHA Safety and Health Standards 29 CFR 1910 and 29 CFR 1926.

C.10.7.3. Safety Officer

The Contractor shall identify an on-site employee as the Site Safety Officer. The Site Safety Officer shall be responsible to ensure the SHEMP is fully implemented and will serve as a focal point for safety related matters to the Dryden Safety, Health and Environmental Office. The Safety Officer shall record and track training/education of all contract employees.

C.10.7.4. Safety Training and Awareness

The Contractor shall address required safety training and awareness in the SHEMP to ensure all employees have adequate knowledge to prevent accidents and mishaps. Training shall be documented and records made available to the COTR upon request.

At a minimum, the Contractor shall hold weekly safety meetings for all employees. For higher hazard work the Contractor shall hold daily safety meetings prior to beginning work.

Prior to any new work activity, the Contractor shall develop, review, and approve a job specific Activity Hazard Analysis (AHA), to identify potential hazards and appropriate mitigation. The Contractor shall ensure employees are aware of the hazards and understand the mitigations approved. AHAs shall be made available to all employees. AHAs shall be available to the COTR upon request.

C.10.7.5. Accident Reporting

The Contractor shall submit each month a “Contractor Monthly Accident Report”, Form D-WK34-8 to the COTR and the Dryden Safety, Health and Environmental Office. Form is included herein as Attachment J-C27. The report includes: Average number of employees, total labor hours worked, number of deaths, number of injuries, number of occupational illnesses, equipment/property damages, environmental damages, number of lost time injuries and total lost time days throughout contract performance period. The Contractor shall also submit each month: close calls, number of safety meetings, number of AHAs developed, # of safety inspections, # of hazards corrected, etc.

In the event of a mishap and/or accident requiring more than first aid, the Contractor shall report the mishap immediately to the COTR and the Safety, Health and Environmental Office. The Contractor shall also report the mishap within 24 hours by direct input into NASA’s Incident Reporting Information System (IRIS) EX3. IRIS can be found at https://nasa.ex3host.com/IRIS/newmenu/login.asp.

C.10.7.6. Environmental Management

The Contractor shall perform all work in an environmental friendly or benign manner. As part of the SHEMP, the Contractor shall address environmental management. The Contractor’s plan shall comply with Dryden’s Environmental Management System and include the elements listed in Attachment J-C09.

C.10.7.7. Chemical Management

The Contractor shall use the Dryden Chemical Management System (Chemical Crib).

C.10.7.8. Hazardous Work Conditions

The Contractor shall ensure that all personnel have received “Hazardous Communication Training” in the proper handling and management of: blood/water borne pathogens, lead-based paint, and asbestos containing materials (ACM). Any personnel that may encounter occupational exposure to pathogens or hazardous materials shall

be trained and provided appropriate vaccinations or other medical treatments and surveillance.

The Contractor shall comply with the attached J-C31 “DCP-X-027 Blood borne Pathogens Procedures”.

C.10.8. Security

C.10.8.1. Compliance with Security Requirements

The Contractor shall comply with all NASA and local security requirements. Upon request, the Contractor shall submit the name and address of each employee hired for work on this contract and shall ensure all required questionnaires and forms are completed in a timely manner.

C.10.8.2. Disclosure of Information

The Contractor and its employees shall not disclose or disseminate any information concerning Government operations, including those performed by contractors for the Government, which could result in or increase the likelihood of the possibility of a breach of security or interrupt the continuity of operations. Disclosure of information relating to the services hereunder to any person not entitled to receive it, or failure to safeguard any sensitive but unclassified (SBU) information that may come to the Contractor or any person under its control in connection with work under this contract, may subject the Contractor, its agents, or employees to criminal liabilities. All inquiries, comments, or complaints arising from any matter observed, experienced, or learned as a result of or in connection with the performance of this contract, the resolution of which may require the dissemination of official information, shall be directed to the CO.

C.10.8.3. Property Loss

The Contractor shall submit to the COTR a full report of lost or stolen Government property and equipment assigned to Contractor employees. The Contractor shall notify and file a report with the DFRC Security office, Code J, as soon as possible and no later than 24 hours after discovery of the occurrence.

C.10.8.4. Access

It shall be the Contractor's responsibility to obtain authorized access to buildings and facilities, and arrange for them to be opened and closed to accomplish work under this contract.

C.10.8.5. Keys

Keys may be issued to a limited number of Contractor personnel; however, it shall be the Contractor's responsibility to arrange for adequate security of the buildings and facilities, occupied solely by the Contractor, at the end of each workday. The Contractor shall be responsible for the cost of replacing keys and/or locks that are furnished to and lost by their employees. If an entire key sequence is jeopardized causing the Government to re-key an entire group, department, or facility, the full cost shall be borne by the Contractor.

C.10.9. Continuity of Services

To ensure continuity of essential services, the Contractor shall be fully prepared to commence work on the start date of this contract, and should not assume that Government or previous Contractor employees will be available to guide, direct, or specifically orient Contractor employees. Prior to the contract start date, the Government will provide orientation to the Contractor's key management and supervisory personnel performing under the contract, as requested.

C.10.9.1. Backlogged Trouble Calls and Service Requests

As part of being fully ready to commence work, the Contractor shall be prepared to accept backlogged Trouble Calls and Service Requests on the contract start date. A review of all backlogged Trouble Calls and Service Requests will be completed with the Government to assess status, and within the first thirty (30) calendar days after the contract award date completion dates for the work orders will be negotiated.

C.11. Government Furnished Property and Services

In accordance with the "GOVERNMENT PROPERTY (FIXED-PRICED CONTRACTS)" clause in Section I, the Government will provide the Contractor the use of certain Government owned facilities and equipment. All such facilities and equipment, will be provided in "as is" condition. The Contractor shall not label or mark the Government's property with the Contractor's name or logo. The Contractor shall remove all names and logos of previous Facilities Maintenance Contractors from all Government property. Any Facilities Maintenance property that requires ready reference identification such as but not limited to: ladders, barricades, tool kits, etc., shall be labeled "Dryden Facilities Maintenance."

C.11.1. Government Furnished Facilities (GFF)

The Government will furnish or make available to the Contractor the facilities described in Attachment J-C05-1. The Contractor shall obtain written approval from the CO prior to making any modifications or alterations to the facilities. Any such modifications or alterations approved by the CO will be made at the expense of the Contractor. At contract completion, all facilities shall be returned to the Government in the same condition as received, except for reasonable wear and tear, and approved modifications and alterations.

C.11.2. Government Furnished Equipment (GFE)

The Government will provide the Contractor the use of existing and available Government owned tools and maintenance equipment in the performance of the contract. The Government will also provide the Contractor the use of Government owned and/or leased vehicles. Such Government furnished vehicles; tools and maintenance equipment are listed in Attachment J-C05-2. Additionally, the Government will provide the Contractor the use of computers and desk telephones on an as needed basis, with appropriate justification.

C.11.2.1. GFE Condition

Should the Contractor choose to use all or part of the Government furnished tools and maintenance equipment, periodic servicing, maintenance, and repair of the items chosen shall be provided at no cost to the Government. The total or partial breakdown or failure of the Government furnished items shall not relieve the Contractor of responsibility to fully perform the work of the contract. On completion or termination of the contract, all Government furnished tools and equipment, including specialized predictive testing and inspection equipment and tools, shall be returned to the Government in the same condition as received, except for normal wear and tear. Tools and equipment that become worn out due to normal wear and tear shall be returned to the Government and their replacement shall be the responsibility of the Contractor at no cost to the Government. Tools and equipment so acquired shall remain the property of the Contractor. The Contractor shall be responsible for the cost of any repairs or replacement caused by negligence or abuse by the Contractor or the Contractor's employees.

C.11.2.2. GFE Inventory

The Contractor and the COTR shall conduct a joint inventory before commencing work to determine the exact number and serviceability of Government furnished tools and equipment. The Contractor shall certify inventory findings, assume accounting responsibility, and subsequently report inventory discrepancies to the COTR. Government furnished items shall not be removed from NASA DFRC, without prior written approval by the CO.

C.11.3. Government Furnished Material (GFM)

Under the previous contract, Government-furnished materials were provided to the incumbent contractor. The remaining materials will be furnished to the Contractor at the outset of this contract. Should the Contractor choose to use the Government furnished material, a joint inventory shall be conducted with the COTR to determine the exact amount and serviceability of Government furnished materials. On depletion of material provided to the Contractor by the Government, the Contractor shall furnish all material to perform the work of the contract, except as otherwise specified herein.

C.12. Contractor Furnished Items

Except for items expressly listed in Section C.5, the Contractor shall provide all facilities, equipment, materials, and services to perform the requirements of this contract

C.12.1. Parts, Components, and Materials/Supplies

The Contractor shall provide new or factory reconditioned parts and components when providing maintenance, repair, and minor construction services as described herein. All replacement units, parts, components and materials/supplies used in the maintenance, repair, and trouble calls of facilities and equipment shall be compatible with the existing equipment on which it is to be used; shall be of equal or better quality than original equipment specifications; shall comply with the technical specifications (Section C.14 through C.25), and used in accordance with original design and manufacturer's intent. Parts and components, once installed in the Government facility, become Government

property. Items not listed in the technical specification shall be of acceptable industrial grade and quality. If the original manufacturer has updated the quality of parts for current production, parts supplied under this contract shall equal or exceed the updated quality. The Contractor shall retain the parts replaced for at least ten (10) working days after completion of the job and make these parts readily available for inspection by the COTR upon request. Equipment or replaced parts may be requested to be retained indefinitely if needed to support incident investigations.

C.12.1.1. Purchases

The Contractor shall purchase materials in accordance with the U.S. Environmental Protection Agency (EPA) Comprehensive Procurement Guidelines and items listed by the EPA for use of recycled materials and content. A comprehensive list with recommended content is located at www.epa.gov/cpg. The Contractor shall submit a waiver for processing in order to purchase items and materials outside of the scope of the EPA requirements. EPA waiver information is located at http://xnet.dfrc.nasa.gov/Organizations/SMA/CodeSH/PDF/Guidance_for_AP_Waivers.pdf. The Contractor shall submit an Estimate of Recovered Material Content for the EPA-Designated Products Report.

C.12.2. Equipment

New, replacement and rebuilt equipment shall conform to the applicable specifications included in all technical specifications (Section C.14 through C.25), and meet original design intent and purpose, meet energy efficiency standards, and the RCM requirements detailed in NPR 8831.2, Chapter 7. The Contractor shall obtain and maintain manufacturer's operating instructions and maintenance manuals on all new equipment installed by the Contractor. These documents shall become property of the Government and shall be maintained in the Facility History Library.

C.12.3. Contractor Furnished Software

If the Contractor should provide any software to the Government, or desire to install software on any Government owned or operated equipment as part of this contract, it shall be commercially available off-the-shelf software and may be installed only with the written approval of the COTR.

C.13. Attachment Descriptions

Below is a list of attachments, and descriptions of the attachments, that are included as part of this document to clarify requirements.

J-C01 Dryden Facilities

This attachment lists the real property (facilities) to be maintained.

J-C02 Asset Maintenance Requirements + ADDENDUM

This attachment lists the collateral equipment (assets) to be maintained as well as all job plans, job plan tasks, and frequency of performance to conduct preventive maintenance on the equipment and facilities at Dryden. Please be

aware that an ADDENDUM is also included slightly revising the equipment list and adding job plans.

J-C03 IDIQ Repair Pricing Schedule

This attachment is a template for providing a list of subcontract rates and mark-ups for IDIQ Work Requests.

J-C04 Acronyms & Definitions

Attachment J-C04 identifies commonly used acronyms and words with their respective definitions as used by NASA and Dryden.

J-C05-1 Government Furnished Facilities

This attachment is a list of facilities provided by the Government for the Contractor's use for personnel, tools, materials, janitorial functions, etc.

J-C05-2 Government Furnished Equipment

This attachment is a list of equipment provided by the Government for the Contractor's use such as Tagged Equipment, Untagged Equipment, Vehicles, and other miscellaneous equipment.

J-C06 Performance & Deduction Metrics

This attachment lists Performance Metrics with the associated description, monitoring method, and monetary deduction for non-compliance. Also included is a spreadsheet with a sample calculation method for the PM, TC, & SR completion metrics.

J-C07 Data Requirements Document

This attachment identifies data deliverables that are required on this contract to be prepared and submitted by the Contractor. Each Data Requirements Description provides: DRD number, title, use of data, date the requirement was written, who prepares the DRD, due date for submittal of the DRD, who the DRD shall be submitted to, references to sections within the PWS or attachments, and more detailed information on how to prepare the DRD.

J-C08 Trouble Call & Service Request Historical Data

This attachment provides a list of Trouble Call & Service Request work orders for October 2010 thru June 2011. This historical data is for basic informational purposes only, to demonstrate the approximate quantity of Trouble Calls & Service Requests received. The Contractor has the responsibility to evaluate from the description what the reasonable level of effort would be required to complete that type of work regardless of stated start and finish times.

J-C09 NPR 8715_003C Appendix E Safety & Health Plan Sample

This attachment provides guidance for the Required Elements of a SHEMP.

J-C10 NASA Reliability Centered Maintenance Guide for Facilities

This attachment is a detailed guide that explains NASA's RCM philosophy. In general the Government will support efforts proposed by the Contractor to more fully operate in accordance with this RCM philosophy.

J-C11 Environmental Management (DCP-S-102)

This attachment details Dryden's Environmental Management System Chemical Management responsibilities and procedures, including hazardous waste management.

J-C12 Equipment Capacity Data

This attachment lists a small portion of Dryden's assets, for which it is helpful to know size and capacity to determine maintenance workload. For applicable equipment, the capacities included are: Horse Power, Kilo-Volt Amps, Voltage, Ampacity, Tonnage, Gallons per Minute, and Refrigerant & other capacities.

J-C13 HVAC System Performance Measurement Sheet

This attachment is a template for taking regular measurements of HVAC systems to track and trend performance over time.

J-C14 Utility Outages (DOP-F-604)

This attachment is the Dryden Procedure for the request, coordination, approval and oversight of facility outages and closures. It also covers coordinating with other organizations throughout Dryden affected by facility outages and closures.

J-C15-1 Cooling Tower Systems Chemical Treatment Requirements

This attachment has detailed information about Dryden's Cooling Tower Systems.

J-C15-2 Compressed Air Systems

This attachment has detailed information about Dryden's Compressed Air Systems.

J-C15-3 Natural Gas System

This attachment has detailed information about Dryden's Natural Gas System.

J-C15-4 Energy Management Control System

This attachment has detailed information about Dryden's EMCS.

J-C16 Electrical Systems

This attachment has detailed information about Dryden's Electrical Systems.

J-C17-1 Fire Safety Systems

This attachment has detailed information about Dryden's Fire Safety Systems.

J-C17-2 Portable Fire Extinguisher Locations

This attachment provides a list of all the fire extinguisher locations in each building. This list does not include asset numbers, only textual locations.

J-C18 Wastewater Facilities and System

This attachment has detailed information about Dryden's Sewer and Wastewater Facilities and System.

J-C19 Potable Water System

This attachment has detailed information about Dryden's Potable Water System.

J-C20 Storm Drainage System & Signage

This attachment has detailed information about Dryden's Storm System.

J-C21 Elevators

This attachment has detailed information about Dryden's Elevators

J-C22 Built-In Cranes

This attachment has detailed information about Dryden's Cranes

J-C23-1 Grounds Maintenance Inventory

This attachment provides details on the Grounds Maintenance requirements and inventory. Included are building numbers and counts and area square footages of associated elements such as: weed controlled areas, grassed areas, trees, plants, shrubs, planter number and size, xeriscape and other ground cover.

J-C23-2 Grounds Maintenance Map

This attachment is a site map showing color-coded areas for each type of grounds maintenance to give a general idea of magnitude and location of work.

J-C24 Janitorial Frequencies and Fixtures

This attachment has three tabs: (1) Service Levels, which identifies each type of janitorial requirement and how often that task is to be performed in areas with each particular Service Level; (2) Building Requirements, which identifies each building with janitorial services, the square footages of each floor type, total serviced square feet, and standard service level with any relevant comments; and (3) Restrooms and Fixtures, which lists restroom, toilet, urinal, sink, and shower counts for each building; (4) Lighting Fixture Inventory, which is a count of the lighting fixtures, bulb count, and bulb type for each building.

J-C25 New Asset Replacement Equipment Data Collection Form

This attachment is the NASA Dryden Maximo – New / Replacement Equipment Data Collection Form that is to be used for gathering data on new equipment to be entered into Dryden's CMMS. All fields shall be filled in as relevant to each piece of equipment, and form submitted to the Government for CMMS data entry.

J-C26 Surveillance Plan

This attachment identifies the approach and methods the Government will use to perform surveillance to ensure the requirements of the contract are delivered by the Contractor.

J-C27 Contractor Monthly Accident Report

This attachment is Dryden Form D-WK 34-8 to be completed monthly per requirement in this PWS. COTR will provide other Dryden Forms as requested.

J-C28 Roof Condition Inspection (RCI) Form

This attachment is a template form to be used for all Roof Condition Inspections.

J-C29 Fuel Tanks

This attachment lists Dryden's fuel tanks and the responsible Point of Contact.

J-C30 Pressure Vessel Technical Standard 8719_17A

This attachment is a NASA Technical Standard (STD) which provides uniform engineering and technical requirements for maintaining Pressure Vessel System (PVS) structural integrity.

J-C31 Blood Borne Pathogens (DCP-X-027)

This attachment is a Dryden Center-wide Procedure (DCP) describing basic procedures to limit and control occupational exposure to human blood, blood products, and Other Potentially Infectious Materials (OPIM) that could result in the transmission of blood borne pathogens.

J-C35 Above Ground Storage Tanks and Fuel Dispensing Facilities (DCP-S-044)

This document establishes procedure for the management of above ground storage tanks at DFRC as required to maintain compliance with Federal, State and NASA Regulations.

J-C36 Above Ground Storage Tanks Berm Stormwater Drainage Log

This log must be completed at the time stormwater is discharged from secondary containment.

J-C37 Bulk Above Ground Storage Tank Checklist

This checklist is required to be completed for routine in service external visual inspection of bulk storage tanks.

J-C38 Ancillary Above Ground Storage Tank Inspection Checklist

Checklist is required for complete routine external visual inspection of ancillary above ground storage tanks and diesel powered electrical generators.

J-C39 Non-Core Buildings List

This is a list of the buildings that are to be included in the Non-Core Facilities Maintenance costs

J-C40 Non-Core Buildings Map
This is a map of the Core, Non-Core Bid and Non Core Facilities at DFRC.

J-C41, Shop Safety, Dryden Center Procedure (DCP-S-060)

J-C42, Fire Safety, Dryden Center Procedure (DCP-S-061)

J-C43, Lockout / Tag-out, Dryden Center Procedure (DCP-S-062)

J-C44, Electrical Safety, Dryden Center Procedure (DCP-S-063)

J-C45, Lifting Operations, Devices and Equipment, Dryden Center Procedure (DCP-S-064)

J-C46, Pressure Vessels and Pressurized Systems, Dryden Center Procedure (DCP-S-065)

J-C47, Communication of Chemical Hazards, Dryden Center Procedure (DCP-S-066)

J-C48, Confined Space Safety, Dryden Center Procedure (DCP-S-067)

J-C49 GFCI Inventory
This document is an inventory of all Dryden Ground Fault Circuit Interrupter (GFCI) fixtures per building. This list also shows if the fixture is an outlet or a breaker GFCI.

J-C50 NASA Environmental Management (NPD 8500_1B)
This document is the NASA Policy Directive (NPD) for Environmental Management – which includes Energy Efficiency and Water Conservation. This is the top level of any NASA Policy and Procedure Documents.

J-C51 Energy Efficiency and Water Conservation (NPR 8570_1)
This document is the NASA Procedural Requirement (NPR) for Energy Efficiency and Water Conservation. This is the NASA Procedure, with which all Dryden Procedures must comply.

J-C52 Dryden Energy Policy (DPD-8570_1-001)
This document is the Dryden Policy Directive (DPD) for Energy and Water Usage throughout the Center, in concurrence with the relevant NASA NPD & NPD. Dryden Functional Plans & Procedures must follow Dryden Policy.

END OF SECTION C