

Statement of Work (SOW)

Liquid Oxygen Storage System for the NASA Dryden Aircraft Operations Facility

The National Aeronautics and Space Administration, Dryden Flight Research Center (DFRC) has a requirement to supply aviator's breathing oxygen in liquid form to the Dryden Aircraft Operations Facility (DAOF), 2825 E. Avenue P, Palmdale, California 93550. The contractor shall provide all needed components to support a bulk liquid oxygen (LOX) supply system for aviator's breathing oxygen.

The contract will be based on rental of a 500 (nominal) gallon tank. The contract shall include installation of all required components of the bulk LOX supply system, preventive maintenance, required periodic inspections, and inventory management of the LOX. The LOX supply system will be located at Building 700E, an existing metal shed roof with reinforced concrete pad location at the DAOF as directed by the contracting officer. The system must be maintained to ensure uninterrupted supply of liquid oxygen for on-going aircraft operations.

PERIOD OF PERFORMANCE:

Base Performance Period: Award date – September 30, 2014

Option Period One: October 1, 2014 – September 30, 2015

Option Period Two: October 1, 2015 - September 30, 2016

Option Period Three: October 1, 2016 - September 30, 2017

CONTRACTOR ELIGIBILITY REQUIREMENTS:

- 1) Vendor shall be headquartered or have service locations within Southern California.
- 2) Vendor shall be certified to produce liquid aviator's breathing oxygen in accordance with MIL-PRF-27210, Type II (Liquid).
- 3) Vendor shall be able to remotely monitor the LOX supply system to manage LOX quantity.
- 4) Vendor shall be certified to install tank, and to perform and complete required periodic maintenance and inspection for bulk liquid oxygen system in accordance with NASA-STD-8719.17A, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS) (see attached).
- 5) Vendor shall demonstrate the capability to make all records available ON-LINE (web access) including delivery history, level history, reading history, and account information that is downloadable to spreadsheet format.

EVALUATION OF QUOTATIONS:

The Government will issue an order from this solicitation to the responsible vendor whose quote conforming to the solicitation will be most advantageous to the Government. Selection and award will be made (on an aggregate basis) to the lowest priced, technically acceptable offeror. Technical acceptability will be determined by review of information submitted by the offeror that provides a description in sufficient detail to show that the product offered meets the Government's Requirements.

CONTRACTOR PERFORMANCE REQUIREMENTS:

- 1) Vendor shall:
 - a) Supply and install one (1) vendor-owned 500-Gallon Capacity Bulk Liquid Oxygen Tank at Building 700E at the DAOF. Vendor shall be advised that there is no electrical power available at Building 700E.
 - (1) The tank shall be ASME Section VIII code stamped and registered with the National Board of Boilers & Pressure Vessels.
 - (2) Tank installation shall meet all state and local code and permitting requirements. The installation site is owned by the Los Angeles World Airports (LAWA), with NASA as a tenant. The vendor shall satisfy any LAWA, City of Palmdale, and Los Angeles County requirements related to tank installation.
 - i. Submit approved City of Palmdale Construction Permit and all related documents to NASA prior to installation for review and approval.
 - ii. On completion of the installation, submit copy of inspector records of inspection and sign off to NASA.
 - (3) Tank installation shall conform to 29 CFR 1910.104, Oxygen.
 - (4) Contractor shall also be familiar with guidelines in NASA-STD-8719.11, NASA Safety Standard for Fire Protection (see attached).
 - (5) Tank installation shall conform to Title 8, General Industry Safety Orders, Article 139, Oxygen.
 - b) Provide all piping, connections, valving and controls required to connect the LOX tank to an existing government-supplied 50-Gallon LOX Service Cart at the DAOF.
 - (1) All process piping shall meet the requirements of ASME B31.3, Process Piping.
 - c) Provide an offsite monitoring system for the tank (wired or wireless system) capable of independently monitoring the system for refill requirements. The vendor shall use this system to track LOX levels and schedule refills as necessary to maintain a continuous supply of LOX. The vendor shall notify NASA if an anomalous condition is indicated by the monitoring system.
 - d) Provide and maintain all equipment required to fill tank as needed.
- 2) Vendor shall install, maintain, and inspect the bulk liquid oxygen system in accordance with NASA-STD-8719.17A, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS) (see attached). Periodic inspection and testing/calibration of the safety relief valve and pressure gauges shall be done every three years if the tank pressure is above 200 psi or five years if 200 psi or below. An integrity assessment of the tank shall be

performed at least every five years.

- a) The DAOF is a secure government facility. On-site service shall be pre-arranged with NASA to assure entrance to the DAOF.
 - b) Provide a complete written preventive maintenance report to NASA listing operation of each device as required by the referenced standards.
- 3) Vendor shall provide a 24/7 emergency contact system available in the event of catastrophic or emergency situations.
- a) Respond to any requested maintenance and inspections within 4 hours of time of notification.
- 4) Vendor shall provide Aviator's Breathing Oxygen in liquid form in accordance with MIL-PRF-27210, Type II (Liquid).
- a) Provide written certification that the LOX provided has been sampled, tested, and meets the purity standards in the referenced specification.
 - b) Tankage used to deliver certified LOX shall be sealed at the producer to assure non-contamination to point of delivery at NASA.
 - c) Deliver LOX Monday-Friday (with the exception of federal holidays) between the hours of 0500 and 1730. Vendor must be available to make deliveries within 24 hours of request, but will be notified in advance if requirement or mission allows. The anticipated rate of refill is nominally every two months.
- 5) At the end of the contract period the vendor is responsible for the complete removal of the tank and all appurtenances.

ATTACHMENTS

- 1) NASA-STD-8719.17A, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS)
- 2) NASA-STD-8719.11, NASA Safety Standard for Fire Protection