US Department of Agriculture (USDA)

Performance Work Statement and QASP

Turbine Generator Maintenance – Ames IA

General Information

1.0 **Scope**: The USDA requires a maintenance contract to provide OEM authorized service and maintenance for a Solar Turbines Taurus 3500 kw natural gas turbine and related equipment located at the USDA Laboratory facility located in Ames, Iowa.

1.1 The Contractor shall perform to the standards of this PWS.

1.2 This is a performance-based requirement, the labor mix of employees to perform this contract remains the discretion of the Contractor for all services.

1.3 Maintenance shall be performed on the following equipment:

OEM Manufacturer	Package S/N	Model	Type
Solar Turbines	CG07798	Centaur 40 - 4701S	Generator

2.0 **Definitions**:

2.1 CLIN – Contract Line Item, numbered. Established in the solicitation schedule, will start with "0001."

2.2 Privity of Contract - Contract service providers shall be accountable solely to the Prime Contractor, who, in turn, is responsible to the Government.

2.3 Contracting Officer's Representative (COR) – A USDA on-site employee, designated in writing by a Contracting Officer (CO), authorized to monitor and administer specific technical or administrative aspects of a contract.

2.4 Program Office Administrative Officer – USDA Employee Location/Program Office administrative representative identified by the Contracting Officer at point of award. The Program Office Administrative Officer may not be physically located at the facility.

2.5 OEM – Original Equipment Manufacturer – Solar Turbines for the purposes of this requirement.

2.6 InSight – OEM specific generator management system includes hardware and software. No other system is acceptable.

2.7 'Calendar Days'- Every single day on the calendar (12 AM to 11:59 PM), including weekends, holidays, and non-working days.

2.8 'Business Days' – Standard business days 8AM to 4PM USA Central Time with holiday exceptions as noted:

Listed below are official Government holidays:
New Year's Day January 1*
Martin L. King Birthday Third Monday in January
President's Day Third Monday in February
Memorial Day Last Monday in May
Juneteenth As Indicated
Independence Day July 4*
Labor Day First Monday in September
Columbus Day Second Monday in October
Veterans Day November 11*
Thanksgiving Day Fourth Thursday in November
Christmas Day December 25*
OR when the USDA-ARS facility is closed due to local or national emergencies, administrative closings, or similar Government-directed facility closings
*In accordance with Federal regulations, if these holidays fall on a Saturday, the holiday will be observed on Friday, if Sunday, holiday will be observed on Monday.

3.0 **Period of Performance:** The period of performance (PoP) shall be for one (1) Base Year of 12 months and one 12-month option year.

4.0 **Hours of Service Performance:**

4.1 **General Access Hours: 8 AM through 4:00 PM Central Time** on Business Days, Monday through Friday.

4.2 Additional access can be granted on a case-by-case basis with a 2-week notice.

5.0 **Place of Performance:** The work to be performed under this contract will be conducted at the USDA Facility located at 1920 Dayton Ave, Ames IA 50010.

6.0 **Invoicing and Payment**:

6.1 The "Submit Invoice-to" address for USDA orders is the Department of Treasury's Invoice Processing Platform (IPP).

6.2 All invoices shall be submitted via the electronic Invoice Processing Platform. This is a mandatory requirement initiated by the U.S. Department of Treasury. More information is available at https://www.ipp.gov. The Department of Treasury is the point of contact for all IPP Collector account inquiries.

6.3 Payment is in arrears pursuant to the clause at FAR 52.212-4. Note FAR 52.212-4 (i)(1) Items accepted. Payment shall be made for items accepted by the Government that have been delivered to the delivery destinations set forth in this contract.
6.4 Payment will not be made for service in advance of delivery.
6.5 The invoice cycle is monthly.
6.6 Advance invoice approval is not required, as required approval tiers exist in IPP.

Contractor Requirements

7.0 Technical Requirements / Tasks Matrix

7.1 General Tasks

7.1.1 Proper maintenance utilizing OEM parts is critical in ensuring operational and system integrity. Only parts authorized by the OEM shall be used for contract requirements.
7.1.2 All work shall be scheduled in advance with management personnel located at the site utility plant. All work shall be completed within the period of performance stated in executed contractual documentation.
7.1.3 The contractor shall be able to respond to emergency calls regarding warranty claims for the service work and arrive on-site at an emergency service call within 2 hours (weather and technician availability dependent).
7.1.4 If the Prime Contractor Representative decides that a non-emergency, unscheduled visit is called for, an OEM certified technician shall be sent out to provide maintenance, troubleshooting or component replacement. This will be provided at no additional cost to the USDA. Visits shall be scheduled to prevent unnecessary travel if no events negatively affect turbine performance, safety, or reliability.
7.1.5 Scheduling. The contractor will work with the USDA CO and COR to schedule times for shutdowns to do maintenance and repair. The contractor will give at least 2 weeks' notice to schedule shutdowns for maintenance and repair. This work will be scheduled throughout the June 15th to September 15th electrical peak season as much as possible.
7.1.6 Reporting.
7.1.6.1 The contractor shall provide a site visit report within two business days after any visit.
7.1.6.2 The contractor shall provide any written formal on basic services including engine condition, lube oil analysis, vibration analysis and other work.
7.1.7 Health, Safety and Security: The contractor and the USDA will work to safeguard the lives of people, property and the environment. They will work together to identify and plan for hazards and risks and shall follow all federal and state laws, rules, and regulations.

7.2 Specific Tasks

7.2.1 **Condition Assessment Visit**
7.2.1.1 The contractor shall provide labor, travel and subsistence to perform at least one onsite assessment per 12-month contract period.
7.2.1.2 Other equipment covered by this agreement may be inspected at this time.
7.2.1.3 Turbine shutdowns for maintenance inspections will be required to take place outside of the June 15th to September 15th electrical peak season with at least a 2-week notice.

7.2.2 **Scheduled Maintenance Inspections**
7.2.2.1 The contractor shall provide consumable maintenance parts (except for air filters and lubricating liquids), labor and travel for regular maintenance inspections including 4,000 hour and 8,000-hour service and inspections and special tooling. See specifics below.
7.2.2.2 The contractor shall ship all maintenance and service parts to the USDA facility at least 2 weeks in advance before performing any maintenance work.
7.2.2.3 Turbine shutdowns for maintenance inspections will be required to take place outside of the June 15th to September 15th electrical peak season with at least a 2-week notice.
7.2.2.4 The following table lists typical maintenance tasks performed during the Level A (4,000 hours) and Level B (8,000 hours) maintenance visits. All tasks may not be performed if InSight data indicates the device, or system is fully functioning correctly and does not require maintenance. This provides an opportunity to minimize the downtime required to perform the maintenance.

	Air Systems		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Air Systems	Inspect enclosure vent fans and filters.	A, B
2.	Air Systems	Inspect evaporative cooler for proper operation, if equipped.	A, B
3.	Air Systems	Inspect intake and exhaust systems (debris, leaks, damage).	A, B
4.	Air Systems	Inspect bleed valve actuator mechanism for proper operation. Electric / hydraulic actuators, inspect shafts for cleanliness or scoring.	A, B
5.	Air Systems	Inspect engine compressor variable vane mechanism for wear. Inspect for bent arms, loose linkage or loose bushings.	A, B
6.	Air Systems	Inspect inlet guide vanes and position. Inspect linkage and actuation systems. Inspect electric / hydraulic actuators for cleanliness or damage.	A, B
7.	Air Systems	If self-cleaning air filters are used, inspect supply pressure. Manually cycle through cleaning operation as required.	A, B
8.	Air Systems	Inspect air inlet housing (obstructions, leaks or contamination). Record differential pressure.	A, B

	Electrical and Control Systems		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Electrical and Control Systems	Visually inspect gages and indicators for proper operation	A, B
2.	Electrical and Control Systems	Inspect control console electrical connections for cleanliness and security	A, B
3.	Electrical and Control Systems	Verify and record speed magnetic pickup sensor output	A, B
4.	Electrical and Control Systems	Inspect condition of thermocouple harnesses and supports	A, B
5.	Electrical and Control Systems	Inspect fire detectors for cleanliness and sensitivity.	A, B
6.	Electrical and Control Systems	Test fire eyes and thermal devices. Verify solenoids systemfor proper operation	A, B
7.	Electrical and Control Systems	For enclosed units, test Hazardous Package sensors /detector(s) Calibrate as required	A, B
8.	Electrical and Control Systems	Inspect critical gages Calibrate, Fill, or Replace as Required	A, B

9.	Electrical and Control Systems	Inspect speed and temperature control boxes, if equippedCalibrate as Required	A, B
10.	Electrical and Control Systems	Inspect and Verify back-up over-speed protection monitorCalibrate as Required	A, B
11.	Electrical and Control Systems	Check gas detection devices	A, B
12.	Electrical and Control Systems	Visually inspect control console	A, B
13.	Electrical and Control Systems	Inspect and Verify safety warning and shutdown devicesCalibrate or adjust as Required	A, B
14.	Electrical and Control Systems	Inspect and Verify package vibration monitoring andassociated vibration devices (transducers)	A, B
15.	Electrical and Control Systems	Inspection of charger (batteries) for condition and properoperation.	A, B
16.	Electrical and Control Systems	Perform a battery run down test	A, B
17.	Electrical and Control Systems	Replace PLC battery	A, B

	Fuel Systems		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Fuel Systems	Record fuel pressure As required – Customer Adjust regulator (Maybe off Package)	A, B
2.	Fuel Systems	Inspect fuel control system (Integrity, leaks, proper operation) May include fuel System (valves, actuators, linkage & connections)	A, B
3.	Fuel Systems	Inspect fuel control poppet valve Replace as Required (Condition Based)	A, B
4.	Fuel Systems	Inspect pilot gas filter element Replace as Required (Condition Based)	A, B
5.	Fuel Systems	Disassemble, clean, and/or rebuild gas shut off pilot controlvalves As Required (Condition Based)	A, B
6.	Fuel Systems	Inspect and lubricate liquid fuel shutoff valvesReassemble with new O-rings	A, B
7.	Fuel Systems	Inspect and clean fuel strainers	A, B
8.	Fuel Systems	Inspect fuel injectors for cracks, excessive oxidation or damage. Remove or Replace as Required	A, B

9.	Fuel Systems	Inspect, clean, and/or rebuild primary and secondary fuel shutoff valves (Condition Based)	A, B
10.	Fuel Systems	Inspect igniter torch housing for cracks and excessive erosion, inspect discharge tube for chaffing wear. Replace as Required	A, B
11.	Fuel Systems	Inspect air purge manifolds (discoloration, cracks, overheating)	A, B
12.	Fuel Systems	As Required - Liquid / Dual Fuel units, Inspect purge systemfor proper operation	A, B

	General		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	General	Review Unit Operating Data	A, B
2.	General	Inspect Package lines and hoses (leaks, wear, chaffing) Correctas Required	A, B
3.	General	Inspect mechanical linkages (wear, looseness) Correct asRequired	A, B
4.	General	Visually inspect entire package for fuel, oil, and air leaks	A, B
5.	General	Check condition and operation of solenoids and shutoff valvesCorrect as Required (kits as necessary)	A, B
6.	General	Inspect package for unusual noise, discoloration, cracks,and chaffing lines – Correct as Required	A, B
7.	General	Visually inspect exhaust bellows for cracks or distortion	A, B
8.	General	Perform cleaning of engine per Performance Condition or as Required (Off-line detergent wash)	A, B
9.	General	Perform borescope inspection of the compressor, combustion section, and the power turbine	A, B
10.	General	Conduct vibration survey.	A, B
11.	General	Lubricate all electric motors that are equipped with grease fittings Per recommended schedule or as Required	B
12.	General	Check all safety valves as required	A, B
13.	General	Inspect, clean/replace all package filters – Condition Based(excludes air inlet filters)	B
14.	General	Witness turbine Restart, record acceleration time. Monitor control system for proper sequencing	A, B
15.	General	Conduct engine performance analysis on As Required – Condition Based	B

	Generator (Driven Equipment)		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Generator (Driven Equipment)	Inspect generator for cleanliness. Inspect fan blades, generator rotor and stator for contamination and damage	B
2.	Generator (Driven Equipment)	Inspect coupling shear bolts for wear or damage	A, B
3.	Generator (Driven Equipment)	If Required – Disassemble, clean, inspect gear engagementwear, repack (Solar coupling grease) Re-assemble (New Gaskets)	B
4.	Generator (Driven Equipment)	As required, based on vibration data, check and realigndriver/driven equipment	B
5.	Generator (Driven Equipment)	Resistance check (PI)	B
6.	Generator (Driven Equipment)	Rectifier assembly, inspection and repair, and diodereplacement	As Required
7.	Generator (Driven Equipment)	Bearings and oil seal replacement	As Required
8.	Generator (Driven Equipment)	Oversee contractor in cleaning the generator utilizing OEM recommendations or Industry Standard Practices	As Required

	Lube Oil and Servo Oil Systems		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Lube Oil and Servo Oil Systems	Inspect Lube oil tank levelRecord oil consumption	A, B
2.	Lube Oil and Servo Oil Systems	Verify proper operation of oil makeup system, if installed	A, B
3.	Lube Oil and Servo Oil Systems	Check oil cooler louver operation, where applicable	A, B
4.	Lube Oil and Servo Oil Systems	Check lube oil tank vent fan and/or mist eliminator for properoperation	A, B
5.	Lube Oil and Servo Oil Systems	Collect oil sample for condition analysis	A, B
6.	Lube Oil and Servo Oil Systems	Inspect and record lube oil filter (Delta P). Rotate to Standbyfilter assembly if equipped (Condition Based). Inspect / Replace filter elements if required.	A, B
7.	Lube Oil and Servo Oil Systems	Inspect Servo oil filter "pop-out" condition indicatorReplace filter (Condition Based) if required	A, B

8.	Lube Oil and Servo Oil Systems	Inspect Lube Oil cooler assembly (cleanliness / properoperation)	B

	Start Systems and Auxiliary Motors		**Level A 4,000 hours, Leve B 8,000 hours**
Item No.	***Deliverable***	***Objective***	***Due***
1.	Start Systems and Auxiliary Motors	Inspect Starter reservoir or lubricator oil level.As Required – Fill Reservoir	A, B
2.	Start Systems and Auxiliary Motors	Replace starter hydraulic filter (if equipped)	A, B
3.	Start Systems and Auxiliary Motors	Inspect and verify pre/post lube oil pump and backup lube oilpump	A, B
4.	Start Systems and Auxiliary Motors	Inspect starter clutch (if applicable) to ensure properengagement and operation	A, B
5.	Start Systems and Auxiliary Motors	Check pneumatic starter assembly (if applicable) for unusualwear and oil consumption. Verify proper operation of starter when unit is in startup cycle	A, B
6.	Start Systems and Auxiliary Motors	Verify starter gas vent over pressure protection is functional(if applicable).	A, B
7.	Start Systems and Auxiliary Motors	Inspect VFD's for proper operation and setpoints	A, B
8.	Start Systems and Auxiliary Motors	As Required - pneumatic starters: clean, inspect or rebuildshutoff valve (Versa valve, etc.)	B

Item No.	***Deliverable***	***Objective***	***Due***
1.	Process Conditions Review	Review of external related balance of plant and processes that may impact or has impacted turbine operation	As needed.
2.	Package Air, Fuel and Water Conditions and Impact Review	Assess air filtration and external fuel and water systems service history and condition to determine if any may impact or have impacted turbine operation	As needed.
3.	Operational Practices Review	Review of operations practices, interview operators, review site and event logs	As needed.
4.	Engine condition review	Conduct an annual borescope inspection and vibration survey. Visually inspect and assess equipment condition	Annually or more often as needed. It is normally done at 4000 and at 8000 hours of run time.
5.	Maintenance Programs and Practices Review	Review of service tasks and intervals, maintenance skills and practices and recommend changes to maintenance practices	As needed.

6.	Review Service Bulletin Compliance	Review for compliance with Solar-issued service bulletins that are published during the Term of this Agreement	As needed.
7.	Machinery Health Assessment and Recommendations	Report on ability to extend turbine life beyond the TBO while meeting the performance and efficiency requirements of the operation	As needed.

8.0 Contractor Personnel

8.1 **Contractor Key Personnel**:

8.1.1 Due to the critical nature of this requirement in ensuring USDA facility operations and continuity of research, the **Prime Contractor** shall have a minimum of 10 years' experience servicing Solar Turbines generators and operating the generator via an ISO/PMCS control system.

8.1.2 The technicians working on the USDA Solar Turbine shall be authorized by the OEM and have at least 2 years' experience in the field working on Solar Turbines.

8.1.3 The Prime Contractor shall provide a Prime Contractor Representative who shall be responsible for the planning and performance of the work and shall be the central point of contact with the Government.

8.1.3.1 The name of the Prime Contractor Representative and an alternate who shall act on behalf of the Prime contractor when the Prime Contractor Representative is absent shall be designated in writing with current contact information to the COR within 10 calendar days of award.

8.1.3.2 The Prime Contractor Representative or alternate shall have full authority to act for the Prime Contractor on all contract matters relating to the daily operation of this contract.

8.1.3.3 The Prime Contractor Representative is not required to present at all on-site visits but is required to be available via phone or email when on-site service is being provided.

8.1.3.3.1 Specific duties of the Prime Contractor Representative:

8.1.3.3.1.1 Set up reports, procedures, check sheets, programming, live view screens.

8.1.3.3.1.2 Review reports and alerts, recommend maintenance and repair, schedule service, phone troubleshooting, resolve technical issues, 24/7 emergency phone support, forecasting and planning engine exchanges, service bulletin implementation.

8.1.3.3.1.3 Provide InSight system uses and training

8.1.3.3.1.4 Provide Semi-Annual Operation and Maintenance reports

8.1.3.3.1.5 Provide Condition assessment Visit and Equipment Condition Report

8.1.3.3.1.6 Administer Recommended Maintenance Visits

8.1.3.3.1.7 Provide Maintenance Consumables and Tooling

8.1.3.3.1.8 Administer Unscheduled Maintenance and Field Service Call Outs

8.1.4 Required Key Personnel Documentation:

8.1.4.1 Documentation from the OEM of the first and last name authorization of identified service technicians (see section 8.1.2) dated as effective by at least the first day of the contract period of performance, shall be presented only if requested in writing by the Contracting Officer at any point after contract award. This documentation shall be presented to the Contracting Officer in writing within one (1) business day of the written request.

8.1.4.2 The Contracting Officer may verify the documentation with the OEM.

8.1.4.3 If contractor personnel are added beyond the initial names, after the first day of the contract period of performance, the first and last names with OEM documentation shall beprovided within (1) 'business day' of a Contracting Officer's written request at any point after contract award

8.2 **Privity of Contract**:

8.2.1 Contractor personnel shall be accountable solely to the Prime Contractor, who, in turn, is responsible for all aspects of contract performance.

8.2.2 The USDA is not responsible for, nor will be directly involved in Prime Contractor personnel actions, such as hiring evaluations, position interviews, resume reviews, contacting individual employees, etc.

9.0 Security Requirements

9.1 All contractor personnel shall be US Citizens. Please contact the COR or Program Office Administrative Officer for acceptable forms of identification.

9.2 Contractor personnel shall be physically escorted by a USDA employee while on site at all times.

10.0 Insurance Requirements

10.1 **Workers' Compensation and Employer's Liability**. The Contractor is required to comply with applicable Federal and State workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they must be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with a Contractor's commercial operations that it would not be practical to require this coverage. Employer's liability coverage of at least $100,000 must be required, except in States with exclusive or monopolistic funds that do not permit worker's compensation to be written by private carriers.
10.2 **General Liability**. The Contractor must have bodily injury liability insurance coverage written on a comprehensive form of policy of at least $500,000 per occurrence.
10.3 **Automobile Liability**. The Contractor must have automobile liability insurance written on a comprehensive form of policy. The policy must provide for bodily injury and property damage liability covering the operation of all automobiles used in connection with performing the contract. Policies covering automobiles operated in the United States must provide coverage of at least $200,000 per person and $500,000 per occurrence for bodily injury and $20,000 per occurrence for property damage or loss.
10.4 **Aircraft Public and Passenger Liability**. When aircraft are used in connection with performing the contract, the Contractor must have aircraft public and passenger liability insurance. Coverage must be at least $200,000 per person and $500,000 per occurrence for bodily injury, other than passenger injury. Coverage for passenger injury must be at least $200,000 multiplied by the number of seats or passengers, whichever is greater.
10.5 Proof of insurance shall be submitted to the COR and Contracting Officer pursuant to the clause at FAR 52.228-5 within 5 calendar days of award.

11.0 Submittal Schedule:

Submittal	Reference	Delivery	Due by
Proof of Insurance	Clause at FAR 52.228-5	Emailed PDF to COR and CO	Within 5 calendar days of award.
Key Personnel – Prime Contractor Representative	Section 8	Emailed PDF to COR and CO	Within 10 calendar days of award

Quality Assurance Surveillance Plan

12.0 Performance Requirement Measures/QASP:
The Government shall establish a Quality Assurance Surveillance Plan (QASP) as a means of evaluating whether the Contractor is meeting the performance standards/quality levels identified in the PWS to ensure that the government pays only for the level of services received. The requirements are stated below.

Tasks	Standards	Acceptable Quality Level (AQL)
Contractor Performance Requirements and Tasks identified in Sections 7, 8, 9, 10, 11	Standards as established in Contractor Performance Requirements and Tasks in Section 7, 8, 9, 10, 11	100%