ATTACHMENT A
ELECTRICAL TRADE SERVICES
STATEMENT OF WORK (SOW)

1.0. BACKGROUND

The Facilities Testing Division (FTD) requires a contractor to perform Special Service Requests (SSR) initiated by various test cell engineers, researchers and facility managers for the installation, modification, and replacement of electrical research equipment and components located in test cells and facilities throughout the NASA Glenn Research Center (GRC) facilities.

2.0. GENERAL REQUIREMENTS

2.1. These general requirements cover SSR for Electrical trade services. The contractor shall perform specific electrical tasks in support of the GRC FTD test cells and facilities.

2.2. The contractor shall have experience with facility low voltage (600 volts and under) systems, include the power distribution, lighting and control systems.

2.3. The contractor must have a working knowledge of the Low Voltage/Operation Instructions (LV/OI's) and procedures for the installation of electrical components for use by the FTD.

2.4. The contractor shall define the hazards associated with tasks and develop and submit a site-specific Health and Safety Plans (HASP) to mitigate these hazards. The contractor shall be familiar with and follow the GRC Lock-Out/Tag-Out (LOTO) procedures. The contractor shall follow GRC configuration control procedures to document changes to the GRC electrical records database.

2.5. All work shall follow the Glenn Safety Manual and shall be in accordance with the latest National Electric Code (NEC).

3.0. WORK REQUIREMENTS

3.1. The work tasks covered by this SOW are described in general terms. The Government will define specific tasks and deliverables on individual issued task technical direction forms. All task orders issued under this BPA will be related to the specific tasks described below.

3.2. The contractor shall perform LV electrical installation, removal, wiring, modification and maintenance of the research facility test cell power distribution equipment and their related electrical components. They will also need to bend and install conduit (flexible and rigid, up to 4-inch diameter) as required.

3.3. The contractor shall perform LV electrical installation, removal, wiring, modification and maintenance of the research facility test cell control systems (PLC and DCS systems) and their related electrical components. They will also need to bend and install conduit (flexible and rigid, up to 4-inch diameter) as required.

4.0. GLENN REQUIREMENTS FOR ALL TASKS

4.1. Waste Disposal.
The contractor shall dispose of all waste in accordance with Federal, State, and Local regulations.

4.2. Security Requirements.
Contractor employees assigned to work at GRC will be required to coordinate access with the NASA Main Gate. Access will be restricted to the work site and travel between the entrance gate and the work site. Contractor employees shall view a construction safety video before an identification badge is issued. Contractor employees shall wear the badge at all times. Access for any Contractor employee who is not a U.S. citizen shall be coordinated with the NASA GRC security manager at least six weeks in advance.

5.0. APPLICABLE DOCUMENTS

5.1. Glenn Research Center
The following GRC documents are applicable to all work covered under the Blanket Purchase Agreement:

a. Glenn Research Center Safety Manual
The following website link provides access to these documents:
http://smad-ext.grc.nasa.gov/shed/pub/gsm/chapter_index.shtml

b. Technical Direction Form
This form will be used by the Contracting Officer's Technical Representative (COTR) to request quotes on a task order basis.

6.0. SITE-SPECIFIC HEALTH AND SAFETY PLAN

6.1. The contractor shall comply with all Federal, State and Local regulations. The contractor shall comply with the Glenn Safety, Occupational Health and Environmental manuals. The contractor shall have a designated competent person on-site during all times during work activities.

6.2. The contractor shall include a separate "SITE SPECIFIC" HASP in accordance with the Glenn Safety Manual Chapter 17 Construction Safety, for the work required to complete the task outlined in this SOW within 30 working days after the contract award. The plan shall cover the requirements of the worker, fall and environmental protection, as well as the requirements listed below.

6.3. The HASP shall cover the emergency phone numbers for on-site work at NASA Glenn Lewis Field as 911 on all fixed internal phone lines and (216) 433-8888 from cell phones.

6.4. The HASP shall include the Material Safety Data Sheets (MSDS) for hazardous materials needed to complete this work.

6.5. Safety practices and regulations such as confined space entry, electrical safety, fall protection, hazard communication, and any other applicable OSHA standards shall also be addressed within the HASP.

6.6. The contractor is required to furnish all Personal Protective Equipment (PPE) that meets OSHA requirements. The contractor accepts all liabilities for items of the site-specific HASP.

6.7. It is NASA's policy to require fall protection for any walking working surface where a person is exposed to a fall to a lower level. Fall protection programs shall focus on eliminating, mitigating, and controlling the fall hazard before an individual is exposed to the hazard.

a. Fall protection programs shall protect workers who may be exposed to a fall of four feet or greater to a lower level for general industry activities in accordance with 29 CFR 1910 and six feet or greater to a lower level for construction activities in accordance with 29 CFR 1926.
b. "Fall hazards" from any height to lower level shall require protection if the work is over a collateral hazard (e.g. moving machinery, chemicals, electrical hazards, impalement hazards).

6.8. It is a requirement that for each situation that requires fall protection at GRC, there shall be a competent person (per ANSI/ASSE Z359.0-2007, paragraph 2.27) assigned responsibility for the immediate application of fall protection work where fall protection is required whose education and training has been administered by an industry-recognized trainer.

6.9. As part of each task-specific HASP, a Fall Prevention Plan shall be submitted to the Safety, Health and Environmental Division (SHED) for review and concurrence. Work shall not commence until this concurrence has been received.

6.10. Cleanliness
Contractor is to maintain area cleanliness.

7.0. PHASE PLANNING

7.1. The contractor shall provide bi-weekly status updates of all active tasks.

7.2. During the center's annual maintenance shutdown, the contractor shall provide a complete report outlining all their work from all institutions based sources at Glenn and expected completion dates on tasks that are consider Lab shutdown related projects. These schedules shall encompass the removal, refurbishment, reinstallation, relocation and the equipment checkout process. The contractor will be required to ensure all safety practices and procedures are addressed before and during this critical maintenance period.

8.0. MATERIALS, EQUIPMENT, AND EFFORTS PROVIDED BY NASA

8.1. NASA shall maintain the option to furnish any or all components, types of material or hardware for any type of service requested by NASA to this contractor on an individual task basis.

8.2. NASA will provide electrical Lock out tag out services to the contractor.

8.3. NASA shall maintain the option of performing the LOTO for the disconnection and reconnection on all sources of pneumatic, hydraulic, water, and any other liquid, coolant or oil sources of all components being removed by the contractor on an individual task basis. Clear roles and responsibilities will be defined for each task between NASA and the contractor.

9.0. SAFETY, HEALTH & ENVIRONMENTAL REQUIREMENTS

9.1. Daily documented site safety inspections shall be conducted as per chapter 17 of the Glenn Safety Manual. All painted surfaces shall be considered lead based and shall be checked for the presence of lead prior to the start of any work that involves disturbing the paint. GRC safety and environmental practices for working with lead-based painted items shall be followed. All insulation and building materials shall be assumed to be asbestos containing unless laboratory data demonstrates that it is not. Welding and other hot work done at GRC is to be performed per Chapter 28 of the Glenn Safety Manual. All welding of pressure systems (pipes and vessels) shall be performed per Glenn Welding Manual (GLM-QE-8730.2, Section II) with pre-approved weld permit (C-4025). A hot work authorization permit (C-7A) shall be completed and signed by the SHED prior to hot work commencing. A hot work pre-operations checklist shall be completed immediately prior to the start of hot work operations (minimum daily). A 30-minute fire watch after welding has stopped is required when hot work is completed the C-7a and C-7B shall be returned to the SHED as specified in the Glenn Safety Manual, Ch 28. Contractor is responsible for completing the overall HASP, but each subcontractor supporting a task at GRC shall complete a HASP covering their work.

9.2. Any new contractor or subcontractor will be required to view the Glenn Safety PowerPoint presentation prior to performing any work.

10.0. OTHER SPECIAL CONSIDERATIONS

10.1. The activities covered by this SOW are subject to in-process inspection by the Glenn Research Center.

10.2. Delivery of an acceptable site-specific HASP shall be delivered in a timely fashion to assure delivery dates are met.