

## **Attachment 1**

### **APPENDIX A**

#### **STATEMENT OF WORK**

#### **“MINOR CONSTRUCTION SERVICES”**

**October 8, 2012**

### **1.0 GENERAL SCOPE**

The National Renewable Energy Laboratory (NREL) routinely subcontracts for minor construction work to support research activities and to incorporate health and safety improvement for the NREL facilities. The general requirements for these projects are described in Sections 2 through 9 of this Statement of Work (SOW). The specific work requirements shall be fully described in individual SOWs and awarded to the Subcontractor by individual task order. This SOW for a Construction Task Ordering Agreement (TOA) will enable NREL to obtain the resources and materials required to complete specific tasks in a timely and effective manner.

### **2.0 THE WORK TO BE PERFORMED**

The Subcontractor shall provide complete construction services to accomplish a variety of tasks at NREL including:

- A. Equipment relocations,
- B. Building alterations, including laboratory and office
- C. System alterations,
- D. Repairs,
- E. Minor construction tasks,
- F. Site upgrades

The SOW for each individual task order shall be developed by the appropriate NREL Project Manager and presented to the Subcontractor through a formal Request for Proposal (RFP) by NREL's Contracts and Business Services Office, including sketches, drawings, specifications, and/or written work descriptions. All work shall be performed according to the applicable codes and standards in force at the time of work.

The Subcontractor's field representative shall ensure all safety and health requirements are met for each of the individual task orders awarded under this TOA.

The work to be performed comprises the construction described in the individual task orders and documents, and shall include all labor, materials, transportation, equipment, and supplies necessary to complete the project.

Individual task order's SOWs defined under this Statement of Work may include, but are not limited to the following:

- A. Carpentry, rough and finish,
- B. Drywall,
- C. Sheet metal work,
- D. Fencing,

- E. Landscaping,
- F. Paving,
- G. Millwright work,
- H. Concrete forming and finishing,
- I. Excavation, backfill, and compaction work,
- J. Ironwork and structural steel,
- K. Welding, cutting, and brazing,
- L. Electrical work (rough and finish) at voltages up to 600 volts; medium voltage electrical work at voltages up to 13.2KV,
- M. Plumbing and pipe fitting,
- N. Brick and block masonry,
- O. Tile, sheet, and carpet and sheet flooring,
- P. Laboratory furniture installation and modifications,
- Q. Architectural millwork,
- R. Operation of cranes, lifts, and hoists.

Submittal of equipment and materials performance data may also be required. Formats for these requirements shall be specified in the individual task order SOW.

When a individual task order has been completed, one set of marked-up drawings (redlines) of as-built conditions shall be prepared by the Subcontractor and submitted to NREL. Some individual task orders may also require the Subcontractor to provide operating and maintenance (O&M) manuals. Formats for these documents shall be specified in the individual task order SOW.

### **3.0 PROJECT DIRECTION**

All work shall be performed as stipulated in each individual task order issued by the Subcontract Administrator. The work shall be performed in accordance with NREL's drawings and specifications. The Subcontractor shall comply with the work requirements and field change orders provided by the NREL Project Manager. All work shall be inspected and accepted by the NREL Project Manager or designated NREL representative.

### **4.0 RESPONSE TIME**

The Subcontractor shall submit questions regarding NREL's RFPs for individual task orders within 48 hours. Proposals for individual task orders shall be due within five (5) working days from receipt of the request unless otherwise noted in the RFP. The Subcontractor shall obtain work clearance and all necessary permits from the Project Manager, Site Operations Building Area Engineer (BAE) and the NREL Environment, Health and Safety Office prior to commencing work on any awarded individual task order.

### **5.0 SUBCONTRACT DOCUMENTS**

All drawings, specifications and copies thereof furnished by NREL are, and shall remain, the property of NREL. They are to be used only with respect to each specific individual task order and are not to be used on any other project. With the exception of one set retained by the Subcontractor, such documents are to be returned to NREL, or suitably accounted for, at the completion of each individual task order.

NREL will review and approve (or take other appropriate action) the Subcontractor's

documentation submittals, such as shop drawings, product data and samples, but only for conformance with the design concept of the work and the information given in the individual task order documents. NREL's action shall be taken with reasonable promptness so as to cause no delay. NREL's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

## **6.0 WORK HOURS**

Work hours at NREL are 7:00 a.m. to 5:00 p.m., Monday through Friday, except holidays. Subcontractor personnel are not allowed on site during non-working hours unless prior arrangements have been made with the NREL Project Manager. When Subcontractor personnel are authorized to work during other than normal working hours, the Subcontractor must notify the NREL Security Desk at telephone number (303) 384-6811, upon arrival and departure of Subcontractor personnel.

## **7.0 ENVIRONMENTAL SAFETY AND HEALTH**

All work under this Task Ordering Agreement shall be performed in accordance with NREL Environmental Safety & Health practices identified in the Task Ordering Agreement Schedule under Clause 78 of Appendix B-4, Worker Safety and Health Requirements.

All of the Subcontractor's personnel must comply fully with all federal, state and local safety regulations, statues and ordinances. The Subcontractor shall provide proper personnel protection for all employees working on this project. All lead and lower tiered subcontractors must demonstrate an EMR below 1, or have specific approval from NREL to work on site. Non-qualified Subcontractors can result in proposals being denied technical acceptance. EMR information for all Subcontractors is required with all proposals.

Subcontractor Safety Plan – Subcontractors will need to submit a completed CEHS Plan for NREL's review and acceptance prior to starting on-site work. The Manual and Plan template documents are available to subcontractors at: <http://www.nrel.gov/extranet/ehs/>

This plan must be accepted by the NREL EHS Office prior to the start of work. Review the manual for requirements.

## **8.0 SUBCONTRACTOR SUPERVISORY AND SAFETY RESPONSIBILITIES**

All construction projects shall provide necessary supervisory oversight as defined in each Statement of Work.

All designated supervisors for construction subcontracts shall have, at a minimum, a 30-hour certified OSHA construction safety training. The Subcontractor shall provide the supervisor's resume and copy of the appropriate documentation of this training as an attachment to the Site Specific Health and Safety Plan for each project under subcontract to complete.

Level of supervisor support will be defined in each Statement of Work as follows:

- A. Working supervisor – An individual with appropriate OSHA training who will supervise all activities for a specific project. This person will be allowed to perform work while supervising all other project tasks.
- B. Dedicated non-working supervisor – An individual with appropriate OSHA training who will provide supervision for all construction tasks on the project. This person will be dedicated to providing supervision only for all construction tasks.
- C. Dedicated safety officer – An individual who is part of the Subcontractor team providing safety oversight on a project.
- D. Project dedicated supervisor – An individual with appropriate OSHA training who will supervise all activities for one specific project. This person will be the supervisor for only one project and will not supervise multiple projects at the same time.
- E. Each Statement of Work will identify the project specific requirements for supervisor and safety responsibilities and the expected level of activity for the project in the table below as defined specifically within the SOW. The expected level of activity will vary from activity specific to full duration of project.

<b>Subcontractor Support</b>	<b>Full Time</b>	<b>Part Time</b>
Project Management		
Construction Supervisor		
Working Supervisor		
Dedicated, non-working supervisor		
Project dedicated supervisor		
Safety Professional		
Environmental Professional		

A dedicated, non-working supervisor will be required for:

- A. Fall protection activities where fall restraint system is required (i.e., roofs without a parapet)
- B. Crane work
- C. Heavy equipment operations
- D. Other high risk activities as defined in the Statement of Work
- E. Excavation work deeper than 4'
- F. Permit-required confined space work

Based on NREL's understanding of the construction requirements for this project, NREL has estimated the **minimum** Subcontractor construction support requirements. Additional Subcontractor support may be required to adequately address the needs of this project and the capabilities of the Subcontractor's personnel.

## **9.0 SECURITY**

Arrangements for NREL identification badges will be accomplished at Subcontractor safety orientations. The Subcontractor will need to coordinate attendance through the Project Manager. All issued badges must be surrendered immediately to the Security Office upon termination of authorized activities at the Laboratory.

- A. Access to NREL operated facilities is controlled in accordance with the DOE's requirements. The Subcontractor shall ensure that any of its, or its lower-tier subcontractors, officers, employees, or agents be specifically authorized site access by an NREL employee, and identified, badged, and registered by NREL Security prior to entering any NREL operated facility. All persons must present valid government issued photo identification (i.e. driver's license, passport, military ID) before NREL Security will grant access. All NREL Environment, Safety, and Security Orientation requirements must be satisfied before an access badge will be issued.
- B. The subcontractor shall further ensure that any of its, or its lower-tier subcontractors, officers, employees, or agents who are not U.S. citizens and who will perform subcontract work on NREL operated facilities must complete and submit an NREL Foreign National Data Card a minimum of 3 working days prior to arrival and present valid Work Authorization Documentation at the point of entry. Access shall be subject to DOE approval. Any such person denied access by DOE shall not be assigned by the Subcontractor to work at NREL operated facilities.
- C. The Subcontractor shall provide to the Subcontract Administrator, prior to the initiation of work, evidence, including visa types and expiration dates, that legally sufficient work permits have been obtained from the U.S. Immigration and Naturalization Service, and such permits are properly maintained, for any of its, or its lower-tier subcontractors officers, employees, or agents who are not U.S. citizens and who will perform subcontract work at NREL operated facilities.
- D. After the Subcontractor, or its lower-tier subcontractors, has commenced subcontract work, the Subcontractor shall provide to the Subcontract Administrator similar advance notice, including visa types and expiration dates, for all subsequently assigned individuals who are not U.S. citizens who will perform work at NREL operated facilities.
- E. NREL reserves the right to revoke site access authorization for any person violating NREL or DOE Environment, Safety, and Security policies and procedures.
- F. As a condition of entry to NREL premises, the Subcontractor agrees to permit NREL security personnel to search its, and its lower-tier subcontractors, officers, employees, or agents vehicles, packages tool boxes, or other containers for the purpose of preventing prohibited articles access to NREL premises or to detect or deter the unauthorized removal of Government property from NREL.
- G. Prohibited articles include firearms, explosive devices, incendiary devices, dangerous weapons or materials, controlled substances (illegal drugs), or alcoholic beverages.
- H. Deliveries of material and equipment must be arranged in advance with the NREL Project Manager.
- I. At anytime, Security Conditions (usually following the lead from the Department of Homeland Security) may change requiring the implementation of additional security measures at NREL that may affect construction work on the site. Additional measures range from mandatory vehicle searches up to and including construction work stoppages. Any changes in conditions will be reported through the NREL Project Manager.
- J. In addition to the requirements above, the Subcontractor shall be responsible for the security of all its personnel, materials, and work in progress until the work is accepted by

NREL as being substantially complete. Subcontractor's personnel, lower-tier subcontractors, material suppliers, vendors and other construction personnel shall not use NREL facilities nor shall they be permitted outside the limits of the Project Site, except for normal access to and from the site.

## **10. SUBCONTRACTOR'S RESPONSIBILITIES**

The Subcontractor shall be responsible for coordinating all scheduling, questions, problems or operational matters with the NREL Project Manager. The Subcontractor shall designate a single point of contact that shall be responsible for coordinating activities with the NREL Project Manager. All activities that require interruption of existing services or operations i.e. electrical power, gas, sewer, water, interior traffic etc. shall be scheduled with the NREL Project Manager at least 5 days in advance.

The Subcontractor shall provide a man lift for all work higher than can be reached from a ladder. All Subcontractor employees riding on man lift must have adequate fall protection and be properly trained.

Product Requirements/Materials Reporting Requirements: Any remodels and additions to buildings should use products with recycled content where available and affordable, and these are required to be reported. We need the square footage and the cost. They are:

- A. Building Insulation Products,
- B. Carpet,
- C. Carpet Cushion,
- D. Cement and Concrete containing Blast Furnace Slag,
- E. Cement and Concrete containing Fly Ash,
- F. Consolidated and Reprocessed Latex Paint,
- G. Floor Tiles/or other types of floor products,
- H. Wood,
- I. Patio Blocks,
- J. Shower and Restroom Dividers/Partitions,
- K. Water Sense bathroom faucets/shower heads/toilets,
- L. Structural Fiberboard,
- M. Modular Threshold Ramps,
- N. Nonpressure Pipe,
- O. Roofing Materials,
- P. Asphalt.

## **11. QUALITY ASSURANCE PLAN**

The Subcontractor shall prepare and submit a Quality Assurance Plan to NREL for acceptance prior to the start of the substantive project work. The Subcontractor shall utilize the plan and associated processes and procedures to meet the project objectives and guard NREL against errors and omissions in design, as well as defects in material, equipment, and workmanship during construction. A graded approach may be utilized for the development of the Quality Assurance Plan depending on the requirements of the project. The subcontractor may submit an existing quality-related document (e.g., quality manual, business manual) with an explanatory introduction if that document meets the intent of the applicable requirements for a Quality Assurance Plan. Typical Quality Assurance Plan elements address the following, as applicable to the project or group of projects (e.g., Task Order Agreement):

Program – State the company quality policy and criteria for the graded approach philosophy. Describe the company quality program. Include descriptions of the following topics:

- A. Organizational structure, including functional responsibilities and levels of authority
- B. The interfaces for managing, performing, and assessing the work
- C. The process for developing, maintaining, and managing the quality program
- D. The process for scheduling and providing required resources (e.g., personnel, equipment)
- E. The communication process ensuring adequate and timely interface with all disciplines and/or parties (e.g., design team, construction team) involved with the project
- F. Personnel Training and Qualification – Describe the company personnel training and qualification process. Include descriptions of the following topics:
  - i. the process for tracking the training and qualification requirements for personnel
  - ii. the process for establishing the minimum professional qualifications for each level of design responsibility in all applicable disciplines
  - iii. the process for establishing the minimum proficiency levels for construction personnel.
- G. Quality Improvement – Describe the company quality improvement process. Include descriptions of the following topics:
  - i. the process for detecting, reporting, and documenting quality problems associated with services, products, and processes
  - ii. the process for identifying, controlling, correcting and preventing the use of nonconforming items, services, and processes
  - iii. the process for identifying and documenting the cause, extent, and remedial and preventative actions.
- H. Documents and Records – Describe the company document and data control process and the company records management process. Include descriptions of the following topics:
  - i. the process for preparing, reviewing, approving, issuing, using, controlling, and revising documents prescribing processes, specify requirements, or establish design
  - ii. the submittal review process
  - iii. the electronic document protection process, including software controls
  - iv. the process to manage the identification, preparation, review, approval, protection, maintenance, and disposition of project records
- I. Work Processes – Describe the company’s work control process. Include descriptions of the following topics:
  - i. the process for ensuring consistency with technical standards, administrative controls, and other hazard controls
  - ii. the process for identifying, labeling, controlling, packaging, storing, shipping, and protecting items, including customer property
  - iii. the process for identifying, controlling, calibrating (when necessary), adjusting, and maintaining equipment used to collect data or take measurements for the project
- J. Design – Describe the company design control process. Include descriptions of the following topics:
  - i. design review management and performance process
  - ii. design approval, verification and validation process
  - iii. design submittal process
  - iv. design development control process
  - v. the process to ensure the incorporation of applicable requirements and design bases in design work
  - vi. design change control process

- vii. design interface (technical and administrative) management process (e.g., tracking, and control)
  - viii. interface and communication management process(e.g., between the design team and the construction team)
  - ix. design and construction configuration management process
  - x. design software quality management and maintenance process
- K. Procurement – Describe the company procurement and subcontracting processes. Include descriptions of the following topics:
- i. the process for establishing procurement requirements for items and services
  - ii. the process for ensuring inclusion of the performance specifications provided by the design authority and expectations
  - iii. the process for evaluating and selecting prospective suppliers based on specified criteria
  - iv. the process for determining and flowing down applicable requirements to suppliers and subcontractors
  - v. the coordination process between subcontractors and lower-tier subcontractors
  - vi. the process for managing and controlling supplier documentation
  - vii. the process for ensuring that approved suppliers continue to provide acceptable items and services
  - viii. the process for identifying potential of suspect/counterfeit items and preventing of their procurement.
- L. Inspections and Acceptance Testing – Describe the company quality control and inspection and acceptance testing processes. Include descriptions of the following topics:
- i. the process for establishing QC checkpoints and QC criteria
  - ii. the process for establishing the inspection and test methods for specified items, services, and processes
  - iii. the process for acceptance and performance criteria establishment and use
  - iv. the process for inspection and test results documentation
  - v. the process for ensuring participation of the customer, statutory and regulatory, and other third parties in the project.
- M. Assessment - Describe the company assessment process. Include descriptions of the following topics:
- i. the process for ensuring management assume responsibility for and directly participate in project assessments
  - ii. the independent assessment (e.g., audits) process, including the planning and performance of assessments to measure item and service quality, to measure the adequacy of work performance, and to promote improvement.

## 12. SUBSURFACE UTILITY ENGINEERING

The Subcontractor shall be responsible for all utility locates and subsurface utility engineering for this project. The Subcontractor shall use NREL's service agreement partner SiteWise for all utility engineering services and locating services including potholing and subsurface boring. The Subcontractor shall be responsible for notifying SiteWise as needed for this project. SiteWise shall perform the following services for the Subcontractor:

- A. Perform 2 forms of utility locate (including potholing) for each utility for all outside subsurface locates.
- B. Perform 2 forms of utility locate for each inside utility including walls, ceilings and floors.
- C. Provide a detailed electronic and paper field survey with GPS (with a minimum of 25% over survey) per NREL's requirements.

- D. Create/update NREL record site drawings & point maps utilizing NREL's/SiteWise's document control protocol.
- E. Fully manage NRELs 3M marker ball program. Provide, program, and document all 3M permanent marker system components per NREL document requirements and specifications.
- F. Immediately remobilize to assist NREL and the Subcontractor to assist in investigation of un-located discovered utilities or if utilities are hit during construction

The Subcontractor shall:

- A. Notify SiteWise at a minimum of 24 hours of needed services
- B. Immediately notify SiteWise if any utilities are hit or newly discovered after utility locates are completed.
- C. Notify SiteWise un-located utilities are discovered during construction

SiteWise contact is:

Jason Ackerley  
Project Manager  
(W) 303-650-8680  
(C) 720-341-0307  
[jackerley@sitewisellc.com](mailto:jackerley@sitewisellc.com)

The Subcontractor contacts Jason at SiteWise to initiate any locates.

### **13. SUBSTANTIAL COMPLETION DEFINED**

Substantial Completion means the date when a specific individual task order has been sufficiently completed, in accordance with the individual task order documents, so that NREL or other Subcontractors can occupy the space or make use of the work, or a designated portion thereof, for the purpose for which it is intended.

**END OF STATEMENT OF WORK**