

**STATEMENT OF WORK
FOR
BASIC ORDERING AGREEMENT
FOR
FIRE ALARM, SECURITY,
BUILDING AUTOMATION SYSTEM and
SPECIAL HAZARD SYSTEM WORK**

C/D FAC-SOW-068

Reference Work Planning #: (To Be Assigned as Needed)

REVISION 0

DATED: November 14, 2014

PREPARED BY:

Scott Decker / ATI

REVIEWED BY:

Martin Donohue / Supervisor

REVIEWED BY:

Bill Slavin / ESH&S

REVIEWED BY:

Barry Jedic / Quality Assurance

APPROVED BY:

Mike Viola / RLM

**PRINCETON UNIVERSITY
PLASMA PHYSICS LABORATORY
P.O. BOX 451
PRINCETON, N.J. 08543
609-243-2000**

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

1.0 INTRODUCTION AND SCOPE

1.1. INTRODUCTION

- 1.1.1. The Princeton Plasma Physics Laboratory (PPPL) is located on the Princeton University James Forrestal Campus. Princeton University maintains and operates the Laboratory under a prime contract with the U.S. Department of Energy (DOE).

1.2. SCOPE OF WORK

- 1.2.1. This Basic Ordering Agreement provides for the issuance of unilateral job orders by PPPL for work related to installation, modification, repair, inspection or testing of fire alarm equipment, security access control and monitoring equipment, closed circuit TV, building automation system and special fire hazard protection equipment and related components. The types of special hazard protection equipment of particular interest to PPPL are: FM-200, CO2 and Wet Chemical systems. Job orders will be issued on a firm fixed price basis or on a time and material basis as agreed to by PPPL and the Subcontractor.
- 1.2.2. The Subcontractor shall price each order in accordance with PPPL furnished drawings, specifications, sketches or other information appropriate to the work to be performed. Price submittals and administration functions shall be through the PPPL Subcontract Administrator.
- 1.2.3. The Subcontractor shall report to the Laboratory Fire Protection Engineer or his designee. All technical direction shall be through the Laboratory Fire Protection Engineer or his designee.
- 1.2.4. If the Subcontractor cannot build the system as shown on the PPPL provided shop drawings, the Subcontractor will:
 - a. Notify the PPPL Technical Representative (Fire Protection Engineer).
 - b. Obtain clarification to the instructions and updated documents.
- 1.2.5. It is the intent of the contract drawings and specifications to call for finished work, tested and ready for operation and in complete conformance with all applicable codes, rules and regulations. Minor items not usually shown or specified, but manifestly necessary for the proper installation and operation of the various systems, shall be included in the work and in the proposal, the same as if it was specified or shown on the contract drawings. If any departures from the contract drawings are deemed necessary, they shall be approved and documents as specified in paragraph 1.2.4 above.

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

- 1.2.6. The Subcontractor shall visit the site and verify all dimensions in the field, and shall advise the PPPL Technical Representative of any discrepancies and obtain approval before the work is performed.
- 1.2.7. The contract drawings indicate arrangements and approximate sizes and relative locations of principal apparatus, equipment, devices and services to be provided. Contract drawings are diagrammatic and are a graphic representation of contract requirements at the scale indicated.
- 1.2.8. Coordinate all work with PPPL. Schedule work in accordance with the construction schedule so that all work can be installed without delaying the project.
- 1.2.9. Schedule all shutdowns that affect utilities and portions of the building that must remain in operation with PPPL
- 1.2.10. Obtain PPPL approval prior to any drilling, coring or boring of any walls, floors, ceilings and steel per PPPL ENG-028. PTR will provide when required.
- 1.2.11. Upon completion of all unfinished or faulty work noted in engineer's final punch list, submit to the engineer in writing a letter of completion certifying that all punch list items have been completed and all as-builts, manuals, etc. have been submitted.

2.0 APPLICABLE DOCUMENTS

- 2.1. System design, installation, and testing shall fully comply with the current edition of NFPA 72, "National Fire Alarm and Signaling Code".
- 2.2. All electrical work shall fully comply with the National Electrical Code (NEC), NFPA 70, current edition, with any applicable parts of NFPA 72 and with the PPPL Standard Electrical Specification. In the event of conflict with the above documents the most stringent will apply. In the event of direct conflict between the NEC and the PPPL Standard Electrical Specification, the NEC will apply.
- 2.3. Fire system equipment and components shall be FM approved or UL listed for fire service use.
- 2.4. All components must be used or installed in full compliance with manufacturer's instructions and any UL listing and FM approval requirements.
- 2.5. Penetrations will comply with PPPL ENG 027 R4 TCR 001 Fire Barrier Penetration Seal and Repair. <http://bp.pppl.gov/procedures/eng027.pdf>. PTR will provide when required.

3.0 APPLICABLE DRAWINGS

Statement of Work		
Basic Ordering Agreement for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

3.1. Drawings may be provided for individual Job Orders.

3.2. PPPL may instruct Subcontractor to Field run some conduits, in which case no drawings will be provided but approval of the location of the conduit will be required.

4.0 RESPONSIBILITIES

4.1. Princeton Plasma Physics Laboratory

All communications on administrative matters shall be directed to the PPPL Procurement Representative.

The Laboratory will provide a single point of contact for the work. Unless otherwise delegated for the specific job, all communications on technical matters shall be directed to the Laboratory Technical Representative, Scott Decker, PPPL Fire Protection Engineer. Other PPPL personnel will be involved in obtaining permits such as lift plans and penetration permits.

4.2. Subcontractor

Subcontractor will designate a contact person for obtaining required information for each job. This includes but is not limited to, training records if required, qualification of employees, obtaining/clarifying quotes, etc.

Subcontractor will be responsible for providing all labor, materials, equipment and tools required to perform work involved in this Basic Ordering Agreement (BOA).

Subcontractor is responsible for familiarizing themselves with PPPL procedures and following them.

5.0 REQUIREMENTS

5.1. PERFORMANCE REQUIREMENTS

5.1.1. PERFORMANCE CHARACTERISTICS

Subcontractor will perform all work in a neat and workmanlike manner. Work will be approved by the ATI/PTR or his designee after it is completed.

5.1.2. OPERATING ENVIRONMENT

Subcontractor will be expected to perform work indoors and outdoors in weather typical to the area.

5.1.3. DESIGN LIFE

Devices obtained should have a minimum 20 year expected product life.

Statement of Work		
Basic Ordering Agreement for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

5.1.4. RELIABILITY

Devices and equipment should comply with Standards associated with the use of the device such as fire protection systems. Other equipment provided should be as reliable as expected in that application.

5.1.5. MAINTAINABILITY

Equipment should be installed to be maintainable by competent electricians and technicians.

5.1.6. HUMAN FACTORS

Not Applicable.

5.1.7. SUSTAINABILITY

PPPL's prime contract requires environmentally preferred products be purchased and specified. These include but are not limited to, EPEAT-registered electronic devices ENERGYSTAR materials, FEMP-listed energy consuming equipment, Water-Sense listed products and EPA-designated recycled content products. Where such products are available and meet the technical requirements of the work, they should be provided to the extent possible. Additional information is available on <http://www-local.pppl.gov/erwm/EPP.htm>.

Since much of the work performed under this BOA will be life safety dependent, any evaluation of sustainable products shall be done in consultation with the PTR, the Fire Protection Engineer.

5.2. EQUIPMENT DEFINITION

5.2.1. SPECIFICATIONS AND STANDARDS

Equipment and conduit shall be labeled as indicated by PPPL representative. If no labeling is required, that shall be noted and signed off by PPPL representative on final inspection.

5.2.2. GENERAL DESIGN FEATURES

Material shall be specified and comply with all regulations for new installations.

5.2.3. MATERIALS

5.2.3.1. Materials will be provided as specified in the statement of work for each job release.

5.2.4. ELECTROMAGNETIC INTERFERENCE AND SUSCEPTIBILITY

Not Applicable.

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

5.2.5. IDENTIFICATION AND MARKING

ID and markings will be indicated by PPPL in the job drawings or document turnover to Subcontractor. Markings shall comply with PPPL ENG-012, Identification & Control of Items. <http://bp.pppl.gov/procedures/eng012.pdf>

5.2.6. WORKMANSHIP

5.2.6.1. All work shall comply with the statement of work for the applicable Job Order and the documents listed in paragraph 2.0.

6.0 **TEST AND INSPECTION REQUIREMENT**

6.1. N/A

7.0 **QUALIFICATIONS**

- 7.1. Subcontractor must be licensed by the State of New Jersey for work on fire alarm systems, FM-200, and C02 systems and Wet Chemical systems. A copy of the specific license shall be provided in the bid package.
- 7.2. Subcontractor must provide evidence of previous experience performing similar work, in particular, experience and familiarity with Simplex 41 20 fire alarm systems and Andover security systems is required.
- 7.3. Subcontractor must identify and provide qualifications for the lead person or supervisor to be assigned to this job. This person must have experience with the systems listed in this Statement of Work.
- 7.4. Personnel to be assigned to this project by the Subcontractor must be familiar with the applicable requirements of the National Electric Code.
- 7.5. To the maximum extent possible, personnel provided by the Subcontractor will remain with the project until completion unless their removal from the project is requested by PPPL.
- 7.6. If requested, the Subcontractor will provide three (3) customer references within a 100-mile radius including addresses and telephone contact points, for work similar to that required by PPPL.

8.0 **ENVIRONMENT, SAFETY, AND HEALTH**

8.1. The Subcontractor shall comply with:

- the specific PPPL documents, requirements, permits and courses listed in this Statement of Work;
- the completed Subcontractor ISM Plan, and

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

- all applicable Federal, State, and local laws, regulations and requirements whether or not they are specifically listed in the Statement of Work or subcontract.
- 8.2. PPPL Procedure ESH-004 shall be followed to perform a Job Hazard Analysis on specific tasks within this subcontract. http://bp.pppl.gov/JHA_online.doc
- 8.3. Specific procedures that the Subcontractor will be required to follow include:
- ESHD 5008 Section 1.0 Construction Safety, Section 2.0 Electrical Safety, and Section 5.0 Fire Protection, Chapter 8.
 - ENG-027 Fire Barrier Penetration Seal Installation and Repair. Rev 4.
 - ENG-028 Core Boring, Cutting and Drilling Rev 2.
 - ESH-016 Control of Hazardous Energy (Lockout/Tagout) Rev 5.
- 8.4. Subcontractor personnel working on-site at PPPL for more than 40 hours will be required to successfully complete PPPL's General Employee (safety) Training (GET) and receive a PPPL Identification Badge Other training may also be required. These can include, but are not limited to:
- Aerial Lift Boom (Classroom) YES
 - Aerial Boom Lift (OJT)
 - Asbestos Awareness No
 - Basic Electrical Safety YES
 - D-site Access Training
 - Electric Utilization Training (EUT)
 - Fall Protection
 - Hazard Communication (Formerly Right-to-Know)
 - Integrated Safety Management
 - Ladder Safety
 - Lockout/Tagout
 - NSTX Access
 - Personal Protective Equipment YES
 - Radiation Safety YES
 - Respiratory Protection
 - Scissor Lift (Classroom) YES
 - Scissor Lift (OJT)
- 8.5. In addition to the above requirements, the following will be applied:
- The Subcontractor's safety record will be considered in the proposal/bid evaluations. Please provide OSHA 300 log with bid submittal or letter attesting to exemption due to number of employees.
 - Provide the number of reportable injury/illness cases, in the last three years.
 - Use of Sub Tier Subcontractors is not allowed without PPPL PTR permission.

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

- Note that work performed at D-Site will include a briefing by PPPL personnel on the unique safety requirements and will require specific D-Site work planning processes.

8.6. Each Construction Contractor must prepare a written Integrated Safety Management (ISM) Plan (construction project safety and health plan) that implements the requirements of items A-G below for the construction work under their responsibility and obtain approval of the plan by the Construction Manager prior to commencement of any work covered by the plan. In the plan, the Construction Contractor must designate the individual(s) responsible for its on-site implementation, specify qualifications for those individuals, and provide a list of those project activities for which subsequent job hazard analyses are to be performed (see item A). The level of detail within the ISM Plan should be commensurate with the size, complexity and risk level of the construction project. In addition, the Construction Contractor must:

- A. Prepare and have approved by the PPPL Construction Manager Job Hazard Analyses (JHAs) in accordance with PPPL procedure ESH-004 prior to commencement of affected work. The JHAs must identify foreseeable hazards and protective measures, and address further hazards revealed by any supplemental information provided by the PPPL Construction Manager. The JHA form can be found at the following web site:

http://bp.pppl.gov/JHA_online.doc

- B. Provide (for approval by the PPPL Construction Manager) drawings and/or other documentation of protective measures for which applicable OSHA standards require preparation by a Professional Engineer or other qualified individual. These should be included in the ISM Plan.
- C. Identify for approval by the PPPL Construction Manager competent persons for activities as required by applicable OSHA standards. These should be included in the ISM Plan.
- D. Ensure workers are aware of foreseeable hazards and the protective measures as defined by the JHAs, and require that workers acknowledge being so informed.
- E. Ensure that workers not following the safe work practices are subject to the Construction Contractor's disciplinary process.
- F. Maintain a designated representative onsite during all active construction that is knowledgeable of the associated hazards and has the authority to act on behalf of the Construction Contractor; and who makes frequent and regular inspections of the construction worksite to identify and correct any instances of noncompliance with project safety and health requirements.
- G. Instruct workers to report to the Construction Contractor's designated representative, hazards not previously identified or evaluated. If immediate corrective action is not possible or the hazard falls outside the project scope, the

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

Construction Contractor must immediately notify affected workers, post appropriate warning signs, modify the appropriate JHAs, implement needed interim control measures, and notify the PPPL Construction Manager of the action taken. The Construction Contractor or the designated representative must stop work in the affected area until appropriate protective measures are established.

9.0 QUALITY ASSURANCE

- 9.1. The Subcontractor shall maintain an effective Quality Assurance Program to assure that the Subcontractor's work meets the required level of quality and is performed in accordance with contractual requirements. The program shall include:
 - 9.1.1. Documented qualification of individuals for specific tasks (see paragraph 2.0).
 - 9.1.2. Control of documents and drawings to preclude use of obsolete information.
 - 9.1.3. Control of measuring and test equipment used for acceptance measurements to assure current calibration to standards traceable to the national institute for standards and technology (NIST) or equivalent, where such standards exist. Where no such standards exist, the basis used for calibration shall be documented.
 - 9.1.4. Positive identification of nonconforming items or services with segregation or tagging to prevent inadvertent use. When the nonconforming condition occurs as a result of an action by the subcontractor, including procurement of material, the subcontractor shall document the nonconformance, investigate the cause and, where practicable, implement corrective actions to prevent recurrence. PPPL shall be formally notified of identified nonconformances. The written approval of PPPL is required prior to using nonconforming items.
 - 9.1.5. Acceptance testing will be accomplished for all revisions and new installations in accordance with NFPA 70 & 72, current editions.
- 9.2. All tests and inspections shall be performed using written procedures with acceptance criteria, qualified individuals, and instruments calibrated to NIST-traceable standards, where such standards exist within the preceding 12 months. Where no such standards exist, the basis used for calibration shall be documented.
- 9.3. Each Job Order task shall include a PPPL Final Walk-Through inspection. The contract release shall not be considered complete until all outstanding items from the walkthrough have been addressed to PPPL's satisfaction. All electrical work shall be approved by representatives from PPPL.

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

10.0 SHIPPING STORAGE AND HANDLING

Not Applicable.

11.0 WARRANTY

11.1. All work furnished under this BOA shall be guaranteed against any and all defects in workmanship and/or materials or not less than one (1) year from the date of final acceptance of the installation. Any defects of workmanship developing during this period shall be remedied and any defective material replaced without additional cost.

12.0 ATTACHMENTS

Not Applicable.

13.0 DOCUMENTATION AND DELIVERABLES

13.1. PPPL maintains detailed as-built documentation of fire alarm systems. The Subcontractor will provide PPPL with as-built information as specified in the statement of work for the project.

Statement of Work		
Basic Ordering Agreement		
for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

Deliverables List: PO / Subcontract / BOA / BPA #: _____

#	Physical Deliverables Required	When Deliverable Is Required	Deliverable Received (✓)
1	Work Performed for Job.	Completion	
2			
3			
4			
5			
Exceptions (Add justification for any missing physical deliverables that will not be received): 			

#	Document Deliverables Required	When Deliverable Is Required	Deliverable format (paper, electronic etc.)	Storage Location for Deliverable	Deliverable Received (✓)
1	Hand Mark-Ups of the Work Performed (<i>See Section 13.1</i>)	Completion of Job	Paper	Engineering	
2	Certifications, Licenses, Qualifications, Experience (<i>See Sections 4.2, 7.1, 7.2, 7.3, 9.1.1</i>)	Bid Package	Electronic	Procurement/ Engineering	
3	Submittals of Materials to be Used (<i>See Section 5.2.2</i>)	Before Start of Work	Electronic	Engineering	
4	OSHA 300 Log (or Exemption Letter) (<i>See Section 8.5</i>)	Bid Package	Paper or Electronic	Engineering	
5	ISM Plan (<i>See Section 8.6</i>)	Contract Award	Paper or Electronic	Engineering	
6	Safety Data Sheets (as needed)	Contract Award	Paper or Electronic	Engineering	
7	JHAs (as needed) (<i>See Sections 8.2, 8.6</i>)	Pre-Job Brief	Paper	Engineering	
8	Penetration Permits (as needed) (<i>See Section 2.5</i>)	PPPL	Paper or Electronic	Engineering	

Statement of Work		
Basic Ordering Agreement for Fire Alarm, Security, Building Automation System, and Special Hazard System Work		
Date: 11/14/14	C/D-FAC-SOW-068	Rev. 0

9	Warranty(as part of contracted work) (<i>See Section 11.0</i>)	Completion	Paper or Electronic	Engineering	
10	Maintenance Manuals (as needed) (<i>See Section 1.2.11</i>)	Completion	Paper or Electronic	Engineering	
11	Three (3) References (if requested) (<i>See Section 7.6</i>)	Bid Package	Paper or Electronic	Engineering	
Exceptions (Add justification for any missing document deliverables that will not be received):					

Princeton Technical Representative/COG: _____
(Sign-off and provide a copy to Operations Center when job is completed and deliverables are dispositioned and placed/filed in the correct locations (e.g., Operations Center or other Project, Department or Division designated file center.)