SITE OPERATIONS SUPPORT SERVICES

CLIN 2 ACTIVITY 2

PERFORMANCE WORK STATEMENT (PWS)

1.0 REQUEST INFORMATION

1.1 Type of Activity: The Site Operations Support Services Activity is a firm fixed-price Activity.
1.2 Description: Site Operations Support
1.3 Location: Albany, OR (ALB); Morgantown, WV (MGN); and Pittsburgh, PA (PGH), U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL) sites.
1.4 Travel: Travel (local and long distance) is anticipated among all three NETL sites.
1.5 Training: Training is anticipated related to maintaining certifications required to perform requirements of this Activity.

2.0 GENERAL REQUIREMENTS

2.1 This Activity is to be performed at the ALB, MGN, and PGH NETL sites.

2.2 This Activity involves Facility Maintenance, including:
2.2.1 Real Property Asset Management
2.2.2 Central Work Control
2.2.3 Maintenance Management
2.2.4 Services Management
2.2.5 Modification Management
2.2.6 Specialty services including Moving and Furniture Support.

2.3 This Activity is covered by the Service Contract Act.

2.4 The Activity does require on-call support based on approval by the Activity Contracting Officer's Representative (ACOR).

2.5 The Activity will require off-hours support (including weekends and holidays) for: maintenance activities impacting critical systems; maintenance activities that cause impedances to site operations and personnel functions; maintenance activities involving loud noise, odors, and other disruptions to site personnel functions; site utility shutdowns/power outages; critical facility equipment failure; and support for Research and/or Construction Projects.

2.6 All tasks shall be performed in this Activity in accordance with established industry standards and applicable NETL procedures, requirements, and/or specifications. Exceptions must be approved by the AHJ and the ACOR.

2.7 For final determination of relevancy of work requested in this Activity to comparison of the Activity scope shall be formally communicated to the Contracting Officer (CO), Contract Specialist (CS), Contracting Officer's Representative (COR), or ACOR.

2.8 The Contractor is responsible for coordinating maintenance outages with the ACOR, Information Technology, and impacted researchers to minimize adverse impacts on research and safety.

2.9 The Contractor is responsible for communicating all planned and unplanned outages with the ACOR and all researchers (Federal, SSC, ORISE, etc.). Communication should include information limitation of operations and/or alternate hazard mitigation methods.

2.10 Work Request/Order Priority Codes are as follows:

2.9.1 P-1: Required to be completed within 7 days.
2.9.2 P-2: Required to be completed within 30 days.
2.9.3 P-3: Required to be completed within 90 days.
2.9.4 P-4: To be completed within 180 days
2.9.5 P-5: Required for work order to be coordinated with a GPP project, resource/utility outage, or specific date.
2.9.6 P-6: Deferred Maintenance

3.0 SPECIAL INSTRUCTIONS

3.1 Historical and Predicted Data

Action	Morgantown	Pittsburgh	Albany
Facility Maintenance Work Requests [average]	2,200		
Preventative Maintenance Work Orders (PMs) [average]	11,000		
Maintenance on Demand (MOD) Calls [average]	1,000	1250	200
Utility Requests [average]	0	60	0
Ratio of Work Orders – P1 • P2 • P3			

3.2 Service estimates that do not specify site values are estimates for the three sites combined; general work ratios (unless otherwise specified) are assumed to be 20% ALB / 40% MGN / 40% PGH.

3.3 Known Bird Feces/Problem Areas are as follows: ALB: B-17, B-18, B-24, B-25, B-27, B-34, B-36, B-37, and B-38. MGN: B-8 (East Side), , , B-33, and Parking Garage. PGH: B-94 HVAC Equipment, , , B-86, B-93, B-901, and areas around B-64.

3.4 The annual average (or expected) number of callouts for Building Systems Control Maintenance is 20 callouts per year at 6 hours per callout.

3.5 The average historic for supplies and materials for this Activity is $1,300,000 per year.

3.6 A historical list of existing gas sensors currently evaluated in performance of this Activity are provided in Attachment 4.

3.7 Referenced Procedures/Orders: Most current version of DOE Order 430.1.

3.8 Activity Definitions

3.8.1 **Maintaining**: keeping equipment and systems in good working condition and equipment assistance.to keep in an appropriate condition, operation, or force; keep unimpaired: to provide for the upkeep or support of; carry the expenses of. **This definition does not include personal items.**

3.8.2 **Repairing:** fix or mend a piece of equipment or property suffering from damage or a faulty operation; to restore to sound condition after damage. **This definition does not include personal items.**

3.8.3 **Servicing:** perform routine and preventative maintenance or repair work on equipment and or property described; supplying maintenance and repair. **This definition does not include personal items.**

3.8.4 **Operating:** control the functioning of the equipment described.

3.8.5 **Preventive Maintenance:** Systematic inspection, lubrication, parts replacement, etc., for the purpose of maintaining equipment and facilities in satisfactory operating condition. Preventive Maintenance frequency is typically time based to replace components/materials either before they fail or develop major defects. Preventive maintenance activities include partial or complete overhauls at specified periods, oil changes, lubrication, minor adjustments, and other repair activities used to prevent system failure.

3.8.6 **Predictive Maintenance**: Systematic inspection and engineering analysis of systems to detect impending component failure or degradation. Predictive maintenance replaces materials or components upon indications of failure rather than on a time-based frequency.

3.8.7 **Routine Maintenance:** Maintenance activities associated with regular (daily, weekly, monthly, etc.) and general upkeep of a building, equipment, machine, plant, or system against normal wear and tear. Routine maintenance consists of inspecting, cleaning, servicing, preserving, adjusting, as required, minor carpentry and plumbing adjustments, and regularly scheduled upkeep of heating, and air-conditioning.

3.8.8 **Corrective Maintenance**: Maintenance activities performed to identify, isolate, and rectify a fault so that the failed equipment, machine, or system can be restored to an operational condition within the tolerances or limits established for in-service operations.

3.8.9 **Non-Routine Maintenance:** For the purpose of this PWS, non-routine maintenance refers to infrequent (typically less often than once a year), maintenance related activities. Non-routine maintenance activities are unable to be identified through preventive, routine, predictive, or corrective maintenance activities. Non- Routine maintenance activities are typically of a more significant nature and it is sometimes synonymous with major maintenance.

3.9 The following Special Activity Clauses apply to work under this Activity:

3.10.1 Criteria for Deductions of Firm Fixed-Price Activity:

3.10.1.1 If the contractor fails to perform work in accordance with the Performance Standards provided, fails to make corrections, or omits work required, the

Contracting Officer or designated representative shall give the contractor written notice of the deficiency. Once notified, if the contractor does not satisfactorily complete the work within the time allotted by the Contracting Officer or designated representative, the work shall be considered for deduction. At a minimum, failure to satisfactorily complete corrections of every two notified deficiencies will result in a performance deduction being taken. Where more than ten deficiencies are noted within any three-month period of performance, the program will be considered "at risk" and every noted deficiency will be considered for deduction. These performance measures and deduction criteria in no way delete or alter the Government's rights under the inspection clause.

3.10.1.2 Per the Fixed Price Inspection of Service clause (FAR 52.246-4), the Government may reduce the contract price to reflect the reduced value of the services performed. The specific deductions identified below reflect the potential impact to Contractor payments, but additional deductions may be taken from Contractor payments if warranted by significant defects in services provides.

3.10.1.3 The CO, COR, and/or ACOR may exclude work orders from the required priority level start times for circumstances outside of the contractor's control or other extenuating circumstances through written request from the Contractor. Contractor should keep documentation of requests and approvals.

Requirements	Standard	Acceptable Quality Limit (AQL)	Surveillance Method	Deduction	Surveillance Frequency
Work orders must be completed within timeframe assigned for each priority level	P1 work orders completed within 7 days	85% of all P1 work orders completed within 7 days	Review of completion time of requests during surveillance period	$5,000 for each percentage point below 85% (80% = $25,000 deduction)	Bi-Annual
Work orders must be completed within timeframe assigned for each priority level	P2 work orders completed within 30 days	85% of all P2 work orders completed within 30 days	Review of completion time of requests during surveillance period	$5,000 for each percentage point below 85% (80% = $25,000 deduction)	Bi-Annual
Work orders must be	P3 work orders	85% of all P3 work orders to	Review of completion	$5,000 for each	Bi-Annual

completed within timeframe assigned for each priority level	completed within 90 days	be completed within 90 days	time of requests during surveillance period	percentage point below 85% (80% = $25,000 deduction)	

4.0 SCOPE

4.1 General

4.1.1 The Contractor shall provide support services for the general site management of NETL as defined in this PWS at the ALB, MGN, and PGH NETL sites. The contractor shall provide to NETL all supervision, personnel, and services to satisfactorily perform work in the areas identified in this PWS. All equipment needed to perform this work shall be provided by the Government. All common supplies and other items commonly stocked in the warehouse shall be provided by the Government. Specific current locations requiring the services identified in this PWS are designated in Attachment 1.

4.1.2 Contractor-Provided Materials and Supplies – The contractor shall provide all materials and supplies necessary to complete the activities required in this PWS. This shall include all Preventive, Routine, and/or Corrective Maintenance activities as defined above.

4.1.3 Non-Routine Maintenance Materials, Supplies, Equipment, and Subcontracting Efforts – The contractor shall provide Materials, supplies, and subcontracting efforts for non-routine maintenance to include catastrophic failure of equipment, machine, or system; failure of a part of a piece of equipment, machine, upgrade of software or firmware, or system in excess of $15,000; and other maintenance related projects, alterations or modifications which cannot be predicted. Contractor will provide the CO, COR, and/or ACOR with acquired bids.

Note: All equipment required to be provided in performance of this Activity shall be considered to be non- routine. Consent from the CO must be provided for all non-routine maintenance activities. The cost for non- routine maintenance should not be included in the Contractor's Cost Estimate (CCE), as these shall be funded on a separate funding line outside of the normal Activity fixed price (IDIQ Activity). The cost of a Government- furnished equipment shall be DOE-provided or otherwise funded.

4.2 Facility Maintenance

4.2.1 Real Property Asset Management

4.2.2 The Contractor shall perform inspection assessments, as required by DOE Order 430.1B and uploading all CAS data and applicable Facility Maintenance Inspection data into the Facility Information Management System (FIMS) and the Condition Assessment Information System (CAIS) databases, as appropriate. Condition assessments must be performed on all real property assets using inspection methods in accordance with industry standards. The current condition assessment schedule has been provided as Attachment 2 to this PWS.

4.2.3 The Contractor shall implement and maintain a Facility Maintenance Inspection Program to perform file information searches and assisting in the identification of

maintenance-worthy items for new/existing buildings and systems. The Contractor shall ensure staff have knowledge of or have received training to use Facility Maintenance inspection/analysis instruments (infrared camera, ultra- sonic flow meter, power quality analyzers, or other non-destructive equipment) and assist in taking readings and measurements, thereby identifying conditions that require maintenance (site caulking, weatherproofing, door replacements, window replacements, and roof replacements).

4.2.4 The Contractor shall provide input for the development and processing of the NETL Site Development Plan, the Annual Maintenance Budget, the Deferred Maintenance Reporting Requirements, the Oregon State Historic Preservation Office (OSHPO), Annual Projects Report, and the Maintenance Crosscut Budget. The information contained in the database of the computerized maintenance management system shall be current, reports shall be generated, and the data shall be analyzed in support of this effort.

4.2.5 The Contractor shall keep up-to-date information contained in the database of the computerized Condition Assessment Information System (CAIS) through the downloading of inspection information from the individual surveys and the data analyzed as required to assist in this effort.

4.2.6 The Contractor shall review and collect documentation of closed construction awards in STRIPES. The documentation shall consist of cost, type, and location of completed work to real property.

4.3 Central Work Control (CWC)

4.3.1 The Contractor shall utilize a Central Work Control (CWC) system to track work request and preventative maintenance items as detailed below:

4.3.2 Operating a CWC system according to the Work Control System Procedure (NETL P 430.4-00.02). The CWC system shall be operated through an existing computerized maintenance management system (CHAMPS). The system will allow a process of submitting, scheduling, tracking, and closing work request/orders.

4.3.3 Coordination/Communication of work that will cause impedances to site operations and personnel functions (like egress, travel paths, building passageways, loud noises, odors, and other disruptions to site personnel functions) with the Facility Custodian. The initial coordination will require NETL form 420.1-2 which must be sent to the COR or ACOR (as designated). Maintenance work impacting critical systems or causes impedances may need to be coordinated to be performed on off hour's timeframes.

4.3.4 Planning, estimating, and scheduling activities to determine resource allocation and material requirements. These functions must be performed initially to ensure their availability prior to scheduling the requested work. The estimation period for work requests shall be completed within 10 working days.

4.3.5 Tracking each work request from authorization, planning, estimation, and scheduling through completion and/or cancellation.

4.3.6 Maintain current computerized maintenance management system (CMMS). All CMMS upgrades, licensing, renewal, and software adjustments will be provided by DOE.

4.3.7 Routing of work request for approvals and establishment of initial work request priority.

4.3.8 Providing logistics support telephone-based call–in maintenance service during regular business hours.

4.3.9 Developing and maintaining database for maintenance worthy items for

preventative maintenance. Maintenance Worthy Asset development require an asset identifier code to be developed. The method of which an asset identifier code is developed is created is detailed in NETL Procedure 430.4-00.02 (Work Control System). A preventative maintenance plan will be created too. The Preventative Maintenance Plan has the work steps and frequencies of all PM's. It may also include pictures to help identify the equipment.

4.3.10 Sort and distribute work requests to the proper work centers.

4.3.11 Documenting and entering applicable maintenance data into the CMMS. All maintenance-worthy items shall be identified, data plate information gathered, and preventive maintenance procedures developed.

4.3.12 Manage, document, and report the maintenance backlog by site and trade.

4.4 Maintenance Management

4.4.1 Utilizing the NETL CWC System, the Contractor shall assist in maintaining buildings (active or inactive) and general-purpose equipment by:

4.4.2 Maintaining, repairing, and servicing general facilities, structures, equipment, utility systems, and desktop and office areas. General facility equipment includes, building components/equipment (doors, windows, building exterior materials [only if maintenance of this material requires it], etc.), Daycare play surfaces (MGN and PGH only), lighting, water system backflow preventers, emergency lighting, HVAC, refrigeration (cafeteria systems, water filters), cafeteria equipment, gym equipment (limited to repair and paint, does not include replacement of equipment or major parts), laboratory exhaust ventilation systems including fume hoods and low pressure air, city water, fire protection system, cranes (crane inspection is covered in CLIN 4 Activity 3), electrical vehicle charging stations, backup generators (supplying diesel fuel and propane for all emergency diesel generators on site to ensure adequate supply to maintain operations during planned and unplanned power outages/emergencies.) and UPS systems, pumps, compressors and delivery systems for site utilities such as high pressure natural gas, high pressure air, nitrogen, argon, and process cooling water systems and natural gas distribution systems from the city or utility point of entry throughout the NETL facilities. All underground water system repairs are considered out of scope if line repairs include a concrete barrier of more than 6 inches. Maintenance of energy consuming devices may require the installation of more energy efficient replacements in failed devices. Elevators throughout NETL sites are maintained and repaired by another Contractor.

4.4.2.1 Maintaining, repairing, inspecting, and servicing electrical distribution system, including electrical power transformers and stations, switchgears, breakers, as well as disconnect switches through secondary electrical sub-panels and motor control centers. Inspection and maintenance of electrical infrastructure, including infrared scanning shall be performed as per NFPA 70B procedures and frequencies. In ALB, service is required from the site side of the pole switch. In MGN, operation is from the power company source and maintenance is from the site side of the power company source air switch at the main station. In PGH, maintain the distribution systems past the power company air switches. After the air switches, the equipment is owned by DOE.

4.4.2.2 Maintenance and repair of NETL's Modular Data Center (MDC) shall be performed as specified below. The MDC is defined as the structure housing NETL's High-Performance Computing (HPC)/supercomputer including internal and external structures and support systems such as

the structure or housing referred to as the MDC; louvers, fans, and actuators; power supply from the TS disconnect switch, cabling, transformers (internal and external), switches, and internals distribution systems and wiring; Programmable Logic Controller (PLC) and associated sensors; water supply from MUB to reducers, valves, meters, and internal distribution components; data cabling; ventilation equipment; and lighting.

The work described below includes inspection, general housekeeping to ensure no foreign material is present that could contaminate/damage the HPC, troubleshooting and emergency repairs as requested by Information Technology Support Services (ITSS) and as described below, and providing assistance to 3rd party subcontractors that perform routine maintenance and repairs as requested.

The primary concern with the MDC is that it remains operational to support NETL's HPC as a critical element of the research environment – it is used for >50% of all NETL research/production of papers and research deliverables. With that goal in mind, while there are guidelines established for lines of demarcation of responsibilities between SOS and ITSS' 3rd party subcontractors, a situation may dictate other actions. For example, generally, SOS will perform work on power systems as required; however, there are times that outside assistance may be required (e.g., dependent upon availability of personnel to perform work in a timely manner, especially regarding specialized/qualified high-voltage electrical work). Also, generally, ITSS' 3rd party subcontractors will perform cable pulls for sensors inside the MDC; however, there may be times that the 3rd party subcontractor cannot perform work in a timely manner and SOS may be called upon to perform corrective actions to overcome a critical failure, all with the goal of maximizing HPC uptime. Outside of an emergency situation, the aforementioned guidelines will be followed.

4.4.2.3 Maintaining, repairing, and servicing utility systems, which include heating and process steam generation and distribution, condensate return, process cooling water, and compressed gases.

4.4.2.4 Maintaining infrastructure and repairing sanitary sewers, storm sewers, and underground, contaminated wastewater removal distribution systems (includes NETL-PGH Wastewater Treatment Facility - plant operations, process automation, and chemistry). This includes maintaining proper flow and function of all storm sewer catch basins (only catch basins deeper than 48 inches are considered a confined space).

4.4.2.5 Maintaining painted surfaces associated with facility structures requiring surface preparation and specialized paint/painting techniques at all sites. The Contractor shall perform repair, patching (wall patch maximum: 6 feet width x 9 feet tall), painting and sealing of exterior/interior building surfaces. The exterior surfaces (walls and windows) of all ALB Buildings (excluding Building 2, the tower at Building 30, Gas Cylinder Storage Facility and all storage buildings/sheds) will be required to be cleaned by power washing once every 2 years. All ALB parking lots, sidewalks and curbs will be power washed annually. MGN Buildings B-2, 3, and 39 power washed (once

annually).

4.4.2.6 Providing operation/maintenance support on a 24-hour per day basis per the call out procedure if facility equipment failure impacts the NETL mission. Providing a Maintenance on Demand (MOD) for Maintenance for hazards that are required to prevent personnel injury or site equipment/property damage. MOD's will be for Main Line Utility Leak/Failure, HVAC adjustments for critical facilities or personnel comfort, re-lamping/ballast replacement to meet minimum lamping requirements, and repair or maintain essential facilities equipment that is not working properly and is a quick repair.

4.4.2.7 Maintaining and repairing security fence lines and gates for all NETL sites (ALB, MGN, and PGH).

4.4.2.8 Providing certified welding capabilities to complete welding requirements as assigned, including requirements for certified welders (nominal qualifications).

4.4.2.9 Building structural maintenance shall include the inspection and repair of building roofs on a semi- annual basis. This will include Building Gutter System Repairs. Roof repair will be limited to small surface repairs (membrane roof's – less than 6 feet by 6 feet), small sheet metal repairs (less than one full metal sheet), Pitch Pocket repairs, and roof penetration leaks. Information related to roof characteristics and warranty information has been provided as Attachment 5 to this PWS.

4.4.2.10 Calibrating non-research related system equipment pressure relief devices, pressure gauges, pressure switches, relief valves, and gas regulators.

4.4.2.11 Obtaining data from the Gas, Electric, and Water utility meters. (MGN and PGH Meter Info has been provided as Attachment 3 to this PWS).

4.4.2.12 Proposing and implementing updated resource management plans to meet the maintenance demands of the three sites. This includes providing information required for adjusting building and equipment quantities for future site infrastructure configurations.

4.4.2.13 Providing trained technicians' processes for planning and scheduling of work activities, preventive maintenance procedures, equipment history and maintenance activity documentation, data analysis, root cause determinations, and response procedures to maintenance requests.

4.4.2.14 Documenting and entering applicable maintenance data into the computerized maintenance management system. All maintenance-worthy items shall be identified, data plate information gathered, and preventive maintenance procedures developed.

4.4.2.15 Performing installation of conduit and associated cabling in support of HazGas Alarms, communications, network, emergency notification, access control, video surveillance, building management systems, and phone systems. Maintenance and replacement of existing fiber optic cables, which will not include new installations. Fiber optic maintenance will include performing preparation of replacement cable and installing cable. This does not include termination at cable end destinations. This work will be limited to non-construction activities.

4.4.2.16 Utilizing diagnostic equipment provided by NETL such as the vibration analyzer, electric power quality analyzer, infrared camera, ultrasonic devices and other non-destructive equipment to evaluate existing equipment to predict corrective maintenance initiatives prior to equipment failure.

4.4.2.17 Developing and implementing a maintenance program for interior laboratory

areas including routine maintenance of walls, ceilings, floors, fume hoods, gas cylinder cabinets, HVAC systems, laboratory benches, gas, water, emergency eyewash/showers and ventilation systems.

4.4.2.18 Developing and implementing plans for restoration and in-kind replacement of laboratory case work, fume hoods and other laboratory infrastructure to facilitate safe, efficient, and effective operations of NETL laboratory facilities consistent with National Laboratory standards.

4.4.2.19 Pest and Animal Clean-up: The Contractor shall provide pest and animal clean-up services, including feces, nesting materials, and animal, bird, and rodent carcasses within the NETL property boundaries. This will include incorporating preventive maintenance in areas known to have issues with animal/bird feces to help reduce accumulations. Preventive maintenance is to include scheduled cleaning activities on a frequency that precludes an unreasonable accumulation of material. It may also include installation of animal/bird deterrent devices (i.e., spikes, metal mesh, etc.) as directed by the ACOR/COR. Animals/Birds that are protected by the migratory bird act or are protected species should not be disturbed. Ensure appropriate controls are implemented via activity hazard analysis (AHA).

4.4.2.20 Toxic Gas Alarm Systems: The Contractor shall maintain the Gas Alarm Network Support. The Contractor should note that versions of MSAnetworks are used. The Contractor shall be responsible for the system regardless of the manufacturers or versions of networks. Siemens BMS is used in ALB, and MGN for remote alarming notifications. PGH currently uses a combination of Siemens and Johnson Controls for remote alarm notifications (gas monitors for the MSA HAZGAS system are all manufactured by MSA). The engineering support for the analysis, design, and installation functions of Toxic Gas Alarm System activities shall include the following elements:

4.4.2.20.1 Provide engineering and technical services to design; develop system specifications; install, calibrate, support, and maintain the toxic gas alarm notification systems for the facilities including both scheduled and incidental service, design, and installation; and determination of system integrity for additional system expansion into existing and new areas to determine whether proper mitigation controls are implemented in the workplace, and that no employee is exposed to hazards at unsafe levels;

4.4.2.20.2 Provide installation services (e.g., augmentation of an existing lab using new purchases or reconditioned equipment) of the sensor head infrastructure (alarm panels, conduit, wiring, and mounting of the hazardous gas monitor). Sensor heads shall be installed in accordance with the manufacturer's manual and within the requirements of the Service Contract Act (SCA).

4.4.2.20.3 Installations (other than just the extra gas sensors) for the addition of: (1) a new laboratory; or (2) augmentation of an existing laboratory, with an estimated 15

additional gas sensor installations per contract year shall be included in the cost plan. New installations are to be approved by the ACOR and the Chemical Hygiene Officer. Unit pricing shall be provided for additional gas sensor installations beyond the number specified in 4.4.1.21.6 table below.

4.4.2.20.4 The split of responsibilities with the installation of project gas sensors will be at the signal transition from the hazardous gas monitor output to the project interlock/warning device.

4.4.2.20.5 Provide annual verification, acceptance, and functional testing of the toxic gas alarm systems and equipment to determine whether audible and visual signals are working properly.

4.4.2.20.6 Maintain and update instrumentation maintenance inventory to determine the accuracy of records. The fixed gas alarm and monitoring system includes the integrated alarm network and its several remote outputs. However, it does not include portions of the network covered by Silent Knight (fire panel used on the MGN site) or Simplex (fire panel used on the ALB and PGH sites). An approximate break-down of existing toxic gas alarm sensors at all three NETL sites are:

Sensor Type / Condition		ALB Site	MGN Site	PGH Site
Facility and R&D Sensors	In Service	97	171	163
	Not Required/ Out-of-Service	5	18	43
Project Sensors	In Service	44	11	0
	Not Required/ Out-of-Service	1	20	0

4.4.2.20.7 Make final connections of new gas sensors and replace old ones to determine sensor functionality. Purchase of new gas sensors shall be per NETL Procedure 440.1- 02.03, Installation of Gas Alarms; new sensors are expected to be installed for various research projects and facilities at a rate of 15 per year.

4.4.2.20.8 Decommission unnecessary monitors and other equipment in the gas alarm system, and re-commission them if a return-to-service is requested.

4.4.2.20.9 Maintain and update any planned and as-built drawings and/or schematics of the toxic gas sensor system.

4.4.2.20.10 All gas sensor installations, modifications, removal shall only be done via approved work order in the NETL Work Control System.

4.4.2.20.11 Purchase consumable supplies and materials necessary to satisfactorily perform toxic gas alarm system program activities. The Contractor shall be responsible for providing all consumable toxic gas alarm system supplies and materials once the current remaining inventory is depleted.

4.4.2.20.12 For every gas monitor that is in service at NETL, the sensor is to be replaced when it has reached the manufacturer's (e.g., MSA) recommended replacement age of that specific sensor.

4.4.2.20.13 Maintain Fixed Toxic Gas Alarm System equipment, in accordance with manufacturer's recommendations. Calibration is covered in CLIN 3Activity 6.

4.4.2.20.14 The Contractor shall purchase and maintain the annual preventive maintenance agreement for existing DOE-owned toxic gas alarm system equipment, as needed. DOE-owned toxic gas alarm system

equipment shall be placed on the Building Management System, or similar systems. These systems will be maintained in accordance with the Building Systems Controls Maintenance section, DOE-owned toxic gas alarm system equipment includes:

- Facility Sensors: Hazardous gas sensor(s) that are required by a safety process other than an R&D SARS package.

  - R&D Safety Sensors: Hazardous gas sensor(s) that are required by an R&D SARS package as a mitigation to a hazard.

  - R&D Project Sensors: Hazardous gas sensor(s) that are installed as project interlock(s) for an R&D SARS package and are not alarmed to security.

  - Sensor Heads: Infrastructure for toxic gas alarm systems, which includes alarm panels, conduit, wiring, and mounting of hazardous gas monitors/sensors. Connections to and actual project interlock/warning systems will not be maintained via this PWS.

  - For any additional toxic gas alarm systems in quantities exceeding the historical information, it is recommended that the Contractor provide unit costs.

4.5 Building Systems Controls Maintenance

Provide full maintenance coverage for NETL's Apogee Building Management System (BMS), Fire Finder Fire System, Emergency Notification System (ENS), and Security Video Surveillance and Access Controls System. Full maintenance shall mean that the contractor will provide all labor and materials, including software and firmware updates as necessary, to ensure these systems are performing with minimal faults. Maintenance, service, diagnosis, and repair will not include the ITD Computer Unit. Each system has been broken down to identify their specific needs:

4.5.1 Building Management System

4.5.1.1 Perform quarterly system inspections at each site and make repairs as necessary as a result of the inspection.

4.5.1.2 Maintenance and repair of the system and its components of the BMS.

Note: Approximately 75% of NETL's facilities have some sort of HVAC control system, of which approximately half of the buildings are outfitted sophisticated control systems (e.g., Siemens or Johnson Controls systems that can be controlled remotely from dedicated client workstations) and the remaining half have basic control systems (such as local thermostats that are not controlled remotely by computer workstation).

4.5.2 Fire Alarm System

4.5.2.1 The contractor will maintain fire safety systems. The contractor shall ensure:

4.5.2.1.1 Perform system inspections and tests in accordance with NFPA 72 (most current version). All installed fire safety systems are fully operational no less than 98% of the time and alternate protective measures are provided when fire safety protection systems are non- operational.

4.5.2.1.2 Maintenance, service, and repair of fire suppression, detection, and

alarm systems.

4.5.3 Emergency Notification System (ENS)

4.5.3.1 The contractor will maintain a functional ENS at ALB, PGH, and MGN. The ENS is a supervised paging system requiring high reliability and high availability operating in compliance with all applicable OSHA, NFPA, and DOE requirements 99.5% of the time in functionally occupied space. The contractor shall ensure:

4.5.3.1.1 Maintenance, service, and repair of the ENS system and its components.

4.5.3.1.2 Perform quarterly ENS operation inspections.

4.5.3.1.3 Requests for new services, service changes, system maintenance, and service disconnects are addressed within established NETL guidelines.

4.5.3.1.4 ENS system, including system electronics, system cabling, and system enunciators, (e.g., speakers and strobes) are fully functional.

4.5.3.1.5 System drawings to reflect as built and planned changes to the system remain current and at least 95% accurate with no major discrepancy by the end of each fiscal quarter.

4.5.3.1.6 An ample supply of batteries is readily available for the existing ENS and fire protection panels and that batteries are replaced within 1 business day of discovery of failure.

Note: The ENS in Albany, Morgantown and Pittsburgh is an integral part of the fire alarm system.

4.5.4 Security Video Surveillance and Access Controls Systems

4.5.4.1 Perform an annual full security system inspection and test in accordance with NFPA 731 (most current version). Submit formal documentation to the ACOR and Facility Security Officer (FSO) of all component test results and proposed corrective actions using the inspection and testing form as referenced in NFPA 731 unless otherwise approved by NETL ACOR.

4.5.4.2 Maintenance, service, and repair of the system and its components of the Security Video Surveillance and Access Controls System.

4.5.5 Maintenance, service, diagnosis, and repair on all systems identified above in 4.5.1 through 4.5.4 in accordance with the manufacturer's specifications (as information is obtained or is available) and applicable codes. This includes all parts, programming, software upgrades, firmware upgrades, etc., related to each system. The ‘system’ will be defined as all ‘hard’ or ‘soft’ components from the main control panel/server to the field sensor. (Software and Firmware upgrades shall be submitted to the COR for review and approval prior to any upgrade.) Any camera or software issue that affects camera operation for greater than 1 week should be reported to the COR, along with corrective action to restore service.

4.5.6 The Contractor shall be responsible for scheduling all required safety testing each year. The ACOR (or site specific ACOR) is to be notified in writing at least 1 month in advance of testing.

4.5.7 The Contractor shall provide system modifications necessary at the request of the ACOR (or site specific ACOR) for each of the systems referenced.

4.6 Services Management

The Contractor shall maintain all delivery systems including preventive, corrective, and predictive activities as required by procedure and approved industry standards and practices.

The Contractor shall provide support by:

4.6.1 Operating, maintaining, and repairing all utility service systems including ancillary components.

4.6.2 Providing general site management support through the operation of the service systems including steam, condensate return, compressed air, heating and process steam generation, process-cooling water, and wastewater treatment plants.

4.6.3 Operating, maintaining, and repairing boilers (including maintaining and repairing project boilers), the cooling towers, chillers and pumps, air compressors, delivery systems for site utilities such as high-pressure natural gas, high pressure air, nitrogen, argon, process cooling water systems and natural gas distribution systems, wastewater treatment plants, and ancillary components for these systems.

4.6.4 Operate, maintain, and repair the hydrogen distribution system. This will include connecting and disconnecting the source during delivery. Also included is the isolation of the source between tests, and routine maintenance as needed (Valve [Regulator and Regular] PM's and Replacement). This will include purging and refilling the system when required.

4.6.5 Providing steam, compressed air, nitrogen, hydrogen, natural gas, and process cooling water as requested by Form NETL 430.4-5 (Utilities and Support Services Request Form) to meet the NETL mission.

4.7 Modification Management

Modification Management Support services shall include, office and lab modifications, repairs as required for operation and function of equipment and installation of facility components that are required for existing facility equipment or spaces/areas, and replacement of facility components if a repair is not possible. This will encompass facility components (1) buildings (2) research (3) common areas and spaces (4) utility systems and (5) desktop and laboratory surfaced areas (limited to in kind replacement of surfaced areas) by altering and modifying facilities, equipment, utility systems, systems furniture, and surfaced areas utilizing approved plans, ergonomic evaluations, and drawings for owned and leased areas. This includes making signs for facilities notification. This includes Office/systems furniture assembling (ALB, MGN, and PGH) related to assembly and adjustment of furniture type items (both new and existing), this also includes repair by replacement and prioritizing critical infrastructure needs. This is limited to non-construction activities.

4.8 Additional Support Services

4.8.1 Moving and Furniture Support – ALB and PGH Site

4.8.1.1 Moving and Furniture Support services include, moving support related to providing moving supplies, moving of office items to new location, in some instances packing and unpacking of office items. This includes moving/relocating of items (including warehouse pickup and delivery to new location and excess equipment/furnishings), furniture and equipment setup, systems furniture setup/adjustments, re-arrangement of office layouts (using system furniture and may include the installation and modifications of existing systems furniture layouts); and conference room layouts. Delivery and assembly of a variety of furniture items to include, but not limited to: desks, chairs, tables, filing cabinets, credenzas, audio-visual equipment, and other office furniture and various types of equipment and boxes. Off-loading new office furniture and casework that is delivered directly to the building requiring furniture and casework installation. Relocate personal computers (PCs), printers, and terminals, including securing of all external cabling, securing of components as required (i.e., hard drives, toner cartridges, paper

trays, etc.), and the physical movement of the devices. Moves shall be coordinated through the Clin 2 Activity 2 ACOR.

4.8.1.2 Expected Level of Effort for Moving Services:

4.8.1.2.1 It is anticipated that the level of effort required for all moving services will be 1400 hours per contract year.

4.8.1.2.2 Moving and furniture support for the MGN site is covered under a separate contract.

4.8.1.3 Other major sitewide moves will be completed via separate contract (outside of the scope of the SOS Contract).

5.0 SUPPORTING FUNCTIONS

5.1 Activity Hazard Analyses (AHAs)

5.1.1 The Contractor shall ensure that all work activities are accomplished in accordance with direct procedures/manuals or otherwise reviewed via AHA to ensure that appropriate ES&H controls are implemented for the performance of work.

5.2 Directives Support

5.2.1 The Contractor shall assist with reviewing and revising NETL directives to ensure that they reflect the current site practices, new or changed responsibilities of individuals, DOE orders and regulatory requirements, and quality assurance measures.

5.3 Corrective Action

5.3.1 The Contractor shall implement on-site corrective/preventive actions associated with action plans previously developed, self-assessments, and other types of internal and external reviews.

5.4 Consulting and Assistance

5.4.1 Consulting and assistance with other NETL deliverables. This could be due to change in regulations or DOE/Executive Orders, new initiatives, or change in NETL policy.

5.5 International Organization for Standardization (ISO) 14001/ISO 45001 Certification Initiatives and Audits.

5.5.1 The Contractor shall support NETL's efforts to maintain ISO 14001 and ISO 45001 certifications as part of the ES&H Management System and shall participate in NETL's internal audits and assessments. Support activities including basic participation in ISO audits (as required). This could include gathering information and/or participating as a subject matter expert.

1.1 6.0 DELIVERABLES

The following table contains the deliverables associated with this Activity.

DELIVERABLE	FORMAT	FREQUENCY

Work Order Status Report	Format as specified by the ACOR The report shall show the status of all work requests from the current week as to whether the work order is open, on schedule, or closed. The work orders that are listed in the "on schedule" part of this deliverable shall show a list (scheduled dates do not need to be included) of work orders planned for the two weeks following the current week. The open work order, scheduled work order, and closed work order list shall be separate tabs in one Microsoft Excel Spreadsheet. As a minimum, the report shall include approved date, estimated completion date (open and scheduled only) and actual completion dates (closed only), Priority Code, Asset ID, Requestor's Name, Work Order Description, and any status updates. Report shall also be submitted to MyPortal for posting to DOE Sharepoint per format as specified by the ACOR.	Weekly Due Friday on the current week.
HVAC Report	The report shall include all HVAC issues, location or area, the temperature or other HVAC system issue, and what is being done to correct the issue, both temporarily and permanently. Each Site Report shall be submitted to the site specific ACOR.	Daily – PGH Weekly – ALB and MGN
Facilities Maintenance Inspections Report	Format as specified by the ACOR The report shall detail asset title, brief description including summary information as reported in the FIMS database, top ten repair /replacement needs for each site, scheduled inspection dates and actual inspection dates.	Semi-Annual (January and July)
Total Maintenance Cost Per Building Report	Format as specified by the ACOR The report shall detail total maintenance cost per building data. The total labor and material maintenance cost for each building.	Semi-Annual (January and July)
Gas, Electric, and Water Meter Data	Format as specified by the ACOR The report shall detail the monthly change in the metered data for each meter.	Monthly.
Building Systems Control Maintenance Reports	Format as specified by the ACOR	Annually (or as otherwise specified)

Overtime Tracking Report	Report shall include hours used and remaining hours by site. The hours shall be separated as GPP or operational with a description of the hours used. There must also be a notification sent when the planned overtime hours reach 50%, 75%, and 90%. The report and percentage notifications shall be distributed to the ACOR, CLIN COR, Joe Matey, and Heidi Dahmer.	Monthly & percentage notifications as specified
Call In Report	Report shall include table of all call-in issues for the previous month and hours needed to resolve each task.	Monthly - PGH
Modification Report	Report shall include table of all modifications completed for the previous month and hours needed to resolve each task.	Monthly - PGH
Moving Report	Report shall include all moving related tasks and hours allocated per task	Quarterly
Preventative Maintenance Report	Report shall include table of all preventative maintenance completed for the previous month and the planned preventative maintenance for the upcoming month	Monthly
Haz Gas Sensor Report	Report shall include table of all sensor location, type, status, age, and replacement schedule	Quarterly
Roof System Inspection	Report shall include a list of all action items for repair of current roof system issues	Semi-Annually
ENS Inspection Report	Report shall include a list of corrective actions and timeline to make all necessary repairs.	Quarterly
Site Electrical Inspections	Report shall include detailed list, and infrared scan pictures of deficiencies found during NFPA 70B testing. Report shall also list recommendations and repairs to correct the deficiencies.	Annually

The table below identifies the deliverable reports and data updates required by FIMS.

FREQUENCY	REQUIREMENTS
Monthly	Real Property Asset Capitalization RPV updates; asset dispositions and data archiving. Deferred Maintenance and CAIS Work Order updates.
February	Recalculation of FIMS generated Building/Trailer RPV values with FY model costs.
April/May	Annual FIMS HQ Validation for all NETL Real Property asset data for all 3 sites.
May	Provide updated sections of NETL Ten Year Site Plan, including Section 4.7 Maintenance Management Program Section 4.8 Condition Assessment Survey Program Section 4.9 Work Control System Section 4.11 Status of Real Property Assets Section 4.12 Recapitalization Plans Section 4.13 Analysis of Facilities
September/October	FY Snapshot for Deferred Maintenance and Repair Needs Cost data updated into FIMS. In addition, the following FIMS data entries must be reviewed and updated for the following fields: Energy Consuming Building/Facilities Energy Consuming Metered Process (Excluded) Facilities, including square footage, Exclusion Part, and Justification Comments
October/November	FY Snapshot for Actual Maintenance and Operating Costs data updated into FIMS. In addition, all Asset Estimated Disposition Years should be reviewed and updated.
October/November	FY Fugitive Gas Inventory (Refrigerants) due.

7.0 PERFORMANCE EXPECTATIONS

7.1 All maintenance is performed as specified in work orders, as applicable.

7.2 All work order estimations (required for planning/scheduling) will be completed within 10 business days.

7.3 Central Work Control management of workflow. Field work for routine maintenance shall be completed within the following time periods from ACOR approval of the work order. Work orders requiring laboratory analysis (i.e., lead paint, asbestos) from external providers is exempt from these time restraints:

7.3.1 P1 - 7 days (calendar)
7.3.2 P2 - 30 days (calendar)
7.3.3 P3 - 90 days (calendar)
7.3.4 P4 – 180 days (calendar).

7.4 All work orders will be completed by the identified time frame or performance identified in the work order and completion dates recorded in CWC.

7.5 Facility operations, preventive maintenance, furniture moves, modifications, and alterations are performed on request based on the needs of the requestor and availability of outages.

<u>High Performance Computing (HPC) Modular Data Center (MDC) Support</u>

Contractor will provide the following general oversight, preventive maintenance and repair of facilities and components for the HPC MDC located in Morgantown. Facility walk throughs and inspections will be in accordance with the frequencies and tasks listed below.

a. Daily – walkthrough inspection of internal and external MDC and surrounding areas for cleanliness, site maintenance needs and any conditions that may affect performance of the HPC MDC.
b. Weekly – flushing of cooling filters and drains, mopping interior server floors, and, vacuuming of vestibule, mixing chambers and outside air intakes
c. Monthly – inspection of all filters and Uninterruptible Power Supply (UPS) status/warning indicators, deep cleaning of mixing chambers, testing of emergency lighting and status check of fire protection panels
d. Quarterly – status check on PLC UPS and battery voltage, removal/inspection/cleaning of water filter wire mesh, physical and visual inspection of water lines and drainage system and assist the NETL support contractor with the removal and pressure washing of roughing filters.
e. Semi-annual fall – verification of PLC controls against threshold settings, general inspection of PLC wiring and sensor for wear, inspection of fans, verification of the operability of solenoid valves (rebuild or replace as necessary), verification of the integrity and operability of dampers and actuators, inspection/cleaning/lubrication/re-calibration of louvers, inspection and verification of heat tracing operation, and, participation in 3rd party preventive maintenance activities and inspections provided and organized by NETL.
f. Semi-annual spring - verification of PLC controls against threshold settings, general inspection of PLC wiring and sensor for wear, inspection of fans, verification of the operability of solenoid valves (verify balance of water flow & condition of distribution boxes), verification of the integrity and operability of dampers and actuators, and participation in 3rd party preventive maintenance activities and inspections provided and organized by NETL.
g. Annual – visually inspect electrical and controls systems, check condition of access doors, check condition of filter frames, spot check water distribution boxes, inspection MDC exterior/interior integrity, test EPO functionality, test fire protection system trip mechanisms, perform electrical system (less than 200A) breaker checks, spot check tightness of electrical connections, participate in 3rd party preventive maintenance activities and inspections provided and organized by NETL, and assist the NETL support contractor with replacing air filters.
h. Ad-hoc – startup/shutdown the HPC in accordance with SOW, UPS startup/shutdown, fan replacement and programming, louver and motor control maintenance/repair/replacement, solenoid rebuilding/replacement, HEPA filter replacement, evaporative media replacement, cooling hose and water supply replacement, component shifting into/out of manual control, startup/shutdown of PLC, door and roof repair, seals replacement, troubleshooting fire panel failure, sensor replacement and calibration, PDU changeout, fire suppression systems override/alarm test/reset, fire suppression tank activator removal and installation, and, I/O cable and circuit board troubleshooting and replacement.