

DATE: August 29, 2023

DEPARTMENT OF GENERAL SERVICES
BUREAU OF CAPITAL PROJECT DESIGN MANAGEMENT
1800 HERR STREETS
HARRISBURG, PENNSYLVANIA

ADDENDUM NO. 2

on

PROJECT NO. DGS C-0372-0005 PHASE 001
PROJECT TITLE - SCI Greene - Renovate Switchgear & Generators

PROFESSIONAL:

HF Lenz Company
1407 Scalp Ave
Johnstown, PA, 15904

If you submitted a bid prior to this Addendum being issued, your bid has been discarded and you must re-submit your bid(s) prior to the bid opening date and time.

GENERAL CHANGES – ALL CONTRACTS

Item 1 - Attached is a powerpoint file from the Bureau of Diversity, Inclusion, and Small Business Opportunity session on Friday, August 4, 2023.

Item 2 - The following are responses to Bidders questions:

Question 1: Will as equals be considered for the gear and generator?

Response: See specification and as equals will be considered.

Question 2: In the Instructions to Bidders document it states "SUBMISSION/SIGNING OF BIDS. All bids shall be submitted in e-Builder prior to the date and time scheduled for the bid opening. Only e-Builder submissions will be accepted by the Department. Mail (regular or express), e-mail, or any other type of delivery of bid submissions will not be accepted by the Department and, if feasible, will be returned to sender." The Request for Proposal Document states "To be considered for selection by DGS, proposals must be delivered to the Request for Proposal Coordinator IN HARRISBURG (address listed in Notice to Proposers) on or before the Proposal Submission Deadline. The Proposal or any part of it, shall not be submitted through e-Builder." Which is correct?

Response: Bids for the .1 contract work shall be submitted through e-builder as outlined in the Instructions to Bidders document. Proposals for the .4 contract work shall be delivered as outlined in the Request for Proposal document.

SPECIFICATION CHANGES – ALL CONTRACTS

Item 1 - Replace Section 261313 with the attached new section with identified revisions:

1.8 SPECIAL TOOLS AND CRITICAL COMPONENTS

A. Critical components shall be provided for each type and size of unit installed. At a minimum, the following shall be provided:

1. Provide the minimum as recommended by the manufacturer.
2. Provide [1] set of each type of control fuse installed within equipment
3. Provide [1] set of each type of indicating lights installed within equipment
4. Portable Circuit Breaker Lifting Device
5. Circuit Breaker Test Cabinet and Test Jumper Cable
6. Provide [1] motorized remote control racking accessory
7. Provide [2] additional breakers for new paralleling gear

DRAWING CHANGES – ALL CONTRACTS

Item 1 -

SECTION 261313

PARALLELING MEDIUM VOLTAGE SWITCHGEAR

PART 1 - GENERAL

1.1 SUMMARY

- A. Scope: Metal-Clad, Medium Voltage, drawout vacuum circuit breaker switchgear and associated monitoring and control systems for paralleling of existing standby generators (generator controls to be upgraded simultaneously under this project to ensure communication compatibility between paralleling switchgear and generators) and for distributing electrical power as shown on the Drawings and as herein specified. It is the intent of this specification to provide a complete control and power distribution system for the operation of [2] existing generator units, rated 1,500 kW at 0.8 PF, 4160 volts, 3 phase, 3 wire, 60 Hertz. All components, testing, and services specified or required for a complete operable system shall be included.
- B. Section Includes: The work specified in this Section includes, but shall not be limited to, the following:
1. Medium voltage metalclad, drawout paralleling switchgear constructed to ANSI C37.20.2 standards
- C. Related Sections: Related sections include, but shall not be limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
 2. Applicable general requirements for electrical Work specified within Division 26 Specification Sections apply to this Section.
 3. The following information is typically depicted on the Drawings: bus configuration, bus ratings, interrupting ratings, circuit breaker size and type, power line and feeder connections, elevation and footprint, etc. Where not shown on or able to be derived from the Drawings, the minimum requirements specified herein shall be provided.
 4. Refer to specification Section 260913 Electrical Power Metering for additional requirements.
 5. Refer to specification Section 261326 Metal-Clad Medium Voltage Switchgear Door Replacement for additional requirements.
 6. Refer to specification Section 263213.1 Controls Upgrade For Packaged Generators for additional requirements.
 7. Refer to specification Section 262312 Paralleling System Sequence of Operation for additional requirements.

1.2 REFERENCES

- A. General, Publications: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.

1. American National Standards Institute (ANSI)
 - a. ANSI/IEEE C37.20.2 - "IEEE Standard for Metal-Clad Switchgear"
 - b. ANSI/IEEE C37.04 - "IEEE Standard Rating Structure for AC High Voltage Circuit Breakers"
 - c. ANSI/IEEE C37.06 - "IEEE Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis - "Preferred Rating and Related Required Capabilities for Voltages Above 1000V"
 - d. ANSI/IEEE C37.11 - "IEEE Standard Requirements for Electrical Control for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis"
 - e. ANSI/IEEE C37.09 - "IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis"
 - f. ANSI/IEEE C57.13 - "IEEE Standard Requirements for Instrument Transformers."
2. International Organization for Standardization (ISO):
 - a. ISO 9001, "Quality Management Systems - Requirements"
3. National Electrical Manufacturers Association (NEMA):
 - a. NEMA SG4 - "Alternating Current High Voltage Circuit Breakers"
 - b. NEMA SG5 - "Power Switchgear Assemblies."
4. National Fire Protection Association (NFPA):
 - a. NFPA 70, "National Electrical Code," (NEC)
5. International Building Code (IBC)
 - a. Switchgear shall be provided with IBC certification and label

1.3 DEFINITIONS

- A. Unless specifically defined within the Contract Documents, the words or acronyms contained within this specification shall be as defined within, or by the references listed within this specification, the Contract Documents, or, if not listed by either, by common industry practice.
1. PCS – Power Control System
 2. BMS – Building Management System
 3. EPMS – Electric Power Monitoring System
 4. ATS – Automatic Transfer Switch
 5. PLC – Programmable Logic Controller
 6. OIT – Operator Interface Terminal
 7. MV – Medium Voltage
 8. AIC – Ampere Interrupting Capacity
 9. BIL – Basic Impulse Level

1.4 SUBMITTALS

- A. Submittals shall include the following as specified herein:
1. Deviations from the Contract Documents shall be indicated within the submittal. Each deviation shall reference the corresponding drawing or specification number and shall include a detailed written justification for the deviation.
 2. Submit required product data and drawings specific to each product and accessory proposed. In addition, include the following information:
 - a. Elevation drawings with shipping splits identified and estimated weights
 - b. Outline drawings showing conduit entry areas and anchoring provisions.
 - c. Single Line Diagram.
 - d. Sequence of Operation including failure modes.
 - e. System Sequencer which graphically and dynamically demonstrates system one line sequence of operation via animated sequences including failure recovery modes.
 - f. Bill of material listing items by manufacturer's name, part number and description.
 - g. Complete nameplate and status annunciator panel schedule.
 - h. Technical literature for major components.
 3. Seismic Qualification Certificates: For each Switchgear assembly provide the following:
 - a. Equipment shall be seismic shake table tested in accordance with ICC-ES AC-156 by an independent and certified seismic qualification agency.
 - b. Equipment shall be certified with Design Spectral Response Acceleration at Short Periods (SDS) equal to 2.46
 - c. Switchgear shall be provided with IBC 2018 certification and label
- B. Operation & Maintenance (O&M) manuals shall be provided and shall include the following items.
1. Submit required Operations & Maintenance data specific to each product and accessory proposed. In addition, include the following information:
 - a. Complete set of drawings included the following:
 - 1) Elevations and plan views
 - 2) One line diagrams
 - 3) Elementary schematics
 - 4) Power Control System (PCS) Network Architecture Diagram
 - 5) Detailed Interconnect Spreadsheet
 - b. Detailed Sequence of Operation
 - c. Manufacturer's standard operation and maintenance data.
 - d. Complete Bill of Material including furnished **critical components**.
 - e. Instruction Manuals for all Major Components including but not limited to synchronizing controllers, circuit breakers, programmable logic controllers, operator interface terminals, protective devices and meters.
 - f. Electronic O&M manual to be provided via secure link.

1.5 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** The equipment described, as a minimum, shall meet all of the requirements specified in this section. The equipment shall be the product of a manufacturer who has produced paralleling switchgear for a period of no less than 25 years. The manufacturer must provide integral electrical and mechanical design, fabrication and construction services for all cubicle structures, formed and punched bus bar, and control panel assemblies. Comprehensive documentation detailing electrical and mechanical designs shall be available upon request.
 - 1. The manufacturer shall have a valid ISO 9001 certification and an applicable quality assurance system that is regularly reviewed and audited by a third-party registrar. Manufacturing, inspection, and testing procedures shall be developed and controlled under the guidelines of the quality assurance system.
 - 2. The manufacturer shall have service, repair, and technical support services available on a 24 hours 7 days a week basis.
- B. All work performed and all materials used shall be in accordance with the National Electrical Code, and with applicable local regulations and ordinances. Equipment assemblies, materials, and equipment shall be listed and labeled by Underwriter's Laboratories or by a testing agency acceptable to authorities having jurisdiction and marked for intended use.
- C. **Order Management:** Management of orders shall be assigned to personnel employed and trained specifically and exclusively for project management; the use of field service representatives, design engineers or sales representatives for order management purposes shall not be acceptable. Each order shall be managed by both a factory-based project manager and a factory-direct field-based project manager.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Prior to delivery to the Project site, the electrical contractor shall ensure that suitable storage space is available to store materials in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity, and corrosive atmospheres. Materials shall be protected during delivery and storage and shall not exceed the manufacturer stated storage requirements. As a minimum, store indoors in clean, dry space with uniform temperature to prevent condensation. In addition, protect electronics from all forms of electrical and magnetic energy that could reasonably cause damage.
- B. Electrical Contractor shall deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and equipment tag number or service name as identified within the Contract Documents.
- C. Electrical Contractor shall inspect and report any concealed damage or violation of delivery storage, and handling requirements to the Engineer.

1.7 WARRANTY AND SERVICE

- A. The Manufacturer shall warrant the equipment for a minimum of 48 months from date of shipment subject to terms and conditions of manufacturer's current warranty publication.

- B. Manufacturer shall have an established network of factory-direct service technicians capable of servicing the equipment.
- C. Manufacturer's field service representatives shall be on call and available for immediate dispatch 24 hours a day, 365 days a year. All field service personnel shall be factory trained, by the manufacturer, and certified in the maintenance and repair of the specified equipment. Manufacturer must employ a minimum of 2 field service technicians within a 150 mile radius of the installation site. Field service representatives shall have access to common replacement components locally and the service organization shall have a detailed counter-to-counter process for providing emergency spares 24 hours a day 7 days a week.
- D. Post-warranty service contracts shall be made available to the Client Agency by the manufacturer to provide scheduled maintenance and/or emergency repair of the equipment.

1.8 SPECIAL TOOLS AND CRITICAL COMPONENTS

- A. Critical components shall be provided for each type and size of unit installed. At a minimum, the following shall be provided:**
 - 1. Provide the minimum as recommended by the manufacturer.**
 - 2. Provide [1] set of each type of control fuse installed within equipment**
 - 3. Provide [1] set of each type of indicating lights installed within equipment**
 - 4. Portable Circuit Breaker Lifting Device**
 - 5. Circuit Breaker Test Cabinet and Test Jumper Cable**
 - 6. Provide [1] motorized remote control racking accessory**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Products: Switchgear specified herein shall be the product of a single manufacturer. Products and manufacturers specified are to establish a standard of quality for design, function, materials, and appearance. Provide the following specified product and manufacturer, or approved equal:
 - 1. ASCO Power Technologies Series 7000 Switchgear- Basis of Design
 - 2. Caterpillar.
 - 3. Eaton.

2.2 GENERAL REQUIREMENTS

- A. The following paralleling switchgear information is typically shown on the Drawings: bus configuration, bus ratings, interrupting ratings, component size and type, power line and feeder connections, elevation and footprint, etc. Where not shown on or able to be derived from the Drawings, the minimum requirements specified herein shall be provided.
- B. System ampacity shall be 1200A. All horizontal bus shall be rated to the full ampacity of the system.
- C. Maximum Design Voltage shall be 4.76 kV.

- D. Circuit Breaker Interrupting Rating shall be 50 kAIC
- E. Impulse Withstand (Basic Impulse Level) shall be 60 kV.
- F. Power Frequency Withstand shall be 19 kV, 1 minute test.
- G. Main Bus Ampacity shall be [1200] amps, continuous.
- H. Momentary Current Ratings shall be equal to the circuit breaker close and latch rating
- I. Equipment shall be Seismic Qualified and Certified by 3rd party testing to meet IBC requirements. Seismic qualification shall be determined from seismic shake table test results as defined in the International Code Counsel Evaluation Service (ICC ES) Acceptance Criteria for Seismic Qualification Testing of Nonstructural Components (AC156).

2.3 STRUCTURE

- A. General/Construction: The enclosure shall be free-standing, and floor supported, with front and rear access. An adequate number of anchor bolt holes shall be designed to place the base in direct contact with the foundation when bolted. The flatness of the floor surface upon which the equipment is installed shall deviate no more than 0.125 inches per 10 feet in any direction. Minimum sheet metal thickness shall be 11-gauge steel on all exterior surfaces. All doors shall be provided with sufficient hinges to support the door and components. Doors must swing open more than 90 degrees. Front doors shall be supplied with a lockable handle. Rear doors shall be supplied on all bussed sections. All door locks shall be keyed alike, with one key supplied for each lock. All panel covers shall be formed type and secured with screws as necessary.
- B. The sheet steel used for the finished assembly shall be degreased and thoroughly cleaned through a minimum five stage aqueous process. The finish shall be ANSI-61, light gray, electrostatically charged powder paint over a phosphate coating, at an average of 2.0 mils. Finish shall be suitable for indoor and outdoor environments.
- C. Bus: The main bus and neutral bus shall be rated [1200] amps and be fully insulated for its entire length with an epoxy coating. The conductors shall be [silver-plated] copper and be of a bolted design. The ground bus shall be 1/4" x 2" copper and shall extend through each compartment for the full length of the switchgear. Access to this compartment is gained from the front or rear of the structure by removing a steel barrier. Provide standard provisions for future extension, as applicable.
- D. Lugs: Lugs shall be provided and shall be 2-hole compression type. Size, conductor type and quantity per conductor shall be as shown on the drawings.
- E. Infrared viewing windows: Provide 3-inch minimum size viewing windows to allow the use of an infrared camera or thermal imager direct line of site to inspect electrical connections without requiring the opening of panels and doors. These windows shall be designed to allow thermographers the ability to inspect the electrical equipment without directly exposing themselves to live electrical components and energized devices.
- F. Nameplates: Engraved laminated plastic nameplates, having black letters on white background, shall identify major components, vertical sections, and circuit breakers. Nameplates shall be attached with self-tapping screws.
- G. Mimic Bus: Continuous mimic bus, arranged in single-line diagram format, using symbols and lettered designations consistent with approved mimic-bus diagram.

1. Mimic-bus segments coordinated with devices in switchgear sections to which applied, to produce a concise visual presentation of principal switchgear components and connections.
 2. Laminated mimic bus shall be Red / Black and be Lamicaid attached with mechanical fasteners.
- H. Control Wiring: AC voltage sensing wiring shall be SIS #14 AWG. CT wiring shall be SIS #12 AWG. All DC control wiring shall be a minimum of #18 SIS AWG. Current transformer circuit terminations shall be ring tongue type and include shorting terminal blocks.
1. Control wires shall be numbered every eight (8) inches or less, numbers shall be visible next to the terminals. Wiring shall be permanently marked at each end with wire termination designations that identify wire "to – from" terminal designations. Sleeve type wire markers are not acceptable. These designations shall include the device and connection point where the wire is terminated. All control wire markings shall be printed directly on the wire insulation and be permanent. Current Transformer wire shall be 12 gauge.
 2. Low level signal circuits shall be separated and provided with shielded wire to minimize electromagnetic interference. Shielded wire shall be grounded at one point. Ethernet cabling shall be unshielded category 5 or higher.
 3. Wiring between each section shall not be spliced and shall be free of abrasions and tool marks. Connections between cubicles shall use labeled connection plugs. Wires shall be placed in wire duct or harnessed and shall be supported to prevent sagging or breakage from weight or vibration. Inter-cubicle wiring harnesses shall be contained in overhead steel wire troughs. Communication cables and current transformer circuits shall be hard wired.
 4. All wiring to hinged doors shall be run through door terminal blocks or connection plugs. Terminal blocks shall be provided for all external connections and placed in an accessible area not exposed to hazardous bus or cables, if possible. Current transformer circuits shall be connected through shorting terminal blocks.
- I. Stationary Structure
1. The switchgear shall consist of sections including circuit breaker compartments and auxiliary compartments as specified on drawings assembled to form a rigid self-supporting completely enclosed structure providing steel barriers between sections.
 2. The sections shall be divided by metal barriers into the following separate compartments:
 - a. Circuit breaker, instrument, main bus, auxiliary device and cable. Each feeder section may have up to two circuit breaker compartments.
- J. Circuit Breaker Compartment
1. Each circuit breaker compartment shall be designed to house a horizontal drawout metal-clad vacuum circuit breaker. The stationary primary disconnecting contacts are to be silver-plated copper and mounted within glass polyester support bushings. The movable contacts and springs shall be mounted on the circuit breaker element for ease of inspection/maintenance.
 2. Entrance to the stationary primary disconnecting contacts shall be automatically covered by metal shutters when the circuit breaker is withdrawn from the connected position to the test or disconnected position or removed from the circuit breaker compartment. Ground bus shall be extended into the circuit breaker compartment to automatically ground the breaker frame with high-current spring type grounding contacts located on the breaker chassis when in the test and connected positions. Guide rails for positioning the circuit breaker and all other necessary hardware shall be an integral part of the circuit breaker compartment. Blocking devices shall interlock breaker frame sizes to prevent

installation of a lower ampere rating or interrupting capacity element into a compartment designed for one of a higher rating. It shall be possible to install a circuit breaker into a bottom compartment without use of a transport truck or lift device.

K. Circuit Breakers:

1. The circuit breakers shall be rated [4160] nominal volts, [4760] maximum volts, 60 Hz, with a continuous current rating of [1200] amps and a maximum symmetrical interrupting rating of [50kA - 4.76 kV system]
2. Furnish Square D Type VR circuit breakers (or approved equal) with one vacuum interrupter per phase.
3. Breakers of same type and rating shall be completely interchangeable.
4. The circuit breaker shall be operated by means of a stored energy mechanism which is normally charged by a universal motor but can also be charged by the manual handle supplied on each VR breaker for manual emergency closing or testing.
5. The closing speed of the moving contacts shall be independent of both the control voltage and the operator.
6. A full front shield shall be provided on the breaker.
7. Secondary control circuits shall be connected automatically with a self-aligning, self-engaging plug and receptacle arrangement when the circuit breaker is racked into the connected position.
8. Provision shall be made for secondary control plug to be manually connected in test position.
9. A minimum of 6 auxiliary contacts and 5 MOC and 5 TOC type contacts, shall be provided for external use. The racking mechanism to move the breaker between positions shall be operable with the front door closed and position indication shall be visible with door closed.
10. An interlocking system shall be provided to prevent racking a closed circuit breaker to or from any position. An additional interlock shall automatically discharge the stored-energy operating mechanism springs upon removal of the breaker out of the compartment.
11. The circuit breaker control voltage shall be: [48] volts DC - one capacitor trip unit shall be provided for each circuit breaker when AC control power is required.

L. Surge Arresters

1. Surge Arresters shall be installed on each phase of all the incoming mains.
2. Surge Arresters shall be distribution class.
3. All surge arresters shall be mounted in the cable termination compartments.
4. All surge arresters shall be solidly grounded with a copper cable to the ground bus in the respective cubicle.

M. Moving and Handling

1. The switchgear shall be provided with shipping splits at each section and shall be capable of being lifted overhead or by a forklift.
2. Each section shall be provided with removable lifting plates for overhead lifting purposes.

2.4 COMPONENTS

- A. Metering Instrumentation: Analog metering instrumentation shall consist of industrial switchboard type meters, 4-1/2" square, 1% accuracy. Current and potential transformer ratios shall be selected and coordinated for nominal and rated values for ammeters, voltmeters and kW meters.

- B. Instrument Switches: Instrument switches shall be of the rotary type. Each switch shall be supplied with a titled escutcheon plate, suitably marked for each position. The switches shall have positive means of maintaining contact, which shall be silver to silver with a wiping action.
- C. Current Transformers: Current transformers shall be furnished with VA burden and relay class ratings suitable to supply the metering and protective devices without affecting accuracy.
- D. Potential Transformers: Provide Two (2) open-delta connected drawout potential transformers with ratios as indicated on the drawings. Transformers shall have integrally mounted primary fuses. The transformers shall have mechanical rating equal to the momentary rating of the circuit breakers and shall have metering accuracy per ANSI Standards.
- E. Alarm and Status Indication: Visual and audible alarm and status indication lights, including spares, shall be furnished as indicated by customer. Visual alarms shall be reset only after the fault condition has been corrected. The audible alarm shall include a silencing circuit which after activation shall permit audible annunciation of subsequent failures. Visual Alarms shall be provided via a solid state status panel with redundant LEDs for each annunciation point. Lamp test shall be an integral feature of this indicator. Each illuminated indicator tile shall be 24 mm x 24 mm. Systems which provide some or all alarms via a touchscreen only are unacceptable.
- F. Control Fuses: Fuses shall be mounted in locations where they are readily accessible. Pull-out type fuses shall be provided for all primary circuits and shall be of the current limiting type.
- G. Electromagnetic Control Relays: All electromagnetic control relays shall be suitable and adequately rated for their intended service in the control system. All relays for control circuit duty shall be plug-in type with retaining clips and transparent plastic covers. Relays shall be clearly marked for control voltage. When possible, all relays shall have light-emitting diodes to indicate that the coil is energized.

2.5 PROTECTIVE RELAYS

- A. Provide a protective relay for each circuit breaker as specified herein and Controllers and as indicated on the drawings. Protective relays shall meet the minimum requirements for the circuit breaker application (Generator, Main, Feeder, Busbar etc.) with the protection types (ANSI/IEEE C37.2 device numbers) and protection levels specified or shown. A separate Lockout Relay (Device 86) shall be provided for each protective relay.

2.6 GENERATOR POWER AND CONTROL SECTION

- A. Generator Circuit Breaker: Each generator section shall contain over-current protection, controls, relays and auxiliary devices associated with its respective engine generator set. It shall include the following:
 1. For each generator set, a medium voltage Square D type VR (or approved equal) vacuum circuit breaker shall be furnished to provide paralleling functions. Circuit breakers shall be rated 4160 nominal volts, 4760 maximum volts, 60 Hz, with a continuous current rating of 1200 amps and a maximum symmetrical interrupting rating of a maximum symmetrical interrupting rating of 50kA - 4.76 kV system.
 2. Furnish circuit breakers with one vacuum interrupter per phase. Breakers of same type and rating shall be completely interchangeable. The circuit breaker shall be operated by means of a stored energy mechanism which is normally charged by a universal motor but can also be charged by the manual handle supplied on each breaker for manual emergency closing or testing. The closing speed of the moving contacts is to be

independent of both the control voltage and the operator. Provide a full front shield on the breaker. A minimum of 6 auxiliary contacts and 5 MOC and 5 TOC type contacts, shall be provided for external use. The racking mechanism to move the breaker between positions shall be operable with the front door closed and position indication shall be visible with door closed.

3. Line Side Drawout type Potential Transformers, 2 Delta Connected ratio as shown on the drawings.
4. An interlocking system shall be provided to prevent racking a closed circuit breaker to or from any position. An additional interlock shall automatically discharge the stored-energy operating mechanism springs upon removal of the breaker out of the compartment.
5. The circuit breaker control voltage shall be 125 volts DC. Close and trip control power shall be independently monitored. Breaker closure shall be inhibited if trip power is unavailable
6. A Circuit Breaker Trip Switch shall be provided with open/closed/tripped indicating LEDs

B. Generator Control System

1. Paralleling switchgear shall be configured to receive remote communications from Generator Set Controls System. Communication protocol shall be Modbus TCP communications via Ethernet 10BASE-T and Modbus RTU communications via RS-485 half duplex with configurable baud rates from 2.4 to 57.6k.
2. Paralleling controls for each generator shall include a programmable logic controller and a Woodward DSLC-2 (or approved equal) digital synchronizer and load controller designed for use on three-phase AC generators and mounted in the switchgear. The controls shall combine a synchronizer (with voltage matching capability), load sensor, load control, dead bus closing system interlock, VAR, power factor and process control. The load sharing network and VAR sharing network shall be redundant and completely integrated in the switchgear with network status monitoring and diagnostics available via switchgear operator terminal screens. The controls shall sense true RMS power and provide soft loading and unloading functions on the main bus.
3. DC-to-DC converter(s) shall be provided in each generator control section to provide constant 24VDC power. The Generator Section DC-to-DC converter shall supplement the DC-to-DC converter in the Master Control section. A single DC-to-DC Converter located in the Master Section only is not acceptable. Control power shall be sourced from generator set batteries and DC station battery system and sustain adequate control voltage during an engine crank. The converters shall provide power for up to 75% rated load if the source voltage drops to 12 volts.
4. Generator controls shall include the following functions, components, devices, and indicators:
 - a. Reverse Power Protection (Device 32R)
 - b. Generator Voltage Monitoring and Frequency Monitoring
 - c. Generator controls shall monitor voltage and frequency to ensure the generator is not connected to the bus until frequency is at least 59 Hertz and 90% rated voltage
 - d. Automatic Synchronizer
 - 1) The synchronizer shall include a differential voltage detector, differential frequency detector and differential phase detector. Analog voltage bias signal shall be provided for voltage matching and an analog speed bias signal shall be provided for frequency matching and phase angle control. Synchronizer shall issue a breaker close signal when frequency, phase and voltage conditions are met.
 - 2) The differential voltage detector shall compare the voltage of the oncoming generator to the paralleling bus. If the voltage is not within the factory set difference of plus or minus 5% (adjustable from 0 to plus or minus 10%), the voltage detector shall inhibit the circuit breaker from closing. When the

oncoming generator voltage is within the preset acceptable limit, the inhibit shall be removed

- 3) The differential frequency detector shall compare the frequency of the oncoming engine generator set to the paralleling bus. If the frequency is not within the preset acceptable difference of plus or minus 0.5 Hz (adjustable from 0 to plus or minus 0.5 Hz), the frequency detector shall inhibit the circuit breaker from closing. When the oncoming engine generator frequency is within the acceptable limit, the inhibit shall be removed.
- 4) The differential phase detector shall compare the phase angle of the oncoming engine generator set to the paralleling bus. If the phase angle is not within the preset acceptable difference of plus or minus 0.05 Hz (adjustable from plus/minus 0.02 to 0.25 Hz), the phase detector shall inhibit the circuit breaker from closing. When the oncoming engine generator phase angle is within the acceptable limit, the inhibit shall be removed.

- e. Multiple Circuit Interlock: Generator controls shall provide for first-up, first-on operation of the generator set. This device shall positively prevent more than one set from being simultaneously connected to a dead bus. Upon initiation of the connection of the first set to the bus, this circuit shall shift the control of the remaining sets to automatic or manual synchronizing at the operator's discretion.

5. Generator Section Protective Relaying and Monitoring

- a. An SEL 700G, Eaton EGR 5000, or GE 889 (or equivalent) Generator management relay shall be provided to provide complete protection and monitoring functions.
- b. Current and Voltage Test blocks shall be provided to facilitate testing of the relay.
- c. A separate Lockout Relay (Device 86) shall be provided for each protective relay.
- d. In conjunction with the generator differential (87G) protection above, which includes dedicated CT's in the switchgear as noted, another set of matching CT's shall be shipped loose with the switchgear to install on the generator for connection to the protective relay

6. Programmable Logic Controller and Engine Controls

- a. The automatic engine starting control shall be provided via a dedicated programmable logic controller and shall automatically start, protect, and monitor each engine generator set. The controller shall be provided with a power supply, CPU and required I/O modules. Engine start control shall additionally be provided with a hard-wired backup so that the engine can be automatically started without operator intervention if the controller is not available. Systems without hard wired backup are not acceptable. The programmable logic controller shall be dedicated for control exclusively of the engine generator set and shall be independent of the Master PLC. Distributed I/O systems which rely on a master controller shall not be acceptable. Loss of communication from the Master PLC to the Generator Programmable Controller shall not inhibit automatic engine start control, operation of the individual generator section controls or require the engine controls to be placed in manual mode to start their respective engines. Programmable Controller shall be Modicon type M340 (or approved equal).
- b. Engine Start/Stop Operation: The automatic engine control logic shall initiate operation of the engine upon receipt of a signal from a contact that closes for engine run and opens for engine stop.
- c. Five Position Engine Control Selector Switch
 - 1) Lockout/Reset - When placed in this position, the engine shall not be capable of starting and/or running from the Parallel Switchgear controls. If

the engine was shut down due to the operation of a protective device, the shutdown shall be reset when the switch is moved to this position. If the engine is running when the switch is moved to this position, it shall immediately shut down, the circuit breaker shall be opened and the generator locked out.

- 2) Off/Cooldown - When placed in this position, the generator shall be soft unloaded from the bus (when possible) and the engine start signal shall be removed after a defined cool-down period.
- 3) Automatic - When placed in this position, the engine control shall be in readiness for fully automatic operation upon receipt of a start signal.
- 4) Test Off-Line - When placed in this position, the engine shall start and run as if a start signal were received except the circuit breaker shall not be closed and it shall not be connected to the bus. If a start signal is received, normal automatic functions shall resume. When returned to the Automatic position, the engine shall shut down.
- 5) Test On-Line - When placed in this position, the engine shall start, run, and connect to the bus. When returned to the Automatic position the circuit breaker shall open, provided no automatic start signal is present, and the engine shall run for its cool-down period before shutting down.
- 6) The Engine Control Switch shall be hard wired so the operator can choose to start the engine manually via the Test On-Line position if desired. Systems which do not include this feature are not acceptable

d. Four Position Synchronizing Mode Selector Switch

- 1) Permissive - In this position the governor controls are deactivated. However, the synchronizer shall operate as a passive synch check relay and signal the closing of the generator breaker when both sources are in phase.
- 2) Check - In this position the synchronizer is fully operational except it cannot close the generator breaker. The phase-lock feature holds the generator output in synchronism with the bus.
- 3) Off - In this position the synchronizer is turned off to allow for manual paralleling at the Master Cubicle.
- 4) Run - In this position the synchronizer is in the fully operational, automatic mode.

e. Engine Cooldown Time Delay

- 1) The cooldown time delay shall be adjustable from 1 to 10 minutes (factory set at 5 minutes) and automatically bypassed for malfunction and manual shutdown of the engine generator set.

f. Failure to Synchronize Time Delay

- 1) The failure to synchronize time delay shall be fixed at 60 seconds. It shall provide audible and visual indication, but it shall not terminate synchronizing attempts nor shut down the engine.

g. 1% Generator Analog Metering / Instrumentation

- 1) Ammeter 0 - [] Ampere scale.
- 2) Voltmeter 0 - 600 Volt scale.
- 3) Kilowatt meter 0 - [] Kilowatt scale.
- 4) Frequency meter 55 - 65 Hertz scale.
- 5) 4 Position Ammeter/Voltmeter selector switch shall be included.

- h. Generator Control Station to include the following
- 1) 5 Position Engine Generator Control Switch with Lockout/Reset, Off/Cooldown, Automatic, Test Off Line and Test On Line Positions
 - 2) 4 Position Synchronizing Mode Selector Switch with Permissive, Check, Off and Run Positions
 - 3) Red Emergency Stop Pushbutton
 - 4) Alarm Reset Pushbutton
 - 5) 3 Position Voltage Control Switch with Lower, Off and Raise Positions
 - 6) 3 Position Speed Control Switch with Lower, Off and Raise Positions
- i. Alarm and Status Indication Panels with the following indications:
- 1) Lamp Test (Pushbutton)
 - 2) Parallel CB Open* - Green
 - 3) Parallel CB Closed* - Red
 - 4) Parallel CB Lockout - Red
 - 5) Parallel CB Fail to Close - Red
 - 6) Failure to Sync - Red
 - 7) Gen Output CB Open - Green
 - 8) Gen Output CB Closed - Red
 - 9) Parallel CB Not Connected - Red
 - 10) Parallel CB Fail to Open - Red
 - 11) Ground Fault Alarm - Red
 - 12) Over Crank Shutdown - Red
 - 13) Over Speed Shutdown - Red
 - 14) Reverse Power Shutdown - Red
 - 15) Low Oil Pressure Shutdown - Red
 - 16) High Water Temp Shutdown -Red
 - 17) Auto Start* - Green
 - 18) ECS Reset Required - Red
 - 19) Engine Control Not in Auto - Red
 - 20) Low Oil Pressure Alarm - Amber
 - 21) High Water Temp Alarm - Amber
 - 22) Engine Running* - Green
 - 23) PLC Stopped* - Red
 - 24) Control Voltage Failure* - Red
 - 25) Controls Not in Auto - Red
 - 26) Local/Remote Emergency Stop - Red
 - 27) Low Water Level Alarm - Amber
 - 28) Low Water Temp Alarm - Amber
 - 29) Powerquest Override - Amber
 - 30) Day Tank Low Fuel - Amber
 - 31) Day Tank High Fuel - Amber
 - 32) Day Tank Rupture Basin - Amber
 - 33) Battery Charger Failure - Red
 - 34) High Battery Voltage - Amber
 - 35) Low Battery Voltage - Amber
 - 36) Gen Common Shutdown* - Red
 - 37) Gen Common Alarm – Amber
 - 38) Protective Relay Shutdown – Red
 - 39) Protective Relay Common Alarm - Amber
 - 40) DC Converter Failure - Red
 - 41) DSLC-2 Self Test Failed - Red
 - 42) * Includes hard wired backup if PLC is not available

2.7 UTILITY POWER AND CONTROL SECTION

A. Utility Circuit Breaker: Each Utility section shall contain over-current protection, controls, relays and auxiliary devices associated with its respective utility source. It shall include the following:

1. For each utility feed, a medium voltage Square D type VR (or approved equal) vacuum circuit breaker shall be furnished. Circuit breakers shall be rated [4160] nominal volts, [4760] maximum volts, 60 Hz, with a continuous current rating of 1200 amps and a maximum symmetrical interrupting rating of a maximum symmetrical interrupting rating of [50kA - 4.76 kV system].
2. Furnish circuit breakers with one vacuum interrupter per phase. Breakers of same type and rating shall be completely interchangeable. The circuit breaker shall be operated by means of a stored energy mechanism which is normally charged by a universal motor but can also be charged by the manual handle supplied on each breaker for manual emergency closing or testing. The closing speed of the moving contacts is to be independent of both the control voltage and the operator. Provide a full front shield on the breaker. A minimum of 6 auxiliary contacts and 5 MOC and 5 TOC type contacts, shall be provided for external use. The racking mechanism to move the breaker between positions shall be operable with the front door closed and position indication shall be visible with door closed.
3. Line Side Drawout type Potential Transformers, 2 Delta Connected ratio as shown on the drawings.
4. An interlocking system shall be provided to prevent racking a closed circuit breaker to or from any position. An additional interlock shall automatically discharge the stored-energy operating mechanism springs upon removal of the breaker out of the compartment.
5. The circuit breaker control voltage shall be [48] volts DC. Close and trip control power shall be independently monitored. Breaker closure shall be inhibited if trip power is unavailable.
6. A Circuit Breaker Trip Switch shall be provided with open/closed/tripped indicating LEDs

B. Utility Control System:

1. Utility Source(s) shall operate in momentary closed transition with the generator sources.
2. Paralleling controls for each utility shall include a Woodward MSLC-2 (or approved equal) master synchronizer and load controller designed to communicate with the generators DSLC-2 and mounted in the switchgear. The controls shall combine Generator bus phase and voltage matching sync, utility load sensor, import/export load level control, system power factor control, and master process control.
3. Provide Modicon X80 (or approved equal) I/O as needed for control.
4. Generator Section Protective Relaying and Monitoring
 - a. An SEL 751, Eaton EDR 5000, or GE 845 or equivalent management relay shall be provided to provide complete protection and monitoring functions.
5. 24 Point Alarm and Status Indication Panels with the following minimum indications:
 - a. Lamp Test (Pushbutton)
 - b. Utility CB Open* - Green
 - c. Utility CB Closed* - Red
 - d. Utility CB Tripped - Red
 - e. Utility CB Fail to Close - Red
 - f. Utility CB Fail to Open - Red
 - g. Utility CB Withdrawn - Red
 - h. Ground Fault Trip - Red
 - i. Reverse Power - Red
 - j. Utility Common - Red

k. Utility Common - Amber

2.8 TIE BREAKER AND CONTROL SECTION

A. Tie Circuit Breaker: Each Tie section shall contain over-current protection, controls, relays and auxiliary devices associated with its respective utility source. It shall include the following:

1. For each tie breaker, a medium voltage Square D type VR (or approved equal) vacuum circuit breaker shall be furnished. Circuit breakers shall be rated [4160] nominal volts, [4760] maximum volts, 60 Hz, with a continuous current rating of 1200 amps and a maximum symmetrical interrupting rating of a maximum symmetrical interrupting rating of [50kA - 4.76 kV system].
2. Furnish circuit breakers with one vacuum interrupter per phase. Breakers of same type and rating shall be completely interchangeable. The circuit breaker shall be operated by means of a stored energy mechanism which is normally charged by a universal motor but can also be charged by the manual handle supplied on each breaker for manual emergency closing or testing. The closing speed of the moving contacts is to be independent of both the control voltage and the operator. Provide a full front shield on the breaker. A minimum of 6 auxiliary contacts and 5 MOC and 5 TOC type contacts, shall be provided for external use. The racking mechanism to move the breaker between positions shall be operable with the front door closed and position indication shall be visible with door closed.
3. Bus Mounted Drawout type Potential Transformers, 2 Delta Connected ratio as shown on the drawings.
4. An interlocking system shall be provided to prevent racking a closed circuit breaker to or from any position. An additional interlock shall automatically discharge the stored-energy operating mechanism springs upon removal of the breaker out of the compartment.
5. The circuit breaker control voltage shall be [48] volts DC. Close and trip control power shall be independently monitored. Breaker closure shall be inhibited if trip power is unavailable.
6. A Circuit Breaker Trip Switch shall be provided with open/closed/tripped indicating LEDs

B. Tie Control System:

1. Paralleling controls for each tie shall include a Woodward MSLC-2 (or approved equal) master synchronizer and load controller designed to communicate with the generators DSLC-2 and mounted in the switchgear. The controls shall combine Generator bus phase and voltage matching sync, utility load sensor, import/export load level control, system power factor control, and master process control.
2. Tie Section Protective Relaying and Monitoring
 - a. An SEL 751A, Eaton, GE or equivalent management relay shall be provided to provide complete protection and monitoring functions.

2.9 SYSTEM MASTER CONTROL SECTION

A. The Master Control Section shall contain redundant programmable logic controllers capable of storing necessary control sequence algorithms, variable operation set-points, time delays and alarming levels. I/O shall include modular input and output cards for discrete and analog signals necessary to provide the integrated system operations specified below. Master PLCs shall be Modicon M580 (or approved equal).

B. Priority Load Control

1. Discrete output modules shall be provided to control the necessary priority load blocks. The number of load blocks shall equal the number of engine generator sets and shall be sized such that the connectable load of each block is not greater than the kW rating of the generator set connected. As the generators are connected to the bus, the controller shall signal for the connection of the load blocks in an ascending sequential priority with the highest priority load requiring emergency power being connected first. Priority pass-along logic shall initiate the connection of low priority loads to the first generator on-line if start signals have not been received from higher priority transfer switches or other devices.
2. In the event of an engine failure system loads shall not be shed if remaining capacity can serve the connected load unless a bus overload or a bus under frequency occurs; this feature is referred to as "load-latch".
3. If Load shedding is required it shall be done on a last-on, first-off basis. The generator bus shall have a solid-state frequency monitor, with integral time delay to initiate load shedding upon a reduction of bus frequency to 58 Hz or less, for a period of three seconds or more. Upon sensing a bus underfrequency, the system shall automatically shed the lowest priority load connected at the time of occurrence. This shed circuit shall override any manual load-add operation and shall lock out the manual load-add circuitry. It shall provide visual and audible alarm annunciation of bus underfrequency load shed.
4. Provide means to reset the bus underfrequency signal.
5. Provide a "load shed bypass/reset" push-button, for manual supervised operation over the load-shed, load-add control logic. One push-button shall be provided for each priority block except priority 1. Logic shall be provided if a bus overload occurs resulting in a reduction in bus frequency; the bypassed priority load shall be shed automatically through override logic control.

C. Power Management Features

1. Master Control features shall include Bus Load Optimization and Generator Load Demand. Applications shall dynamically adjust to bus conditions.
2. Bus Load Optimization shall control up to 128 individually prioritized and separately controlled distribution loads via power transfer switches and/or electrically operated circuit breakers. Loads shall be added or removed from the bus according to the available headroom on the bus. If a Priority Block of load has been shed or has not been added to the bus while operating in the Emergency Mode, Load Bus Optimization is provided to re-add shed loads individually based on predetermined kW loading values up to 95% (adjustable via OIT) of the capacity of the on-line power. Bus Optimization loading control determines if there is enough room to add the next load by checking the pre-set Load Value (field adjustable, accessible via the OIT) assigned to each shed load. If it is determined that the load can be added without exceeding the available headroom, the load is signaled to add.
 - a. The real time kW output of the generator bus is constantly measured, and the next sub-priority load is evaluated. Loads are evaluated at a preset time interval defined via the OIT. When the bus has been loaded to a level such that the next load will exceed the available headroom load adding will pause.
 - b. The system will continuously monitor the generator load and evaluate if the next load step can fit on the bus. If building load decreases and the next load can be added, the system will add it and continue the evaluation process until as many loads as possible are added to the bus.
 - 1) With the Bus Optimization switch in the "on" position during emergency mode and with loads shed (loads requiring power but are not connected to

- the emergency bus), after a stabilization time delay the optimization feature is activated and a Bus Optimize Active light illuminates.
- 2) The Bus Optimize Active light flashes through the duration of the stabilization time delay (default 30 seconds, adjustable via OIT).
 - 3) Bus Optimization loading control will determine if there is enough room to add the next load by checking the pre-set Load Value (field adjustable, accessible via the OIT) assigned to the first sub-priority within the highest priority block that is shed and compare it to the excess generator bus capacity.
 - 4) If it is determined that the load can be added without exceeding the Bus Optimization KW loading value (95%), the load is signaled to add.
 - 5) The real time kW output of the generator bus is constantly measured and the next sub-priority load is evaluated.
 - 6) Loads are evaluated at a preset time interval defined via the OIT
 - 7) When the bus has been loaded to a level such that the next load would exceed the KW loading value (95%), the Next Load Exceeds Headroom light will activate and load adding will pause.
 - 8) The system will continuously monitor the generator load and evaluate if the next load step can be added to the bus.
 - 9) If building load decreases and the next load can be added (for the duration of the step time delay), the system will add it and continue the evaluation process until as many loads as possible are added to the bus.
3. Generator Load Demand controls the number of generator sets to remove excess generator capacity and add additional capacity when needed, keeping the optimum number of generators online at all times. Generator load demand saves fuel and wear by running fewer generators at a more efficient load level. Engine-generator sets shall be added or removed from the bus according to dynamic measurements of power consumption and engine-generator efficiency set-points.
- a. After all generator sets have been paralleled to the bus and all loads connected that require power, a stabilization time delay (0-300 seconds) factory set at 30 seconds will be initiated and the Load Demand Mode light flashes. At the expiration of the time delay period, the system will operate in load demand mode.
 - b. Load demand removes the lowest priority generators (priority value set at the OIT) that are in excess of N. When the system is operating with more generators online than the system requires and the system load falls below the drop out load value (default setting of 80% kW) a 20 second time delay (field adjustable from 0 - 300 seconds) is initiated and the "Gen Stop TD Active" light flashes. If the load stays below the dropout value for the duration of the time delay, the generators with the lowest priority will be taken offline. The engines will run for their cool down period, then shutdown. If the bus KW (system load), is equal to or greater than the generator load demand pickup value for the duration of the load demand start td (default 5 seconds), the controls will initiate the starting and paralleling of the next set in sequence.
 - c. Run Time Based Load Demand feature – Optional, Spec writer to determine if desired.
 - 1) Provide a run time based, automated load demand feature that automatically rotates generators to be removed from the bus when operating in load demand mode. Engines will be rotated based on actual engine run time.

D. Master Programmable Logic Controller

1. The master programmable logic controller shall be programmed by Parallel Switchgear manufacturer and shall meet or exceed the following specifications:
 - a. Modicon M580 (or approved equal) with CPU, power supply, I/O, and communications.
 - b. The controller shall have the capability to interface to an I/O rack; I/O network shall be a managed ring configuration.
2. Master PLC Redundancy
 - a. The system shall consist of identical and synchronized redundant programmable logic controllers and a common I/O system. Normally, the primary PLC shall be the active one that controls the system I/O while the secondary PLC shall be on standby, ready to take control of the system I/O. Any single failure to the active controller shall cause automatic switch over to the standby controller. As both controllers shall be synchronized, there shall be a transfer from one controller to the other without interruption. The I/O shall be held in their current state during the transfer.
 - b. If the active controller fails and control transfers to the standby controller, the failed controller can be turned off and repaired without affecting the rest of the system.
 - c. Status indicators shall indicate which controller is active and if a controller is in run or stop mode.
 - d. Redundant I/O Optional feature, spec writer to determine if redundant I/O is required. Spec writer note – Redundant I/O may require an auxiliary section to provide proper space to include I/O
 - 1) I/O shall be redundant and connected to the PLC's through a managed ring communication network. Loss of a single I/O module shall be annunciated but have no impact on the performance of the system.

E. Manual Paralleling Controls

1. A Synchroscope selector switch shall be provided to select any generator for manual paralleling operation. The positioning of the selector switch shall simultaneously connect the synch-check relay, Synchroscope, and "manual paralleling" push-button to the selected generator.
2. A solid-state sync check relay shall be furnished for manual paralleling, to sense and compare the phase angle difference between the incoming generator and the bus. This relay shall lockout the manual paralleling push-button until the oncoming generator is within 15 degrees of synchronism.
3. Operation shall be arranged so the operator shall depress and hold the manual paralleling push-button. When the relative phase angle reduces to 15 degrees and going towards zero degrees, the sync check relay's output contact shall initiate the closing of the respective oncoming generator breaker.
4. The manual paralleling interface controls and metering shall be grouped in a central location on the front of the master control section. This shall allow for paralleling multiple generators from one location within the switchgear. Manual paralleling controls and sync check relay shall be hardwired and shall not rely on touch screens or programmable logic controllers to perform manual paralleling functions. Systems that rely on touchscreens only for manual paralleling or that require manual paralleling to be initiated at the engine generator control panel are not acceptable.

F. DC Control Power Selector – Best Battery System

1. Control power for the system logic shall be derived from the engine starting batteries and/or an optional station battery system. The control logic shall be powered through a suitable means that shall permit continuity of power until the last battery is no longer available. The controls shall be powered from any battery or combination of batteries and prevent feedback to a failing battery. The transition of control logic power from any battery combination to any other battery combination shall be accomplished without disruption in the power flow.
2. DC-to-DC converters shall provide a constant 24VDC power to the Master and Generator controllers during starting and cranking of all engine generator sets “simultaneously”. Dedicated DC to DC converters shall be provided in each Generator Control Section and the Master Control Section.
3. The best battery system shall provide power to each generator paralleling circuit breaker trip coil if the generator battery power to its cubicle is lost.

G. System Test Switch

1. Provide a system no-load test switch to initiate a complete automatic system operation by simulating the closure of the remote engine start signal. This switch shall be mounted inside the master section to limit access to authorized personnel only.

H. Main Bus Monitoring

1. Main bus monitoring shall include discrete Bus Under/Overvoltage (Device 27/59) and Bus Under/Over-Frequency Relays (Device 81O/U) and a Main Bus Power Watt Transducer.

I. 1% Paralleling Bus Analog Metering / Instrumentation

1. Ammeter 0 - [] A scale
2. (Qty 2) Voltmeters 0 – [] V scale
3. Kilowatt Meter 0 - [] kW scale
4. (Qty 2) Frequency Meters 55 - 65 Hz scale
5. Synchroscope
6. Synchroscope Plant Selector Switch with positions for each generator
7. 4 Position Ammeter/Voltmeter selector switches shall be included.

J. Alarm and Status Indication Panels with the following indications:

1. Lamp Test (Pushbutton)
2. Gen # Running (one for each Generator) - Green
3. Gen # Online (One for each Generator) - Red
4. Gen # Locked Out (One for each Generator) - Red
5. Pri # Load Shed Active (One for each Priority) - Amber
6. Pri # Load Shed Bypassed (One for each Priority) - Amber
7. System Test - Amber
8. Emergency Mode - Amber
9. I/O Comm Failure - Red
10. System PLC Diagnostic Fault - Amber
11. Load Demand Mode Active - Amber
12. Load Demand Start TD Active - Amber
13. Load Demand Stop TD Active - Amber
14. Bus Under Frequency - Red

15. Bus Over Frequency - Red
16. Bus Under Voltage - Red
17. Bus Over Voltage - Red
18. Bus Optimization Mode Active - Amber
19. Next Load Exceeds Headroom - Amber
20. Bus Loaded to Capacity - Amber
21. Bus Overload - Red
22. Station Battery Charger Failure - Amber
23. Main Tank Low Fuel - Amber
24. ATS Control Fuse Blown - Red
25. PLC 1 Stopped - Red
26. PLC 2 Stopped - Red
27. Control Voltage Failure - Red
28. Dc Converter Failure - Red

K. System Master Control Station to include the following:

1. Bus Alarm Reset Pushbutton
2. Alarm Silence Pushbutton – Red
3. Lighted Manual Parallel Pushbutton – Green
4. Load Shed Bypass Pushbuttons – 1 for each priority except priority 1

L. Main Audible Alarm

1. Provide a main audible alarm horn. The alarm horn shall be the DC vibration type, subsequent malfunctions will resound the alarm if the horn had been previously silenced following an initial malfunction.

2.10 SYSTEM OPERATOR INTERFACE TERMINAL

- A. **The monitoring and control operator interface shall be compatible with existing Siemens SCADA system in Central Plant building (Contact Information: Robert Mazza - Siemens (phone): 412-216-4834)**
- B. Metering and monitoring network devices and design standards shall include IEC 62443-3, NERC CIP and IEEE 1613, providing a secure network with security management. Encrypted connections and configuration files shall provide data confidentiality with connection verification required for access. Simple general purpose security for industrial applications shall include IEC 62443-4-2 Level 1 and Level 2 for medium and high security options. The controls network shall remain isolated.
- C. The monitoring and control interface shall include a programmable 24" color touch screen unit and shall interface with Programmable Logic Controllers, Synchronizer/Load Controllers, Power Meters, Circuit Breaker Trip Units and Transfer Switches. The automatic operation of the system shall not be impeded by the unavailability, disconnection or failure of any single or all color touchscreens.
- D. The main default screen shall consist of a one-line overview of the system that includes:
 1. Dynamically updated and color-coded (according to status) one-line representing power flow and sources, and emergency power system elements such as engine-generator sets, circuit breakers included in scope of delivery (including breaker position and alarms), switchgear assemblies, and transfer switches (including transfer switch position, source availability, and bypass position if available).

2. Communication status of PLCs
3. Generators and transfer switches shall, when selected, link to a separate screen showing detailed status and alarm information (“drill down screens”)
4. Main menu buttons, buttons linking to user guides, and buttons that link to other screens
5. ATS summary/configuration screen shall be accessible via menu button
6. Common alarm status including number of active alarms, number of unacknowledged alarms, and a flashing warning indicator if there are active alarms
7. The current KW value of all main and tie breakers
8. Color legend, abbreviation legend, and customer logo

E. Drill down screens shall include:

1. A dynamically updated mimic of the Master Status Panel.
2. Generator status panels shall mimic the actual switchgear panels including dynamically updated color indications and signal nomenclature.
3. Generator control stations shall mimic the actual switchgear control stations with fully functional engine control switch and synchronizing mode switch.
4. Metering screens shall include an image icon of the meters and dynamically updated parameters that are available from the meter (voltages, currents, power measurements)
5. Synchronizer/Load Share controller screens shall include a photographic image icon of the actual controller and dynamically updated parameters that are available from the controller such as metering status (voltages, currents, power measurements) and synchronization status (frequencies, voltages, synchroscope).
6. Transfer Switch drill down screens shall include details of selected transfer switches, if available, including present status and position, source availability, transfer/retransfer controls (password protected), bypass status, pickup/dropout settings, time delay settings, and metering data.

F. The monitoring and control interface screens shall also include:

1. A load management screen which shall dynamically indicate the current load demand status and provide operator controls to change settings (password protected). Each generator shall be represented and include “pick up” and “drop out” information and parameters (user-defined time delays, current timer status, and actual power) to manage loading of all engine-generator sets.
2. A bus optimization screen which shall dynamically indicate application status (enabled/disabled), most recent step load added, next available step load information, headroom, and priority load shed controls.
3. A generator priority screen for load demand.
4. A load priority screen for assigning unique priorities and tag names to each transfer switch and/or electrically operated circuit breaker for distribution loads. Parameters for each load shall include current power status and step add time delay. Transfer switches shall include (when available) engine start signal, load shed signal, and HOA (Hand-Off-Auto) mode.
5. An alarm summary screen with a current listing of all active alarms up to 500 entries and option for operator to acknowledge alarms (password protected)
6. An alarm history screen with up to 500 entries and a button linking to folder containing archive of 3 months or longer
7. A communication status screen with network connections color-coded and dynamically updated
8. Historical trending of up to 10 parameters (phase currents; average current; average line-to-line voltage; total apparent, real, and reactive power; frequency; power factor) for 3 months or longer. Buttons shall be provided to zoom in and out as well as recall historical data and fast forward up to the current time. Plots shall display up to 8 curves concurrently.

- G. Security features shall include at least three distinct security levels (monitor, control, manage) and a unique user name and password for each individual. Each individual account shall also be assigned to a security level thereby defining the scope of their access and control. Logging into or out of the system shall be an event entered into the alarm history. Each operator-triggered alarm shall be logged as an alarm history entry with the operator identity included. If an individual is logged in to the system with no activity for 30 minutes, the individual shall be automatically logged out.
- H. On loss of screen communication, the operator must be able to take control at any time; systems that utilize "instant auto" features shall be excluded.
- I. Screens shall be turned off (power standby mode) after 30 minutes of inactivity to protect the LCD monitor; a single touch of the screen shall turn the screen back on.

2.11 REMOTE OPERATOR INTERFACE TERMINAL [-Optional]

- A. The remote operator interface terminal shall consist of an operator interface terminal and audible alarm horn. Connectivity to the Master Control Section shall be via network communication.
- B. Monitoring and Control Features shall duplicate those of the System Master Control Operator Interface Terminal
- C. A UPS shall provide standby power for the annunciation panel (customer to supply 120VAC power for the UPS)

2.12 REMOTE DESKTOP STATION [-optional]

- A. The remote desktop station shall consist of a desktop computer with Microsoft Windows 10, 24" rotatable monitor, keyboard, mouse and color printer. Connectivity to the Master Control Section shall be via network communication.
- B. Monitoring and Control Features shall duplicate those of the System Master Control Operator Interface Terminal
- C. A UPS shall provide standby power for the annunciation panel (customer to supply 120VAC power for the UPS)

2.13 DISTRIBUTION SECTIONS

- A. Distribution sections shall be provided with number and size of distribution circuit breakers as shown on the project drawings.
- B. One High Feeder Breaker Sections shall be provided as shown on the drawings and shall contain the following components
 1. (Qty 1) [1200A] Square D type VR (or approved equal) vacuum circuit breaker with Auxiliary Contacts, MOC and TOC Switches
 2. (Qty 3) Current transformers for metering and relays, ratio as shown on drawings
 3. Circuit Breaker Control Switch with open/closed/tripped LEDs
 4. SEL 751A, Eaton EDR 3000, GE 850 or equivalent Feeder Protective Relay with overcurrent protection and test blocks

5. Device 86 Lockout Relay
- C. One High Feeder Breaker and Main Bus PT Section shall be provided as shown on the drawings and shall contain the following components
1. (Qty 1) [1200A] Square D type VR (or approved equal) vacuum circuit breaker with Auxiliary Contacts, MOC and TOC Switches
 2. (Qty 3) Current transformers for metering and relays, ratio as shown on drawings
 3. Main Bus Drawout type Potential Transformers, 2 Delta Connected ratio as shown on the drawings
 4. Circuit Breaker Control Switch with open/closed/tripped LEDs
 5. SEL 751A, Eaton EDR 3000, GE 850 or equivalent Feeder Protective Relay with overcurrent protection and test blocks
 6. Device 86 Lockout Relay
- D. Provide circuit breaker control switches for all circuit breakers. Control switches shall have built in LED indicating lights to indicate breaker status (open, closed, tripped). Manually opening the circuit breaker via circuit breaker control switch shall inhibit automatic operation and shall be annunciated on the one-line screen.
- E. Distribution sections shall be provided with main bus of the same ampacity as the generator switchgear sections.
- F. Prepared spaces shall be completely assembled included circuit breaker cradles/cells with complete provisions for addition of future Circuit Breakers

2.14 ELECTRICAL POWER MANAGEMENT SYSTEM CONNECTIVITY

- A. The equipment specified herein shall provide the necessary communications connectivity and functionality required to support the functionality of an Electrical Power Management System (EPMS). This shall include, but not be limited, to the following:
1. Communications connectivity to EPMS system shall be via a Modbus/TCP protocol. Ethernet protocol connectivity shall be provided within the equipment.
 2. Refer to Electrical Power Management System specification 26.09.13 for additional requirements.

2.15 POWER METERING

- A. Provide power meters as follows:
1. Generator Sections: Provide a power quality metering device at each Generator as follows:
 - a. Provide the following specified product and manufacturer: PowerLogic [PM8244 Meter] by Schneider Electric (or approved equal).
 2. Feeder Circuit Breakers: Provide a power metering device at each Distribution Circuit Breaker as follows:
 - a. Provide the following specified product and manufacture: Powerlogic [PM5580 Meter] by Schneider Electric (or approved equal).

3. Utility Circuit Breakers: Provide a power quality metering device at each Utility Circuit Breaker as follows:
 - a. Provide the following specified product and manufacture: Powerlogic [ION9000 Meter] by Schneider Electric (or approved equal).

2.16 PCS SYSTEM SIMULATOR [-OPTIONAL]

- A. To verify system operating sequence and facilitate on-site training by developing and evaluating operator expertise, PCS System Simulator shall be provided comprising:
 1. Operator Station: The Operator Station shall be a monitor and control station that includes the actual operator screens from the specified PCS system.
 2. Master PLC - The Master PLC shall be a fully-functioning Modicon M580 (or approved equal) PLC that includes and executes the actual sequences of operation from the specified PCS system.
 3. Configuration Station: The Configuration Station shall include application software to simulate devices and system components including circuit breakers, synchronizers, switchgear control stations, automatic transfer switches, utility feeds and generators. The Configuration Station shall also provide ways to set up scenarios including device and component failures and system events in order to test operator knowledge, capabilities and responsiveness.
 4. Simulator shall be provided separately from the switchgear and shall include the following:
 - a. Master PLC identical to the System Master PLC containing the identical Master PLC program.
 - b. System Operator Interface Terminal identical to the one in the System Master Control Section used to view system status and set system parameters. This OIT utilizes the same program that the OIT in the system gear uses.
 - c. A Simulator Operator Interface Terminal (OIT) that mimics the state of the actual specified simulated switchgear. This OIT simulates the operation of the switchgear and communicates with the simulator PLC to mimic the control signals normally received by the System Master PLC in the actual specified switchgear. The simulator OIT mimics the operation of the generators, circuit breakers, control stations, master synchronizers, utility sources (available/not available), automatic transfer switches, alarm horn, electrical interlocks, and simple KW simulation (for purposes of bus optimization, load demand, and load shedding).
 5. Simulations shall include the following:
 - a. Circuit Breaker Simulation
 - 1) Open/close/connected
 - 2) Spring charge
 - 3) Fail to open and fail to close
 - 4) Electrical circuit breaker control switch interlocks for closing
 - b. Generator Simulation
 - 1) Start/Stop
 - 2) Parallel circuit breaker close/open
 - 3) Common Alarm and Common Pre-Alarm
 - 4) Cooldown Mode

- 5) Generator Control Switch Simulation
 - c. Automatic Transfer Switch (ATS) Simulation
 - 1) Engine Start
 - 2) Load Shed
 - 3) Normal Source Failure Simulation
 - 4) ATS Normal available and Emergency available indication
 - 5) ATS on Normal, ATS on Emergency
 - 6) Normal Time Delay Bypass
 - 7) ATS simulation depends upon which features are present in the actual system, these features shown are all supported.
 - d. Master Control Station Simulation includes all pushbuttons/switches/and lights
 - e. Simple KW simulation to simulate the load changes in the system and how they affect system loading/load shed/bus optimization/load demand
 - f. Under Frequency alarm simulation to see how the system reacts to an under frequency condition.
 - g. Alarm Horn Simulation to know when the alarm horn will sound and what triggers it.
 - h. Utility Source Simulation - Changes if the utility source is available or not
6. Provide Enclosed Computer Desk with Monitor mounting and CPU holder

2.17 SWITCHGEAR STATION BATTERY SYSTEM

- A. The Paralleling Switchgear shall utilize existing 120 volt DC battery power system on site for the electrical equipment as indicated on the Drawings. DC cables shall be extended by contractor to Paralleling Switchgear to simultaneously energize all the switchgear spring charge motors plus the continuous loads on the switchgear requiring DC power.

PART 3 - EXECUTION

3.1 GENERAL

- A. Examine equipment exterior and interior prior to installation. Report any damage and do not install any equipment that is structurally, moisture, or mildew damaged.
- B. The .4 Contractor shall schedule and conduct a pre-installation meeting. Notify the Department, Client Agency, Commissioning Agent, and Professional no less than 2 weeks in advance of the meeting time and date. The pre-installation meeting shall be scheduled for the same day as a regular, weekly construction meeting. The pre-installation meeting shall be scheduled immediately before or after the regular construction meeting whenever possible.
 - 1. The meeting shall be attended by the manufacturer's representative and all the .4 Contractor's tradespersons and their sub-contractors having installation, start-up, or commissioning duties related to the equipment. The Contractor shall notify other Prime Contractors to attend the meeting when necessary and appropriate. The meeting agenda shall be prepared by the .4 Contractor shall be distributed to all concerned parties no less than 2 days prior to the meeting, along with a copy of the manufacturer's installation instructions. Documents shall be uploaded to e-Builder.

2. The manufacturer's representative shall review the final equipment and material submittals and all of the manufacturer's requirements of the installation, including rigging and handling, mounting, connections, and control and commissioning requirements. The representative shall also review all work required to be completed prior to start-up of the equipment, including the provisions of this Section.
3. The .4 Contractor shall provide a written record of the meeting including date and a list of attendees, and shall upload this report to e-Builder.
 - a. The .4 Contractor shall utilize the Pre-Installation Meeting Agenda and Pre-Installation Meeting Checklist documents in the Z Standard Training & Documentation: Documents \ 03 - Construction - Training and Guidance Documents \ 03 - Role Based Training and Guidance Documents \ Contractors.

- C. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installing Contractor.
- D. Contractor shall install equipment in accordance with reviewed product data, final shop drawings, manufacturer's written instructions and recommendations, and as indicated on the Drawings.
- E. Contractor shall Provide final protection and maintain conditions in a manner acceptable to the manufacturer that shall help ensure that the equipment is without damage at time of Substantial Completion.

3.2 FACTORY ACCEPTANCE TESTING (VIRTUAL)

- A. An inspection and witness test of the switchgear prior to shipment shall be scheduled in advance with the factory.
- B. The factory acceptance shall include the following:
 1. Mechanical Inspection with equipment deenergized
 2. Complete sequence of operation testing

3.3 INSTALLATION ASSISTANCE

- A. The manufacturer of the generator control switchgear shall provide the services of a factory-employed and factory-trained technician to provide installation assistance.
- B. It shall be the responsibility of the installing contractor to verify that the following items have been completed per applicable codes and standards, and are ready to perform as specified before the arrival of the factory technician
 1. Inspect for obvious shipping damage.
 2. The switchgear is properly installed, anchored and grounded.
 3. Shipping splits have been reinstalled with the splits bolted together, interconnect wiring installed, and bus splice plates installed.
 4. Terminate all power cables.
 5. Install customer control wiring to external equipment including engines, batteries, building management systems, associated motor control, etc.
 6. The engine generator set is installed and ready to run.
 7. Associated motor controls, plumbing, building utilities are complete and operational.

- C. It shall be the responsibility of the Field Service Technician to perform the following:
1. Verify contractor connections and control power availability.
 2. With the engine generator supplier's technical representative controlling the engines, verify that the switchgear and control equipment are fully operational, and perform per the sequence of operation specified. Test equipment and services as required for the engine generator sets shall be provided by the engine generator set supplier.
 3. With the engine generator supplier's technical representative controlling the engines, demonstrate all functions of the control system, both automatic and manual, to the satisfaction of the Client Agency or representative.
 4. Provide plant operators with instruction on the plant operating procedures and major component maintenance after acceptance by the Client Agency's representative.

3.4 TRAINING

- A. Onsite training specific to the equipment furnished shall be provided to the Client Agency's staff by a factory trained manufacturer's representative. Training duration shall be sufficiently adequate to cover the operation and maintenance of the equipment and shall consist of not less than [1] session(s) with [4] hours of onsite classroom and hands-on instruction for a minimum of [4] attendees per session.
1. The instructor shall provide sufficient time and detail in each session to cover the following as a minimum:
 - a. Sequence of operation
 - b. Major components of equipment
 - c. Operation of equipment
 - d. Configurations of equipment
 - e. Maintenance, troubleshooting and repair

END OF SECTION

DGS C-0372-0005 .1 Phase 1 SCI
Greene - Renovate Switchgear &
Generators

Issuing Officer

Sam Dell – sadell@pa.gov

Steven Molhollen -
smulhollen@hflenz.com

Susan Stanisic–
sstanisic@pa.gov

August 4, 2023 10:00 AM

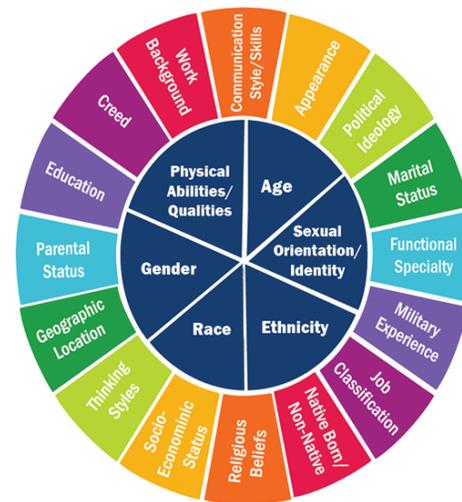


What's the Point?



Diversity Defined

- Diversity is...
 - everything that makes us unique,
 - our cognitive skills and personality traits, and
 - also the things that shape our identity (*e.g. race, age, gender, religion, sexual orientation, cultural background*), etc.



Diversity is the Mix

Inclusion is making the mix work. ~Andres Tapia

Baking a
cake

Each
ingredient
has its own
distinct taste
and
quality...



Baking a
cake

Each
ingredient
adds *value*
to
the recipe...



Baking a
cake

Recognizing the
individuality
and the value
of *every* person
is essential to
understanding
the concept of
diversity.



©SheWearsMany



Equity Defined

Equity is the fair treatment, **access**, **opportunity**, and advancement for **all** people, while at the same time striving to identify and **eliminate barriers** that have prevented the full participation of *small businesses*.



EQUALITY IS THE
END GOAL.
EQUITY IS THE
MEANS TO GET
THERE.



Equality



Equity

Inclusion Defined

Inclusion is about:

- *Small Businesses* as prime contractors
- *Primes* subcontracting with SB,SDB,VBE vendors
- Engaging with vendors representative of the community



Diversity, Equity, and Inclusion

Diversity

Having a seat
at the table

Equity

Entering the
conversation
without
barriers

Inclusion

Being heard
and having a
voice at the
table



Solicitation Specific Goals

DGS C-0372-0005.1 Ph 1	SDB	VBE
.1 General Construction – ALL BASE BIDS (#1, #2, #3 & #4)	N/A	N/A
.2 HVAC Construction – ALL BASE BIDS (#1, #2, #3 & #4)	N/A	N/A
.3 Plumbing Construction – ALL BASE BIDS (#1, #2, #3 & #4)	N/A	N/A
.4 Electrical Construction ALL BASE BIDS (#1, #2, #3 & #4)	12%	3%

Goal Setting Process

- Available subcontracting opportunities across the entire state for applicable services,
- Availability of DGS-verified SDB/VBEs to perform commercially useful functions, and
- Historical analysis of similar projects within the last 3 years.

A Bidder/Offeror’s failure to meet the SDB participation goal in full and the VBE participation goal in full, or their failure to receive an approved Good Faith Efforts waiver for any unmet portion of either the SDB or VBE participation goal will result in the rejection of the Bid or Proposal as nonresponsive



SDB and VBE Classification

Vendors must self-certify as a Small Business (SB) prior to SDB/VBE validation.

SB Eligibility Requirements

- The business must be a for-profit, United States business.
- The business must be independently owned.
- The business may not be dominant in its field of operation.
- The business may not employ more than 100 full-time equivalent employees.
- The business may not exceed three-year average gross revenues of \$38.5 Million, regardless of business type (effective 11/1/2018).

Small Diverse Business (SDB)

Goal oriented

- Woman Business Enterprise (WBE)
- Service-Disabled Veteran Business Enterprise (SDVBE)
- Minority Business Enterprise (MBE)
- LGBT Business Enterprise (LGBTBE)
- Disability-Owned Business Enterprise (DOBE)

Veteran Business Enterprise (VBE)

Goal oriented

- Veteran Business Enterprise (VBE)
- Service-Disabled Veteran Business Enterprise (SDVBE)

SDBs and VBEs must be certified/valid as of bid close due date and time.



Finding SDB/VBE vendors

- <http://www.dgs.internet.state.pa.us/suppliersearch>
- Access Search Guide - <https://www.dgs.pa.gov/Small%20Diverse%20Business%20Program/Documents/Finding%20SBs%20and%20SDBs.pdf>
- Supplier Search assistance available from Issuing Officer or Bureau of Diversity Procurement Liaison



Quick Search

Note: The below searches (Quick Search and Advanced Search) will search suppliers who are qualified for one or more Invitation to Qualify (ITQ) Contracts AND suppliers registered with the Bureau of Diversity, Inclusion and Small Business Opportunities (BDISBO) as a small business or small diverse business. Use the Quick Search to search by Vendor Name or Vendor Number. Use the Advanced Search to search by Small, Small Diverse, ITQ Contracts, COSTARS and UNSPC codes.

Quick Search

Supplier Name or SAP Number Search Reset

IMPORTANT: Always click Reset prior to a new search to clear parameters from previous searches

Advanced Search

Show 10 entries Export to Excel Reset Search Criteria

Supplier (click on name to display full record)	Contact	Address	SB Validity Dates	SDB Validity Dates	VBE Validity Dates	COSTARS
21ST CENTURY MEDIA NEWSPAPER LLC	ROBERT BUTKINS sales@nittanyvalley.com					No
22 GROUP, LLC ()	Caroline M. Harper	757 PUBLIC RD	9/23/2019-	9/23/2019-		No

<http://www.dgs.internet.state.pa.us/suppliersearch>



Advanced Search

Supplier Classifications

- Minority Business Enterprise
- Woman Business Enterprise
- LGBT Business Enterprise
- Disabled-Owned Business Enterprise
- Service-Disabled Veteran Business Enterprise
- Veteran Business Enterprise
- Small Business
- Stocking Supplier
- Non-Stocking Supplier

Select all Classifications
 Select all Small Diverse Business Classifications

Select one or more classifications. To pull only SDBs, check "Select all Small Diverse Business Classifications" below. To include SBs, check "Small Business".

Find only vendors that have all selected classifications
 Find only vendors that have at least one selected classification

UNSPSC Description

Enter a brief code description (e.g. Door)

Type in any part of a UNSPSC code description to find vendors who have selected that UNSPSC code. ex: Landscaping will find vendors who have selected any UNSPSC code that has landscaping anywhere in the description. [Click here to download the entire list in Excel format.](#)

OR

UNSPSC Codes

- 10000000 - Live Plant and Animal Material and Accessories and Supplies
- 11000000 - Mineral and Textile and Inedible Plant and Animal Materials
- 12000000 - Chemicals including Bio Chemicals and Gas Materials
- 13000000 - Resin and Rosin and Rubber and Foam and Film and Elastomeric Materials
- 14000000 - Paper Materials and Products
- 15000000 - Fuels and Fuel Additives and Lubricants and Anti corrosive Materials
- 20000000 - Mining and Well Drilling Machinery and Accessories
- 21000000 - Farming and Fishing and Forestry and Wildlife Machinery and Accessories
- 22000000 - Building and Construction Machinery and Accessories
- 23000000 - Industrial Manufacturing and Processing Machinery and Accessories
- 24000000 - Material Handling and Conditioning and Storage Machinery and their Accessories and
- 25000000 - Commercial and Military and Private Vehicles and their Accessories and Components
- 26000000 - Power Generation and Distribution Machinery and Accessories

Click arrow to expand Segment for additional codes

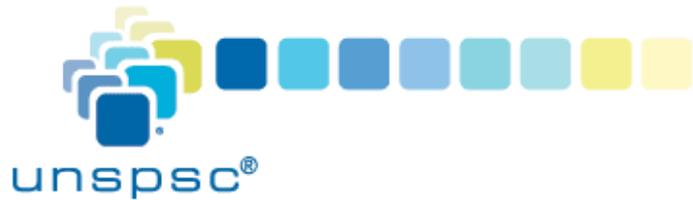
Browse and select one or more codes. Don't know the codes you want? Download the entire list in Excel.

See slide 13 to understand the UNSPSC code hierarchy.

Find only vendors that have all selected UNSPSC codes
 Find only vendors that have at least one selected UNSPSC code



UNSPSC Commodity Code Search



Find A Partner

Menu

UNv24.0301 of the UNSPSC Codeset is now available. [Access codesets.](#)

Search the Code

Version 24.0301
Code Number: (2-8
digits)

Code Name:

Welcome

The **United Nations Standard Products and Services Code® (UNSPSC®)**, managed by GS1 US® for the UN Development Programme (UNDP), is an open, global, multi-sector standard for efficient, accurate classification of products and services.

The UNSPSC offers a single global classification system that can be used for:

- Company-wide visibility of spend analysis
- Cost-effective procurement optimization
- Full exploitation of electronic commerce capabilities



UNSPSC Commodity Code Search

Write down
your code
selections



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Version 24.0301

Search Code

Search Title

Code	Title
31211900	Paint applicators and painting accessories
60121001	Paintings
60121225	Watercolor painting mediums
60124101	Multicultural painting products
72151300	Painting and paper hanging services
72151301	Residential painting service
72151302	Commercial painting service
72151303	Industrial painting service
72151304	Aircraft painting service
72151305	Bridge painting service
72151307	Ship painting service
73181104	Painting services
78181501	Vehicle body repair or painting service
78181836	Aircraft fixed wing coating and painting service
86121500	Painting



Advanced Search

Use multiple filters to restrict your search results to exactly what and where you need.

PA Counties

- Grant County
- Clearfield County
- Clinton County
- Columbia County
- Crawford County
- Cumberland County
- Dauphin County
- Delaware County
- Elk County
- Erie County

Select all Counties

Find only vendors that s

Find only vendors that s

Supplier Classifications

- Minority Business En
- Woman Business En
- LGBT Business Ente
- Disabled-Owned Bu
- Service-Disabled Ve
- Veteran Business En
- Small Business
- Stocking Supplier
- Non-Stocking Supplier

UNSPSC Codes

- 30100000 - Structural components and basic shapes
- 30110000 - Concrete and cement and plaster
- 30120000 - Roads and landscape
- 30130000 - Structural building products
- 30140000 - Insulation
- 30150000 - Exterior finishing materials
 - 30151500 - Roofing materials
 - 30151600 - Roofing accessories
 - 30151700 - Rain gutters and accessories
 - 30151800 - Siding and exterior wall materials
 - 30151900 - Finishing materials and products
 - 30152000 - Fencing

Find only vendors that have all selected UNSPSC codes

Find only vendors that have at least one selected UNSPSC code



Search Results

Advanced Search

Show 25 entries

Export to Excel Reset Search Criteria

Supplier (click on name to display full record)	Contact	Address	SB Validity Dates	SDB Validity Dates	VBE Validity Dates	COSTARS
ADVANCED AUDIO VISUAL SALES INC	JOHN GREENE DIRECTOR OF SALES John.Green@advancedav.com (Phone) 610-719-6194 (Fax) 610-692-8421	208 CARTER DRIVE SUITE 7 WEST CHESTER, PENNSYLVANIA 19382 (Phone) 610-719-6194				No
ADVANCED BUILDING CONTROLS LLC (DBA ADVANCED BUILDING CONTROLS LLC)	Craig Connelly CCONNELLY@ADVANCEDBLDGCNTOLS.COM (Phone) 215-520-9964	PO BOX 303 HOLICONG, PENNSYLVANIA 18928 (Phone) 215-520-9964	2/11/2019-2/28/2021			No
ADVANCED BUILDING PERFORMANCE INC ()	Pei Pei Cavalier PEIPEI@ABPCX.COM (Phone) 301-760-9989	11225 HURDLE HILL DR POTOMAC, MARYLAND 20854 (Phone) 301-760-9989 abpcx.com	12/20/2019-12/20/2021	12/20/2019-12/20/2021		No
ADVANCED CLEANING SOLUTIONS LLC (ADVANCED CLEANING SOLUTIONS LLC)	Nicholas Ward cleanteam@advancedsolutionsPA.com (Phone) 610-597-0012	PO BOX 3223 ALLENTOWN, PENNSYLVANIA 18106	2/27/2018-3/31/2020	2/27/2018-3/31/2020	2/27/2018-3/31/2020	No

Certified Small Businesses

- Advanced Building Controls LLC
- Advanced Building Performance Inc
- Advanced Cleaning Solutions LLC

Small Diverse Businesses

- Advanced Building Performance Inc
- Advanced Cleaning Solutions LLC

Veteran Business Enterprise

- Advanced Cleaning Solutions LLC



Supplier Profile

Name:	ADVANCED CLEANING SOLUTIONS LLC
SAP Number:	511377
Doing Business As:	ADVANCED CLEANING SOLUTIONS LLC
Other Names:	
Keywords:	
Web site:	
SB Validity Dates:	02/27/2018 - 03/31/2020
SDB Validity Dates:	02/27/2018 - 03/31/2020
VBE Validity Dates:	02/27/2018 - 03/31/2020
COSTARS Participant:	No

← SB, SDB & VBE Expiration Dates

Supplier Classifications

- Small Business
- Service-Disabled Veteran Business Enterprise
- Veteran Business Enterprise

← SB, SDB & VBE Classifications

Contact Information

Contacts

Contact Type	Contact Details	Phone
CORPORATE	Email: CLEANTEAM@ADVANCEDSOLUTIONSPA.COM	
SB MAIN	Nicholas Ward Title: Email: cleanteam@advancedsolutionsPA.com	610-597-0012



Search Results

Advanced Search						
Show <input type="text" value="25"/> entries		Export to Excel Reset Search Criteria				
Supplier (click on name to display full record)	Contact	Address	SB Validity Dates	DB Validity Dates	VBE Validity Dates	COSTARS
ADVANCED AUDIO VISUAL SALES INC	JOHN GREENE DIRECTOR OF SALES John.Green@advancedav.com (Phone) 610-719-6194 (Fax) 610-692-8421	208 CARTER DRIVE SUITE 7 WEST CHESTER, PENNSYLVANIA 19382 (Phone) 610-719-6194				No
ADVANCED BUILDING CONTROLS LLC (DBA ADVANCED BUILDING CONTROLS LLC)	Craig Connelly CCONNELLY@ADVANCEDBLDGGCONTOLS.COM (Phone) 215-520-9964	PO BOX 303 HOLICONG, PENNSYLVANIA 18928 (Phone) 215-520-9964	2/11/2019-2/28/2021			No
ADVANCED BUILDING PERFORMANCE INC ()	Pei Pei Cavalier PEIPEI@ABPCX.COM (Phone) 301-760-9989	11225 HURDLE HILL DR POTOMAC, MARYLAND 20854 (Phone) 301-760-9989 abpcx.com	12/20/2019-12/20/2021	12/20/2019-12/20/2021		No
ADVANCED CLEANING SOLUTIONS LLC (ADVANCED CLEANING SOLUTIONS LLC)	Nicholas Ward cleanteam@advancedsolutionsPA.com (Phone) 610-597-0012	PO BOX 3223 ALLENTOWN, PENNSYLVANIA 18106	2/27/2018-3/31/2020	2/27/2018-3/31/2020	2/27/2018-3/31/2020	No

Certified Small Businesses

- Advanced Building Controls LLC
- Advanced Building Performance Inc
- Advanced Cleaning Solutions LLC

Small Diverse Businesses

- Advanced Building Performance Inc
- Advanced Cleaning Solutions LLC

Veteran Business Enterprise

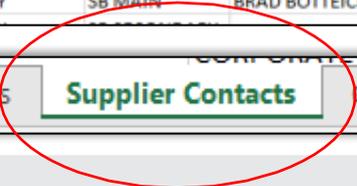
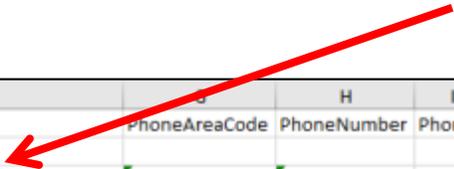
- Advanced Cleaning Solutions LLC



Excel Export Results – Supplier Contacts

Excel Export Results includes Vendor ID, Supplier Name, Contact Name, Email, Phone, Fax

A	B	C	D	E	F	G	H	I	J	K
SAP Number	Supplier Name	Contact Name	Name	Title	Email	PhoneAreaCode	PhoneNumber	PhoneEx	FaxAreaCo	FaxNumber
104279	CA WEISS SALES LLC	CORPORATE			caweiss@comcast.net					
104279	CA WEISS SALES LLC	SB MAIN	KRISTY ZARICHNIAK		kristyz@comcast.net	610	4588864		610	4588875
119565	DUFF SUPPLY COMPANY	CORPORATE	ALEX DUFFINE	VP	DFRANK@DUFFCOMPANY.COM	610	2754453	147	610	2796299
119565	DUFF SUPPLY COMPANY	REMITTO	BARB COHEN		bcohen@duffco.com	610	2754453	149	610	2756761
119565	DUFF SUPPLY COMPANY	SB MAIN	ALEX DUFFINE		aduffine@duffco.com	610	2754453			
119565	DUFF SUPPLY COMPANY	SB SECONDARY			info@duffco.com					
122594	HOUCK SERVICES INC	CORPORATE			jherrold@houcks.com					
122594	HOUCK SERVICES INC	SB MAIN	JARROD HERROLD		jherrold@houcks.com	717	6573302		717	6579805
122594	HOUCK SERVICES INC	SB SECONDARY			kgussler@houcks.com					
134717	PENN STATE ELECTRIC MECHANICAL	CORPORATE			razmataz33@aol.com					
134717	PENN STATE ELECTRIC MECHANICAL	SB MAIN	RAZ SUGARWALA		razmataz33@aol.com	717	2992090		717	2992297
134717	PENN STATE ELECTRIC MECHANICAL	SB SECONDARY			ksing6027@yahoo.com					
135270	BARBARA J SALES ASSOC INC	CORPORATE			barb@barbarajsles.com					
135270	BARBARA J SALES ASSOC INC	SB MAIN	BARBARA SMITH		barb@barbarajsales.com	412	5233398		800	8137122
135270	BARBARA J SALES ASSOC INC	SB SECONDARY			willsmith@willjsservices.com					
137893	IDA YEAGER SALES INC	CORPORATE			idayeagersales@zoominternet.net					
137893	IDA YEAGER SALES INC	SB MAIN	IDA LAQUATRAYEAGER		idayeagersales@zoominternet.net	724	4525260		724	4521072
144061	CONSTRUCTION TOOL SERVICE INC	CORPORATE			ehuss@constructiontoolservice.com					
144061	CONSTRUCTION TOOL SERVICE INC	SB MAIN	BETTY CONNELLY		bconnelly@constructiontoolservice.com	412	6816673		412	6819185
144061	CONSTRUCTION TOOL SERVICE INC	SB SECONDARY			bcgoodwork@aol.com					
145576	BURKE & MICHAEL INC	CORPORATE			MARYFRANCES@BURKEANDMICHAEL.COM					
145576	BURKE & MICHAEL INC	SB MAIN	MARY FRANCES HOGAN		maryfrances@burkeandmichael.com	412	3212301		412	3214582
153927	COOPER TRADING INC	CORPORATE			cti@ctipa.com					
153927	COOPER TRADING INC	SB MAIN	PETER COOPER		pete@ctipa.com	724	8618830		724	8618832
153927	COOPER TRADING INC	SB SECONDARY			debbie@ctipa.com					
157009	CONTRACT HARDWARE AND SUPPLY	CORPORATE			cristil@chsupplyinc.com					
157009	CONTRACT HARDWARE AND SUPPLY	SB MAIN	BRAD BOTTEICHER		bradb@chsupplyinc.com	814	9412340		814	9412342



Suppliers	Supplier Addresses	Supplier Contacts	Counties	Supplier Classifications	ITQs	ITQ Contracts	UNSPSC Codes
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Upcoming Supplier Search Training

The training will focus on the basics of the supplier search process including recognizing the UNSPSC Codes Structure, accessing the DGS Supplier Search Database and Searching for Small, Small Diverse and Small Veteran Owned Businesses to gain a better understanding of supplier search results.

The 30-minute sessions will be offered via Teams on-line presentations on the following dates in 2022: **(No RSVP Required)**

Targeted Audience (External): Potential prime contractors that conduct business with the commonwealth who want to learn the basics of finding DGS certified small diverse and veteran owned businesses.

- Thursday, June 29th, 10:00 am-10:30 am
- Thursday, July 13th, 10:00 am – 10:30 am
- Thursday, July 27th, 10:00 am – 10:30 am
- Thursday, August 3rd, 10:00 am – 10:30 am
- Thursday, August 10th, 10:00 am -10:30 am
- Thursday, August 24th, 10:00 am – 10:30 am
- Thursday, September 7th, 10:00 am – 10:30 am
- Thursday, September 14th, 10:00 am – 10:30 am
- Thursday, September 28th, 10:00 am – 10:30 am
- Thursday, October 19th, 10:00 am – 10:30 am
- Thursday, October 26th, 10:00 am – 10:30 am
- Thursday, November 2nd, 10:00 am – 10:30 am
- Thursday, November 16th, 10:00 am – 10:30 am
- Thursday, November 30th, 10:00 am – 10:30 am
- Thursday, December 7th, 10:00 am – 10:30 am

Microsoft Teams meeting

- **Join on your computer or mobile app**

[Click here to join the meeting](#)

Meeting ID: 293 754 842 172

Psscode: Uhqm2D

[Download Teams](#) | [Join on the web](#)

Or call in (audio only)

[+1 267-332-8737](#), [690952530#](#) United States, Philadelphia

Phone Conference ID: 690 952 530#

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SDB/VBE Forms in e-Builder

Pennsylvania Department of General Services / SCI Greene - Renovate Switchgear & Generators
↳ DGS C-0372-0005 Phase 1.1

Status

Bid Package	Open
Bidding	Pending
Response Submitted	No

32 Days 6 Hours 46 Minutes Left

Due on 09.05.2023 at 2:00 PM
(GMT-05:00) Eastern Time (US & Canada)

Summary **0.00**

Base Bid Total	0.00
Base Bid 2 Total	0.00

Package Invitation | Response Form | Q&A Board

Accept | Decline

Bid Info | **Invitation Documents (21)** | Addenda (1)

Hide All | Show All

Click this icon  to download files. Clicking the icon next to a folder will download all files and subfolders within it.

File / Folder Name	Uploaded on	File Size
  01 Bid Documents (5)	06.24.2021 10:42 AM	
 Worker Protection Form Public Works.pdf Version 1	07.17.2023 10:18 AM	74.97 KB
 Public Works Employment Verification Form.pdf	07.17.2023	71 KB

Scroll down to find SDB and VBE Participation Packets



New Forms and Processes

- SDB/VBE Instructions – *SDB-1/VBE-1* **READ**
- SDB/VBE Participation Submittal – *SDB-2/VBE-2*
- SDB/VBE Utilization Schedule – *SDB-3/VBE-3*
- Letter of Commitment – *SDB 3.1/VBE-3.1*
- Guidance for Good Faith Effort (GFE) Waiver – *SDB-4/VBE-4* **READ**
- GFE Waiver – *SDB-5/VBE-5*

Bid packages available in e-Builder in the Package Invitation/Bid Info in the Invitation Documents folder



Solicitation-Specific Goals

SDB-1 INSTRUCTIONS FOR COMPLETING THE SMALL DIVERSE BUSINESS (SDB) PARTICIPATION SUBMITTAL AND SDB UTILIZATION SCHEDULE.

PLEASE READ BEFORE COMPLETING THESE DOCUMENTS
Bidders/Offerors do not need to return SDB-1 with their SDB Participation Submittal

The following instructions include details for completing the SDB Participation Submittal (SDB-2) which Bidders or Offerors must submit in order to be considered responsive.

The following instructions also include details for completing the SDB Utilization Schedule (SDB-3) which Bidders or Offerors must submit for any portion of the SDB participation goal the Bidder or Offeror commits to meeting.

A Bidder/Offeror's failure to meet the SDB participation goal in full or their failure to receive an approved Good Faith Efforts waiver for any unmet portion of the SDB participation goal will result in the rejection of the Bid or Proposal as nonresponsive.

I. SDB Participation Goal: The SDB participation goal is set forth in the Solicitation. The Bidder/Offeror is encouraged to use a diverse group of subcontractors and suppliers from the SDB classifications to meet the SDB participation goal.

II. SDB Eligibility:

1. Finding SDB firms: Offerors can access the directory of DGS-verified SDB firms from the DGS Supplier Search directory at: <http://www.dgs.internet.state.pa.us/suppliersearch>.

Only SDBs verified by DGS and as defined herein may be counted for purposes of achieving the SDB participation goal. In order to be counted for purposes of achieving the SDB participation goal, the SDB firm, including an SDB prime, must be DGS-verified for the services, materials or supplies that it has committed to perform.

- a. SDB prime bidders or offerors. An SDB prime firm whose SDB verification is pending or incomplete as of the bid or proposal due date and time may not satisfy the SDB participation goal through its own performance. A self-certified SB prime that does



SDB Submittal – SDB-2

CRITICAL
✓ Check One, and Only One, Box

SDB-2 SDB PARTICIPATION SUBMITTAL

Buyer/Offeree: _____ Solicitation # : _____
Solicitation Title: _____
Discipline: _____ (.1 GC, .2 HVAC, .3 Plumbing, or .4 Electrical)
Base Bid: _____ (identify the corresponding Base Bid for this SDB Participation Submittal)

CHECK ONE, AND ONLY ONE, BOX. FAILURE TO COMPLY WILL RESULT IN REJECTION OF YOUR BID/PROPOSAL.

Click on bold titles to navigate to that specific page.

- | | | |
|---|---|---|
| <input type="checkbox"/> I agree to meet the SDB participation goal in full.

I have completed and am submitting with my bid or proposal an SDB Utilization Schedule (SDB-3) , which is required in order to be considered for award. | <input type="checkbox"/> I am requesting a partial waiver of the SDB participation goal.

After making good faith outreach efforts as more fully described in the Guidance for Documenting Good Faith Efforts to Meet the SDB Participation Goal , I am unable to achieve the total SDB participation goal for this solicitation and am requesting a partial waiver of the SDB participation goal.

I have completed and am submitting with my bid or proposal both of the following, which are required in order to be considered for award: | <input type="checkbox"/> I am requesting a full waiver of the SDB participation goal.

After making good faith outreach efforts as more fully described in the Guidance for Documenting Good Faith Efforts to Meet the SDB Participation Goal , I am unable to achieve any part of the SDB participation goal for this solicitation and am requesting a full waiver of the SDB participation goal.

I have completed and am |
|---|---|---|



SDB Utilization Schedule – SDB-3

SDB-3 SDB UTILIZATION SCHEDULE

Solicitation Title: _____

Identify all SDBs (including where applicable a prime bidder or offeror is self-performing a portion of the work) that will meet the SDB participation goal (add additional pages if necessary). Submit a **Letter of Commitment (SDB-3.1)** for each SDB subcontractor, supplier, or manufacturer (add additional Letters of Commitment as necessary).

CRITICAL
✓ Verify SDB/VBE validity

SDB Name SAP Vendor Number (6-digit number provided by SDB) SDB Verification Number (located on DGS SDB verification)	Type of SDB (check all that apply)	Description of Work to be Performed (Statement of Work/Specification reference)	% Commitment (or % of work to be self-performed by SDB bidder/offeror)	Dollar Value of Commitment (after applying any calculation per SDB-1, Section IV, Calculating SDB participation)
Name: <u>ABC IT Solutions</u> SAP Vendor Number: <u>123456</u> SDB Verification Number: <u>123456-2023-09-SB-M</u>	MBE	IT staffing resources	%	\$
Name: _____ SAP Vendor Number: _____ SDB Verification Number: _____	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		%	
Name: _____ SAP Vendor Number: _____ SDB Verification Number: _____	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		%	
Name: _____ SAP Vendor Number: _____ SDB Verification Number: _____	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		%	
Name: _____ SAP Vendor Number: _____ SDB Verification Number: _____	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		%	



Letter of Commitment SDB-3.1

CRITICAL
 ✓ Complete all shaded areas.

SDB-3.1 LETTER OF COMMITMENT

This Letter of Commitment serves as confirmation of the commitment by the prime Bidder or Offeror to utilize the Small Diverse Business (SDB) on the below-referenced Solicitation/Project.

Solicitation #: _____ Solicitation Name: _____

	Bidder/Offeror Information	SDB Information
Name		
Address		
Point of Contact		
Telephone #		
Email address		

Services/Supplies and Time Frame. If Bidder/Offeror is the successful vendor, the SDB shall perform or provide the following services or supplies during the term of the prime contract, as more specifically set forth below:

Services or supplies the SDB will provide:	
Specific Time Frame the SDB will provide the services or supplies:	

Dollar Value of Commitment. These service or supplies for contract/fee indicated in the table below shall be for the term of the contract.

COMMITMENT TABLE	Total Contract/Fee Commitment Value	Allowable Participation Percentage	Allowable Participation Value equals Dollar Value Commitment on SDB-3
	(c)	(d)	(c) x (d) = (e)
SDB Subcontractor - performs at least 50% of the value of the subcontract with its own forces		100%	
SDB Manufacturer - produces on premise material, supplies, articles or equipment required for contract.		100%	
SDB Stocking Suppliers - maintains materials on premises that are bought and stored and required for			

SDB to expect a letter and SIGN it!



Guidance to Document GFE SDB-4

READ, READ, READ

- The ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the Offeror of the responsibility to make Good Faith Efforts to meet the stated participation goal.
- Prime must complete all components of the GFE paperwork. Details/Evidence are important, proof is required.
- Carefully review SDB and VBE submittal Instructions, specifically Section VI of SDB/VBE-1 which lists pertinent items as Fatal errors.



Good Faith Efforts Packet SDB-5

Good Faith Efforts (GFE) Partial or Full Waiver

- Identified Items of Work Applicant Made Available to SDBs (Part 1)
- Identified SDBs and Record of Solicitations (Part 2)
- SDB Outreach Compliance Statement (Part 3)
- Additional Information Regarding Rejected SDB Quotes (Part 4)
- SDB Subcontractor Unavailability Certificate (Part 5)



SDB GFE Documentation – SDB-5

SDB-5

GOOD FAITH EFFORTS DOCUMENTATION TO SUPPORT WAIVER REQUEST OF SDB PARTICIPATION GOAL

Project Description:	
Commonwealth Agency Name:	
Solicitation #:	
Solicitation Due Date and Time:	
Bidder/Offeror Company Name:	
Bidder/Offeror Contact Name:	
Bidder/Offeror Contact Email:	
Bidder/Offeror Contact Phone Number:	

Complete all five parts

Part 1 – Identified Items of Work Offeror Made Available to SDBs

Identify those items of work that the Offeror made available to SDBs. This includes, where appropriate, those items the Offeror identified and subdivided into economically feasible units to facilitate the SDB participation. For each item listed, show the anticipated percentage of the total contract amount. It is the Offeror's responsibility to demonstrate that enough work to meet the SDB participation goal was made available to SDBs, and the total percentage of the items of work identified for SDB participation met or exceeded the SDB participation goal set for the procurement.

Identified Items of Work	Was this work listed in the solicitation?	Does Offeror normally self-perform this work?	Was this work made available to SDB Firms? If not, explain why.
	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no



GFE Waiver – Part 1

Identified Items of Work Offeror Made Available to SDBs

Identify those items of work that the Offeror made available to SDBs. This includes, where appropriate, those items the Offeror identified and subdivided into feasible units to facilitate the SDB participation. For each item listed, show the anticipated percentage of the total contract cost that will be made available to SDBs, and the total percentage of the contract cost that will be made available to SDBs, and the total percentage of the contract cost that will be made available to SDBs.

CRITICAL
 ✓ List all components of work offered for subcontracting.

Was this work listed in the solicitation?	Does Offeror normally self-perform this work?	Was this work made available to SDB Firms? If not, explain why.
<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no

Attach additional sheets if necessary.



GFE Waiver – Part 2

Identified SDBs and Record of Solicitations

CRITICAL
 ✓ Specifics and Details
 are important

provide quotes for the Identified Items of Work made available for SDB participation. Include the name of the SDB which quotes were solicited, date and manner of initial and follow-up solicitations, whether the SDB provided a quote, and whether the SDB was used toward meeting the SDB participation goal. SDBs used to meet the SDB participation goal must be listed on Form GFE-2 (SDB-2).

Documentation of initial solicitations and documentation of follow-up calls to SDBs must be attached to this form. For each Identified SDB the Offeror should submit an SDB Subcontractor Unavailability Certificate signed by the SDB or a statement from the Offeror that the SDB is unable to sign the SDB Subcontractor Unavailability Certificate.

Name of Identified SDB and Classification	Describe Item of Work Solicited	Initial Solicitation Date & Method	Follow-up Solicitation Date & Method	Details for Follow-up Calls	Quote Received?	Quote Used?	Reason Quote Rejected
SDB Name: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		Date: <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax	Date: <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax	Date and Time of Call: Spoke with: Left Message:	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> Used other SDB <input type="checkbox"/> Used non-SDB <input type="checkbox"/> Self performing
SDB Name: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> LGBTBE <input type="checkbox"/> DOBE <input type="checkbox"/> SDVBE		Date: <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax	Date: <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax	Date and Time of Call: Spoke with: Left Message:	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> Used other SDB <input type="checkbox"/> Used non-SDB <input type="checkbox"/> Self performing

Attach additional sheets as necessary.



GFE Waiver – Part 3

SDB Outreach Compliance Statement

CRITICAL
✓ Documentation for
Part 1

1. List the Identified Items of Work for subcontracting opportunities for the solicitation along with specific work categories:

2. Attach to this form copies of written solicitations (with Bid or Proposal instructions) used to solicit Identified SDBs for these subcontract opportunities.

3. Offeror made the following attempts to contact the Identified SDBs:

4. Bonding Requirements (Please Check One):

This project does not involve bonding requirements.

Offeror assisted Identified SDBs to fulfill or seek waiver of bonding requirements.
(DESCRIBE EFFORTS):

5. Pre-Bid/Proposal Conference or Supplier Forum (Please Check One):



GFE Waiver – Part 4

Additional Information Regarding Rejected SDB Quotes

This form, in conjunction with Part 2 indicates that an SDB quote was rejected because the Offeror is using a non-SDB or is self-performing the Identified Items of Work, state whether the work will be self-performed or performed by a non-SDB, and if performed by a non-SDB firm. Also include the names of all SDBs and non-SDB firms that provided a quote and the amount of

CRITICAL
 ✓ Documentation for Part 2

Self-performing or using non-SDB (provide name of non-SDB if applicable)	Amount of non-SDB quote \$	Name of other firms that provided quotes and whether they are SDB	Amount quoted \$	Reason why SDB quote was rejected along with brief explanation
<input type="checkbox"/> self-performing <input type="checkbox"/> using Non-SDB Name:		<input type="checkbox"/> SDB <input type="checkbox"/> Non-SDB Name:		<input type="checkbox"/> price <input type="checkbox"/> capabilities <input type="checkbox"/> other
<input type="checkbox"/> self-performing <input type="checkbox"/> using Non-SDB Name:		<input type="checkbox"/> SDB <input type="checkbox"/> Non-SDB Name:		<input type="checkbox"/> price <input type="checkbox"/> capabilities <input type="checkbox"/> other
<input type="checkbox"/> self-performing <input type="checkbox"/> using Non-SDB Name:		<input type="checkbox"/> SDB <input type="checkbox"/> Non-SDB Name:		<input type="checkbox"/> price <input type="checkbox"/> capabilities <input type="checkbox"/> other
<input type="checkbox"/> self-performing <input type="checkbox"/> using Non-SDB Name:		<input type="checkbox"/> SDB <input type="checkbox"/> Non-SDB Name:		<input type="checkbox"/> price <input type="checkbox"/> capabilities <input type="checkbox"/> other



GFE Waiver – Part 5

SDB Subcontractor Unavailability Certificate

CRITICAL
✓ Required for each vendor listed in Part 1

It is hereby certified that the firm of _____
(Name of SDB)

located at _____
(Number) (Street)

_____ (City) _____ (State) _____ (Zip)

was offered an opportunity to bid on Solicitation No. _____

by _____
(Name of Prime Contractor's Firm)

2. _____ (SDB), is either unavailable for the work/service or unable to prepare a Proposal for this project for the following reason(s):

_____ (Signature of SDB's Representative) _____ (Title) _____ (Date)



SDB/VBE Response Submittal

Pennsylvania Department of General Services / SCI Greene - Renovate Switchgear & Generators

↳ DGS C-0372-0005 Phase 1.4

Status

Bid Package	Open
Bidding	Pending
Response Submitted	No

32 Days 6 Hours 38 Minutes Left

Due on 09.05.2023 at 2:00 PM
(GMT-05:00) Eastern Time (US & Canada)

Electronic Bid Submission Disabled
Electronic bid submission has been disabled for this project. Hard copy bid must be submitted.

Package Invitation

Q&A Board

Accept

Decline

Bid Info

Invitation Documents (21)

Addenda (1)

Hide All | Show All

Click this icon  to download files. Clicking the icon next to a folder will download all files and subfolders within it.

File / Folder Name

Uploaded on

File Size



Best Practices

Do's

- Read the solicitation and all instructions completely.
- Submit SEPARATE SDB and VBE submittal forms.
- Validate subcontractor SDB/VBE status in DGS Supplier Database.
- Ensure that all appropriate forms are completed and signed correctly.
- Submit questions early per the solicitation requirements.

Don'ts

- Make any assumptions.
- Copy SDB submittal paperwork. Download and complete the VBE submittal separately, titles and accuracy matter.
- Skip any portion of the GFE request documentation.
- Forget to verify subcontractor status as current SDB/VBE in DGS Supplier Database.



REMINDER



**SEPARATE SDB/VBE
SUBMITTALS WITH
EACH DISCIPLINE
AND BASE BID!**



REMINDER

**Failure to submit
fully completed SDB
and VBE submittal
packets or GFE
waiver request
documentation will
result in removal of
your bid for award
consideration**

Questions?



BDISBO Contact Info

Bureau of Diversity, Inclusion and Small Business Opportunities

North Office Building
401 North Street, Room 611
Harrisburg, PA 17120-0500
717.783.3119

GS-BDISBO@pa.gov

