

**CITY OF KENOSHA, WISCONSIN
PUBLIC WORKS DEPARTMENT
MUNICIPAL OFFICE BUILDING IT GENERATOR PACKAGE
PROPOSAL NOTICE #03-23**

ISSUED: TUESDAY, MAY 9, 2023

Sealed proposals will be accepted by the City of Kenosha, in the Department of Finance, Municipal Office Building, 625 52nd Street, Room 208, Kenosha, WI, 53140 until **TUESDAY, MAY 30, 2023 at 4:00 P.M.** for the procurement and storage of the following equipment all in accordance with City of Kenosha standard terms and conditions, and the specifications contained herein:

- BID FOR:**
- 1. Automatic Transfer Switch Per Project Specifications (26 28 26).**
 - 2. Engine Generator package consisting of the equipment Per Project Specifications (26 32 13).**
 - 3. Commissioning Services Per Project Specifications (FPT 26 32 13).**

Proposals must be sealed and submitted on the attached proposal form and returned clearly marked with the scheduled date and time of opening. Proposals received after the date and time of opening will not be considered. All proposals shall be submitted in a sealed envelope carrying the following information: proposing firm's name, firm address, proposal description, proposal notice number and date and time of proposal opening. Proposals submitted via facsimile or through other electronic means will not be accepted.

Vendors shall furnish complete manufacturer specifications and manufacturers descriptive literature describing in detail the equipment that is proposed. Any questions regarding these specifications should be directed to Mr. Greg Boldt, PE, Deputy Director of Public Works /City Engineer, at 262-653-4057. Inquiries regarding the proposal process and submittal can be directed to Mr. Lemuel Gomez, Purchasing Coordinator, at 262-653-4186.

The City of Kenosha reserves the right to award contract to the most qualified proposer. The City reserves the right to accept or reject any or all proposals or to accept any proposal that is considered the most advantageous to the City of Kenosha.

The City of Kenosha is exempt from Federal Excise Tax and State Sales Tax, therefore, proposals should be made exclusive of these taxes. A Tax Exemption Certificate will be furnished to the successful vendor.

State delivery date on the proposal form or the number of days from receipt of purchase order.

This proposal assumes that the Vendor will receive and store all equipment as identified in the product specifications.

Unit shall be new, unused and of the current model year.

Award will be made within thirty (30) days of scheduled opening to the lowest responsive responsible vendor meeting or exceeding City of Kenosha specifications, providing proposals are received within budgetary amounts.

SPECIFICATIONS CAN BE FOUND AT THE END OF THIS BID FORM

EACH BID SHALL INCLUDE:

- A. THIS BID FORM.
- B. PRELIMINARY EQUIPMENT/PRODUCT SHOP DRAWINGS.
- C. MANUFACTURER'S EXTENDED EQUIPMENT/PRODUCT WARRANTY OF FIVE YEARS FROM THE DATE OF COMMISSIONING AND STARTUP.
- D. THE BIDDER AGREES TO SUPPLY, STORE AND DELIVER THE EQUIPMENT/PRODUCTS LISTED ABOVE PER THE PROJECT SPECIFICATIONS FOR THE SUM OF:

_____ Dollars

(\$_____).

- E. THE BIDDER AGREES TO PROVIDE COMMISSIONING SERVICES FOLLOWING THE INSTALLATION OF THE UNIT FOR THE SUM OF:

_____ Dollars

(\$_____).

THE BIDDER AGREES TO:

- 1. Hold this bid open for a Minimum of 30 calendar days after bid opening date or as required in the project manual.
- 2. Enter into and execute a contract with City of Kenosha if awarded on the basis of this bid.

THE BIDDER ACKNOWLEDGES PROPOSAL # 03-23 HAS BEEN RECEIVED AND ALL COSTS THERETO ARE INCLUDED IN THE BID SUM.

THE BIDDER MAKES THE FOLLOWING REPRESENTATIONS AND CERTIFICATIONS:

- A. The Bidder is not barred from contracting with any unit of state or local government as a result of violating the bid rigging or bid rotating provisions.
- B. The Bidder is not barred from contracting with the State of Wisconsin as a result of a bribery conviction.

Respectfully submitted by

Firm: _____

Signature: _____

Print Name: _____

Address: _____

Telephone: _____ FAX: _____

E-mail: _____

Date: _____

SECTION 26 28 26

ENCLOSED TRANSFER SWITCHES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes providing transfer switch in individual enclosure, startup and testing.
- B. Related Sections:
 - 1. Section 26 32 13 - Engine Generators.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 - 1. NEMA ICS 10 - Industrial Control and Systems: AC Transfer Switch Equipment.
- B. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. Underwriters Laboratories Inc.:
 - 1. UL 1008 - Transfer Switch Equipment.

1.3 SUBMITTALS

- A. Product Data: Submit catalog sheets showing voltage, switch size, ratings and size of switching and overcurrent protective devices, operating logic, short circuit ratings, dimensions, and enclosure details.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit routine preventative maintenance and lubrication schedule. List special tools, maintenance materials, and replacement parts.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years of experience and with service facilities within 100 miles of Project.

1.6 MAINTENANCE SERVICE

- A. Furnish service and maintenance of transfer switches for one year from Date of Substantial Completion. Service shall include (1) inspection and routine maintenance to occur 1 year after Date of Substantial Completion.

1.7 WARRANTY

- A. Furnish five year manufacturer warranty.
- B. Warranty shall include parts, labor and travel to the jobsite.
- C. Warranty shall begin at generator startup.

PART 2 PRODUCTS

2.1 AUTOMATIC TRANSFER SWITCH

- A. Manufacturers:
 - 1. ASCO Automatic Switch Co.
 - 2. Approved Equal.Note: All equipment shall be submitted before bidding for approval as an equal. Equipment will only be considered equal if it meets the requirements of these specifications including the withstand and close on rating requirements.
- B. Basis of Design: ASCO 300 Series Automatic Transfer Switch.
- C. Configuration: Electrically operated, mechanically held transfer switch.
- D. Rating: Voltage, current rating and number of poles as scheduled.
- E. Withstand and Close on Rating: As scheduled.
- F. Product Features:
 - 1. Indicating Lights: Mount in cover of enclosure to indicate NORMAL SOURCE AVAILABLE, ALTERNATE SOURCE AVAILABLE, switch position.
 - 2. Test Switch: Mount in cover of enclosure to simulate failure of normal source.
 - 3. Return to Normal Switch: Mount in cover of enclosure to initiate manual transfer from alternate source to normal source.
 - 4. Transfer Switch Auxiliary Contacts:
 - a. One contact is closed when the ATS is connected to the utility.
 - b. One contact is closed when the ATS is connected to the generator.
 - 5. Normal Source Monitor: Monitor each line of normal source voltage and frequency; initiate transfer when voltage drops below 85 percent or frequency varies more than 3 percent from rated nominal value.
 - 6. Alternate Source Monitor: Monitor alternate source voltage and frequency; inhibit transfer when voltage is below 85 percent or frequency varies more than 3 percent from rated nominal value.
 - 7. In-Phase Monitor: Inhibit transfer until source and load are in phase.

2.2 AUTOMATIC TRANSFER SWITCH SCHEDULE

- A. Kenosha Municipal Building Automatic Transfer Switch
 - 1. Description:
 - a. Designation: ATS-S

- b. Voltage rating: 240V
 - c. Operating voltage: 208Y/120V, 3 phase
 - d. Current Rating: 400 amps
 - e. Poles: 3 pole
 - f. Withstand and Close On Rating: 65,000 rms symmetrical amperes (minimum), when used with a Square D circuit breaker suitable for use in an I-Line distribution panel. (Circuit breaker will be upgraded as needed during construction)
 - g. Open transition: Programmed time delay in neutral position.
 - h. Digital metering: Display voltage and current on each phase. ASCO option 135L.
 - i. Ethernet communication module to allow monitoring via built in webpage, Modbus TCP, SNMP, or email alerts. ASCO option 72EE.
 - j. Programmable engine exerciser. ASCO option 11BE.
 - k. Enclosure: NEMA Type 1 Enclosure.
2. Automatic Sequence of Operation:
- a. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.
 - b. Time Delay To Start Alternate Source Engine Generator: 0 to 6 seconds, adjustable. Set at 3 seconds.
 - c. Initiate Transfer Load to Alternate Source: Upon initiation by normal source monitor and permission by alternate source monitor.
 - d. Time Delay Before Transfer to Alternate Power Source: 0 to 60 seconds, adjustable. Set at 0 seconds.
 - e. Initiate Retransfer Load to Normal Source: Upon permission by normal source monitor.
 - f. Time Delay Before Transfer to Normal Power: 0 to 30 minutes, adjustable; bypass time delay in event of alternate source failure. Set at 10 minutes.
 - g. Time Delay Before Engine Shut Down (Unloaded Running): 0 to 60 minutes, adjustable. Set at 5 minutes.
3. Engine Exerciser:
- a. Programmable engine exerciser able to run the generator on a daily, weekly, bi-weekly, or monthly basis.
 - b. Alternate System Exerciser: Programable to allow generator exercising with or without transferring load to alternate source during engine exercising period.

2.3 SOURCE QUALITY CONTROL

- A. Furnish shop inspection and testing of each transfer switch.

PART 3 EXECUTION

3.1 STORAGE AND DELIVERY

- A. Supplier shall receive and store equipment at the supplier's location until the installing contractor is ready to receive the equipment at the Project site with no

additional cost to the owner. Supplier may submit an invoice for equipment only when the equipment is received by the supplier. Supplier shall make the equipment available for inspection by the owner prior to being paid for the equipment. Supplier may submit additional invoice for the remaining portions of the contract after delivery to site, functional performance testing and completion of the owner training.

- B. Supplier shall provide delivery of the equipment from the supplier's location to each project site. Delivery to site shall be by flatbed truck or trailer. Supplier shall be responsible for loading the equipment at the supplier's location and delivering the equipment to the Project site on a date coordinated with the installing contractor. Delivery of equipment supplied under this section shall be assumed to be separate from delivery of equipment supplied under other sections. Unloading of the equipment at the Project site shall be provided by the installing contractor.

3.2 INSTALLATION

- A. Installation of all equipment shall be performed by the installing contractor.

3.3 FIELD QUALITY CONTROL

- A. Verify all wiring connections.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Check out transfer switch connections and operations and place in service.

3.5 ADJUSTING

- A. Program the automatic transfer switch to match the settings listed in the sequence of operations above.

3.6 DEMONSTRATION AND TRAINING

- A. Provide training of owner's staff. Training shall be on site after all systems are functional. Training shall be for (6) individuals.
 - 1. Training topics shall include:
 - a. Instruction and demonstration on how to program settings including:
 - 1) Set time and date.
 - 2) Adjust time delays.
 - b. Instruction and demonstration on how to manually operate transfer switch including:
 - 1) Manual operation from the electronic display.
 - 2) Manual operation with the manual operation handle.
 - c. Instruction and demonstration on how to access/utilize the ethernet capabilities.

END OF SECTION

SECTION 26 32 13
ENGINE GENERATORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes furnishing a complete factory assembled packaged engine generator system with controls and startup testing.
- B. Related Sections:
 - 1. Section 26 28 26 - Enclosed Transfer Switches.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
 - 2. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
 - 3. NEMA ICS 10 - Industrial Control and Systems: AC Transfer Switch Equipment.
 - 4. NEMA MG 1 - Motors and Generators.
- B. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. National Fire Protection Association:
 - 1. NFPA 30 - Flammable and Combustible Liquids Code.
 - 2. NFPA 99 - Standard for Health Care Facilities.
 - 3. NFPA 110 - Standard for Emergency and Standby Power Systems.

1.3 SYSTEM DESCRIPTION

- A. Description: Engine generator assembly and accessories to provide source of power for standby power applications.
- B. Generator shall be operated in conjunction with the corresponding automatic transfer switch provided under specification 26 28 26.
- C. Basis of Design: Kohler KG80 with APM603 controller, 4R9X alternator and standard sound attenuating enclosure.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate electrical characteristics and connection requirements. Include plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, electrical diagrams including schematic and interconnection diagrams.

- B. Product Data: Submit data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, day tank, fuel tank and radiator.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit instructions and service manuals for normal operation, routine maintenance, oil sampling and analysis for engine wear, and emergency maintenance procedures.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience and with service facilities within 100 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years documented experience.

1.7 WARRANTY

- A. Furnish five-year manufacturer warranty.
- B. Warranty shall include parts, labor and travel to jobsite.
- C. Warranty shall begin at generator startup.

1.8 MAINTENANCE SERVICE

- A. Furnish service and maintenance of engine generator and transfer switch for one year from Date of Substantial Completion. Maintenance shall occur quarterly for the first year.

1.9 MAINTENANCE MATERIALS

- A. Furnish two of each fuel, oil and air filter element.

PART 2 PRODUCTS

2.1 ENGINE

- A. Manufacturers:
 - 1. Cummins.
 - 2. Generac.
 - 3. Kohler.
- B. Product Description: Water-cooled, normally aspirated or turbo charged, four cycle internal combustion engine.

- C. Fuel System: Natural gas.
- D. Engine speed: 1800 rpm.
- E. Safety Devices: Engine shutdown on high water temperature, low oil pressure, overspeed, and engine overcrank. Limits as selected by manufacturer.
- F. Engine Starting: DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions. Furnish remote starting control circuit, with MANUAL-OFF-REMOTE selector switch on engine-generator control panel.
- G. Engine Jacket Heater: Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F, and suitable for operation on 120 volts AC.
- H. Radiator: Radiator using glycol coolant, with blower type fan, sized to maintain safe engine temperature in ambient temperature of 110 degrees F Radiator air flow restriction 0.5 inches of water maximum.
- I. Engine Accessories: Fuel filter, lube oil filter, intake air filter, lube oil cooler, fuel transfer pump, fuel priming pump, gear-driven water pump. Furnish fuel pressure gage, water temperature gage, and lube oil pressure gage on engine/generator control panel.
- J. Mounting: Furnish unit with suitable spring-type vibration isolators and mount on structural steel base.

2.2 GENERATOR

- A. Manufacturers:
 - 1. As selected by the package manufacturer.
- B. Product Description: NEMA MG1, three phase, four pole, reconnectable brushless synchronous generator with brushless exciter.
- C. Capacity: Minimum of 80 kW, 100 kVA, 08 pf, 208Y/120V, 3 phase, 4 wire, 12 wire reconnectable, 60 Hz Standby power rated.

Note: Generator may be relocated to another location in the future. Generator must be reconfigurable to 480Y/277V. Any generator not meeting this requirement will be rejected during shop drawing review.

- D. Motor starting kVA shall be 275 kVA minimum based on 35% voltage dip.
- E. Insulation Class: H.
- F. Temperature Rise: 130 degrees C Standby.
- G. Enclosure: NEMA MG1, open drip proof.

- H. The alternator shall include an excitation system comprised of a permanent magnet generator exciter and electronic voltage regulator.

2.3 GOVERNOR

- A. Product Description: Isochronous governor to maintain engine speed within 0.5 percent, steady state, and 5 percent, no load to full load, with recovery to steady state within 2 seconds following sudden load changes. Equip governor with means for manual operation and adjustment.

2.4 ACCESSORIES

- A. Exhaust Silencer: Critical type silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, sized in accordance with engine manufacturer's instructions.
- B. Alternator Heater: The generator package shall include an alternator heater to help prevent corrosive damage of electrical and mechanical components.
- C. Batteries: Heavy duty, diesel starting type lead-acid storage batteries, 170 ampere-hours minimum capacity. Match battery voltage to starting system. Furnish cables and clamps.
- D. Battery Tray: Treated for electrolyte resistance, constructed to contain spillage.
- E. Battery Charger: Generator skid mounted battery charger. Provide 10 ampere voltage regulated battery charger. Charger shall be equipped with float, taper and equalize charge settings. Charger shall include overload protection, voltage surge suppressor, DC voltmeter and fused AC input.
- F. Line Circuit Breaker: 300 amp, 100% rated, UL 489, molded case circuit breaker on generator output with electronic trip including minimum of adjustable LI functions (Long time pickup and Instantaneous trip). Unit mount in enclosure to meet NEMA 250, Type 1 requirements.
- G. Engine-Generator Control Panel: NEMA 250, Type 1 generator-mounted control panel enclosure with engine and generator controls and indicators. Furnish provision for padlock and the following equipment and features:
 - 1. NFPA 110 Level 1 capable.
 - 2. Graphic screen display.
 - 3. Controller shall support Modbus RTU, Modbus TCP, SNMP and BACnet.
 - 4. Built-in alternator thermal overload protection.
 - 5. UL-listed overcurrent protective device.
- H. Generator Monitoring: The engine generator shall include programmable relays for connection to owner monitoring equipment. Minimum of (6) relays shall be provided. Relay output shall consist of dry contacts rated for 120V, 10A. Relays shall be programmed to alert the following conditions:
 - 1. Generator running. (Normally open, closed when running)

2. Generator running ended (return to normal/not running state). (Normally closed, open when running)
 3. Generator alarm. (Normally open, closed when alarm is present.)
 4. Spare/To be determined.
 5. Spare/To be determined.
 6. Spare/To be determined.
- I. Remote Annunciator Panel: Surface mounted panel. Furnish audible and visible indicators and alarms in accordance with NFPA 110.
- J. Weather-protective, Sound Attenuating Enclosure with the following features:
1. Enclosure shall be suitable to protect genset components in all weather including rain, windblown rain, snow and windblown snow.
 2. Vandal resistant lockable doors and access points.
 3. Rodent resistant. All gaps between enclosure, steel mounting structure and pad shall be sealed with rodent resistant insulation. Any holes in the enclosure not related to ventilation shall be filled or covered. All louvers for ventilation purposes shall be provided with bird/rodent screening.
 4. Coated galvanized steel body in manufacturer standard finish.
 5. Lifting points on base frame.
 6. Stainless steel or nonmetallic latches, hinges and fasteners.
 7. Multiple lockable access doors on each side installed as needed to allow access to components requiring maintenance.
 8. Radiator fill access door with lockable cover.
 9. Engine cooling via airflow through enclosure.
 10. Lube oil and coolant drains piped to the exterior of the enclosure.
 11. Battery can only be reached through lockable doors.
 12. Vertical or horizontal radiator discharge.
 - a. Vertical turn ducts shall include drain holes for rain and melting snow at the bottom of the turn duct.
 - b. Vertical turn ducts shall include access panels to allow snow and foreign material removal.
 13. Sound attenuation to limit noise level not to exceed 69 dB. Reasonable deviations from the specified sound level will be considered.
 14. (1) GFCI weatherproof receptacle installed near the access door with dedicated electrical circuit for small tools and other maintenance equipment.
 15. (1) GFCI weatherproof receptacle installed to provide power to the Web enabled dialer (if applicable).
 16. Electrical lighting to illuminate enclosure interior for maintenance purposes with manual toggle switch located adjacent to the maintenance receptacle.
 17. Integrated 60 amp, main circuit breaker 208/120 volt, single phase load center to serve accessories including but not limited to, the battery charger, alternator heater, engine jacket heater, motorized dampers, enclosure lighting and maintenance receptacle. Load center and all associated circuitry shall be factory installed. Load center shall include Type 3R enclosure and circuit breakers as required. Provide typed circuit identification directory.

- K. Remote Emergency Stop "Mushroom" Switch: Provide emergency shut off switch on the unit generator and one remote mounted device. Shut off switch shall be a red button with (2) normally open and (2) normally closed contact block. Switch shall be wet location listed labeled "Emergency Shut Down" in white letters on red background. Switch shall incorporate a padlockable cover that must be lifted to access the switch.

2.5 SOURCE QUALITY CONTROL

- A. Provide shop inspection and testing of completed assembly.

PART 3 EXECUTION

3.1 STORAGE AND DELIVERY

- A. Supplier shall receive and store generator at the supplier's location until the installing contractor is ready to receive the generator equipment on site with no additional cost to the owner. Supplier may submit an invoice for generator equipment only when the equipment is received by the supplier. Supplier shall make the generator equipment available for inspection by the owner prior to being paid for the generator equipment. Supplier may submit additional invoice for the remaining portions of the contract after delivery to site, generator startup, load bank testing, functional performance testing and completion of owner training.
- B. Supplier shall provide delivery of the generator equipment from the supplier's location to the project site. Delivery to site shall be done on a flatbed truck or trailer. Supplier shall be responsible for load the equipment on the flatbed at the supplier's location and delivering the equipment to the project site on a date coordinated with the installing contractor. Equipment for unloading the generator equipment at the project site shall be provided by the installing contractor.

3.2 INSTALLATION

- A. Installation of all equipment shall be performed by the installing contractor.

3.3 FIELD QUALITY CONTROL

- A. Provide full load testing utilizing a portable test bank for four hours continuous minimum after the generator equipment has been installed. Testing shall include the following:
 - 1. During the first two hours, step increase the load from 0% to 100% in four equal steps. At the end of two hours, continue running test at 100% load. Record the following in 20 minute intervals throughout the four hour test: kilowatts, amperes, voltage, coolant temperature, generator frequency and oil pressure.
 - 2. Load bank test shall include (1) single step 100% load test to verify that the generator is capable of picking up the full load as specified.

- B. Load bank testing shall be completed prior to permanent connection of the generator to the building electrical service.
- C. Load bank testing shall be coordinated with the installing contractor and scheduled with the owner and engineer minimum 2 weeks in advance to allow the owner and engineer the opportunity to observe the testing.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Pre-Installation Coordination. Supplier shall provide full shop drawings and installation instructions to the installing contractor. Supplier shall provide technical guidance as required and be available to answer installation questions from the installing contractor.
- B. Supplier shall coordinate a startup date with the installing contractor.
- C. Manufacturer's representative shall prepare and start up engine generator assembly.
- D. Manufacturer's representative shall perform the load bank testing.
- E. Manufacturer's representative shall be on site and participate in functional performance testing to occur after permanent connection to the building electrical service.

3.5 ADJUSTING

- A. Adjust generator output voltage and engine speed to meet specified ratings.

3.6 CLEANING

- A. Cleaning shall be performed by the installing contractor.

3.7 DEMONSTRATION AND TRAINING

- A. Furnish 2 hours of instruction for (6) individuals, to be conducted at project site with manufacturer's representative. Training shall occur after successful completion of the functional performance testing.
- B. Training topics to include the following:
 - 1. Demonstrate operation of systems and equipment.
 - 2. Demonstrate preventative and routine maintenance procedures as well as common repairs.
 - 3. Instruction and demonstration on how to access/utilize the ethernet capabilities.
- C. Simulate power outage by interrupting normal source, and demonstrate system operates to provide standby power.

END OF SECTION

**Functional Performance Test
26 32 13 - Engine Generators**

FPT-26 32 13 – Engine Generators

Equipment Identification/Tag: _____
Location: _____

Test Duration

Date: _____ Start Time: _____ End Time _____

Estimated Duration: _____

Testing Provider(s): _____

Objectives

This test is performed to investigate the functionality of the generator to provide standby power to the City of Kenosha Municipal Building IT Generator in concert with the automatic transfer switch (ATS) upon loss of normal power.

Procedure

1. Power Transfer
 - a. Open the circuit breaker feeding normal power to the ATS.
 - b. Verify the generator starts and comes up to speed.
 - c. Record the time delay between loss of power and generator start up.
 - d. Verify the ATS transfers loads to the generator.
 - e. Close the circuit breaker feeding normal power to the ATS (only complete this step after all Standby Load Tests have been completed).
 - f. Verify the ATS transfers power back to normal power.
 - g. Verify generator shuts down after given cool down period.
 - h. Record time from power transfer to generator shut down.

2. Standby Load Tests
 - a. Equipment Verification
 - i. Verify Panel IT (Load Side of ATS) is being supplied by generator power system only.
 - ii. Verify that the UPS indicates input power has been restored and that the system has returned to normal operation.
 - iii. Verify that the power has been restored to the Computer Room Air Conditioner. Coordinate a startup of the air conditioner with the owner and confirm that the unit is able to operate on generator power.
 - b. Monitoring Verification
 - i. On Generator Start:
 1. Verify generator control panel (or web based dialer) sends an email indicating that the generator is running.
 2. Verify remote annunciator indicates generator is running.
 - ii. On Generator Shut Down:
 1. Verify generator control panel (or web based dialer) sends an email indicating the generator has stopped running.
 2. Verify remote annunciator indicates generator has stopped running.
 - iii. Simulate Generator Alarm:
 1. Verify generator control panel (or web based dialer) sends an email indicating generator alarm.
 2. Verify remote annunciator indicate a generator alarm.

**Functional Performance Test
26 32 13 - Engine Generators**

Results - Lift Station Power Transfer

Generator starts in response to loss of utility power at Pump Building?	Y / N
Time Delay Between Loss of Power and Generator Start-up:	
ATS properly transfers power to generator without any issues or hitches in transfer?	Y / N
UPS indicates power has been restored and returns to normal operation on generator power?	Y / N
Computer Room Air Conditioner starts and operates on generator power?	Y / N
Generator Control Panel (Or Web Based Dialer) sends email indicating generator is running?	Y / N
Remote Annunciator indicates generator is running?	Y / N
ATS transfers power back to utility feed in response to restoration of normal power feed?	Y / N
Generator successfully shuts down after cool down period?	Y / N
Time From Transfer to Utility Feed to Generator Shut Down:	
Generator Control Panel (Or Web Based Dialer) sends an email indicating generator has stopped running?	Y / N
Remote Annunciator indicates generator has stopped running?	Y / N
Generator Control Panel (Or Web Based Dialer) sends an email in response to generator alarm?	Y / N
Remote Annunciator indicates alarm in response to generator alarm?	Y / N

Conclusion

Acceptable Criterion: Generator and ATS transfer power without issue and in accordance with specified time delays for power transfer and cool down, all attached loads to emergency power comply with as-built documentation and are operational.

Comments:

Observations:

Final Status: Accepted Not Accepted

Witnesses

Name

Signature
