

BID SOLICITATION NOTICE

TO RECEIVE A BID PACKAGE, BIDDERS MAY EITHER DOWNLOAD THE REQUEST FOR BIDS (“RFB”) FROM THE AUTHORITY’S WEBSITE AT <http://www.state.nj.us/turnpike/purchasing.html> OR REQUEST A BID BY COMPLETING THIS FORM AND FAXING IT TO THE NUMBER STATED BELOW. FOR RECORD KEEPING PURPOSES, THE AUTHORITY REQUESTS THAT THE BIDDER COMPLETE THIS FORM AND RETURN IT TO THE PROCUREMENT AND MATERIALS MANAGEMENT DEPARTMENT, EVEN WHEN A BIDDER IS DOWNLOADING THE RFB. THIS IS THE ONLY NOTICE OF BIDDING FOR THE FOLLOWING GOODS.

**THE NEW JERSEY TURNPIKE AUTHORITY
PROCUREMENT AND MATERIALS MANAGEMENT DEPARTMENT**

New Jersey Turnpike Administrative Offices
P.O. Box 5042, 581 Main Street
Woodbridge, New Jersey 07095-5042
Tel. - 732-750-5300 Ext. 8640 Fax - 732-750-5399

TITLE: **125 KW DIESEL POWERED GENERATOR**
BID NO: **R-117228**
DUE DATE: **AUGUST 6, 2015**
TIME: **10:30 AM**

SUBMIT BIDS BEFORE THE DUE DATE AND TIME STATED ABOVE TO THE ABOVE ADDRESS

BIDDER INFORMATION (PLEASE PRINT)

NAME OF BIDDING ENTITY

ADDRESS

CITY, STATE AND ZIP CODE

E-MAIL ADDRESS

REPRESENTATIVE TO CONTACT-NAME & TITLE

TELEPHONE NO

FEDERAL TAX I.D. NO. or TAXPAYER I.D. NO

FAX NO

WE HAVE DOWNLOADED THE BID FROM THE AUTHORITY WEBSITE

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FAX NO

____ BUSINESS CORPORATION ____ PARTNERSHIP ____ INDIVIDUAL

____ OTHER (SPECIFY) _____

SECTION I

A. INTRODUCTION

The New Jersey Turnpike Authority (the “Authority”) was created by an act of the New Jersey Legislature in 1948, known as the New Jersey Turnpike Authority Act (as amended and supplemented, “Act”). The Act authorizes the Authority to construct, maintain, repair, and operate the New Jersey Turnpike, to collect tolls, and to issue Turnpike Revenue Bonds or Notes, subject to the approval of the Governor, payable from tolls and other revenues of the Authority. On May 27, 2003, the Act was amended to empower the Turnpike to assume all powers, rights, obligations and duties of the New Jersey Highway Authority (the “Highway Authority”), which owned and operated the Garden State Parkway and PNC Bank Arts Center. On July 9, 2003, the Authority assumed all powers, rights, obligations and duties of the Highway Authority. The Authority currently operates both the Garden State Parkway (“GSP”) and the New Jersey Turnpike (“Turnpike”) (both roads are collectively referred to herein as the “Roadways”).

The Authority is governed by an eight member Board of Commissioners (“Board”). The Governor of New Jersey appoints each of its members and has the statutory authority to overturn an action of the Board by vetoing any Board action within 10 days of receiving the minutes of the meeting. The Board authorizes awards of all public contracts over \$35,000, except in cases where it has delegated authority to the Executive Director.

This bid solicitation is being conducted pursuant to the Authority’s enabling statute as found in N.J.S.A. 27.23-6.1 and Executive Order number 37 (Corzine 2006) and the regulations and policies of the Authority with regard to public bid procurement.

B. BIDDER GUIDELINES/CHECKLIST

BIDS THAT FAIL TO CONFORM TO THE FOLLOWING REQUIREMENTS MAY BE REJECTED:

1. The Request for Bids (“RFB”), including specifications and related bid documents (“Bids”) must be received at or before the due date and time stated on the cover page at the following place: New Jersey Turnpike Authority, Administration Building, 581 Main Street, Woodbridge, New Jersey 07095. Late Bids will be returned unopened. Telephone or facsimile Bids will not be accepted.
2. The entity submitting a Bid (“Bidder”) must provide one original and one copy of the Bid. The Bid must include all price information. Bid prices shall include delivery of all items F.O.B. destination or as otherwise provided. Price quotes must be firm through issuance of contract.
3. All Bid prices must be typed or written in ink. Quote the specified unit of measure. If bidding an alternate, provide detailed specifications.
4. All corrections, white-outs, erasures, re-striking of type, or other forms of alteration or the appearance of alteration, to unit and/or total prices must be initialed in ink by the Bidder.
5. The Bidder must attend the mandatory site inspection at the following date(s) and time(s) if applicable:
6. If checked this RFB requires the following mandatory document(s) or the Bid **will** be rejected:

- (a) Bid Bond or Cashier’s Check for 10% of the amount Bid or a Letter of Surety
- (b) Stockholder/Partnership Disclosure Statement

7. See the Authority’s Instruction to Bidders for a complete list of the Authority’s standard contract Terms and Conditions, as well as required forms that must be included with the Bid (**ATTACHED**).

The following checked documents are required for this Bid. Failure to submit the required forms may result in the rejection of the Bid.

- (a) State of New Jersey Division of Revenue Business Registration Certificate
- (b) Certification of Registration with the Secretary of State (only if non-NJ corporation)
- (c) Acknowledgement of requirement for Disclosure of Political Contributions (ELEC)
- (d) Public Works Contractor Registration Certificate(s) (if applicable)
- (e) Affirmative Action Information Sheet with Certificate or Form AA302
- (f) Signed Mandatory Equal Employment Opportunity Language
- (g) SBE/WBE/MBE Certificates and Form
- (h) Vendor Disclosure Form (EO129-Location of Services)
- (i) Notice of Set-Off for State Tax (P.L. 1999, c 159)
- (j) Automobile Insurance Liability Waiver
- (k) Insurance Certificate
- (l) Disclosure of Investment in Iran

8. Bidder must sign Bid
9. Three year Open Option Clause

SECTION II

A. INTENTION

1. Sealed Bids for **R-117228** must be received at the New Jersey Turnpike Authority Administrative Offices, 581 Main Street, Woodbridge, New Jersey 07095-5042, by the due date and time stated on the cover page of this “RFB” at which time and place said Bid will be opened and read in public.
2. Bidders mailing Bids should allow for their normal mail delivery time to ensure timely receipt of the Public Bids. **Please be advised that using an overnight/next-day delivery service does not guarantee overnight/next-day deliveries to our location. The Authority will not be responsible for any Bid not being received by the required date and time.**
3. It is the intention of the Authority to issue a purchase order or notice of award for a price agreement for the procurement of **ONE (1) 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES.**
4. Items purchased under this contract will be delivered as directed by the Authority.
5. Please contact Richard Bava with any questions regarding this procurement at 732-750-5300 x-8636, or rbava@turnpike.state.nj.us.

B. BID SHEET INSTRUCTIONS

1. Bidders must follow all instructions in this RFB and in the Instructions to Bidders issued by the Authority, and any other documents issued by the Authority in connection with this RFB (collectively, “Bid Documents”).
2. Bidders must examine the bid documents carefully before bidding and must ask the Director of Procurement and Materials Management Department (“PMM”) in writing for any interpretation or correction of any apparent ambiguity, inconsistency or apparent error therein. If necessary, an interpretation or correction to the specifications shall be issued by the Director of PMM in response to inquiries and/or addendum shall be faxed to Bidders who have obtained the Bid Documents. Upon the issuing of an addendum, the addendum shall become part of the bid documents. **Requests for interpretation or correction shall be considered only if received at least 5 business days prior to the Bid opening date.**
3. Written requests can be submitted by FAX at 732-750-5399.
4. The submission of the Bid is conclusive evidence that the Bidder is fully aware of the conditions, requirements, and details as stated in the Bid Documents. If the Bidder, prior to submitting its Bid, fails to notify the Director of PMM of the existence of an ambiguity or inconsistency in the Bid Documents, a Bid will conclusively be

presumed to have been based upon the Authority's interpretation of such ambiguity or inconsistency.

5. All erasures, interpolations or other physical changes on the Bid form shall be signed or initialed by the Bidder. Bids containing any conditions, omissions, erasure's, alterations, or items not called for in this "RFB" or irregularities of any kind, may be rejected by the Authority, in its sole discretion.

The Bidder shall not attach conditions, limitations or provisos to their Bid, except in cases where "exceptions" are permitted.

6. **The Authority will accept Approved Equivalent items on this Bid.** If a Bidder is basing the proposal on items other than what is specified, and wishes the items proposed to be considered as an "Approved Equivalent", the Bidder shall enter a price on the Bid sheet then submit on the Exception Sheet in the exact format of the line item on the RFB contained herein, the item number, an item description including manufacturers name, model number, informational brochure(s), and packaging quantities of those items that the Bidder proposes to substitute.

C. BASIS OF AWARD

1. **Bidders must supply a price for every item listed. Bids not having a price for all listed items may be rejected.**
2. **Bidders must quote only one price per line item. If a Bidder quotes multiple prices per line item, the Bid may be rejected.**
3. The Authority will purchase amounts of any given item as needed, at the sole discretion of the Authority and shall not be bound by any quantities listed. The Authority reserves the right to make reasonable increases or decreases to line item quantities.
4. All items are to be Bid FOB Destination. All shipping, handling, and other costs should be considered in the Bid price.
5. The Authority is tax exempt from New Jersey Sales and Excise Tax.
6. Award will be made to the lowest responsive Bidder for the total line items Bid.

D. MISCELLANEOUS

1. Delivery Date _____
(Insert if applicable)

2. Payment Terms: The Authority's standard payment terms are Net 30 days. Prompt payment discounts may be offered and must be a minimum of 10 days.

3. Discount: Maximum time period: _____ Percentage: _____

Note: Although prompt payment discounts will not be considered in determining low Bid, the Authority reserves the right to take advantage of any such discounts offered.

BID PRICE SHEET

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL DOLLAR AMOUNT
1	1	EA	<u>125 KW DIESEL - POWERED GENERATOR AND ACCESSORIES, as per attached Specifications</u>	\$	\$

**ANY INQUIRIES CONCERNING THIS BID MUST BE SENT VIA FAX TO 732-750-5399
NO LATER THAN FIVE (5) BUSINESS DAYS BEFORE BID OPENING**

NEW JERSEY TURNPIKE AUTHORITY

Andrea E. Ward
Director, PMM Department

_____/_____
Name of Company / Authorized Signature of Bidder

E. SIGNATURE PAGE

1. **ADDENDA / INQUIRIES:** COMPLETE (if applicable) BEFORE SUBMITTING BID:

Receipt of Addendum/Inquiries # _____ dated _____ is hereby acknowledged.

Receipt of Addendum/Inquiries # _____ dated _____ is hereby acknowledged.

CHECK BOX IF NO ADDENDA/INQUIRY ISSUED

(All Addenda / Inquiries must be acknowledged as indicated above.)

2. **BID IRREVOCABLE:** This offer shall be irrevocable for ninety (90) working days after the date on which the Authority publicly opens this Bid except in those instances where an unsuccessful Bidder has filed a bid protest pursuant to N.J.A.C. 19:9-2.12. Upon notification of a protest, Bidders are required to hold their prices for an additional 90 days. All Bidders will be notified in writing of the action taken by the Authority.
3. **OFFER/CERTIFICATION:** The undersigned offers and agrees to furnish to the New Jersey Turnpike Authority the services and/or materials in compliance with all terms, conditions, specifications and addenda of the RFB, Bid Documents, and resulting contract. The undersigned further certifies understanding and compliance with the requirements of the standard terms and conditions as stated in the Instructions to Bidders included with the Bid Documents. The undersigned certifies that he or she executes this Bid with full authority so to do; and that all statements contained in this Bid and in this certification are true and correct, and made with full knowledge that the Authority relies upon the truth of the statements contained herein and in any statements requested by the Authority showing evidence of qualifications in awarding the contract.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

4. **AUTHORIZED SIGNATURE:** _____

Print Name and Title: _____

Bidder: _____

Address: _____

City _____ State _____ Zip: _____

E-mail address: _____

Telephone #: _____ Fax #: _____

Date: _____

SECTION III

NO RESPONSE BID SURVEY

BID REQUISITION NUMBER: R-117228

BID TITLE: 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES

If you do not choose to respond to this Bid, please complete the form below:

Name of Company _____

Reason you did not respond (Check all that apply):

_____ Cannot supply product or service

_____ Cannot meet technical specifications

_____ Cannot meet delivery specifications

_____ Cannot meet legal requirements
(i.e. Bid/performance/security/insurance, etc.)

_____ Cannot provide a competitive price at this time

_____ Interested in receiving specifications for informational purposes only

_____ Insufficient lead time to respond

_____ Other:(please be specific) _____

_____ Do you wish to remain on our mailing list?

_____ Yes _____ No

Additional comments: _____

Signed (optional): _____

Company: _____

ADDITIONAL YEARS PURCHASING OPTION, for R-117228

BID TITLE: 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES

3 - Year Open End Option: The Authority shall have the option for one (1) Model Year* from the date of Contract, to order additional units conforming to the requirements of these specifications at the same price and under the same terms and conditions as those contained herein.

The Authority shall further have the option to purchase additional units conforming to these specifications for two (2) additional Model Years. Any unit(s) offered during the two (2) subsequent Model Years shall be of the model equivalent to that specified herein. In the latter instances, if there have been any price changes, the vendor shall submit a request to the Authority covering the aforesaid price changes, and shall include appropriate explanation and justification for any such price changes.

Any such request for price adjustment shall be in writing and directed to the Director, Procurement and Materials Management Department and shall be accompanied by the following evidence as a basis for your request;

1. The published price lists for equipment, which were in effect at the time of your original proposal.
2. The equivalent published price lists in effect at the time of your request.
3. Any additional evidence which the Authority deems necessary in the evaluation of your request.

The Authority shall, within its sole discretion, have the right to accept the price changes proposed by the vendor or if it so desires, re-bid the requirement.

*Model Year is defined as the Model Year of the Manufacturer of the unit(s) offered by you in this Request for Quotation. In that instance where proposals are for equipment for which “Model Year” and “Production Cut-Off Dates” are undefined or non-existent, the “Model Year” is defined, for bid purposes, as one calendar year from the date on which the Contract is accepted. The last date on which orders may be placed for the Model currently in effect is_____.

NEW JERSEY TURNPIKE AUTHORITY

GENERAL INSTRUCTIONS AND SPECIFICATIONS FOR: STAND-BY 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES

Quantity	Description	Maximum Delivery Date
1	Stand-by 125 KW Diesel-Powered Generator and Accessories	120 Days After Receipt of Order

SPECIFICATIONS: SBDPG-2015-S/D: STAND-BY 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES

COMPLIANCE WITH RULES AND REGULATIONS: The units must meet all current OSHA, ANSI, PEOSHA, NFPA 99, NFPA 110, National Electrical Code, and all other applicable regulations. The New Jersey Turnpike Authority reserves the right to request certification indicating the unit bid has been certified and tested to meet these requirements with proper documents attesting to said Certification.

ENERGY STAR REQUIREMENTS: If applicable for items specified in the bid package, the vendor must provide products that earn Energy Star Certification and meet the Energy Star specifications for energy efficiency. The vendor is encouraged to visit energystar.gov for complete product specifications and updated lists of qualifying products. The Energy Star label must also be affixed to each delivered item. The bidder's signature on the signature page certifies that items so indicated that have earned Energy Star and meet the Energy Star specifications or other standards for energy efficiency will be supplied.

ERRORS AND OMISSIONS: Inadvertent omissions or errors in the attached specifications must be brought to the attention of the New Jersey Turnpike Authority's Director of Procurement and Materials Management at 732-750-5300 before bid submission date. If, with knowledge of such error or omission and prior to the correction thereof, the bidder proceeds with any work affected hereby, they shall do so at their own risk and the work so done shall not be considered as work done under and in performance of this Agreement unless and until approved and accepted.

DELIVERY INSTRUCTIONS:

A. **Vendor must contact Peter Perperas (Project Supervisor) at 732-442-8600 ext. 2868 for authorization to schedule date and time prior to delivery. Deliveries shall be made to the NJTA Southern Division Maintenance Facility located at NJ Turnpike milepost 37.1 northbound in Mt. Laurel, NJ 08054.**

B. Vendor shall be responsible for all delivery, shipping and pick-up expenses.

C. All units must be pre-delivery serviced, completely assembled, operational, and cleaned prior to delivery.

D. The following administrative package **must** accompany all deliveries:

- **Invoice**: purchase order number must be displayed on vendors invoice. Invoice shall have current date and be hand delivered to Peter Perperas after final acceptance of complete order.
- Warranty forms properly executed.
- Four (4) keys for each unit shall be furnished.

WARRANTY: All units delivered must be guaranteed to be free from defects in materials, design and workmanship for a minimum of five (5) years/3,000 hours, whichever occurs first parts and labor from the time of acceptance by the New Jersey Turnpike Authority. All warranties shall start upon written acceptance of units by the New Jersey Turnpike Authority. Warranty must include service availability from any manufacturers authorized dealer establishment most closely located to Parkway and Turnpike area. This repair facility may not be further than 100 miles from the Central Maintenance Facility in Holmdel, NJ 07733 or the Central Shops Maintenance Facility located in Hightstown, NJ 08520. If warranty service is required, the vendor who supplied the unit shall provide for pickup, delivery and repair of unit at no charge to the New Jersey Turnpike Authority. The vendor shall also have a program to include an in-house warranty. All warranty periods shall start from date of acceptance of unit by the New Jersey Turnpike Authority.

EXCEPTION SHEET: Exception sheet is furnished with each set of specifications. Bidders making exceptions must note exceptions by item and indicate substitution in lieu and submit with bid, detailed specifications on the substitution. If the vendor is submitting an alternate product, component, feature or part to what is referenced in the specifications, the proposals **must** be accompanied by descriptive literature, marked and indicate the exact items to be furnished, with an engineering drawing of the same. **Failure to supply information requested may result in rejection of bid.** Where no exception is taken, the word “None” shall be neatly printed or typed on the exception sheet. **Failure to supply information and/or failure to complete the bidder’s exception spaces in the prescribed manner may disqualify bid. It shall be understood that if no exception is taken, the vendor shall supply all material exactly as specified. No substitution will be permitted after receipt of bids.**

APPROVED EQUIVALENT: A bid substitution for a specified item brand and/or model that meets the required quality and performance standards of the original brand; substitutions will be determined to be an equivalent by the New Jersey Turnpike Authority.

MANUFACTURER’S PRODUCTION SHEET: The vendor shall furnish one (1) copy of the actual factory production sheet at the time of the Authority’s inspection of the unit.

TRAINING: It shall be the responsibility of the successful bidder to supply all safety, operational and service training to New Jersey Turnpike Authority personnel in accordance with all applicable ANSI and OSHA regulations. The safety and operational training shall consist of a complete review and understanding of the manufacturer's owner manual, along with actual operation of equipment. The instructor shall emphasize all proper uses for safe operation. The training shall include but not limited to all general troubleshooting. The instructor shall also emphasize the proper use of tools and test equipment along with general shop safety. The training shall be scheduled and take place at one (1) site with a minimum of eight (8) hours training designated by the New Jersey Turnpike Authority.

LABELS: Plastic stick-on labels shall not be acceptable.

ADVERTISEMENTS: No Dealer advertisements shall appear on unit or any other related equipment.

ACCESSORIES: All accessories shall be manufacturer installed when the item is available from the manufacturer.

FACILITIES: Bidders shall represent a manufacturer, which has in operation a factory adequate for the manufacture of the equipment, which it proposes to furnish. The manufacture(s) whose associated equipment or products are bid shall have a full service warranty and parts supply facility that can guarantee availability of parts within 24 hours after telephone order and shall be located within a 100 mile radius of either Central Shops Maintenance Facility (exit 8 on the NJ Turnpike) located in Hightstown, NJ 08520 or Telegraph Hill Maintenance Facility (exit 116 on the GSP) located in Holmdel, NJ 07733. This facility will be required to establish an in-house warranty program and provide all warranty work related to the equipment in the bid proposal. The bidder shall submit the locations, names and telephone numbers of people who are authorized to service the equipment or who can be reached for emergency service.

Location _____

Phone # _____

Contact _____

Name & Title

**SPECIFICATIONS: SBDPG-2015-S/D
STAND-BY 125 KW DIESEL-POWERED GENERATOR AND ACCESSORIES**

INTENT: The intent of this specification to describe and govern the purchase of a Stand-By 125 KW Diesel-Powered Generator and Accessories. Generator shall be designed for 120/208 voltage, 3-phase with enclosure, and fuel tank. Generator shall run a **minimum** of twenty-four (24) hours at 100% load. The components including the completed unit shall be new and of the latest design and be in current production at the time of the submission of bid. No bid shall be considered unless the vendor submitting the bid can meet the following conditions. All standard and optional equipment shall be Original Equipment Manufacturer (OEM) items, when available. **NO EXCEPTIONS**

BIDDER’S INSTRUCTIONS

IT SHALL BE THE BIDDER’S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED “APPROVED EQUIVALENTS” MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED “APPROVED EQUIVALENTS” MAY CAUSE REJECTION OF BID. WHERE “MINIMUM” IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

	COMPLY	
	YES	NO
SUBMITTALS:		
A. The contractor shall furnish data showing manufacturer's model numbers, dimensions and weights for the engine, generator, enclosure, including major auxiliary equipment, to include the following listed below B thru I.		
B. Engine generator set, including sales literature and elevation drawings clearly showing entrance points and interconnections.		
C. Fuel consumption curves published kw ratings, combustion air (cfm) requirements.		
D. Dimensions for the generator set enclosure, showing access points, and confirmation concerning fastener sizes, material sizes, hinge sizes, and door latch details shall be supplied as specified.		
E. Exhaust silencer, manufacturer's name and model number including details for the flex, 90° degree exhaust elbow and rain cap.		
F. Battery racks, battery size, and amp hour rating.		

	COMPLY	
	YES	NO
G. Drawing showing the load take-off provisions including access points to service the machine.		
H. Electrical diagrams and schematics for all equipment supplied.		
I. Guards shall be provided over all exposed moving parts as required by OSHA.		
TESTING:		
A. The manufacturer shall be responsible for design prototype tests as described herein.		
B. Components of the emergency system, such as the engine/generator set, and accessories shall not be subjected to prototype tests since the tests are potentially damaging.		
C. Prototype test programs shall include the requirements of NFPA-99 and NFPA-110 and the following: <ul style="list-style-type: none"> • Maximum power (kw). • Maximum motor starting (kva) at 35% instantaneous voltage dip. • Alternator temperature rise by embedded thermocouple and by resistance method per NEMA MG1-32.6. • Governor speed regulation under steady-state and transient conditions. • Voltage regulation and generator transient response. • Harmonic analysis, voltage waveform deviation, and telephone influence factor. • 3-Phase short circuit test. • Alternator cooling air flow. • Torsional analysis testing to verify that the generator set is free of harmful torsional stresses. • Endurance testing. 		
D. Each generator set shall be tested under varying loads with guards and exhaust system in place, test shall include: <ul style="list-style-type: none"> • Single-step load pickup. • Safety shutdown device testing. • Rated power @ 0.8 PF. • Maximum power. • Either a witness test by the NJTA or certified test record sent prior to shipment. 		
GENERAL:		
A. Kohler Model 125REOZJG with a 4R13X generator or approved equivalent.		
B. Provide 128kW/160.0kVA when operating at 120/208 volts, 60 Hz, .80 power factor.		
C. The generator set shall be capable of a Standby 130° C rating while operating in an ambient condition of less than or equal to 77° F and a maximum elevation of 500 feet above sea level.		
D. Vibration isolators shall be provided between engine-alternator and heavy-duty steel base.		

	COMPLY	
	YES	NO
ENGINE:		
A. 4.5 liter displacement engine shall deliver a minimum of 195 hp at a governed speed of 1,800 rpm.		
B. Engine shall be equipped with the following: <ul style="list-style-type: none"> • Electronic isochronous governor capable of .25% steady-state frequency regulation. • 12-volt positive engagement solenoid shift starting motor. • 65-amp automatic battery charging alternator with solid-state voltage regulation. • Positive displacement, full pressure lubrication oil pump, oil filters, dipstick and oil drain. • Dry-type replaceable air cleaner. • Engine driven or electric fuel transfer pump including fuel filter and electric solenoid fuel shutoff valve capable of lifting fuel. 		
C. 4-cylinder turbo-charged air-cooled diesel engine.		
D. Engine shall be EPA certified from factory.		
E. Generator must accept rated load in one-step.		
F. Engine shall be liquid-cooled.		
G. The radiator, fan and other rotating engine parts shall be guarded.		
ALTERNATOR:		
A. Alternator shall be salient-pole, brushless, 2/3 pitch, 12-lead self-ventilated of drip-proof construction with amortisseur rotor windings and skewed stator for smooth voltage waveform. The ratings shall meet the NEMA standard (MG1-32.40) temperature rise limits. The insulation shall Class H per UL1446 and the varnish to be fungus resistant epoxy. Temperature rise of the rotor and starter shall be limited to Standby 130° C. The excitation system shall be of brushless construction controlled by a solid- state voltage regulator capable of maintaining voltage within +/- 2% at any constant load from 0% to 100% of rating. The AVR shall be capable of proper operation under severe nonlinear loads and provide individual adjustments for voltage range, stability and volts-per-hertz operations. The AVR shall be protected from the environment by conformal coating. The waveform harmonic distortion shall not exceed 5% total RMS measured line to line at full rated load. The TIF factor shall not exceed 50.		
B. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current support devices.		
C. The alternator having a single maintenance-free bearing designed for 40000 hour B10 life. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.		
CONTROLLER:		
A. Decision Maker 3000 or approved equivalent generator set controller.		
B. Generator set controller shall be a microprocessor based control system that		

	COMPLY	
	YES	NO
shall provide automatic starting, system monitoring and protection. The controller system shall also provide local monitoring and remote monitoring. The control system shall be capable of PC based updating of all necessary parameters, firmware, and software.		
C. The controller shall be mounted on the generator set and shall have integral vibration isolation. The controller shall be prototype and reliability tested to ensure operation in the conditions encountered.		
CONTROLLER BUTTONS, DISPLAY & COMPONENTS:		
A. Generator set controller shall include the following features and functions.		
B. Push button master control buttons with an indicator light to initiate the following functions: <ul style="list-style-type: none"> • <u>Run Mode</u>—when in run mode the generator set shall start as directed by the operator. • <u>Off/Reset Mode</u>—when in off/reset mode the generator set shall stop; the reset shall reset all faults allowing for the restarting of the generator set after a shutdown. • <u>Auto Mode</u>—when in auto mode the generator set shall be ready to accept a signal from a remote device. 		
C. Emergency Stop Switch: the remote stop switch shall be red in color. Depressing the stop button shall immediately stop the generator set and lockout the generator set for any automatic remote starting.		
D. Push Button/Rotary Selector Dial: the dial shall be used for selection of all menus and sub-menus. Rotating the dial shall enable you to move through the menus, pushing the dial selects the menu and function/features in that menu. Pushing the button shall select the feature/function and sub-menus.		
E. Digital Display: digital display shall be back-lighted and alphanumeric. The display shall display status of all faults and warnings including engine faults.		
F. Fault Light: the controller shall have an annunciator fault light that shall glow red for faults and yellow for warnings. The fault light shall also glow yellow when not in Auto.		
G. Alarm Horn: the controller shall provide an alarm horn that sounds when any faults or warnings are present. The horn shall also sound when the controller is not in the Auto mode.		
H. Alarm Silence/Lamp Test Button: when the button is depressed it shall test all controller lamps. This button shall also silence the alarm horn when the unit is not Auto.		
I. USB Connection: the controller shall have a USB connection that shall allow for updating of all software and firmware. The port shall also allow for servicing of the generator parameters, fault diagnostics and viewing of all controller information via use a laptop computer.		
J. Dedicated User Inputs: the controller shall have dedicated inputs for remote emergency stop switch, remote 2 wire star for transfer switch and auxiliary shutdown.		

	COMPLY	
	YES	NO
K. The controller shall have auto resettable circuit protection integral on the circuit board.		
SYSTEM CONTROLLER MONITORING & STATUS FEATURES & FUNCTIONS:		
A. The generator controller shall display and monitor the following engine and alternator functions and allow adjustments of certain parameters at the controller.		
B. Overall menu: <ul style="list-style-type: none"> • Active shutdown and warnings shall be displayed if present and without the need of operator interface. • Engine runtime with total hours. • Average line to line voltage. • Coolant temperature. • Fuel level or pressure. • Oil pressure. • Battery voltage. • Software version. • Frequency. • Average current. 		
C. Engine metering menu: <ul style="list-style-type: none"> • Engine speed. • Oil pressure. • Coolant temperature. • Battery voltage. 		
D. Generator metering menu: <ul style="list-style-type: none"> • Total power in VA. • Total power in W. • Rated power % used. • Voltage L-L and L-N for all phases. • Current L1, L2, L3. • Frequency. 		
E. Generator set information: <ul style="list-style-type: none"> • Generator set model number. • Generator set serial number. • Controller set number. 		
F. Generator set run time: <ul style="list-style-type: none"> • Engine run time total hours. • Engine loaded total hours. • Number of engine starts. • Total energy in kW. 		
G. Generator set system: <ul style="list-style-type: none"> • System voltage. 		

	COMPLY	
	YES	NO
<ul style="list-style-type: none"> • System frequency 50/60Hz. • System phase, single/three phase. • Power rating kW. • Amperage rating. • Power type standby/prime. • Measurement units, metric/English units adjustable. • Alarm silence, always or auto only. 		
<p>H. Generator set calibration, the following are adjustable at the controller:</p> <ul style="list-style-type: none"> • Voltage L-L and L-N all phases. • Current L1, L2, L3. • Reset all calibrations. 		
<p>I. Voltage regulation, +/- 0.5% regulation, the following is adjustable at the controller:</p> <ul style="list-style-type: none"> • Voltage adjustable +/- 10%. 		
<p>J. Digital and analog inputs and outputs:</p> <ul style="list-style-type: none"> • Display settings and status. 		
<p>K. Event log:</p> <ul style="list-style-type: none"> • Stores event history up to 1000 events. 		
CONTROLLER ENGINE CONTROL FEATURES & FUNCTIONS:		
A. Automatic restart: the controller shall have an automatic restart feature which shall initiate the start routine and re-crank after a failed start attempt.		
B. Cyclic cranking: the controller shall have programmable cyclic cranking.		
C. Engine starting aid: the controller shall have the capability of providing control for an optional engine starting aid.		
D. The control system shall include time delays for engine start and cool down.		
E. The control system shall interface with the engine ECM and display engine fault codes and warnings. The ECM shall also include sender failure monitoring to help distinguish between failed senders and actual failure conditions.		
F. The controller shall monitor and display engine governor functions with include steady state and transient frequency monitoring.		
CONTROLLER ALTERNATOR CONTROL FEATURES & FUNCTIONS:		
A. Integrated hybrid voltage regulator: the system shall have integral microprocessor based voltage regulator system that shall provide +/- 5% voltage regulation, no load to full load with three phase sensing. The voltage regulator shall be adjustable at the controller with maximum +/- 10% adjustable of nominal voltage.		
B. AC output voltage regulator adjustment: the system shall allow for adjustment of the integral voltage regulator with a maximum of +/- 10% adjustment of the system voltage.		
C. Alternator thermal overload protection: the system shall have integral alternator overload and short circuit protection matched to each alternator for the particular voltage and phase configuration.		

	COMPLY	
	YES	NO
D. Power metering: the controller shall digitally display power metering of kW and kVA.		
E. Event logging: the controller shall keep records of up to 1000 events for warning and shutdown faults.		
F. Historical data logging: the controller total number of generator set successful start shall be recorder and displayed.		
G. Programmable access: the control system shall include a USB port that shall give technicians the ability to provide software and firmware upgrades. The system shall also be capable of allowing setting all critical parameters using the service software and a laptop computer. All parameters and setting should be capable to being stored on a laptop for future upgrades of printing for analysis.		
GENERATOR SET WARNING, SHUTDOWN ALARM AND STATUS:		
A. The generator set shall have alarms and status indication lamps that show non-automatic status and warning and shutdown conditions. The controller shall indicate with a warning lamp and or alarm and on the digital display screen any shutdown, warning or engine fault condition that exists in the generator set system. The following alarms and shutdowns shall exist as a minimum:		
B. Engine functions: <ul style="list-style-type: none"> • Critical high fuel level (alarm). • ECM communication loss (shutdown). • ECM diagnostics (alarm & shutdown). • Engine over speed (shutdown). • Engine start aid active. • Engine under speed (shutdown). • Fuel tank leak (alarm & shutdown). • High DC battery voltage (alarm). • High coolant temperature (alarm & shutdown). • High fuel level (alarm). • Low DC battery voltage (alarm). • Low coolant level (shutdown). • Low coolant temperature (alarm). • Low cranking voltage (alarm). • Low engine oil level (alarm & shutdown). • Low fuel level (alarm & shutdown). • Low fuel pressure (alarm). • Low oil pressure (alarm & shutdown). • No coolant temperature signal (shutdown). • No oil pressure signal (shutdown). • Over crank (shutdown). • Speed sensor fault (alarm). 		
C. Generator functions: <ul style="list-style-type: none"> • AC sensing loss over & under current (alarm & shutdown). • Alternator protection (shutdown). 		

	COMPLY	
	YES	NO
<ul style="list-style-type: none"> • Ground fault input (alarm). • kW overload (shutdown). • Locked rotor (shutdown). • Over frequency (shutdown). • Over AC voltage (shutdown). • Under frequency (shutdown). • Under AC voltage (shutdown). • Emergency stop (shutdown). 		
<p>D. General functions:</p> <ul style="list-style-type: none"> • Battery charger fault (alarm). • Common fault (shutdown). • Common warning (alarm). • Master switch not in auto (alarm). • Generator running. • Input/output fault (alarm). 		
<p>E. The generator set controller shall be capable of meeting all necessary NFPA 110 level 1 requirements, which shall include several of the above along with EPS supplying load, master switch not in auto and contacts for local and remote common alarm.</p>		
ACCESSORIES:		
<p>A. An air cleaner restriction indicator shall be supplied indicating the need for maintenance of air cleaners.</p>		
<p>B. Standard air cleaner: the air cleaner shall provide the engine air filtration which meets the engine manufacturer's specifications under typical operating conditions.</p>		
<p>C. Battery rack and battery cables recommended by the manufacturer shall be supplied.</p>		
<p>D. Batteries: BCI group 31 batteries meeting manufacturer's specifications. Each battery shall have a cold cranking amp of 950 amps and a minimum reserve capacity of 185 minutes at 80°F.</p>		
<p>E. Circuit breaker: the generator shall come with a primary, factory installed, 80% rated line circuit breaker of 400 amperes that is UL489 listed. Line circuit breakers shall be sized for the rated capacity of the genset. The line circuit breaker shall include auxiliary contacts, shunt trip, under voltage trip, alarm switch, and overcurrent switch functionality.</p>		
<p>F. Flex exhaust tube: the exhaust piping shall be gas proof, seamless, stainless steel, flexible exhaust elbows with threaded NPT connection.</p>		
<p>G. Generator strip heater: the generator strip heater shall prevent the accumulation of moisture and dampness in the generator windings. The heater shall be wired on at all times.</p>		
<p>H. Run relay: the run relay shall provide three-pole, double-throw relay with 10-amp/250VAC contacts to indicate that the generator is running. The relay provides three (3) sets of dry contacts for energizing or de-energizing customer</p>		

	COMPLY	
	YES	NO
devices while the generator is running.		
I. Engine exhaust silencer, coated to be temperature and rust resistant, rated for critical applications. Silencer shall reduce noise 25-35 dba.		
J. Block heater of proper wattage and voltage thermostatically controlled to maintain engine coolant at 90° F to meet the start-up requirement of NFPA-99 or NFPA-110, Level 1.		
K. Fuel pressure gauge: a pressure gauge shall be mounted into the fuel line to display the pressure of the incoming fuel.		
DOUBLE WALL SECONDARY CONTAINMENT SUB BASE FUEL TANK:		
A. The sub base fuel tank used in conjunction with a diesel powered generator set of 125 kW shall contain approximately 315 gallons of diesel fuel.		
B. The sub base fuel system shall be listed under UL 142, subsection entitled Special Purpose Tanks EFVT category, and shall bear their mark of UL Approval according to their particular section.		
C. The above ground steel secondary containment rectangular tank for use as a sub base for diesel generators shall be manufactured and intended to be installed in accordance with the Flammable and Combustible Liquids Code—NFPA 30, the standard for Installation and Use of Stationary Combustible Engine and Gas Turbines—NFPA 37, and Emergency and Standby Power systems—NFPA 110.		
D. Primary tank : <ul style="list-style-type: none"> • Tank shall be rectangular in shape and constructed in clam shell fashion to ensure maximum structural integrity and allow the use of a full throat fillet weld. Steel channel support system: <ul style="list-style-type: none"> • Reinforced steel box channel for generator support with a load rating of 5,000 lbs. per generator mounting hole location. Full height gussets at either end of channel and at generator mounting holes shall be utilized. Exterior finish: <ul style="list-style-type: none"> • The exterior coating shall be Power Armor Plus, a polyurethane rubberized coating. 		
E. Venting: normal venting shall be sized in accordance with the American Petroleum Institute standard # 2000, Venting Atmospheric and Low Pressure Storage Tanks not less than 1¼" nominal inside diameter.		
F. Emergency Venting: the emergency vent opening shall be sized to accommodate the total capacity of both normal and emergency venting and shall be not less than that derived from NFPA 30, table 2-8 and based on the wetted surface area of the tank. The wetted area of the tank shall be calculated on the basis of 100% of the primary tank. The vent shall be spring pressure operated: opening pressure is 0.5/psig and full opening pressure is 2.5 psig. The emergency relief vent shall be sized to accommodate the total venting capacity of both normal and emergency vents.		

	COMPLY	
	YES	NO
G. Fuel Fill: there shall be a 2" NPTR opening within the primary tank and lockable manual fill cap.		
H. Fuel Level: a direct reading, UL listed, magnetic fuel level gauge with a hermetically sealed vacuum tested dial shall be provided to eliminate fogging.		
I. Low Fuel Level Switch: shall consist of a 30 watt float switch for remote or local annunciation of a 50% standard low fuel condition.		
WEATHER ENCLOSURE:		
A. All enclosures shall be constructed from high strength, low alloy steel, aluminum or galvanized steel.		
B. The enclosure shall be finish coated with powder baked paint. Enclosures shall be finished in the manufacturer's standard color.		
C. The enclosures shall allow the generator set to operate at full load in an ambient temperature of 40-45°C with no additional derating of the electrical output.		
D. Enclosures shall be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum are tow (2) doors per side. Access to the controller and main line circuit breaker shall meet the requirements of the National Electric Code.		
E. Doors shall be equipped with lockable latches. All locks shall be keyed alike.		
F. A duct between the radiator and air outlet shall be provided to prevent re-circulation of hot air.		
G. The complete exhaust system shall be internal to the enclosure or optional with external mounted silencer.		
H. The critical silencer shall be insulated with a tailpipe and rain cap.		
INSTALLATION:		
A. Equipment shall be installed by NJTA personnel. The successful bidder shall provide a full set of manufacturer's plans, specifications and schematics for installation to the Authority within three (3) days of notice of intent to award. Any additional recommendations from the manufacturer for installation in accordance with all applicable codes must be supplied with the manufacturer's plans.		
SITE TESTS:		
A. An installation check, start-up, and building load test shall be performed by the manufacturer's local representative. The time and date of the site test shall be determined by the New Jersey Turnpike Division. Tests shall include the following below:		
B. Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations under the environmental conditions present and expected.		
C. Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. This shall include engine heaters, battery charger, generator strip heaters, remote annunciator, etc.		
D. Generator start-up under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting		

	COMPLY	
	YES	NO
and stopping, vibration during running, normal and emergency line-to-line voltage and phase rotation.		
E. Automatic start by means of a simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator set voltage, amperes and frequency shall be monitored throughout the test.		
AUTOMATIC TRANSFER SWITCH:		
A. Transfer switch system with 3-pole/4-wire solid neutral (T), 200-amperes, 208 volt-60Hz. Transfer switch shall consist of an inherently double throw power transfer switch mechanism and a microprocessor controller to provide automatic operation.		
B. Automatic transfer switch shall be an ASCO—series 300 cat. # A300320041C or approved equivalent.		
CONSTRUCTION:		
A. The transfer switch shall be electrically operated and mechanically held with double throw construction and operated by a momentarily energized solenoid driven mechanism. Main operators shall include overcurrent disconnect devices.		
B. All transfer switch sizes shall use only one (1) type of main operator for ease of maintenance and commonality of parts.		
C. The switch shall be positively locked and unaffected by momentarily outages, so that contact pressure is maintained at a constant value and contact temperature rise is minimized for maximum reliability and operating life.		
D. All main contacts shall be silver composition. Switches rated 600-amperes and above shall have segmented blow-on construction for high withstand and close-on capability and be protected by separate arcing contacts.		
E. Inspection of all contacts shall be possible from the front of the switch without disassembly of operating linkages and without disconnection of power conductors. Switches rated 800-amperes and higher shall have front removable and replaceable contacts. All stationary and moveable contacts shall be replaceable without removing power conductors and/or bus bars.		
F. Designs utilizing components of molded case circuit breakers, contactors, or parts, which are not intended for continuous duty, repetitive switching or transfer between two active power sources shall not be acceptable.		
G. For two and three pole switches where neutral conductors are to be solidly connected as shown on the plans, a neutral conductor plate with fully rated AL-CU pressure connectors shall be provided.		
H. For four pole switches with a switching neutral, where neutral connectors must be switched as shown on the plans, the contactor shall be provided with fully rated switched neutral transfer contacts. Overlapping neutral contacts may be used as an alternative.		
ENCLOSURE:		

	COMPLY																			
	YES	NO																		
A. The automatic transfer switch (ATS) shall be furnished in a NEMA 1 enclosure.																				
B. All standard door mounted switches and indicating LED's shall be integrated into a flush-mounted interface membrane or equivalent in the enclosure door for easy viewing and replacement. The panel shall be capable of having a manual locking feature to allow the user to lockout all membrane mounted control switches to prevent tampering. This cover shall be mounted with hinges and have a latch that may be padlocked. The membrane panel shall be suitable for mounting by others when furnished on open type units.																				
CONTROLLER DISPLAY & KEYBOARD:																				
A. A four line, 20 character LCD display and dynamic 4 button keypad shall be an integral part of the controller for viewing all available data and setting desired operational parameters. Operational parameters shall also be available for viewing and control through the communications interface port or USB.																				
B. The following parameters shall only be adjustable by use of a password protected programming on the controller: <ul style="list-style-type: none"> • Nominal line voltage and frequency. • Single or three phase sensing. • Operating parameter protection. • Transfer operating mode configuration (Standard transition, Programmed transition or closed transition). 																				
VOLTAGE FREQUENCY & SENSING:																				
A. Voltage (all phases) and frequency on both the normal and emergency sources shall be continuously monitored. Voltage on both normal and emergency sources and frequency on the emergency sources shall be adjustable with the following pickup, dropout, trip setting capabilities (values shown as % of nominal unless otherwise specified:																				
<table border="1"> <thead> <tr> <th>Parameter</th> <th>Dropout/Trip</th> <th>Pickup/Reset</th> </tr> </thead> <tbody> <tr> <td>Under voltage</td> <td>75 to 98%</td> <td>85 to 100%</td> </tr> <tr> <td>Over voltage</td> <td>106 to 135%</td> <td>95 to 100% of trip</td> </tr> <tr> <td>Under frequency</td> <td>95 to 99%</td> <td>80 to 95%</td> </tr> <tr> <td>Over frequency</td> <td>101 to 115%</td> <td>105 to 120%</td> </tr> <tr> <td>Voltage unbalanced</td> <td>5 to 20%</td> <td>3 to 18%</td> </tr> </tbody> </table>	Parameter	Dropout/Trip	Pickup/Reset	Under voltage	75 to 98%	85 to 100%	Over voltage	106 to 135%	95 to 100% of trip	Under frequency	95 to 99%	80 to 95%	Over frequency	101 to 115%	105 to 120%	Voltage unbalanced	5 to 20%	3 to 18%		
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B. Repetitive accuracy of all settings shall be within +/- 0.5% over an operating temperature range of -20° C to 70° C.																				
C. An adjustable dropout time for transient voltage and frequency excursions shall be provided. The time delays shall be 0.1 to 9.9 seconds for voltage and .1 to 15 seconds for frequency.																				
D. The controller shall be capable of sensing the phase rotation of both the normal and emergency sources. The source shall be considered unacceptable if the phase rotation is not the preferred rotation selected (ABC or BAC). Unacceptable phase rotation shall be indicated on the LCD; the service required LED and the annunciation through the communication protocol and																				

	COMPLY	
	YES	NO
dry contacts. In addition the phase rotation sensing shall be capable of being disabled, if required.		
E. The controller shall be capable of detecting a single phasing condition of a source even though a voltage may be regenerated by the load. This condition is a loss of phase and shall be considered a failed source.		
F. Source status screens shall be provided for both normal and emergency to provide digital readout of voltage on all 3 phases (phase to phase and phase to neutral), frequency, and phase rotation.		
TIME DELAYS:		
A. An adjustable time delay of 0 to 6 seconds shall be provided to override momentary normal source outages and delay all transfer and engine starting signals. Capability shall be provided to extend this time delay to 60 minutes by providing an external 12 or 24 VDC power supply.		
B. A time delay shall be provided on transfer to the emergency source, adjustable from 0 to 60 minutes for controlled timing of transfer of loads to emergency.		
C. A time delay shall be provided on a re-transfer to normal. The timed delays shall be adjustable from 0 to 60 minutes. Time delay shall be automatically bypassed if the emergency source fails and the normal source is acceptable.		
D. A time delay activated output signal shall also be provided to drive external relays for selective load disconnect and reconnect control. The controller shall be capable of controlling a maximum of 9 individual output time delays to step loads on after a transfer occurs. Each output may be individually programmed for their own time delay of up to 60 minutes. Each sequence shall be independently programmed for transferring from normal to emergency and transferring from emergency to normal.		
E. The controller shall also include the following built-in delays for the following operations: <ul style="list-style-type: none"> • 0 to 60 minute time delay on failure to acquire the acceptable electrical parameters from the emergency source. • 10 seconds to 15 minute delay for a failure to synchronize on an in-phase operation. 		
F. All time delays shall be adjustable in 1 second increments.		
G. All time delays shall be adjustable by using the display and keypad with a remote device connected to the communications interface port or USB.		
H. Each time delay shall be identified and a dynamic countdown shall be shown on the display. Active time delays can be viewed with a remote device connected to the communications interface port or USB.		
ADDITIONAL FEATURES:		
A. The controller shall have 3 levels of security. Level 1 shall allow monitoring of settings and parameters only. The level 1 shall be capable of restricted with the use of a lockable cover. Level 2 shall allow test functions to be performed and level 3 shall allow setting of all parameters.		
B. The display shall provide for the test functions allowed through password		

	COMPLY	
	YES	NO
security. The test function shall be load, no load or auto test. The auto test function shall request an elapsed time for test. At the completion of this time delay the test shall be automatically ended and a retransfer sequence shall commence. All loaded tests shall be immediately ended and retransfer shall occur if the emergency source fails and the normal source is acceptable.		
C. A contact closure shall be provided for a low voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the generator set to reach proper output and run for the duration of the cool down setting regardless of whether the normal source restores before the load is transferred.		
D. Auxiliary contacts shall be provided consisting of a minimum of two contacts, closed when the ATS is connected to the normal source and two contacts closed when the ATS is connected to the emergency source.		
E. LED indicating lights shall be provided; one to indicate when the ATS is connected to the normal source (green) and one to indicate when the ATS is connected to the emergency source (red).		
F. LED indicating lights shall be provided and energized by controller outputs. The lights shall provide true source availability of the normal (green) and emergency sources (red) as determined by the voltage, frequency, and phase rotation sensing trip and reset settings for each source.		
G. A membrane switch shall be provided on the membrane panel to test all indicating lights and display when depressed.		
H. Provide ability to select “commit/no commit to transfer” to determine whether the load should be transferred to the emergency generator if the normal source restores before the generator is ready to accept the load.		
I. Terminals shall be provided for a remote contact which opens to signal the ATS to transfer to emergency and for the remote contacts which closes to inhibit transfer to emergency and/or retransfer to normal. Both of these inhibit signals can be activated through the keypad, communications interface port or USB. A “not-in-auto” LED shall indicate anytime the controller is inhibiting transfer from occurring.		
J. An in-phase monitor shall be a standard feature in the controller. The monitor shall control transfer so that motor load inrush currents do not exceed normal starting currents, and shall not require external control of power sources. The in-phase monitor shall be specifically designed for and be the product of the ATS manufacturer. The in-phase monitor shall be capable of being enabled or disabled from the user interface, communications interface port or USB.		
K. A time based load control feature shall be available to allow the prioritization addition and removal of loads based during transfer. This feature may be enabled for either or both sources. The user shall be able to control up to nine loads with independent timing sequences for pre and post transfer delays in either direction of transfer.		
L. The controller shall provide 2 inputs for external controls that can be		

	COMPLY	
	YES	NO
<p>programmed from the following values:</p> <ul style="list-style-type: none"> • Common fault-Remote test • Inhibit transfer-Low battery voltage • Peak shave-Time delay bypass • Load shed forced to OFF position (programmed transition only) <p>The controller shall provide two from “C” contact outputs rated for up to 2A @ 240 VAC or 2A @ 480 VAC that can be programmed from the following values:</p> <ul style="list-style-type: none"> • Aux switch open—Transfer switch aux contact fault • Alarm silenced—Alarm active • I/O communication loss—Contactor position • Exercise active—Test mode active • Fail to transfer—Fail to acquire standby source • Source available—Phase rotation error • Not in automatic mode—Common alarm • In phase monitor sync—Load bank control active • Load control active—Maintenance mode active • Non-emergency transfer—Fail to open/close • Loss of phase—Over/under voltage • Over/under frequency—Voltage unbalance • Start signal—Peak shave active • Preferred source supplying load—Standby source supplying load • The controller shall be capable of expanding the number of inputs and outputs with additional modules. Optional input/output modules shall be furnished with mount on the inside of the enclosure to facilitate ease of connections. 		
<p>M. Engine Exerciser: The controller shall provide an integral engine exerciser. The engine exerciser shall allow the user to program up to 21 different exercise routines based on the calendar mode. For each routine, the user shall be able to do the following:</p> <ul style="list-style-type: none"> • Enable or disable the routine • Enable or disable transfer of the load during routine • Set the start time, time of day, time of week, week of month • Set duration of the run • At the end of the specified loaded exercise duration the switch shall transfer the load back to normal and run the generator for the specified cool down period. All loaded exercises shall be immediately ended and retransfer shall occur if the standby source fails. The next exercise period shall be displayed on the main screen with type of exercise, time, and date. The type of exercise and the time remaining shall be display when the exercise is active. It shall be possible of ending the exercise event with a single button push. 		

	COMPLY	
	YES	NO
N. Date & Time: the date shall automatically adjust for leap year and the time shall have the capability of automatically adjusting for daylight saving and standard times.		
<p>O. System Status: the controller shall have a default display the following on:</p> <ul style="list-style-type: none"> • System status • Date, time and type of the next exercise event • Average voltage of the preferred and standby sources <p>Scrolling through the displays shall indicate the following:</p> <ul style="list-style-type: none"> • Line of line and lone to neutral voltages for both sources • Frequency of each source • Load current for each phase • Single or three phase operation • Type of transition • Preferred source • Commit or no commit modes of operation • Source/source mode • In phase monitor enable/disable • Phase rotation • Date and time 		
P. Controllers that require multiple screens to determine system status or display “coded” system status messages, which must be explained by references in the operators manual shall not be acceptable.		
Q. Self-Diagnostics: The controller shall contain a diagnostic screen for the purpose of detecting system errors. This screen shall provide information on the status input signals to the controller which may be preventing load transfer commands from being completed.		
R. Communications Interface: The controller shall be capable of interfacing through a standard communications with a network of transfer switches and generators. It shall be able to be connected via an RS-485 serial communication (up to 4,000' direct connect or multi-drop configuration). This module shall allow for seamless integration of existing or new communication transfer devices and generators.		
S. The transfer switch shall also be able to interface to third party applications using Modbus RTU open standard protocols utilizing Modbus register maps. Proprietary protocols shall not be acceptable.		
T. The controller shall contain a USB port for use with software diagnostic application available to factory authorized personnel for downloading the controller’s parameters and settings; exercise event schedules; maintenance records and event history. The application can also adjust parameters on the controller.		
U. Data Logging: The controller shall have the ability to log data and to maintain the last 2,000 events even in the event of total power loss. The		

	COMPLY	
	YES	NO
<p>following events shall be time and date stamped and maintained in a non-volatile memory. The controller shall be able to display up to the last 99 events. The remaining events shall be accessible via the communications interface port or USB.</p> <p>a. Event Logging</p> <ul style="list-style-type: none"> • Data, date, and time indication port or USB <p>b. Statistical Data</p> <ul style="list-style-type: none"> • Total number of transfers* • Total number of fail to transfers* • Total number of transfers due to preferred source failure* • Total number of minutes of operation* • Total number of minutes in the standby source* • Total number of minutes not in the preferred source* • Normal to emergency transfer time • Emergency to normal transfer time • System start date • Last Maintenance date <p>*The statistical data shall be held in two registers. One register shall contain data since start up and the second register shall contain data from the last maintenance reset.</p>		
V. External DC Power Supply: An optional provision shall be available to connect up to two external 12/24 VDC power supply to allow the LCD and the door mounted control indicators to remain functional when both power sources are dead for extended periods of a time. This module shall contain reverse battery connection indication and circuit protection.		
MANUFACTURER'S RESPONSIBILITY:		
A. The supplier shall be able to provide the services of a field technician to test and demonstrate and train the operating personnel.		
B. The Authority shall have the option of witnessing the demonstration of the system. Notification shall be provided one week prior to the test and demonstration. Submittal shall include specification sheets showing all standard and optional accessories to be supplied: schematic, wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set and the transfer switch.		
C. Each transfer switch shall be provided with an operator's manual providing installation and operating instructions.		
D. Each automatic transfer switch and generator set shall be warranted by the generator set manufacturer for one year from the date placed in service.		
PAINT:		
A. All steel parts shall have the mill scale and oil removed by means of a high-pressure chemical cleaner prior to painting. These surfaces shall be primed with a zinc rich, rust preventive primer. The finish paint shall be a high quality, high		

	COMPLY	
	YES	NO
solid, polyurethane type enamel. All painting shall be done in conjunction with good commercial practices.		
B. Enclosure Color: Manufacturer's Standard.		
C. Generator and Transfer Switch: Manufacturer's Standard.		
MANUALS/ELECTRICAL DIAGRAM:		
A. One (1) service manual, one (1) parts manual, and one (1) electrical diagram for each unit shall be supplied at time of delivery.		

