



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**Solicitation**

NUMBER
DEFK13015

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE 304-558-2544

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

DIV ENGINEERING & FACILITIES  
 ARMORY BOARD SECTION  
 1707 COONSKIN DRIVE  
 CHARLESTON, WV  
 25311-1099 304-341-6368

DATE PRINTED
03/29/2013

BID OPENING DATE: 04/25/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** PLEASE NOTE A MANDATORY PRE-BID MEETING IS SCHEDULED FOR 04/09/2013 AT 10:00 AM AT THE CFMO OFFICE LOCATED AT 1707 COONSKIN DRIVE CHARLESTON, WV 25301. TWO ADDITIONAL MANDATORY MEETINGS WILL BE HELD ON APRIL 10, 2013 AT THE GLEN JEAN AFRC AND GASSAWAY AFRC. THE MANDATORY MEETING FOR GLEN JEAN WILL BE 4/10/13 AT 9:00 AM. THE MANDATORY MEETING FOR GASSAWAY WILL BE 4/10/13 AT 1:00 PM. ***** PLEASE NOTE THE DRUG FREE WORKPLACE AFFIDAVIT AND BID BOND ARE REQUIRED WITH BID SUBMISSION. *****						
0001	1	JB		285-39		
				RELOCATE GENERATOR		
0002	1	JB		285-39		
				PURCHASE & INSTALL NEW GENERATOR AT GLEN JEAN AFRC		
THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WV NATIONAL GUARD, IS SOLICITING BIDS TO RELOCATE AN EMERGENCY GENERATOR FROM THE GLEN						
SIGNATURE				TELEPHONE		DATE
TITLE		FEIN		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



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BID OPENING DATE: 04/25/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				JEAN AFRC TO THE GASSAWAY AFRC AND PURCHASE/INSTALL NEW EMERGENCY GENERATOR FOR THE GLEN JEAN AFRC, PER THE ATTACHED SPECIFICATIONS.  ATTACHMENTS INCLUDE:  1. INSTRUCTIONS TO VENDORS SUBMITTING BIDS 2. GENERAL TERMS AND CONDITIONS 3. ADDITIONAL TERMS AND CONDITIONS (CONSTRUCTION CONTRACTS ONLY) 4. DEFK13015 SPECIFICATIONS 5. CERTIFICATION AND SIGNATURE PAGE 6. PURCHASING AFFIDAVIT 7. DRUG-FREE WORKPLACE AFFIDAVIT 8. BID BOND INSTRUCTIONS AND FORM 9. WV-75-CONSTRUCTION BID SUBMISSION REVIEW FORM		
				***** THIS IS THE END OF RFQ DEFK13015 ***** TOTAL:		

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**INSTRUCTIONS TO VENDORS SUBMITTING BIDS**

1. **REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.
2. **MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.
3. **PREBID MEETING:** The item identified below shall apply to this Solicitation.

[ ] A pre-bid meeting will not be held prior to bid opening.

[ ] A **NON-MANDATORY PRE-BID** meeting will be held at the following place and time:

[✓] A **MANDATORY PRE-BID** meeting will be held at the following place and time:

April 9, 2013 at 10:00 am at the Construction Facilities and Maintenance Operations Building at 1707 Coonskin Drive Charleston, WV 25301.

There will be two (2) additional mandatory meetings at the Glen Jean AFRC and Gassaway AFRC on April 10, 2013.

Glen Jean AFRC - 4/10/13 at 9:00 am  
Gassaway AFRC - 4/10/13 at 1:00 pm

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing. Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required

information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. **VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are non-binding.

Question Submission Deadline: April 15, 2013 at 5:00 pm

Submit Questions to:

Tara Lyle, File 32

2019 Washington Street, East

P.O. Box 50130

Charleston, WV 25305

Fax: 304-558-4115

Email: Tara.L.Lyle@wv.gov

5. **VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.
6. **BID SUBMISSION:** All bids must be signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The bid delivery address is:

Department of Administration, Purchasing Division  
 2019 Washington Street East  
 P.O. Box 50130,  
 Charleston, WV 25305-0130



The bid should contain the information listed below on the face of the envelope or the bid may not be considered:

SEALED BID

BUYER: \_\_\_\_\_  
 SOLICITATION NO.: \_\_\_\_\_  
 BID OPENING DATE: \_\_\_\_\_  
 BID OPENING TIME: \_\_\_\_\_  
 FAX NUMBER: \_\_\_\_\_

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus  convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE:     Technical  
                    Cost

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when time stamped by the official Purchasing Division time clock.

**Bid Opening Date and Time:**

April 25, 2013 at 1:30 pm

**Bid Opening Location:**

Department of Administration, Purchasing Division  
 2019 Washington Street East  
 P.O. Box 50130,  
 Charleston, WV 25305-0130

8. **ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.
9. **BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

**GENERAL TERMS AND CONDITIONS:**

1. **CONTRACTUAL AGREEMENT:** Issuance of a Purchase Order signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.
  
2. **DEFINITIONS:** As used in this Solicitation / Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation / Contract.
  - 2.1 **"Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
  
  - 2.2 **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods and services requested in the Solicitation.
  
  - 2.3 **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.
  
  - 2.4 **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.
  
  - 2.5 **"Purchase Order"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the successful bidder and Contract holder.
  
  - 2.6 **"Solicitation"** means the official solicitation published by the Purchasing Division and identified by number on the first page thereof.
  
  - 2.7 **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
  
  - 2.8 **"Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**Term Contract**

**Initial Contract Term:** This Contract becomes effective on   
  
and extends for a period of  year(s).

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal must be submitted to the Purchasing Division Director thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to  successive one (1) year periods. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

**Reasonable Time Extension:** At the sole discretion of the Purchasing Division Director, and with approval from the Attorney General's office (Attorney General approval is as to form only), this Contract may be extended for a reasonable time after the initial Contract term or after any renewal term as may be necessary to obtain a new contract or renew this Contract. Any reasonable time extension shall not exceed twelve (12) months. Vendor may avoid a reasonable time extension by providing the Purchasing Division Director with written notice of Vendor's desire to terminate this Contract 30 days prior to the expiration of the then current term. During any reasonable time extension period, the Vendor may terminate this Contract for any reason upon giving the Purchasing Division Director 30 days written notice. Automatic extension of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases, but Attorney General approval may be required.

**Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within  days.

**One Time Purchase:** The term of this Contract shall run from the issuance of the Purchase Order until all of the goods contracted for have been delivered, but in no event shall this Contract extend for more than one fiscal year.

**Other:** See attached.

4. **NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Purchase Order will be considered notice to proceed
5. **QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.
- Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.
- Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.
- Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.
- One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.
6. **PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.
7. **EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.
8. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.
- BID BOND:** All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

**PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of . The performance bond must be issued and received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.

**LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be issued and delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

**MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

**WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall have appropriate workers' compensation insurance and shall provide proof thereof upon request.

**INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award:

**Commercial General Liability Insurance:**  
 or more.

**Builders Risk Insurance:** builders risk – all risk insurance in an amount equal to 100% of the amount of the Contract.

The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

**LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

- WV Contractor's License
- 
- 
- 

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

**9. LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.

**10. ALTERNATES:** Any model, brand, or specification listed herein establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

**11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or



other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

**12. LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount

	for	

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.

**13. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Purchase Order, upon receipt.

**14. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee if applicable.

**15. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

**16. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

**17. PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears, to the Agency at the address on the face of the purchase order labeled "Invoice To."

**18. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

**19. DELIVERY:** All quotations are considered freight on board destination ("F.O.B. destination") unless alternate shipping terms are clearly identified in the bid. Vendor's listing of shipping terms that contradict the shipping terms expressly required by this Solicitation may result in bid disqualification.

**20. INTEREST:** Interest attributable to late payment will only be permitted if authorized by the West Virginia Code. Presently, there is no provision in the law for interest on late payments.

**21. PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Resident Vendor Certification form has been attached hereto to allow Vendor to apply for the preference. Vendor's

failure to submit the Resident Vendor Certification form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.

22. **SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid on or after July 1, 2012, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to submission of its bid to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.
23. **TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
24. **CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-7.16.2.
25. **WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.
26. **TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
27. **APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
28. **COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendors acknowledge that they have reviewed, understand, and will comply with all applicable law.
29. **PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage

requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.

- 30. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.
- 31. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary, no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). **No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.**
- 32. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
- 33. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
- 34. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
- 35. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
- 36. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
- 37. BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

- 38. HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at <http://www.state.wv.us/admin/purchase/vrc/hipaa.html> and is hereby made part of the agreement provided that the Agency meets the definition of a Covered entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the Vendor. Additionally, the HIPAA Privacy, Security, Enforcement & Breach Notification Final Omnibus Rule was published on January 25, 2013. It may be viewed online at <http://www.gpo.gov/fdsys/pkg/FR-2013-01-25/pdf/2013-01073.pdf>. Any organization, that qualifies as the Agency's Business Associate, is expected to be in compliance with this Final Rule. For those Business Associates entering into contracts with a HIPAA Covered State Agency between January 25, 2013 and the release of the 2013 WV State Agency Business Associate Agreement, or September 23, 2013 (whichever is earlier), be advised that you will be required to comply with the 2013 WV State Agency Business Associate Agreement. For those Business Associates with contracts with a HIPAA Covered State Agency executed prior to January 25, 2013, be advised that upon renewal or modification, you will be required to comply with the 2013 WV State Agency Business Associate Agreement no later than September 22, 2014.
- 39. CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.
- 40. DISCLOSURE:** Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code § 29B-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and WILL NOT BE HONORED. In addition, a legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the applicability of the various public records laws should be addressed to your own legal counsel prior to bid submission.

- 41. LICENSING:** In accordance with West Virginia Code of State Rules §148-1-6.1.7, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.
- 42. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Purchase Order from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.
- 43. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid for the same material, supplies, equipment or services; (2) that its bid is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this RFQ in its entirety; understands the requirements, terms and conditions, and other information contained herein. Vendor's signature on its bid also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

The individual signing this bid on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

- 44. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

- 45. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting,



supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, *etc.* and the filing of all necessary documents, forms and returns pertinent to all of the foregoing. Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

- 46. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.
- 47. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
- 48. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.
- 49. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire any interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.



**50. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

- Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.
- Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at [purchasing.requisitions@wv.gov](mailto:purchasing.requisitions@wv.gov).

**51. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision.

The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**52. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or

such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.

The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

- a. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- b. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**53. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)**

1. **CONTRACTOR'S LICENSE:** West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor.

West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. Failure to include a contractor's license number on the bid shall result in Vendor's bid being disqualified. Vendors should include a contractor's license number in the space provided below.

**Contractor's Name:** \_\_\_\_\_

**Contractor's License No.** \_\_\_\_\_

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a purchase order/contract.

2. **DRUG-FREE WORKPLACE:** W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit at the same time an affidavit that the Vendor has a written plan for a drug-free workplace policy. To comply with this law, Vendor must either complete the enclosed drug-free workplace affidavit and submit the same with its bid or complete a similar affidavit that fulfills all of the requirements of the applicable code. Failure to submit the signed and notarized drug-free workplace affidavit, or a similar affidavit that fully complies with the requirements of the applicable code, with the bid shall result in disqualification of Vendor's bid.
3. **AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the AIA A101-2007 and A201-2007 or the A107-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.
4. **SUBCONTRACTOR LIST SUBMISSION:** In accordance with W. Va. Code § 5-22-1, The apparent low bidder on a contract for the construction, alteration, decoration, painting or improvement of a new or existing building or structure valued at more than \$500,000.00 shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. This provision shall not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects.

- c. **Required Information.** The subcontractor list shall contain the following information:
- i. Bidder's name
  - ii. Name of each subcontractor
  - iii. License numbers as required by W. Va. Code § 21-11-1 et. seq.
  - iv. Notation that no subcontractors will be used if the bidder will perform the work
- d. **Submission.** The completed subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. Failure to submit the subcontractor list within one business day after the deadline for submitting bids shall result in disqualification of the bid.
- e. **Substitution of Subcontractor.** Written approval must be obtained from the Purchasing Division before any subcontractor substitution is permitted. Substitutions are not permitted unless:
- i. The subcontractor listed in the original bid has filed for bankruptcy;
  - ii. The subcontractor in the original bid has been debarred or suspended; or
  - iii. The contractor certifies in writing that the subcontractor listed in the original bill fails, is unable, or refuses to perform his subcontract.
5. **GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

**DEFK13015- Glen Jean / Braxton Co. Armory Emergency Generators**

Provide all labor, materials, and associated costs to remove, transport, relocate, reinstall, and reconnect an operational 150kW diesel powered generator and accessories from the Glen Jean Armory at 409 Wood Mountain Road, Glen Jean, WV 25846, to the Braxton County Armory at 1072 State St., Gassaway, WV 26624, and to provide, install, and connect a new 800kW diesel generator and accessories at the Glen Jean Armory location.

**A mandatory pre-bid conference is scheduled for April 9, 2013 at 10:00 am at the Construction Facilities and Maintenance Operations Building at 1707 Coonskin Drive, Charleston, WV 25301.**

**There will also be mandatory meetings at the Glen Jean AFRC and Gassaway AFRC centers on April 10, 2013. The mandatory meeting at Glen Jean will be April 10, 2013 at 9:00 am. The mandatory meeting at Gassaway will be April 10, 2013 at 1:00 pm.**

Due to the nature of this project, vendors are solely responsible for field verifying measurements of current site conditions at the Glen Jean Armory regarding the size of the concrete pad and chain-link security fencing to duplicate the installation requirements of the generator to be relocated at the Braxton County Armory and to determine the amount of materials needed to expand the existing concrete pad and chain-link security fencing required to install the new generator at the Glen Jean Armory site.

Vendors are also responsible for identifying the locations of electrical service, electric meters, other utility service locals, and building entry points at both sites.

Vendors are solely responsible for obtaining, if required, all WV DOH permits, etc. to transport the emergency generator and enclosure from Glen Jean to Gassaway, WV.

This project is to be completed within 60 calendar days of the notice to proceed.

Vendors quoting this project shall comply with the below specifications and the scope of work as follows:

Glen Jean AFRC located at 409 Wood Mountain Rd, Glen Jean, WV

- Remove existing enclosed Caterpillar model D150P4 diesel powered packaged generator set rated at 150kw continuous standby @ 277/480V, 3-phase, 4-wire and 60Hz, the automatic transfer switch (ATS), and remote enunciator
- Provide, install, and connect a new 800kW, 3-phase, diesel generator set in a sound attenuated enclosure as specified.
- Provide a 48-hour 2,000 gallon fuel tank.

- Provide a 2000 amp/480V automatic transfer switch (ATS).
- Provide a remote enunciator in a 'to be determined' visible area of the facility.
- Provide additional concrete as needed to generator and ATS pads.
- Provide additional chain-link security fencing as needed for generator enclosure.
- Relocate and install power company ST Cabinet and Meter Point.
- Provide an alternate bid to supply a 800kW natural gas powered packaged generator set in lieu of diesel powered with the same specified performance capabilities.

Braxton County Armory located at 1072 State St., Gassaway, WV

- Relocate, install, and connect 150kW generator, ATS, and remote enunciator from the Glen Jean AFRC.
- Provide earthwork and concrete as needed for generator and ATS pads.
- Provide chain-link security fencing as needed for generator enclosure.

## **PART I – DIESEL GENERATOR SET**

### **1.1 DESCRIPTION OF WORK**

A. Provide all labor materials, and equipment to furnish, install, and place into operation the Emergency/Standby power generation system in accordance with the contract documents and manufacturer's drawings and installation instructions. All equipment shall be U/L 2200 listed and labeled, factory tested, and delivered ready for field installation.

B. The responsibility for performance to this specification shall not be divided among individual component manufacturers, but must be assumed solely by the primary manufacturer. This includes generating system design, manufacture, test, and having a local supplier responsible for service, parts, and warranty for the total system.

C. Generator set mounted subassemblies such as cooling system, base, air intake system, exhaust outlet fittings, and generator set mounted controls and switchgear shall also be designed, built, and assembled as a complete unit by the engine/generator manufacturer.

### **1.2 APPROVED MANUFACTURERS**

A. The engine and generator shall be the product of an ISO 9001 certified manufacturer. The design is based on a Caterpillar engine/generator set. Any changes to the design based on other manufacturers will be the responsibility of the installing contractor at no additional cost to the owner. The naming of a



specific manufacture does not waive any requirements or performance of individual components described in this specification.

- B. Substitutions to this specification shall include complete submittal data clearly identifying all deviations or exceptions.
- C. The Generator Distributor shall have an ISO 9001:2008 Certified Quality Program in order to be considered as an acceptable supplier. Details of the Quality Certification shall be included.

### 1.3 SYSTEM RATING

- A. The electric power generating system including engine mounted radiator shall have a site capability of:

<u>800</u>	KW
<u>1000</u>	kVA ~ 0.8 PF, standby rating
<u>277/480</u>	Volts AC, Wye connected, 3 Phase, 60 Hertz
<u>500</u>	Altitude (Feet)
<u>110</u>	Maximum Engine Ambient Temperature (°F)
<u>-20</u>	Maximum Outside Temperature (°F)

### 1.4 SUBMITTALS

- A. Submittals shall include but not be limited to:
  1. Certification of Prototype Testing.
  2. Component List - A breakdown of all components and options.
  3. Technical Data - Manufacturer produced generator set specification or data sheet identifying make and model of engine and generator, and including relevant component design and performance data.
  4. Auxiliary Equipment - Specification or data sheets, including switchgear, transfer switch, vibration isolators, and day tank.
  5. Drawings - General dimensions drawings showing overall generator set measurements, mounting location, and interconnect points for load leads, fuel, exhaust, cooling and drain lines.
  6. Wiring Diagrams - Wiring diagrams, schematics and control panel outline drawings published by the manufacturer for controls and switchgear showing

interconnect points and logic diagrams for use by contractor and owner.

7. Warranty Statements - Warranty verification published by the manufacturer.

## 1.5 PRODUCTION TESTS

A. The system manufacturer shall perform production tests on the complete generator set supplied at the generator set manufacturers facility. A certified report of these tests shall be available when requested at the time of the generator set order. These tests and controls shall include but not be limited to:

1. Operation at rated kW
2. Operation at rated kVA
3. Transient and steady state governing
4. Transient and steady state voltage regulation
5. Operation of all alarm and shutdown devices
6. Single step load pickup of rated kW
7. Operation at 2250 rpm (125% overspeed) at room temperature

## 1.6 PROTOTYPE TESTS

A. The system manufacturer must certify that engine, generator, controls, and switchgear have been tested as complete system of representative engineering models (not on equipment sold). Prototype testing shall include:

1. Fuel consumption at 1/4, 1/2, 3/4, and full load
2. Exhaust emissions
3. Mechanical and exhaust noise
4. Governor speed regulation at 1/4, 1/2, 3/4, and full load; and during transients
5. Motor starting kVA
6. Generator temperature rise in accordance with NEMA MG 1-22.40
7. Voltage regulation at 1/4, 1/2, 3/4, and full load; and during transients
8. Harmonic analysis, voltage waveform deviation and telephone influence factor
9. Generator short circuit capability
10. Cooling system performance
11. Torsional analysis
12. Linear vibration analysis
13. Generator revolving field assembly for 2 hours at 2700 rpm (150% overspeed) and 70C, and each production unit tested at 2250 rpm (125% overspeed) at room temperature.

## 1.7 WARRANTY / SERVICE

- A. The manufacturer's and dealer's standard warranty shall in no event be for a period of less than two (2) years from date of initial start-up of the system and shall include repair parts, labor, reasonable travel expense necessary for repairs at the job site, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair. Applicable deductible costs shall be specified in the manufacturer's warranty. Running hours shall not be a limiting factor for the system warranty by either the manufacturer or servicing dealer.
  
- B. The generator set supplier shall have factory trained service representatives and tooling necessary to install, test, maintain, and repair all provided equipment and shall be located within 50 miles of the customers site.
  
- C. The generator set supplier shall have sufficient parts inventory to maintain over the counter availability of at least 90% of any required parts and shall guarantee 100% parts availability within 48 hours.

## PART 2 - PRODUCTS

### 2.1 SYSTEM PERFORMANCE

- A. The power generating system shall conform to the following performance criteria at the site conditions:
  - 1. Rating - Engine brake horsepower shall be sufficient to deliver full rated generator set kW/kVA when operated at rated rpm and equipped with all engine-mounted parasitic and external loads such as radiator fans and power generators.
  - 2. Start Time and Load Acceptance - Engines shall start, achieve rated voltage and frequency, and be capable of accepting load within 10 seconds when properly equipped and maintained.
  - 3. With the power generating system at normal operating temperature, it shall accept a 100% block load, less applicable derating factors, in accordance with NFPA 110.
  - 4. Frequency regulation shall be Isochronous, regulated to within +/- 0.25 % from no load to full load.
  - 5. Voltage regulation shall be +/- 0.5% for any steady state load between no load and full load.

## 2.2 EMISSIONS

- A. The proposed generator set shall be EPA Tier 2 Certified and in compliance with Federal and State Emission regulations at the time of installation/commissioning.

## 2.3 ENGINE

- A. The engine shall be a stationary, liquid cooled, 1800 rpm, four-cycle design, vertical in-line, with dry exhaust manifolds. It shall have 12 cylinders with a minimum cubic inch displacement of 1649 and be manufactured in the United States.

## 2.4 ENGINE ACCESSORY EQUIPMENT

- A. The engine shall be cooled by an engine mounted, vertical radiator with blower type fan, using a 50% antifreeze/coolant mixture. Antifreeze shall have a service life of 3000 hours without maintenance. The radiator shall properly cool the engine while the engine is operating at full load and 0.25 inch H<sub>2</sub>O external air restriction. The minimum ambient capability shall be 110°F. Air flow total for combustion and cooling shall not exceed 46,500 CFM.
- B. Electric starting motor and control circuit capable of three complete starting cycles without overheating.
- C. Mechanical, positive displacement lube oil pump with replaceable full flow filter, oil cooler, and dip stick.
- D. Mechanical, positive displacement fuel transfer pump with replaceable full flow filter.
- E. Fuel Filter and serviceable fuel system components shall be located to prevent fuel from spilling onto genset batteries.
- F. Manually operated fuel priming pump.
- G. Replaceable dry element air filter.
- H. Engine mounted electrically powered, thermostatically controlled jacket water heater sized to ensure proper starting. Shall include isolation valves and adjustable thermostat.

- I. Flexible, stainless steel exhaust connector.
- J. Flexible fuel lines
- K. Battery charging alternator with regulator and charge rate ammeter.

## 2.5 GENERATOR

- A. The generator shall be close coupled, drip proof and guarded, constructed to NEMA 1 and IP 22 standards, single bearing, salient pole, revolving field, and synchronous type with amortisseur windings in the pole faces of the rotating field and skewed stator windings to produce optimum voltage waveform.
- B. The generator shall be capable of delivering rated kVA at 60 Hz and 0.8 PF within +/- 5% of rated voltage.
- C. All insulation systems shall meet NEMA MG-1 standards for Class H systems. The actual generator temperature shall be limited to Class F levels (130 °C rise by resistance over 40 °C ambient). Materials which support fungus growth shall not be used.
- D. The revolving field coils shall be precision wet layer wound with epoxy based material applied to each layer of magnet wire. The revolving field assembly shall be prototype tested for 2 hours at 2700 rpm (150% overspeed) and 70°C, and each production unit shall be tested at 2250 rpm (125% overspeed) at room temperature. The revolving field assembly shall be balanced to 0.5 mil peak-peak. The stator shall have two dips and bakes using Class H impregnating varnish.
- E. A 3 phase permanent magnet (PMG) generator shall provide the source of excitation to the exciter to increase immunity to non-linear loads and to maintain 300% of rated current for 10 seconds during shortcircuit conditions.
- F. The automatic voltage regulator (AVR) shall maintain generator output voltage within +/- 0.5% for any constant load between no load and full load. The regulator shall be a totally solid state design which includes electronic voltage buildup, volts per Hertz regulation, three phase sensing, overexcitation protection, loss of sensing protection, temperature compensation, shall limit voltage overshoot on startup, and shall be environmentally sealed.

## 2.6 CIRCUIT BREAKER

- A. The three (3) pole main line circuit breaker shall be provided to protect the generator against external faults and provide a positive disconnect device at the generator output terminals. The breaker shall be UL listed with shunt trip device connected to engine / generator safety shutdowns. The breaker shall be mounted [RH] or [LH] on the generator in a NEMA 1P22 guarded drip-proof enclosure which provides direct access for cable from the top or bottom.

## 2.7 CONTROLS - GENERATOR SET MOUNTED

- A. The control panel shall be designed and built by the engine-generator manufacturer. It shall be mounted on the generator set and incorporate 100% solid state microprocessor based control circuitry and digital instrumentation. All electronic control components are to be mounted in sealed, dust tight, watertight, metal housings. Housings which must be opened for service or setup are not acceptable. All output circuits greater than 100mA shall be fuse or circuit breaker protected. The panel shall be labeled with ISO symbols and comply with IEC 144, IP 22, and NEMA 12 for external environmental resistance, and IP 44 and NEMA 12 for resistance of the internal sealed modules. The control panel shall be capable of facing the right, left, or rear and shall be vibration isolated.

- B. The panel shall include the following equipment / functions:

1. Automatic remote start capability with mode of operation selectable from a panel-mounted 4-position switch (Stop, Manual, Automatic, Reset).
2. Cycle crank with adjustable "crank" and "rest" times.
3. Adjustable cooldown timer.
4. Emergency Stop push button requiring manual reset.
5. Voltage adjustment potentiometer to adjust voltage +10, -25% of rated.
6. Individual flashing LED's shall be provided. The use of a common alarm or shutdown lamp which depend on a separate display to determine the alarm or fault condition is not acceptable. Separate LED annunciation shall be provided for:

- Overspeed (red)
- Overcrank (red)
- High Coolant temperature (red)
- Low Oil pressure (red)
- Emergency Stop (red)
- Low Coolant Level (red)



7. NFPA 110 alarm module with common alarm and silence switch. Separate LED annunciation shall be provided for:

- Approach High Coolant Temperature (Amber)
- Approach Low Oil Pressure (Amber)
- Low Water Temperature (Amber)
- Low DC Volts (Red)
- Low Fuel (Amber)
- Fuel Tank Rupture (Red)
- Ground Fault (Red)

8. Remote Annunciator Panel

- A. The engine generator shall be supplied with a (surface) mount remote annunciator panel with face plate, mounted to annunciation terminal strip, to give remote indication of the following:

Generator powering load (position signal from ATS)

Battery charger malfunction (red)

High jacket water temperature (prewarn-amber) (shutdown – red)

Low water temperature (prewarn-amber)

Low oil pressure (prewarn-amber) (shutdown-red)

Low fuel

Overspeed (red)

Overcrank (red)

Fuel tank rupture

Low water level

Ground fault

Horn silence

9. Panel illumination lights (2) with ON/OFF switch

10. Separate digital displays shall be provided for the engine and generator parameters. These displays shall allow the simultaneous display of AC parameters and at least one (selectable) engine parameter to be displayed at the same time. Requirements for these displays are as follows:
11. Digital display and phase selector switch for generator operational parameters. True RMS sensing of these parameters shall be utilized to minimize distortion due to non-linear loads and ensure accuracy.
  - AC volts (+/- 0.5% accuracy)
  - AC amps (+/- 0.5% accuracy)
  - Hertz (+1-0.3 Hz accuracy)
  - Kilowatts (Total and per phase)
  - Kilovars (Total)
  - Kilovolt – Amps KVA (Total)
  - Kilowatt – Hours KWHR (Total)
  - Kilovar – Hours KVAR-HR (Total)
  - Percent of rated power (Total)
  - Power Factor (Average Total and per phase)
12. Digital display for:
  - Engine RPM (+/- 0.5% accuracy)
  - DC voltage (+/- 0.5% accuracy)
  - Oil pressure (+/- 0.5% accuracy)
  - Coolant temperature (+/- 0.5% accuracy)
  - Operating hours
13. Diagnostic capability:
  - Must provide dual level diagnostics identifying both system level and component level. The diagnostic codes shall be maintained in a history log specifying the number of occurrences, and second/minute/hr at which they occur.
14. Protective Relaying (Programmable trip point and time delay)
  - Overvoltage (alarm & shutdown)
  - Undervoltage (alarm & shutdown)
  - Overfrequency (alarm & shutdown)
  - Underfrequency (alarm & shutdown)
  - Overcurrent (alarm & shutdown)
  - Reverse Power (shutdown)
15. Sensors:
  - Sensors providing a pulse width modulated output shall be utilized for oil pressure, coolant temperature sensing and shall be protected against a fault to battery. The usable output range of the sensor shall be

limited to 5% to 95% duty cycle. Output outside the usable range shall be diagnosed as a fault condition and appropriate diagnostic shall be provided. Separate speed sensing signals shall be provided for overspeed protection and electronic governor.

16. Ambient parameters:

operating: -40C to +70C (-40 F to +158 F)

storage: -55 C to +85 C (-67 F to +185 F)

humidity: 0 to 100% relative humidity

17. Must be impervious to salt spray, fuel, oil and oil additives, coolant, spray cleaners, chlorinated solvents, hydrogen sulfide and methane gas, and dust.

## 2.8 BASE

A. The engine and generator shall be assembled to the base using vibration isolators. The generator set base shall be designed and built by the engine-generator manufacturer to resist deflection, maintain alignment, and minimize resonant linear vibration.

## 2.9 BATTERY CHARGER

A. A dual rate 10 ampere battery charger shall be provided which shall accept 120 volt AC single phase input to provide 24 volt DC output. It shall be fused on the AC input and DC outputs, incorporate current limiting circuitry, and include a DC ammeter and voltmeter. The use of a crank disconnect relay to protect the charger during starting is not acceptable. The charger shall be housed in a NEMA 1 enclosure vibration suitable for wall mounting.

B. The charger shall include LED annunciation for low battery voltage, high battery voltage, battery charger malfunction, and AC failure; and dry contacts for battery charger malfunction and low battery voltage.

## 2.10 BATTERIES

A. Twenty-four (24) volt starting batteries; sized as recommended by the generator set manufacturer to comply with the starting and temperature specifications, battery cables, and base mounted battery rack shall be provided. The batteries shall be warranted by the gen set manufacturer.

**2.11 TANK**

- A. The day tank system shall be supplied by engine generator set supplier and shall include the following:
1. 660 gallon tank, pressure tested, double walled, U/L listed
  2. Rupture basin alarm contact
  3. Low level alarm contact
  4. Float controls
  5. Fuel gauge, dial type
  6. Connections for:
    - a. Engine supply
    - b. Engine return
    - c. Vent with vent whistle
    - d. Bottom drain
    - e. Fuel gauge
    - f. Manual fill cap, lockable

**2.12 EXHAUST SILENCER**

- A. A critical exhaust silencer shall be sized and supplied by the engine supplier. The silencer and associated piping shall not impose more than 27 inches water restriction.
- B. The silencer shall utilize a high temperature coating system to prevent rusting and shall be mounted near the engine to minimize noise and condensation. A provision for draining moisture shall be included.
- C. The silencer shall be mounted and insulated inside the Sound Attenuated Enclosure for outdoor applications.

**2.13 WEATHERPROOF HOUSING WITH FUEL TANK BASE**

- A. A weatherproof, sound attenuated, walk-in type enclosure shall be provided to house the engine/generator and accessories. The enclosure is to be in compliance with the National Electrical Code (NEC), and the National Fire Protection Association (NFPA) for clearance around electrical equipment as specified.
- B. Enclosure will consist of a roof, fuel tank and rupture basin base, two (2) side walls, and two (2) end walls.

- C. The system shall include a cooling and combustion air inlet silencer section, an equipment enclosure section, and a cooling air discharge silencer section. It shall be designed to reduce source noise by an estimated average 25 dB(A) as measured at 1 Meter.
- D. Insulation in walls and roof shall be semi-rigid, thermo-acoustic, thickness as required to meet the noise criteria specified.
- E. An integral fuel tank under frame with floor and rupture basin shall be supplied, consisting of the following: a rupture basin utilizing minimum 7 ga. steel channel perimeter walls and bottom; a U.L. listed (per U.L. 142) above-ground 2000 gallon capacity rectangular tank of minimum 12 ga. steel construction. The tank shall have venting and emergency venting per U.L. 142, lockable fill, low level and high level alarm contacts, and a D.C. electric analog level gauge. The cross members shall incorporate 3/8" thick steel tapping plates for genset mounting. The rupture basin shall have a float contact to indicate tank rupture, and the entire system shall be leak tested prior to installation.
- F. Four-point lifting provisions shall be provided at or near the enclosure base, with capacity suitable for rigging the entire assembly. Quality assurance procedures of the manufacturer shall include regular testing of the lift devices.
- G. Enclosure manufacturer shall provide all necessary hardware to internally mount the specified exhaust silencer(s) and maintain the weatherproof integrity of the system. Silencer and exhaust flex shall be insulated. Include a 10' stainless steel concentric exhaust extension when required by local code.
- H. The enclosure shall include A.C./D.C. lighting, duplex receptacles, and an A.C. distribution panel. D.C. lights to have timer type switch. All devices in the enclosure, including specified generator set accessories, shall be prewired in E.M.T. by enclosure manufacturer. In addition, the manufacturer shall perform the system integration of all components in the enclosure, mechanical and electrical.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION / ON SITE TESTING**

- A. The installation shall be performed in accordance specifications, and the manufacturer's instructions; and shall comply with applicable state and local codes.

- B. The generator set shall be tested in accordance with NFPA 110 to show it is free of any defects and will start automatically and carry full load. This testing is to be performed at the jobsite. Testing shall be completed in the presence of the owner's engineer or his appointed representative. All consumables necessary for testing shall be furnished by the bidder. Any defects which become evident during the test shall be corrected by the bidder at his own expense.
- C. Proper operation of the following shall be demonstrated:
1. All auxiliary equipment supplied to this specification.
  2. Starting and charging system components.  
All controls, engine shutdowns, and safety devices
- D. Cold start test:  
The unit shall demonstrate the ability to start from a "cold" standby condition (ie. normal standby mode with engine coolant temperature at normal temperature established by properly functioning jacketwater heater).
- E. Load Bank Test:  
The unit shall be operated at 75% of full load rating for one hour followed by three hours operation at 100% full load. After the first half-hour stabilization period at full load, the following shall be recorded at fifteen minute intervals:
- Voltage, amperage and frequency
  - Fuel pressure, oil pressure and water temperature
  - Exhaust gas temperature at engine exhaust outlet
  - Ambient temperature

### **3.2 SERVICE MANUALS AND PARTS BOOKS**

- A. The vendor shall furnish one copy each of the system manufacturer's manuals and books listed below for the unit under this contract:
1. OPERATING INSTRUCTIONS - with description and illustration of all switchgear controls and indicators; and engine and generator controls and indicators.
  2. PARTS BOOKS - that illustrate and list all assemblies, subassemblies and components, except standard fastening hardware (nuts, bolts, washers, etc.).



3. PREVENTATIVE MAINTENANCE INSTRUCTIONS - on the complete system that cover daily, weekly, monthly, biannual, and annual maintenance requirements and include a complete lubrication chart.
4. ROUTINE TEST PROCEDURES - for all electronic and electrical circuits and for the main AC generator.
5. TROUBLESHOOTING CHART - covering the complete generator set showing description of trouble, probable cause, and suggested remedy.

## **AUTOMATIC TRANSFER SWITCH**

### **PART 1 - GENERAL**

#### **1.1 WORK INCLUDED**

- A. Automatic Transfer Switches

#### **1.2 SYSTEM**

- A. Furnish the automatic transfer switches to automatically transfer between the normal and emergency power source. The transfer switch shall be supplied as part of the engine/generator package for system responsibility.

#### **1.3 APPLICABLE STANDARDS**

- A. The automatic transfer switches covered by these specifications shall be designed, tested, and assembled in strict accordance with all applicable standards of ANSI, U.L., IEEE and NEMA.

#### **1.4 SUBMITTALS**

- A. Vendor shall submit the following manufacturer information, as a minimum:
  1. Descriptive literature
  2. Plan, elevation, side, and front view arrangement drawings, including overall dimension, weights and clearances, as well as mounting or anchoring requirements and conduit entrance locations.
  3. Schematic diagrams.
  4. Wiring diagrams.
  5. Accessory list.

### **PART 2 - PRODUCTS**

#### **2.1 ACCEPTABLE MANUFACTURERS**

- A. Russ electric (or equal)

## 2.2 CONSTRUCTION

### A. General

1. The automatic transfer switch shall be furnished. Voltage and continuous current ratings and number of poles shall be as shown.
2. On 3 phase, 4 wire systems, utilizing ground fault protection, a true 4 pole switch shall be supplied with all four poles mounted on a common shaft. The continuous current rating and the closing and withstand rating of the fourth pole shall be identical to the rating of the main poles.
3. The transfer switch shall be mounted in a NEMA 1 enclosure, unless otherwise indicated. Enclosures shall be fabricated from 12 gauge steel. The enclosure shall be sized to exceed minimum wire bending space required by UL 1008.
4. The transfer switch shall be equipped with an internal welded steel pocket and house an operations and maintenance manual.
5. The transfer switch shall be top and bottom accessible.
6. The main contacts shall be capable of being replaced without removing the main power cables.
7. The main contacts shall be visible for inspection without any major disassembly of the transfer switch.
8. All bolted bus connections shall have Belleville compression type washers.
9. When a solid neutral is required, a fully rated bus bar with required AL-CU neutral lugs shall be provided.
10. Control components and wiring shall be front accessible. All control wires shall be multiconductor 18 gauge 600 volt SIS switchboard type point to point harness. All control wire terminations shall be identified with tubular sleeve-type markers.
11. The switch shall be equipped with 90 degrees C rated copper/aluminum solderless mechanical type lugs.
12. The complete transfer switch assembly shall be factory tested to ensure proper operation and compliance with the specification requirements. A copy of the factory test report shall be available upon request.

## B. Automatic Transfer Switch

1. The transfer switch shall be double throw, actuated by two electric operators momentarily energized, and connected to the transfer mechanism by a simple over center type linkage. Minimum transfer time shall be 400 milliseconds.
2. The normal and emergency contacts shall be positively interlocked mechanically and electrically to prevent simultaneous closing. Main contacts shall be mechanically locked in both the normal and emergency positions without the use of hooks, latches, magnets, or springs, and shall be silver-tungston alloy. Separate arcing contacts with magnetic blowouts shall be provided on all transfer switches. Interlocked, molded case circuit breakers or contactors are not acceptable.
3. The transfer switch shall be equipped with a safe load break external manual operator designed to prevent injury to operating personnel. The manual operator shall provide the same contact to contact transfer speed as the electrical operator to prevent a flashover from switching the main contacts slowly. The external manual operator shall be safely operated from outside of the transfer switch enclosure while the enclosure door is closed.

## C. Automatic Transfer Switch Controls

1. The transfer switch shall be equipped with a microprocessor based control system, to provide all the operational functions of the automatic transfer switch. The controller shall have two asynchronous serial ports. The controller shall have a real time clock with Nicad battery back-up.
2. The CPU shall be equipped with self diagnostics which perform periodic checks of the memory I/O and communication circuits, with a watchdog/power fail circuit
3. The controller shall use industry standard open architecture communication protocol for high speed serial communications via multidrop connection to other controllers and to a master terminal with up to 4000 ft of cable, or further, with the addition of a communication repeater.
4. The serial communication port shall allow interface to either the manufacturer's or the owner's furnished remote supervisory control.
5. The controller shall have password protection required to limit access to qualified and authorized personnel.

6. The controller shall include a 20 character, LCD display, with a keypad, which allows access to the system.
7. The controller shall include three phase over/under voltage, over/under frequency, phase sequence detection and phase differential monitoring on both normal and emergency sources.
8. The controller shall be capable of storing the following records in memory for access either locally or remotely:
  - a. Number of hours transfer switch is in the emergency position (total since record reset).
  - b. Number of hours emergency power is available (total since record reset).
  - c. Total transfer in either direction (total since record reset).
  - d. Date, time, and description of the last four source failures.
  - e. Date of the last exercise period.
  - f. Date of record reset.

#### D. Sequence of Operation

1. When the voltage on any phase of the normal source drops below 80% or increases to 120%, or frequency drops below 90%, or increase to 110%, or 20% voltage differential between phases occurs, after a programmable time delay period of 0-9999 seconds factory set at 3 seconds to allow for momentary dips, the engine starting contacts shall close to start the generating plant.
2. The transfer switch shall transfer to emergency when the generating plant has reached specified voltage and frequency on all phases.
3. After restoration of normal power on all phases to a preset value of at least 90% to 110% of rated voltage, and at least 95% to 105% of rated frequency, and voltage differential is below 20%, an adjustable time delay period of 0-9999 seconds (factory set at 300 seconds) shall delay retransfer to allow stabilization of normal power. If the emergency power source should fail during this time delay period, the switch shall automatically return to the normal source.
4. After retransfer to normal, the engine generator shall be allowed to operate at no load for a programmable period of 0-9999 seconds, factory set at 300 seconds.

#### E. Automatic Transfer Switch Accessories

1. Programmable three phase sensing of the normal source set to pickup at 90% and dropout at 80% of rated voltage and overvoltage to pickup at 120% and dropout out at 110% of rated voltage. Programmable frequency pickup at 95% and dropout at 90% and over frequency to pickup at 110% and dropout at 105% of rated frequency. Programmable voltage differential between phases, set at 20%, and phase sequence monitoring.
2. Programmable three phase sensing of the emergency source set to pickup at 90% and dropout at 80% of rated voltage and overvoltage to pickup at 120% and dropout out at 110% of rated voltage programmable frequency pickup at 95% and dropout at 90% and over frequency to pickup at 110% and dropout at 105% of rated frequency. Programmable voltage differential between phases set at 20%, and phase sequence monitoring.
3. Time delay for override of momentary normal source power outages (delays engine start signal and transfer switch operation). Programmable 0-9999 seconds. Factory set at 3 seconds, if not otherwise specified.
4. Time delay to control contact transition time on transfer to either source. Programmable 0-9999 seconds, factory set at 3 seconds.
5. Time delay on retransfer to normal, programmable 0-9999 seconds, factory set at 300 seconds if not otherwise specified, with overrun to provide programmable 0-9999 second time delay, factory set at 300 seconds, unloaded engine operation after retransfer to normal.
6. Time delay on transfer to emergency, programmable 0-9999 seconds, factory set at 3 seconds.
7. A maintained type load test switch shall be included to simulate a normal power failure, keypad initiated.
8. A remote type load test switch shall be included to simulate a normal power failure, remote switch initiated.
9. A time delay bypass on retransfer to normal shall be included. Keypad initiated.
10. Contact, rated 10 Amps 30 volts DC, to close on failure of normal source to initiate engine starting.

11. Contact, rated 10 Amps 30 volts DC, to open on failure of normal source for customer functions.
12. Light emitting diodes shall be mounted on the microprocessor panel to indicate switch is in normal position, switch is in emergency position, and controller is running.
13. A plant exerciser shall be provided with (10) 7 day events, programmable for any day of the week and (24) calendar events, programmable for any month/day, to automatically exercise generating plant programmable in one minute increments. Also include selection of either "no load" (switch will not transfer) or "load" (switch will transfer) exercise period. Keypad initiated.
14. Provision to select either "no commit" or "commit" to transfer operation in the event of a normal power failure shall be included. In the "no commit position," the load will transfer to the emergency position unless normal power returns before the emergency source has reach 90% of it's rated values (switch will remain in normal). In the "commit position" the load will transfer to the emergency position after any normal power failure. Keypad initiated.
15. Two auxiliary contacts rated 10 Amp, 120 volts AC (for switches 100 to 800 amps) 15 amp, 120 volts AC (for switches 1000 to 4000 amps), shall be mounted on the main shaft, one closed on normal, the other closed on emergency. Both contacts will be wired to a terminal strip for ease of customer connections.
16. A three phase digital LCD voltage readout, with 1% accuracy shall display all three separate phase to phase voltages simultaneously, for both the normal and emergency source.
17. A digital LCD frequency readout with 1% accuracy shall display frequency for both normal and emergency source.
18. An LCD readout shall display normal source and emergency source availability.
19. Include (2) time delay contacts that open simultaneously prior to transfer in either direction. These contacts close after a time delay upon transfer. Programmable 0-9999 seconds after transfer.
20. Two position selector to provide either automatic or manual retransfer operation (with pushbutton).



## F. Approval

1. As a condition of approval, the manufacturer of the automatic transfer switches shall verify that their switches are listed by Underwriters Laboratories, Inc., Standard UL-1008 with 3 cycle short circuit closing and withstand as follows:

## RMS Symmetrical Amperes 480 VAC

<u>Amperes</u>	<u>Current Limiting Closing and Withstand</u>	<u>Fuse Rating</u>
100-400	42,000	200,000
600-800	65,000	200,000
1000-1200	85,000	200,000
1600-4000	100,000	200,000

2. During the 3 cycle closing and withstand tests, there shall be no contact welding or damage. The 3 cycle tests shall be performed without the use of current limiting fuses. The test shall verify that contacts separation has not occurred, and there is contact continuity across all phases. Test procedures shall be in accordance with UL-1008, and testing shall be certified by Underwriters' Laboratories, Inc.
3. When conducting temperature rise tests to UL-1008, the manufacture shall include post-endurance temperature rise tests to verify the ability of the transfer switch to carry full rated current after completing the overload and endurance tests.
4. The microprocessor controller shall meet the following requirements:
  - Storage conditions - 25 degrees C to 85 degrees C
  - Operation conditions - 20 degrees C to 70 degrees C ambient
  - Humidity 0 to 99% relative humidity, noncondensing
  - Capable of withstanding infinite power interruptions
  - Surge withstand per ANSI/IEEE C-37.90A-1978
5. Manufacturer shall provide copies of test reports upon request.

## G. Manufacturer

1. The transfer switch manufacturer shall employ a nationwide factory-direct, field service organization, available on a 24-hour a day, 365 days a year, call basis.
2. The manufacture shall include an 800 telephone number, for field service contact, affixed to each enclosure.

3. The manufacturer shall maintain records of the transfer switch, by serial number, for a minimum 20 years.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

A. Automatic Transfer Switches shall be provided with adequate lifting means for ease of installation of wall or floor mounted enclosures.

B. Provide access and working space as required.

#### **3.2 ADJUSTMENTS**

A. Tighten assembled bolted connections with appropriate tools to manufacturer's torque recommendations prior to first energization.

### **CAST-IN-PLACE CONCRETE**

#### **PART 1 – GENERAL**

##### **1.1 WORK INCLUDED**

A. Extend existing concrete pad at Glen Jean AFRC and construct a new concrete pad at Braxton Co. Armory in Gassaway.

##### **1.2 DESCRIPTION OF WORK**

A. Provide all labor, materials, equipment, and supervision necessary to complete an extension of the existing generator concrete pad at the Glen Jean AFRC for utilization with the new 800 ekW generator and to construct a duplicate of the existing concrete pad from Glen Jean at the Braxton Co. Armory to install the 150 ekW generator from Glen Jean at the Braxton Co. Armory. Vendor is responsible for verifying all measurements at both locations.

##### **1.3 APPLICABLE STANDARDS**

A. The cast-in-concrete materials and installation practices covered by these specifications shall be in accordance with the American Concrete Institute's (ACI) current codes and standards for cast-in-place concrete.

##### **1.4 SUBMITTALS**

A. Vendor shall submit shop drawings for review, prior to issuance of the Notice to Proceed. Submittals shall include the following, as a minimum:

1. Plan, elevation, side, and front view arrangement drawings, including overall dimensions of the pad/slab.

2. Indication of required clearances.
3. Any and all mounting and anchoring requirements.
4. Any and all conduit locations.
5. Any other relevant information required for installation and operation of the generators with regard to the concrete pad(s).

## **PART 2 – PRODUCTS**

### **2.1 ACCEPTABLE MATERIALS**

- A. Cast-in-place concrete work shall conform to the American Concrete Institute (ACI) codes and standards.
  1. Aggregate composition shall consist of quartz, limestone, dolomite, granite, or feldspar.
  2. Maximum aggregate size shall be 1-1/2", well graded, well shaped (not elongated, flat, or slippery), and free of clay, dirt, and excess fines.
  3. Cement shall be Type 1.

### **2.2 CONSTRUCTION**

- A. The minimum ultimate compressive strength of concrete @28 days shall be 4000psi.
- B. Maximum concrete slump is 3".
- C. Reinforcing bars: ASTM A615, Grade 60.
- D. Welded wire fabric: ASTM A185
- E. Provide 6x6-w2.9xw2.9 welded wire fabric in slab on grade.
- F. Place reinforcement in slabs 1-1/2" down from top of slab.
- G. Provide control joints in all slabs on grade. The maximum spacing of control joints shall be 10'-0" O.C. Control joint depth equal to 1/5 slab thickness, not less than 1".
- H. Reinforcing bar lap splices and anchorage lengths shall conform to ACI-318-95 "Development and Splices of Reinforcement." All splices shall be Type B.

## **PART 3 – EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and conditions, with owner's representative present, for compliance with applicable industry standard requirements for site clearing, earthwork, utility accessibility, and other conditions affecting performance etc.
- B. Provide access and working space as required for all workers, technicians, and inspectors.

### **3.2 INSTALLATION**

- A. All new concrete at Glen Jean AFRC shall be bonded to previously place concrete per ACI recommendations and standard practices.

- B. Determine size, location, and weight of mechanical equipment and make necessary provisions for bolts, sleeves, pads, etc. per generator set manufacturer's certified drawings.

## **CHAIN-LINK FENCES AND GATES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Contract Drawings and general provisions of the Contract apply to this Section.

#### **1.2 SUMMARY**

- A. This Section includes the following:
  - 1. Galvanized steel chain-link fabric.
  - 2. Galvanized steel framework.
  - 3. Barbed wire.
  - 4. Grounding and bonding.

#### **1.3 DEFINITIONS**

- A. CLFMI: Chain Link Fence Manufacturers Institute.

#### **1.4 SUBMITTALS**

- A. Product Data: Material descriptions, construction details, dimensions of individual components and profiles, and finishes for the following:
  - 1. Fence and gate posts, rails, and fittings.
  - 2. Chain-link fabric, reinforcements, and attachments.
  - 3. Gates and hardware.
  - 4. Barbed wire.
- B. Shop Drawings: Show locations of fence, each gate, posts, rails, and tension wires and details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, elevations, sections, gate swing and other required installation and operational clearances, and details of post anchorage and attachment and bracing.

- C. Product Certificates: Signed by manufacturers of chain-link fences and gates certifying that products furnished comply with requirements.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and other information specified.
- E. Field Test Reports: Indicate and interpret test results for compliance of chain-link fence and gate grounding and bonding with performance requirements.

### **1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Testing Agency Qualifications: Testing agency as defined by OSHA in 29 CFR 1910.7 or a member company of the InterNational Electrical Testing Association and that is acceptable to authorities having jurisdiction.
  - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies, to supervise on-site testing specified in Part 3.
- C. Source Limitations for Chain-Link Fences and Gates: Obtain each color, grade, finish, type, and variety of component for chain-link fences and gates from one source with resources to provide chain-link fences and gates of consistent quality in appearance and physical properties.

### **1.6 PROJECT CONDITIONS**

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by C&FMO or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify C&FMO not less than two days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without C&FMO's written permission.

- B. Field Measurements: Verify layout information for chain-link fences and gates shown on Contract Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. The Tymetal Corporation (or Equal)

### **2.2 CHAIN-LINK FENCE FABRIC**

- A. Steel Chain-Link Fence Fabric: Height indicated on Contract Drawings. Provide fabric fabricated in one-piece widths for fencing in height of 12 feet and less. Comply with CLFMI's "Product Manual" and with requirements indicated below:
1. Mesh and Wire Size: As indicated on Contract Drawings.
  2. Zinc-Coated Fabric: ASTM A 392, with zinc coating applied to steel wire before weaving according to ASTM A 817, Type II, zinc coated (galvanized) with the following minimum coating weight:
    - a. Class 1: Not less than 1.2 oz./sq. ft. of uncoated wire surface.
    - b. Class 2: Not less than 2 oz./sq. ft. of uncoated wire surface.
  3. Coat selvage ends of fabric that is metallic coated during the weaving process with manufacturer's standard clear protective coating.
- B. Selvage: Knuckled at both selvages.

### **2.3 INDUSTRIAL FENCE FRAMING**

- A. Round Steel Pipe: Standard weight, Schedule 40, galvanized steel pipe complying with ASTM F 1083. Comply with ASTM F 1043, Material Design Group IA, external and internal coating Type A, consisting of not less than 1.8-oz./sq. ft. zinc; and the following strength and stiffness requirements:
1. Line, End, Corner, and Pull Posts and Top Rail: Per requirements for Heavy Industrial Fence.



- B. Roll-Formed Steel Shapes: C-sections or other shape, produced from structural steel. Comply with ASTM F 1043, Material Design Group II, with minimum yield strength of 45,000 psi; and the following coating and strength and stiffness requirements:
1. Coating: Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.
  2. Line, End, Corner, and Pull Posts and Top Rail: Per requirements for Heavy Industrial Fence.
  3. Line, End, Corner, and Pull Posts and Top Rail: Per requirements for Light Industrial Fence.
- C. Roll-Formed Steel Shapes: Hot-rolled H-beams or other shape, produced from structural steel. Comply with ASTM F 1043, Material Design Group III, with minimum yield strength of 45,000 psi; Heavy Industrial Fence strength and stiffness for line posts, and external and internal coating Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.
- D. Square Steel Tubing: Galvanized steel-tubing end, corner, and pull posts and top rail with coating Type A, consisting of not less than 1.8-oz./sq. ft. zinc according to ASTM F 1043, and complying with CLFMI's "Product Manual," Type I for the following components and fence fabric height:
1. End, Corner, and Pull Posts: For fence fabric height more than 6 feet.
- E. Post Brace Rails: Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and clamps for attaching rails to posts.

## 2.4 TENSION WIRE

- A. General: Provide horizontal tension wire at the following locations:
1. Location: Extended along top and bottom of fence fabric.
- B. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire complying with ASTM A 824 and the following:
1. Coating: Type II, zinc coated (galvanized) by the hot-dip process, with the following minimum coating weight:
    - a. Matching chain-link fabric coating weight.

## 2.5 INDUSTRIAL SWING GATES

- A. General: Comply with ASTM F 900 for the following swing-gate types:
  - 1. Single gate.
- B. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1083 and ASTM F 1043 for materials and protective coatings.
- C. Frames and Bracing: Fabricate members from galvanized steel tubing with outside dimension and weight according to ASTM F 900 for the following gate fabric height:
  - 1. Gate Fabric Height: More than 6 feet.
- D. Frame Corner Construction: As follows:
  - 1. Welded or assembled with corner fittings and 5/16-inch- diameter, adjustable truss rods for panels 5 feet wide or wider.
- E. Gate Posts: Fabricate members from round aluminum pipe with outside dimension and weight according to ASTM F 900 for the following gate fabric heights and leaf widths:
  - 1. Gate Fabric Height by Leaf Width: Over 6 feet by 6 feet or less.
- F. Extended Gate Posts and Frame Members: Extend gate posts and frame end members above top of chain-link fabric at both ends of gate frame as required to attach barbed wire assemblies.
- G. Hardware: Latches permitting operation from both sides of gate, hinges, center gate stops and, for each gate leaf more than 3 feet wide, keepers. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

## 2.6 FITTINGS

- A. General: Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.
- B. Post and Line Caps: Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide weathertight closure cap for each post.
  - 1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.

- D. Tension and Brace Bands: Hot-dip galvanized pressed steel.
- E. Tension Bars: Hot-dip galvanized steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- F. Truss Rod Assemblies: Hot-dip galvanized steel rod and turnbuckle or other means of adjustment.
- G. Barbed Wire Arms: Hot-dip galvanized pressed steel. Provide the following type, according to ASTM F 626, with clips, slots, or other means for attaching strands of barbed wire, integral with post cap; one for each post, unless otherwise indicated. Provide line posts with arms designed with opening to accommodate tension wire. Provide corner arms at fence corner posts, unless extended posts are indicated.
  - 1. Type I, single slanted arm.
- H. Tie Wires, Clips, and Fasteners: Provide the following types according to ASTM F 626:
  - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
    - a. Hot-Dip Galvanized Steel: 0.148-inch- diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
  - 2. Power-driven fasteners.
  - 3. Round Wire Clips: Hot-dip galvanized steel or aluminum for attaching chain-link fabric to H-beam posts.
  - 4. Round Wire Hog Rings: Hot-dip galvanized steel or aluminum for attaching chain-link fabric to horizontal tension wires.
- I. Pipe Sleeves: For posts set into concrete, provide preset hot-dip galvanized steel pipe sleeves complying with ASTM A 53, not less than 6 inches long with inside dimensions not less than 1/2 inch more than outside dimension of post, and flat steel plate forming bottom closure.

## 2.7 BARBED WIRE

- A. Zinc-Coated Steel Barbed Wire: Comply with ASTM A 121, Chain-Link Fence grade for the following two-strand barbed wire:

1. Standard Size and Construction: 0.099-inch- diameter line wire with 0.080-inch- diameter, 2-point round barbs spaced not more than 4 inches o.c.

## **2.8 CAST-IN-PLACE CONCRETE**

- A. General: Comply with ACI 301 for cast-in-place concrete.
- B. Materials: Portland cement complying with ASTM C 150 aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94.
  1. Concrete Mixes: Normal-weight concrete with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.
- C. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

## **2.9 GROUT AND ANCHORING CEMENT**

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior applications.

## **2.10 FENCE GROUNDING**

- A. Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
  1. Material Above Finished Grade: Copper.
  2. Material On or Below Finished Grade: Copper.
  3. Bonding Jumpers: Braided copper tape, 1 inch wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.

- B. Connectors and Ground Rods: Listed in UL 467.
  - 1. Connectors for Below-Grade Use: Exothermic welded type.
  - 2. Ground Rods: Copper-clad steel.
    - a. Size: 5/8 inch by 96 inches.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance.
  - 1. Do not begin installation before final grading is completed, unless otherwise permitted by C&FMO.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

### **3.3 INSTALLATION, GENERAL**

- A. General: Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
  - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil.
- C. Post Setting: Hand-excavate holes for post foundations in firm, undisturbed or compacted soil. Set terminal line gate posts in concrete footing. Protect portion of posts aboveground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Using mechanical devices to set line posts per ASTM F 567 is not permitted. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured.

1. Dimensions and Profile: As indicated on Contract Drawings.
2. Exposed Concrete Footings: Extend concrete 2 inches above grade, smooth, and shape to shed water.

### 3.4 CHAIN-LINK FENCE INSTALLATION

- A. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.
- B. Line Posts: Space line posts uniformly at 10 feet maximum o.c.
- C. Post Bracing Assemblies: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at two-thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- D. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.
  1. Top Tension Wire: Install tension wire through post cap loops.
  2. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same gage and type of wire.
- E. Intermediate Rails: Install in one piece at as indicated on Contract Drawings, spanning between posts, using fittings, special offset fittings, and accessories.
- F. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- G. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
- H. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
  1. Maximum Spacing: Tie fabric to line posts 12 inches o.c. and to braces 24 inches o.c.



- I. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- J. Barbed Wire: Install barbed wire uniformly spaced as indicated on Contract Drawings. Pull wire taut and install securely to extension arms and secure to end post or terminal arms.

### **3.5 GATE INSTALLATION**

- A. General: Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

### **3.6 GROUNDING AND BONDING**

- A. Fence Grounding: Install at maximum intervals of 1500 feet except as follows:
  - 1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.
    - a. Gates and Other Fence Openings: Ground fence on each side of opening.
      - 1) Bond metal gates to gate posts.
      - 2) Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches below finished grade.
- B. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a maximum distance of 150 feet on each side of crossing.
- C. Grounding Method: At each grounding location, drive a ground rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location, including the following:
  - 1. Each Barbed Wire Strand. Make grounding connections to barbed wire with wire-to-wire connectors designed for this purpose.
- D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
  - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
  - 2. Make connections with clean, bare metal at points of contact.
  - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
  - 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
  - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- F. Bonding to Lightning Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor complying with NFPA 780.

### 3.7 FIELD QUALITY CONTROL

- A. Ground-Resistance Testing Agency: Engage a qualified independent testing agency to perform field quality-control testing.
- B. Ground-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure ground resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests by two-point method according to IEEE 81.
- C. Desired Maximum Grounding Resistance Value: 25 ohms.
- D. Excessive Ground Resistance: If resistance to ground exceeds desired value, notify C&FMO promptly. Include recommendations to reduce ground resistance and proposal to accomplish recommended work.
- E. Report: Prepare test reports, certified by testing agency, of ground resistance at each test location. Include observations of weather and other phenomena that may affect test results.

**3.8 ADJUSTING**

- A. Gate: Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

**3.9 DISPOSAL OF WASTE**

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project sites and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

**END OF SECTION**

ALL LABOR, MATERIALS, EQUIPMENT, AND SUPPLIES NECESSARY TO RELOCATE 150kW EMERGENCY GENERATOR FROM GLEN JEAN AFRC TO BRAXTON CO. ARMORY AND TO PROVIDE AND INSTALL NEW 800kW EMERGENCY GENERATOR AT GLEN JEAN AFRC

**BID FORM**

The undersigned, hereafter called the Bidder, being familiar with and understanding the bidding documents; and being familiar with the site and all local conditions affecting the Project, hereby proposes to furnish labor, material, equipment, supplies, and transportation to perform the work as described in the bidding documents

BIDDERS COMPANY NAME: \_\_\_\_\_

VENDOR ADDRESS: \_\_\_\_\_

\_\_\_\_\_

TELEPHONE: \_\_\_\_\_

FAX NUMBER: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

WV CONTRACTOR'S LICENSE NO. \_\_\_\_\_

**CONTRACT TOTAL BID:** (Project as designed with **diesel powered** 800kW generator)

\_\_\_\_\_

(\$ \_\_\_\_\_) \*\*\* (Contract bid to be written in words and numbers.)

**ALTERNATE TOTAL BID:** (Project substituting a **natural gas powered** 800kW generator)

\_\_\_\_\_

(\$ \_\_\_\_\_) \*\*\* (Contract bid to be written in words and numbers.)

The contract will be awarded to the Bidder with the lowest contract total bid or alternate total bid meeting all of the specifications. The agency will decide upon review of the bids whether the diesel powered 800kW generator or the natural gas powered 800 kW generator will be awarded. Only one generator will be awarded on this contract. Bidder understands that to the extent allowed by the West Virginia Code, the OWNER reserves the right to waive any informality or irregularity in any bid, or bids, and to reject any and all bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the bidding documents; to reject any conditions of the bid by the Bidder that is any way inconsistent with the requirements, terms, and conditions of the bidding documents; or to reject a bid that is in any way incomplete or irregular.

Failure to use this bid form may result in bid disqualification.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_  
(Please Print)

TITLE: \_\_\_\_\_

**CERTIFICATION AND SIGNATURE PAGE**

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

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(Company)

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(Authorized Signature)

---

(Representative Name, Title)

---

(Phone Number)

(Fax Number)

---

(Date)

RFQ No. \_\_\_\_\_

STATE OF WEST VIRGINIA  
Purchasing Division

## PURCHASING AFFIDAVIT

**MANDATE:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

**"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

**"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

**"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code §61-5-3*) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_, to-wit:

Taken, subscribed, and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

My Commission expires \_\_\_\_\_, 20\_\_.

AFFIX SEAL HERE

NOTARY PUBLIC \_\_\_\_\_





State of West Virginia  
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT  
West Virginia Code §21-1D-5

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_, TO-WIT:

I, \_\_\_\_\_, after being first duly sworn, depose and state as follows:

1. I am an employee of \_\_\_\_\_; and,  
(Company Name)

2. I do hereby attest that \_\_\_\_\_  
(Company Name)

maintains a valid written drug free workplace policy and that such policy is in compliance with **West Virginia Code** §21-1D-5.

The above statements are sworn to under the penalty of perjury.

\_\_\_\_\_  
(Company Name)

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Taken, subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_.

By Commission expires \_\_\_\_\_

(Seal)

\_\_\_\_\_  
(Notary Public)

**THIS AFFIDAVIT MUST BE SUBMITTED WITH THE BID IN ORDER TO COMPLY WITH WV CODE PROVISIONS. FAILURE TO INCLUDE THE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF THE BID.**

BID BOND PREPARATION INSTRUCTIONS

AGENCY (A)
RFQ/RFP# (B)

- (A) WV State Agency (Stated on Page 1 "Spending Unit") Request for Quotation Number (upper right corner of page #1)
(C) Your Company Name
(D) City, Location of your Company
(E) State, Location of your Company
(F) Surety Corporate Name
(G) City, Location of Surety
(H) State, Location of Surety
(I) State of Surety Incorporation
(J) City of Surety Incorporation
(K) Minimum amount of acceptable bid bond is 5% of total bid. You may state "5% of bid" or a specific amount on this line in words.
(L) Amount of bond in figures
(M) Brief Description of scope of work
(N) Day of the month
(O) Month
(P) Year
(Q) Name of Corporation
(R) Raised Corporate Seal of Principal
(S) Signature of President or Vice President
(T) Title of person signing
(U) Raised Corporate Seal of Surety
(V) Corporate Name of Surety
(W) Signature of Attorney in Fact of the Surety

NOTE: Dated, Power of Attorney with Raised Surety Seal must accompany this bid bond.

Bid Bond
KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, (C) of (D), (E), as Principal, and (F) of (G), (H), a corporation organized and existing under the laws of the State of (I) with its principal office in the City of (J), as Surety, are held and firmly bound unto The State of West Virginia, as Obligee, in the penal sum of (K) (\$ (L)) for the payment of which, well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof to enter into a contract in writing for (M)

NOW THEREFORE.

(a) If said bid shall be rejected, or

(b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated

The Surety for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of time within which the Obligee may accept such bid: and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be affixed hereto and these presents to be signed by their proper officers, this (N) day of (O), 20 (P).

Principal Corporate Seal (R) By (Q) (Name of Principal) (S) (Must be President or Vice President) (T) Title

Surety Corporate Seal (U) (V) (Name of Surety)

(W) Attorney-in-Fact

IMPORTANT - Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised Corporate Seals must be affixed and a Power of Attorney must be attached.

Agency \_\_\_\_\_  
REQ.P.O# \_\_\_\_\_

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_, as Principal, and \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_  
\_\_\_\_\_ with its principal office in the City of \_\_\_\_\_, as Surety, are held and firmly bound unto the State  
of West Virginia, as Obligee, in the penal sum of \_\_\_\_\_ (\$ \_\_\_\_\_) for the payment of which,  
well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the  
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NOW THEREFORE,**

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Principal Corporate Seal

\_\_\_\_\_  
(Name of Principal)

By \_\_\_\_\_  
(Must be President or Vice President)

\_\_\_\_\_  
(Title)

Surety Corporate Seal

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
Attorney-in-Fact

**IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised corporate seals must be affixed, a power of attorney must be attached.**



State of West Virginia

## **PURCHASING DIVISION**

### **Construction Bid Submission Review Form**

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*This list has been provided for informational purposes only and is not to be construed as a complete list of request for quotation or bidding requirements for any individual construction project. This list does not and cannot include every item, mistake or oversight that could cause a contractor's bid to be disqualified. Rather, this list is intended to draw attention to some of the most common problems that the Purchasing Division encounters in the bidding process for construction projects. All potential bidders must read the request for quotation, all additional documents, and all instructions relating thereto ("Bid Documents") in their entirety to identify the actual request for quotation and bidding requirements. Failure to read the Bid Documents in their entirety and comply with the stated requirements contained therein may result in bid disqualification.*

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#### **Errors That Shall Be Reason for Immediate Bid Disqualification**

1. Failure to attend a mandatory pre-bid meeting
2. Failure to sign the bid
3. Failure to supply West Virginia contractor's license # on bid
4. Failure to supply a signed drug free workplace affidavit with the bid
5. Failure to supply a valid bid bond or other surety approved by the State of West Virginia
6. Failure to meet any mandatory requirement of the RFQ
7. Failure to acknowledge receipt of Addenda (only if stipulated as mandatory)
8. Failure to submit bid prior to the bid opening date and time
9. Federal debarment
10. State of West Virginia debarment or suspension

#### **Errors that May Be Reason for Bid Disqualification Before Contract Award**

1. Uncontested debt to the State exceeding \$1,000.00 (must be cured prior to award)
2. Workers' Compensation or Unemployment Compensation delinquency (must be cured prior to award)
3. Not registered as a vendor with the State (must be cured prior to award)
4. Failure to obtain required bonds and/or insurance
5. Failure to provide the sub-contractor listing within 1 business day of bid opening.
6. Failure to use the provided RFQ form (only if stipulated as mandatory).