



LEGAL NOTICE

CITY OF TAYLOR MILL SOLICITATION FOR SEALED BIDS FIRE STATION GENERATOR

The City of Taylor Mill, Kentucky is seeking sealed bids for the purchase and installation of a generator for the Taylor Mill Fire Station.

Invitation to Bid ("ITB") packets may be found at www.TaylorMillky.gov/notices. All bids in response to this ITB must be received at 5225 Taylor Mill Road, Taylor Mill KY 41015 packaged in a sealed envelope with the subject "FIRE STATION GENERATOR BID" clearly indicated on the outside of the envelope by 11 am ET (10 am CT) on Friday, September 18, 2026, at which time bids will be publicly opened.

The City reserves the right to fully evaluate all bids for completeness and adherence to all bid specifications and further reserves the right to reject any and all bids for any reason and waive any informality in the evaluation of the bid(s). The City may, in its sole discretion, award a bid to the lowest and/or best evaluated bidder, who meets any or all, or a combination thereof, of the specifications and conditions set out in this ITB.

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

Introduction & General Terms

Through this Invitation to Bid (“ITB”), the City of Taylor Mill is seeking sealed bids for the purchase and installation of a generator for the Taylor Mill Fire Station, located at 5219 Taylor Mill Road, Taylor Mill, KY 41015.

Bid Submission

The City of Taylor Mill, Kentucky (the “City”) accepts bids through the Office of the City Clerk, located at the City of Taylor Mill Municipal Building, 5225 Taylor Mill Road, Taylor Mill, KY 41015. Bids will be received until Friday, September 18, 2026 at 11 am ET (10 am CT), at which time bids will be publicly opened. All information requested in this ITB must be included in the submittal, which shall be packaged in a sealed envelope with the subject “FIRE STATION GENERATOR BID” clearly indicated on the outside of the envelope.

Bids received after this date and time may not be accepted. It is the sole responsibility of the vendor to assure that the bid is submitted before the submission deadline. Typed bids are preferred; however, if handwritten, the sheets must be legible. Information that is illegible may result in the rejection of the bid.

All bids and submitted information become the property of the City and will not be returned to the vendor. It is not the intention of the specifications contained herewith to eliminate any vendor; however, quoted items must equal or exceed stated specifications.

Bids, once submitted, shall remain firm and open to acceptance by the City for a minimum period of ninety (90) calendar days. The City may request a letter from vendors granting an extension of the 90-day period.

The City reserves the right to reject any and all bids, and to waive irregularities and/or minor immaterial defects in submitted bids when such waiver is determined by the City to be in its best interest. Minor exceptions to the specifications established herein shall be listed in detail on a separate sheet and attached to the bid. The City shall determine whether any exception is minor.

Bid submission does not constitute a contract for goods and/or services with the City. Submission of and signature on a bid constitutes acceptance by the vendor of the terms, conditions, and requirements set forth in this ITB.

Please do not contact any City staff member or any other person involved in the selection process, other than the designated contact person(s), regarding the project contemplated under this ITB while it is open and a selection has not been finalized. ANY ATTEMPT TO DO SO MAY RESULT IN DISQUALIFICATION OF THE VENDOR’S SUBMITTAL FROM CONSIDERATION.

General Provisions

1. **Compliance with Laws and Regulations:** Each vendor shall comply with all applicable Federal, State, and Local laws and/or regulations concerning the type of goods and/or services being procured under this ITB, which are deemed to be incorporated herein by reference.

The selected vendor agrees to comply with all statutes, rules, and regulations governing safe and healthful working conditions, including the Occupational Health and Safety Act of 1970, 29 U.S.C. 650 et seq., as amended, and KRS Chapter 338. The selected vendor also agrees to notify the City in writing immediately upon detection of any unsafe and/or unhealthy working conditions at the job site. The selected vendor agrees to indemnify, defend, and hold the City harmless from all penalties, fines, or other expenses arising out of the alleged violation of said laws.

2. **Equal Opportunity Statutes:** The City is an equal opportunity employer and does not discriminate on the basis of race, color, religion, sex, national origin, age, marital status, physical or mental disability, or any other characteristic protected by law. The City is also committed to employing only United States citizens and aliens who are authorized to work in the United States. The City complies with the Immigration Reform and Control Act of 1986. Therefore, the selected vendor must demonstrate to the satisfaction of the City that it also conforms to all Federal, State, and Local Equal Opportunity statutes. Further, the selected vendor will reimburse the City for any damages incurred due to any violation of the above-mentioned statutes by the vendor while under contract to the City.
3. **Failure to Submit Required Documentation:** Failure to submit ALL forms and information required in this ITB may be grounds for disqualification. At the time of submission, each vendor will be presumed to have inspected the site(s), if necessary, and to have read the scope and to be thoroughly familiar with the project plans and contract documents (including any and all addenda). The failure or omission of any vendor to examine any form, instrument, or document shall in no way relieve any vendor from any obligation with respect to this ITB.
4. **Submittal of Additional Information:** Vendors must provide manufacturer's product literature, if available and appropriate, with the bid submission. While not necessary, the vendor may include any product brochures, software documentation, sample reports, or other documentation that may assist the City in better understanding and evaluating the vendor's response. Additional documentation shall not serve as a substitute for other documentation which is required by this ITB to be submitted with the bid.
5. **Indication of Compliance:** Each vendor shall indicate compliance with either a "Yes" or a "No" for each item specification. Blank spaces shall be considered an indication of non-compliance. Any deviation from the specification(s), or case where submitted literature

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

does not fully support meeting the specification(s), must be clearly cited on the attached “EXCEPTIONS TO SPECIFICATIONS AND/OR COMMENTS” page. No deviation below “minimum” specifications will be accepted.

6. **Changes/Alterations to Submittal:** Each vendor may change or withdraw a bid at any time prior to the submission deadline; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted bid which is addressed in the same manner as the bid, and received by the City prior to the scheduled deadline for receipt of bids, will be accepted. The bid, when opened, will then be corrected in accordance with such written request(s), provided that the written request is timely submitted to the City Clerk and is plainly marked “modifications of bid.”
7. **Addenda and Interpretations:** All addenda and Q&A posted to the City of Taylor Mill’s official website, if any, shall be considered in preparing a bid, and such addenda shall be made a part of this ITB. Before submitting a bid, it is incumbent upon each vendor to be informed as to whether any addenda have been issued, and the failure to cover in the bid any such addenda may result in disqualification of that bid.

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any vendor orally. Every request for such interpretation shall be submitted in writing to the City Clerk:

City of Taylor Mill, City Clerk
5225 Taylor Mill Rd, Taylor Mill, KY 41015
(859) 581-3234
kwebb@taylormillky.gov

Any and all such interpretations and any supplemental instructions, if issued, will be posted to the City of Taylor Mill’s official website: www.TaylorMillky.gov/notices.

ALL QUESTIONS AND REQUESTS FOR CLARIFICATION/INTERPRETATION ARE DUE BY Friday, September 11, 2026 at 4 pm ET (3 pm CT).

The City will post all responsive addenda no later than Tuesday, September 15, 2026 at 4 pm ET (3 pm CT).

Failure of any vendor to receive any such supplementation or interpretation shall not relieve such vendor from any obligation under their bid as submitted. All posts so issued shall become part of the ITB and/or contract documents.

8. **Clarification of Submittal:** The City reserves the right to obtain clarification of any point in a bid or to obtain additional information from a vendor.

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

9. Bid Reservations: The City reserves the right to reject any or all bids, to award in whole or part, and to waive minor immaterial defects in bids. The City reserves the right to award contracts based on the best interest and/or most advantageous option for the City of Taylor Mill. The City may also consider any alternative bid that meets its basic needs.

10. Vendor's Qualifications: Each vendor must demonstrate, to the satisfaction of the City, that its firm/company has adequate equipment, personnel, experience and understanding of the specifications to perform service under the contract to be awarded.

No contract will be awarded to any vendor who, in the opinion of the City, is not qualified to perform satisfactorily due to a previously unfavorable performance, reputation or lack of experience, capital, organization, equipment, and/or personnel to conduct and complete the services in accordance with the terms and conditions of the contract.

The selected vendor must comply with the City's ordinances relating to Occupational License Fees, Business Licenses, payroll and net profits, and any other ordinances which may apply to any particular bid package.

11. "Or Equal" Clause: Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendors' names, trade names, catalog numbers, etc., it is intended merely to establish a standard; any materials, articles or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article or equipment so proposed is, in the opinion of the City, of equal substance and function.

12. New Goods, Fresh Stock: Unless otherwise specifically stated, all vendors shall provide new commodities, fresh stock, latest model, design, or package.

13. Vendor Preference: Pursuant to KRS 45A.494, which is incorporated herein by reference: "A resident vendor of the Commonwealth shall be given a preference against a nonresident vendor registered in any state that gives or requires a preference to vendors from that state. The preference shall be equal to the preference given or required by the state of the nonresident vendor."

14. No Liability: The City is not liable for any expenses or costs incurred in connection with the preparation of bids.

15. Open Records Laws: At the time a bid is submitted to the City, vendor shall identify any information that is submitted as part of the bid that is proprietary or confidential in nature and not subject to release for public inspection. The City will make its best effort to protect any proprietary or confidential information to the extent allowable under the Kentucky Open Records Act (KRS 61.870 to KRS 61.884).

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

- 16. Bribery Clause:** By signature of an authorized agent on the bid, each vendor certifies that no employee of the vendor's firm, any affiliate or subcontractor, has bribed or attempted to bribe an officer or employee of the City.
- 17. Ambiguity, Conflict, or Errors in ITB:** If a vendor discovers any ambiguity, conflict, discrepancy, omission or other such error in the ITB, the vendor shall immediately notify the City of such error in writing and request modification or clarification of the document, if allowable by the City.
- 18. Pricing:** All prices shall be quoted exclusive of any taxes. The City is exempt from Federal excise, transportation and/or Kentucky sales tax. Any items supplied DIRECTLY to the City from a supplier and/or manufacturer are exempt from sales tax. Any items purchased by a contractor that will be used in the fulfillment of a contract are NOT exempt from sales tax. In case of a discrepancy in the extension of a unit price, the unit price shall govern the total price.
- 19. Delivery Schedule:** Delivery date shall be specified on each proposed deliverable. The vendor will be expected to fulfill the delivery as specified.
- 20. Payment:** The bid must clearly state the payment terms, including prompt payment discounts and payment due dates. Discounts should be figured into the unit price of the quoted item. The City reserves the right to select the most beneficial terms.
- 21. Bonding:** A certified check or "Bid Bond" in the amount of five percent (5%) of the bid price must be included with the bid response. If a certified check is supplied, it must be made payable to the "City of Taylor Mill, Kentucky." Certified checks will be returned upon receipt of the "Performance Bond" and entering into a contract in accordance with specifications. In the event of failure to enter into a contract within the time period set forth in this bid, it is agreed that the certified check may be cashed and the funds retained by the City as liquidated damages. Checks of unsuccessful vendors will be returned when the bid has been awarded.

The selected vendor shall provide a "Performance Bond," with sufficient surety satisfactory to the City, in an amount equal to the contract price.

- 22. Insurance Requirements:** The selected vendor covenants and agrees to maintain and keep in force during the term of the contract (to be awarded) insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the selected vendor and their agents, representatives, employees, or subcontractors.

A. Commercial General Liability (CGL): CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal &

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

- B. Automobile Liability:** Any auto, or if the selected vendor has no owned autos, hired and non-owned autos, with limit no less than \$1,000,000 per accident for bodily injury and property damage.
- C. Workers' Compensation Insurance:** As required by the Commonwealth of Kentucky, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease. If the selected vendor maintains broader coverage and/or higher limits than the minimums shown above, the City requires and shall be entitled to the broader coverage and/or higher limits maintained by the selected vendor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.
- D. Excess Umbrella Coverage:** Required, in a minimum amount of \$2,000,000. In lieu of providing Excess Umbrella Coverage, the successful bidder may opt to provide adjusted occurrence and aggregate CGL limits that are comparably equivalent, which may be accepted in the City's discretion.

Acceptability of Insurers: Insurance is to be placed with insurers with a current A.M. Best rating of no less than A- if admitted in the Commonwealth of Kentucky.

Subcontractors: Selected vendor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and the selected vendor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage at least as broad as the CGL carried by the selected vendor.

- 23. Indemnification and Hold Harmless:** The selected vendor covenants to save, defend, keep harmless, and indemnify the City and all of its officers, departments, agencies, agents, and employees from and against all claims, loss, damage, injury, fines, penalties, and costs including court costs and attorney's fees, charges, liability, and exposure however caused resulting from, arising out of, or in any way connected with the vendor's negligent performance or non-performance of the terms of this ITB and/or the contract to be awarded. This provision shall in no way be limited by any financial responsibility or insurance requirements and shall survive the termination of the contract to be awarded to the selected vendor.
- 24. Ability to Meet Obligations:** Each vendor affirmatively states that there are no actions, suits or proceedings of any kind pending against the vendor or, to its knowledge, threatened against the vendor before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

authority or ability of vendor to perform its obligations under the contract to be awarded pursuant to this ITB, or which question the legality, validity, or enforceability hereof or thereof.

25. Agreement to ITB Terms: In submitting a bid, each vendor agrees that it has carefully examined the project site(s), if necessary, specifications, and all provisions relating to the services to be performed attached hereto and made a part of the bid (including any and all addenda). The failure or omission of any vendor to examine any form, instrument, or document shall in no way relieve any vendor from any obligation with respect to this bid. By acceptance of a contract under this ITB, the selected vendor states that it understands the meaning, intent, and requirements of the ITB and agrees to the same. The selected vendor shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to the selected vendor shall be authorized for services or expenses reasonably covered under these provisions that the vendor omits from its bid.

26. Method of Award: The award will be based upon the lowest responsive and responsible vendor complying with specifications on each item. The City of Taylor Mill reserves the right to consider as a part of the bid evaluation the stated warranty, stated delivery schedule, service, features, upgrades and payment terms.

27. Standard Contract: The selected vendor will be required to sign a contract for goods and/or professional services with the City within fourteen (14) days of the "Notice of Award." The contract will contain terms and conditions that include, but are not limited to, the term and duration, a sworn statement regarding campaign finance laws, a provision indicating that the vendor and its employees or agents are not employees of the City, a termination clause, an additional termination clause of those agreements covering multiple fiscal years in the event that sufficient funds are not appropriated as part of the budget process, provision that Kentucky law applies to interpretation of the agreement and any disputes and that venue shall be Kenton County, KY, and a provision that the services cannot be assigned without the prior approval of the City.

A "Notice to Proceed" will be issued once the agreement has been signed by both parties and all required paperwork herein described is received by the City.

28. Default; Termination: In the event that any of the provisions of this ITB and/or the contract to be awarded are violated by the selected vendor, such breach shall constitute a default. In the event of a default, the City may serve written notice upon the vendor of its intention to terminate the contract, such notice to contain the reasons for such intention to terminate. Unless within ten (10) days after the serving of such notice upon the vendor such violation or delay shall cease and satisfactory arrangement of correction be made, the contract shall, upon the expiration of said ten (10) days, cease and terminate.

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

The City shall be authorized to terminate for its own convenience all contracts for the procurement of supplies and services when the procuring City department determines in writing that such termination will be in the best interest of the City of Taylor Mill.

- 29. Assignment:** The selected vendor shall not assign or subcontract any portion of the contract without the express written consent of the City. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that the City shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of the City.
- 30. Contractor Status:** Vendor understands and agrees that its employees, agents, and/or sub-vendors are not employees of the City for any purpose whatsoever.
- 31. Authority to do Business:** Each vendor must be a duly organized and authorized to do business under the laws of Kentucky, Kenton County, and the city of Taylor Mill. Vendors must be in good standing and have full legal capacity to provide the services specified under the contract to be awarded. The selected vendor must have all necessary rights and lawful authority to enter into the contract for the full term thereof and ensure that proper corporate or other action has been duly taken authorizing the vendor to enter into the contract. Upon request, the selected vendor agrees to provide the City with a copy of a corporate resolution authorizing this action and/or a letter from an attorney confirming that the vendor is authorized to do business in the State of Kentucky. All bids must be signed by a duly authorized officer, agent, or employee of the vendor.
- 32. Severability:** If any term or provision of this ITB is found to be illegal or unenforceable, the remainder of the ITB shall remain in full force and such term or provision shall be deemed stricken.
- 33. Use of City Name, Seal, and/or Logo:** The selected vendor will not appropriate or make use of the City's name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the City. If such consent is granted, the City reserves the right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. The selected vendor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by the City.

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

GENERAL REQUIREMENTS

The City of Taylor Mill is seeking a vendor to furnish and install a 100 kilowatt generator to serve the Taylor Mill Fire Station, located at 5219 Taylor Mill Road, Taylor Mill, KY 41015.

PRE-BID MEETING

A non-mandatory pre-bid meeting will be held at the Taylor Mill Fire Station, located at 5219 Taylor Mill Road, Taylor Mill, KY 41015, on Thursday, September 10, 2026 at 9 am ET (8 am CT).

SPECIFICATIONS

The full specification sheet is attached hereto, and incorporated as though set forth full herein, as "Exhibit A."

WARRANTY

Vendor warrants said goods and services for a period of one (1) year after installation and warrants that such goods and services shall meet all City and State specifications.

****Remainder of page left unintentionally blank****

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

BID RESPONSE FORM

BASE BID: _____

NAME OF FIRM: _____

ADDRESS: _____

NAME (Type or Print): _____

TELEPHONE: _____

EMAIL: _____

* Authorized Signature: _____

Date: _____

- * Signature certifies the proposed solution and services meet all requirements outlined in this bid proposal and the vendor will comply with all specified requirements unless exceptions are noted below.

Vendor Acknowledges receipt of Addendum as noted: (mark N/A if none)

_____ Dated _____

_____ Dated _____

_____ Dated _____

Sub-Contractor / Supplier

Contract Amount

\$ _____

\$ _____

\$ _____

Check here _____ and attach additional sheets for additional Sub-Contractors/Suppliers.

EXCEPTIONS TO SPECIFICATIONS AND/OR COMMENTS

[illegible]

**AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION
AND NON-CONFLICT OF INTEREST**

I hereby certify:

1. That I am the bidder (if the bidder is an individual), a partner in the bidder (if the bidder is a partnership), or an officer or employee of the bidding corporation (if the bidder is a corporation) having authority to sign on its behalf.
2. That the submitted bid or bids have been arrived at by the bidder independently and have been submitted without collusion with, and without any agreement, understanding, or planned common course of action with, any other Contractor, Vendor of materials, supplies, equipment or services described in the Notice to Bidders, designed to limit independent bidding or competition, as prohibited.
3. That the contents of the bids have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder, its surety on any bond furnished with the bid or bids and will not be communicated to any such person prior to the official opening of the bid or bids.
4. That the bidder is legally entitled to enter into the Contract with the City of Taylor Mill and is not in violation of any prohibited conflict of interest.
5. This offer is for ninety (90) calendar days from the date of the bid is opened. In submitting the above, it is expressly agreed that upon proper acceptance by the Owner of any or all items bid above, a contract shall thereby be executed with respect to the items accepted.
6. That I have fully informed myself regarding and affirm the accuracy of all statements in this bid and/or proposal including the amount bid and the conditions thereof.

Sign in space below. Failure to sign may invalidate bid.

Signed by: _____ Title: _____

Firm: _____

Telephone: _____ Fax: _____

Address: _____

Date: _____

EQUAL OPPORTUNITY AGREEMENT

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by vendor and sub-vendor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states:
The Vendor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by vendors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:
The Secretary of Labor may investigate the employment practices of any Government vendor or sub-vendor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The City of Taylor Mill, Kentucky (the "Government") practices Equal Opportunity in recruiting, hiring, and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above-mentioned ordinances may cause a contract to be canceled and the vendors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Vendors

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.

Signature

Name of Firm

Invitation to Bid - #2026-01
Fire Station Generator
Bid Opening: Friday, September 18, 2026 at 11 am ET (10 am CT)

CHECKLIST FOR REQUIREMENTS

Initial “_____” for all below as indicated or bid may be rejected.

_____ VENDOR RECEIVED AND UNDERSTANDS THE INVITATION TO BID PACKAGE AND SPECIFICATIONS.

_____ A “BID BOND” OR CERTIFIED CHECK (in the amount of five percent (5%) of this bid made payable to the “City of Taylor Mill, Kentucky”) is attached.

_____ PROOF OF REQUIRED INSURANCE COVERAGES is attached.

_____ BID RESPONSE FORM is completed and attached.

_____ AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST is signed and attached.

_____ EQUAL EMPLOYMENT AGREEMENT is signed and attached.

_____ EXCEPTIONS TO SPECIFICATIONS AND/OR COMMENTS is completed and attached, if applicable.

_____ WARRANTY INFORMATION is attached, if applicable.

_____ VERIFICATION OF SERVICE AND MANUFACTURING QUALIFICATIONS is attached, if applicable.

SECTION 263213 – SPARK IGNITED ENGINE-DRIVEN GENERATOR SETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Spark-Ignited Engine.
2. Natural Gas Fuel Supply System.
3. Control and monitoring.
4. Generator overcurrent and fault protection.
5. Generator, exciter, and voltage regulator.
6. Outdoor engine generator enclosure (where selected).
7. Vibration isolation devices (where applicable).

B. Related Requirements:

1. Section 262313 "Paralleling Low-Voltage Switchgear" for controls and paralleling equipment for large or multiple parallel engine generators.
2. Section 263343 "Battery Chargers" for remote engine battery chargers.
3. Section 263600 "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine generators.

1.2 DEFINITIONS

A. EPS: Emergency power supply.

B. EPSS: Emergency power supply system.

C. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
2. Include thermal damage curve for generator.
3. Include time-current characteristic curves for generator protective device.
4. Include fuel consumption in gallons per hour (liters per hour) at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
5. Include generator efficiency at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.

6. Include airflow requirements for cooling and combustion air in cubic feet per minute (cubic meters per minute) at 0.8 power factor, Provide Drawings indicating requirements and limitations for location of air intake and exhausts.
7. Include generator characteristics, including, but not limited to, kilowatt rating, efficiency, reactance's, and short-circuit current capability.

B. Shop Drawings:

1. Dimensioned Outline Drawings of Equipment Unit: With engine and generator mounted on rails, identify center of gravity and total weight for provided components; fuel tank, enclosure, silencer, base tank, each piece of equipment not integral to the engine generator.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Identify fluid drain ports and clearance requirements for proper fluid drain.
4. Design calculations for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams indicating terminal markings for engine generators and functional relationship between all electrical components.
7. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.

1.4 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Data: Certificates, for engine generator, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Source Quality-Control Reports: Including, but not limited to, the following:

1. Certified summary of prototype-unit test report. Perform tests at rated load and power factor. Provide the following test results:
 - a. Maximum Power Level
 - b. Maximum Motor Starting (sKVA)
 - c. Structural Soundness
 - d. Torsional Analysis
 - e. Transient Response
 - f. Alternator Temperature Rise
 - g. Engine Cooling Requirements (unit mounted radiator)
 - h. Harmonic Analysis (per IEEE-115 and ANSI-100)
 - i. Voltage Regulation
 - j. Endurance Testing

2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
 3. Report of factory test on units to be shipped for this Project, indicating evidence of compliance with specified requirements.
 4. Report of sound generation.
 5. Report of exhaust emissions indicating compliance with applicable regulations.
 6. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
- C. Field quality-control reports. Field start up report and unit in-service documentation, including load bank test results if applicable.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. Include manufacturer's recommended maintenance and periodic testing plan in accordance with NFPA 110, Chapter 8.
- B. Furnish extra materials required by local Authority Having Jurisdiction (AHJ) and defined in project documents that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.6 QUALITY ASSURANCE

- A. The generator set covered by these specifications shall be designed, tested, rated, assembled and installed in accordance with all applicable standards below:
 1. CSA C22.2, No. 14-M91 Industrial Control Equipment.
 2. CSA C22.2, No. 100 Motors and Generators
 3. CSA 282-15
 4. EN 61000-6
 5. EN 55011
 6. FCC Part 15 Subpart B
 7. ISO 8528
 8. IEC 61000
 9. UL 508
 10. UL 2200
 11. UL 142
 12. UL 6200
 13. Designed to allow for installed compliance to NFPA 37, NFPA 70, NFPA 99 and NFPA 110
- B. Manufacturer Qualifications:
 1. Current certificate holder for ISO 9001 compliance.
 2. The power system shall be produced by a manufacturer who has produced this type of equipment for a period of at least 25 years and who maintains a service organization of factory-authorized generator technicians available twenty-four hours a day throughout the year.

3. Manufacturing and assembly of products must be done in the United States using domestically sourced materials to the extent practical.
- C. Installer Qualifications: An authorized representative who is trained and certified by the manufacturer on stationary power systems.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
 1. Warranty: 10 Year Comprehensive from date of Substantial Completion.
 2. A Comprehensive Warranty is defined as the manufacturer covering replacement parts, labor, and limited technician travel costs for covered warranty repairs during the listed warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Generac Power Systems, Inc.; RG100 with a QT100 alternator. The Three Phase generator shall be rated for 100 kW at 208 volts and 60 Hz, at 0.8 power factor lagging while operating at a maximum ambient temperature of 77 Fahrenheit and maximum altitude of 600 feet above sea level without reduction in electrical output capacity. Comparable products by one of the following will be considered:
 1. Generac, Inc.
 2. Caterpillar, Inc.
 3. Cummins Power Generation.
- B. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer. "Source Limitations: Obtain packaged engine generators and auxiliary components from single supplier. The equipment supplied and installed shall meet the requirements of NEC and all applicable local codes and regulations. All equipment shall be new, of current production. There shall be one source responsibility for warranty; parts and service through a local representative with factory certified service personnel.
- C. Requests for substitutions shall be made a minimum of thirty (30) days prior to bid date. Manufacturers catalog data and a completed generator sizing model using the proposed manufacturer's generator sizing software shall accompany each request and authorized acceptance shall be addenda only. Should any substitutions be made, the contractor shall bear responsibility for the installation, coordination and operation of the system as well as any engineering and redesign costs, which may result from such substitutions.

2.2 PERFORMANCE REQUIREMENTS

- A. NFPA Compliance:
 - 1. Comply with NFPA 37.
 - 2. Comply with NFPA 70.
 - 3. Comply with NFPA 99.
 - 4. Comply with NFPA 110 requirements for Level 1 EPSS.
- B. UL Compliance: Engine generator assembly and factory enclosure (if provided) shall be UL 2200 listed.
- C. Engine Exhaust Emissions: Comply with applicable US EPA, State and Local Government requirements. Spark-ignited Stationary Emergency: Engines shall be certified by the manufacturer to comply with 40 CFR Part 60 Subpart JJJJ, Table 1, Emission Standards for Stationary Emergency SI Engines and Table 2, Requirements for Performance Tests.

2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION

- A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Power Rating: Standby.
- D. Service Load: The generator set shall be a Generac model RG100 with a QT100 alternator. It shall provide 100 kW and 125 kVA while operating at the maximum ambient operating temperature and elevation specified in the project documents.
- E. Power Factor: 0.8 lagging.
- F. Frequency: 60 Hz.
- G. Voltage: 208 Volts ac.
- H. Phase: Three Phase, Three Wire.
- I. Induction Method: Naturally aspirated or Turbocharged.
- J. Governor: Adjustable isochronous, with speed sensing.
- K. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.
- L. Nameplates: For each major system component to identify manufacturer's name, model and serial number of component.

M. Engine Generator Performance:

1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 10.21 percent variation for 50 percent step-load increase or decrease at unity power factor. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Less than 3.5 Hertz variation for 50 percent step-load increase or decrease at unity power factor. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined in accordance with NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start time to comply with NFPA system requirements.

2.4 ENGINE PERFORMANCE

A. Fuel: Natural gas shall be "pipeline grade" meeting the following conditions:

1. Methane number 80 or greater.
2. High heating value shall be within the range of 950 - 1,150 BTU/scf.
3. Hydrogen sulfide shall not exceed 0.3 g/100 scf.
4. Total sulfur shall not exceed 20 g/100 scf.
5. Water vapor content shall not exceed 0.32 g/100 scf.

B. Rated Engine Speed: 1800 rpm.

C. Lubrication System to be engine mounted.

1. Oil filter shall be engine-mounted replaceable cartridge type with integral bypass valve, in accordance with manufacturer recommendations.
2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

D. Jacket Coolant Heater: Jacket water heater shall be sized per NFPA110 and UL listed to ensure that genset will start within the specified time period and ambient conditions.

E. Integral Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine generator set mounting frame and integral engine-driven coolant pump.

1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
2. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gauge glass and petcock.
3. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
4. Maximum Ambient Operating Temperature on Radiator: 104 degrees F (40 degrees C).
5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, UV-, and abrasion-resistant fabric.
 - a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.
 - b. Meets SAE 100R1A Type S, EN853 1SN, ISO 1436-1 Type 1SN
 - c. Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

F. Muffler/Silencer:

1. Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.

G. Air-Intake Filter: Heavy duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

H. Starting System: 12 or 24-V electric, with negative ground.

1. Cranking Cycle: As required by NFPA 110 for system level specified.
2. Battery: Lead acid, with capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle as required by NFPA 110 for system level specified.
3. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35 minimum continuous rating.
4. Battery Charger: Current-limiting, automatic-equalizing, and float-charging type designed for lead-acid batteries. Unit shall comply with UL 1236 and NFPA 110 Section 5.6.4.6 for Level 1 systems.:

2.5 FUEL SYSTEM – NATURAL GAS

- A. Comply with NFPA 37.
- B. Operating Pressure: 11 inches of water column.
- C. Flowrate: Maximum gas flow demand at 100% load: 1128 cubic feet per hour.

2.6 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of engine generator. When mode-

selector switch is switched to the on position, engine generator starts. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.

- B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts engine generator. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- C. Provide minimum run time control set for 15 minutes with override only by operation of a remote emergency-stop switch.
- D. Control panel must comply with UL 6200. The controller shall meet ASTM B117 (salt spray test).
- E. Connection to Building Management: If required, provide connections for data transmission of indications to remote data terminals via Modbus.
- F. Environmentally Hardened Design: Open circuit boards, edge cards, and PC ribbon cable connections are unacceptable.
- G. PCB Construction: Circuit boards with surface-mounted components to provide vibration durability. Circuit boards utilizing large capacitors or heat sinks must utilize encapsulation methods to securely support these components.
- H. Configuration:
 - 1. Operating and safety indications, protective devices, basic system controls, and engine gauges shall be grouped in a common control and monitoring panel mounted on the engine generator. Mounting method shall isolate the control panel from engine generator vibration. Panel powered from the engine generator battery.
- I. Control and Monitoring Panel:
 - 1. Digital engine generator controller with integrated controls, and microprocessor, capable of local and remote control, monitoring, and programming, with battery backup.
 - 2. Instruments: Located on the control panel and viewable during operation.
 - a. Engine-coolant temperature guage.
 - b. DC voltmeter (alternator battery charging).
 - c. Running-time meter.
 - d. AC voltmeter.
 - e. AC ammeter.
 - f. AC frequency meter.
 - g. Generator-voltage adjusting feature.

3. Controls and Protective Devices: Controls, shutdown devices, and common alarm indication, including the following:

- a. Cranking control equipment.
- b. Run-Off-Auto switch.
- c. Control switch not in automatic position alarm.
- d. Overcrank alarm.
- e. Overcrank shutdown device.
- f. Low-water temperature alarm.
- g. High engine temperature shutdown device.
- h. Overspeed shutdown device.
- i. Coolant low-level shutdown device.
- j. Coolant high-temperature shutdown device.
- k. EPS load indicator.
- l. Battery low-voltage alarm.
- m. Remote manual stop shutdown device.
- n. Total engine run hours, non-resettable.
- o. Engine generator metering, including voltage, current, hertz, ampere, and power factor.

J. Engine Generator Metering: Comply with [Section 260913 "Electrical Power Monitoring and Control."] [Section 262713 "Electricity Metering."] [Section 260913 "Electrical Power Monitoring and Control" and Section 262713 "Electricity Metering."]

K. Remote Emergency-Stop Switch: Provide remote emergency stop switch in quantity and style as shown on electrical drawings. Electrical contractor to coordinate exact location with engineer and local AHJ.

L. Data Logging:

1. Event Logging – the controller keeps a record of up to 50 events with date and time locally for warning and shutdown faults. This event log can be downloaded onto a USB storage device or onto a PC through the service program.

2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Overcurrent Protective Device:

1. Unit mounted circuit breaker. Rating, ampacity, accessories, as shown on drawings or as listed below:
2. Molded-case type disconnect switch; 100 percent rated:
 - a. Trip Rating: Matched to generator output rating.

B. Generator Controller Integrated Alternator Protective Functions:

1. Short-time I^2t function: Generator controller-based function shall continuously monitor current level in each phase of alternator output, integrate alternator heating effect over time, and predict when thermal damage of alternator will occur. As overcurrent heating effect on the alternator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the engine generator. When signaled by generator protector or other engine generator protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits.
2. Long-time function: Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other engine generator malfunction alarms. Contacts shall be available for load shed functions.
3. Short-circuit fault clearing: Under single- or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.

2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.
- E. Range: Provide range of output voltage by adjusting the excitation level.
- F. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity. Stator shall be skewed construction to minimize harmonic voltage distortion.
- G. Enclosure: Drip proof.
- H. Instrument Transformers: Mounted within generator enclosure.

I. Voltage Regulator:

1. Voltage Regulator: Solid-state type, separate from exciter. The digital voltage regulator shall be microprocessor based with fully programmable operating and protection characteristics. The regulator shall maintain steady-state generator output voltage within +/- 0.25% for any constant load between no load and full load. The regulator shall be capable of sensing true RMS. The regulator shall provide an adjustable Volts/Hz slope regulation characteristic in order to optimize voltage and frequency response for site conditions.
2. Alternator Excitation: Permanent Magnet Generator (PMG) shall provide excitation power for optimum motor starting and short circuit performance.
3. The generator must accept rated load in one-step.
4. Calculated Transient Voltage Performance: Motor starting performance and voltage dip determinations shall be based on the complete generator assembly. Voltage dip shall not exceed 7.9 percent based on the largest project block load, as determined by manufacturer's sizing program.
5. System Transient Voltage Performance: Alternator shall be capable of supplying 189 sKVA with a voltage dip not more than 35% at 0.3 starting power factor. Sustained voltage dip data or manufacturer-published SKVA numbers based on unity PF alternator-only dynamometer testing will not be accepted.
6. Calculated Transient Frequency Performance: Transient frequency dip performance shall be based on the complete generator set. Maintain frequency within 2.2 percent based on largest project block load, as determined by manufacturer's sizing program.

J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

2.9 OUTDOOR ENGINE GENERATOR ENCLOSURE

- A. Basis of design is a Standard Weather Enclosure.
- B. Generator packaged within manufacturer's weather protective, sound attenuated enclosure. Enclosure and generator set shall be UL 2200 Listed as a system.
- C. Enclosure Construction: Minimum 14 gauge construction. Roof construction shall be raised-seam, gasket-free interlocking panels. Rivets shall not be used on external painted surfaces. Design shall be rodent resistant.
- D. Doors shall be equipped with lift-off pin and sleeve type hinges to allow access to the engine, alternator, and control panel. Hinges shall be adjustable for door alignment. Hinges and all exposed fasteners shall be stainless steel. Each door shall be equipped with minimum 2-point latching mechanism and identical keys. Perimeter of all door openings shall include polyethylene gasket.
- E. Upward discharging exhaust hood for engine cooling airflow and exhaust.
- F. Engine exhaust silencer mounted within enclosure discharge hood.
- G. Enclosure Finish: Electrostatic applied powder paint, baked and finished to manufacturer's specifications. Finish system shall be subjected to the following tests:

1. ASTM D1186 - 87; 2.5+ mil Paint Thickness
 2. ASTM D3363 - 92a; Material Hardness
 3. ASTM D522 - B; Resistance to Cracking
 4. ASTM D3359 - B; Adhesion
 5. ASTM B117 D 1654; Resistant to Salt Water Corrosion
 6. ASTM D1735 D 1654; Resistant to Humidity
 7. ASTM 2794 93 (2004); Impact Resistance
 8. SAE J1690 - UV Protection"
- H. Enclosure Color: Manufacturer's standard color, or custom color matched based on architect's design with color sample provided to generator manufacturer.
- I. Wind Rating: Enclosure shall be constructed to attain basic wind speed rating of 110 MPH; WIF 1.15, Exposure Category "C", Building Classification "Enclosed", Topographic Factor Kzt = 1. Wind Design Pressures: windward, 20.6 lb/ft²; leeward, -12.9 lb/ft²; roof, -18.0 lb/ft²."
- J. Snow Load Rating: Minimum 70 pounds per square foot.
- K. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.
- L. Sound Insulation: Enclosure and air discharge hood completely lined with reflective silver mylar faced sound attenuating closed cell foam that meets UL 94 HF1 standards for flammability (FMVSS 302 test method). Roof sound insulation panels shall include additional mechanical retention.
- M. Sound Performance: The engine generator, while at operating speed and no load, shall not exceed 71 dBA average measured at 23 ft (7 meters) from the engine generator in a free field environment.
- N. Louvers: Fixed-engine, cooling-air inlet and discharge. Stormproof and drainable louvers prevent entry of rain and snow.
- O. Convenience Outlets (two): 120v GFCI duplex-outlet & 240v single receptacle within enclosure, w/ In-Use Cover.
- 2.10 VIBRATION ISOLATION DEVICES
- A. Internal Genset Vibration Isolation
- 2.11 SOURCE QUALITY CONTROL
- A. Prototype Testing: Factory test engine generator using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
1. Tests: Comply with IEEE 115 and with NFPA 110, Level 1 Energy Converters.

- B. Project-Specific Equipment Tests: Before shipment, factory test engine generator and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
 - 1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
 - 2. Test generator, exciter, and voltage regulator as a unit.
 - 3. Full load run.
 - 4. Maximum power.
 - 5. Voltage regulation.
 - 6. Transient and steady-state governing.
 - 7. Single-step load pickup.
 - 8. Safety shutdowns.

2.12 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.
- B. Examine roughing-in for piping systems and electrical connections. Verify actual locations of connections before packaged engine generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service in accordance with requirements indicated:
 - 1. Notify Project Manager in advance of proposed interruption of electrical service.
 - 2. Do not proceed with interruption of electrical service without written permission.

3.3 INSTALLATION

- A. Comply with NECA 1 and NECA 404.
- B. Comply with packaged engine generator manufacturers' written installation and alignment instructions and with NFPA 110.

C. Equipment Mounting:

1. Install packaged engine generators on cast-in-place concrete equipment bases or steel dunnage as indicated on drawings.
2. Coordinate size and location of mounting bases for packaged engine generators.

3.4 FIELD QUALITY CONTROL

A. Tests and Inspections: The supplier of the electric generating plant and associated items covered herein shall provide factory certified technicians to inspect the completed installation and to perform an initial startup inspection to include:

1. Ensuring the engine starts (both hot and cold) within the specified time.
2. Verification of engine parameters within specification.
3. Verify no load frequency and voltage, adjusting if required.
4. Test all automatic shutdowns of the engine-generator.
5. Perform a load test of the electric plant, ensuring full load frequency and voltage are within specification by using building load.

B. Battery and Charger Tests:

1. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions.
2. Verify that measurements are within manufacturer's specifications."

C. System Integrity Tests: Verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.

D. Coordinate tests with tests for transfer switches and run them concurrently.

E. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.

F. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

G. Remove and replace malfunctioning units and retest and reinspect as specified above.

H. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.

I. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

3.6 MAINTENANCE SERVICE

A. Repair Service Capabilities:

1. The generator set supplier shall maintain service parts inventory for the entire power system at a central location which is accessible to the service location 24 hours per day, 365 days per year. The manufacturer of the generator set shall maintain a central parts inventory to support the supplier, covering all the major components of the power system, including: engines, alternators, control systems, paralleling electronics, and power transfer equipment.
2. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of power system replacement parts in the local service location. Service vehicles shall be stocked with critical replacement parts. The service organization shall be on call 24 hours per day, 365 days per year. The service organization shall be physically located within 20 miles of the site.
3. The manufacturer shall maintain model and serial number records of each generator set provided for at least 20 years.

B. Preventative Maintenance Service Agreement: The supplier shall include as a line item adder in the proposal, a one-year maintenance service agreement. The maintenance shall be performed by factory authorized service technicians capable of servicing both the engine generator set(s) and the transfer switch(es). This agreement shall include semi-annual preventative maintenance visits to verify operation and/or complete the following:

1. All periodic engine maintenance as recommended by the service manual.
2. All electrical controls maintenance and calibrations as recommended by the manufacturer.
3. All auxiliary equipment as a part of the emergency systems.
4. The supplier shall guarantee emergency service.
5. All expendable maintenance items are to be included in this agreement.
6. A copy of this agreement and a schedule shall be provided in the submittal documents, detailing scope of work and preventative maintenance service visit interval.

END OF SECTION 263213