

TOWN OF SIMSBURY

PORTABLE GENERATOR SET

933 HOPMEADOW STREET

SIMSBURY, CONNECTICUT

JUNE 16, 2014

BIDDING REQUIREMENTS AND PROJECT MANUAL

PREPARED BY: Friar Associates II, LLC

PROJECT NO. 3013-003A

Town of Simsbury Portable Generator Set

June 4, 2014

933 Hopmeadow Street
Simsbury, CT 06070

BIDDING REQUIREMENTS AND PROJECT MANUAL TABLE OF CONTENTS

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**INVITATION TO BID
TOWN OF SIMSBURY**

Project: **PORTABLE GENERATOR SET**

Sealed bids, endorsed "**Portable Generator Set**" will be received at the office of the Finance Director, 933 Hopmeadow St., (Route 10/202), Simsbury, Connecticut, until **Tuesday, July 8, 2014 at 1:00 p.m. (EDST) in the Town Hall Meeting Room** at which time they will be opened in public by the Director of Finance. Bids received after the time set for the opening may be rejected.

Included in this work is the procurement of an industrial, towable 275kW, voltage-selectable generator set.

The Invitation to Bid package may be obtained at the Engineering Department Room at the Simsbury Town Hall during Town Hall office hours or on the Town's website under the Department of Public Works – Public Bids and RFP's, <http://www.simsbury-ct.gov/finance/pages/public-bids-and-rfp>.

The right is reserved to reject any or all bids or to waive defects in same if it be deemed in the best interest of the Town of Simsbury. The Town of Simsbury is an Equal Opportunity Employer.

Jerome F. Shea, P.E.
Town Engineer

For publication in the Hartford Courant on June 19, 2014 as a Zone 5 Legal Notice.

An affidavit of publication and tear sheet is requested.

BIDDING REQUIREMENTS
PROPOSAL
(Submitted in Triplicate)

BID FROM _____, BIDDER

FOR: The Town of Simsbury Portable Generator Set located in Simsbury, Connecticut

TO: Mr. Jerome F. Shea, P.E.
Town Engineer
Town of Simsbury
933 Hopmeadow Street
Simsbury, CT 06070

The undersigned proposes to furnish all labor, materials, transportation, overhead and related project costs, and equipment and to perform all work under the contract for the procurement of an industrial, towable 275kW generator set in accordance with the Contract Specifications, dated June 16th, 2014, prepared by Friar Associates II, LLC, 281 Farmington Avenue, Farmington CT 06032 for the amounts shown herein under the Schedule of Proposals.

Receipt is acknowledged of the following addenda:

ADDENDUM NUMBER _____ DATED _____

ADDENDUM NUMBER _____ DATED _____

SCHEDULE OF PROPOSALS

1. BASE BID (Electrical)

A. Base bid for performing all work under the contract for the lump sum of:

\$ _____
(Amount in Numerals)

(Amount in Words)

Bidding Requirements Proposal Form

It is understood and agreed that the Town of Simsbury has the privilege of rejecting any and all proposals and of waiving informality in any proposal.

If is further understood and agreed that this bid shall be irrevocable for ninety (90) calendar days after bid receipt date.

Name of Firm: _____

Address: _____

Signed: _____

Title

Phone Number

Date



Town of Simsbury

933 HOPMEADOW STREET

P.O. BOX 495

SIMSBURY, CONNECTICUT 06070

Mary A. Glassman - First Selectman

Chapter 13, ETHICS, CODE OF

[HISTORY: Originally adopted by the Board of Selectmen of the Town of Simsbury 9-14-1988.
Revised on September 10, 2001]

Chapter 13-1. Legislative Intent.

The proper operation of government requires that public officials and public employees be independent, impartial and responsible to the people; that governmental decisions and policies be made free from undue influence and in the proper channels of governmental structure; that governmental office and employment not be used for unauthorized personal gain; that governmental officials and employees strive to avoid even the appearance of impropriety; and that the public have confidence in the integrity of its government. The purpose of this Code of Ethics is to set forth standards of ethical conduct to guide officials and employees of the Town of Simsbury in the conduct of their public responsibilities and to develop and maintain a tradition of responsible and effective public service. In recognition of these goals, this Code of Ethics is established pursuant to authority granted to the Town by Connecticut General Statutes §7-148h.

Chapter 13-2. Board of Ethics.

A. Establishment. As authorized by §702 and §715 of the Charter of the Town of Simsbury and §7-148h of the Connecticut General Statutes, the Board of Selectmen shall appoint a Board of Ethics consisting of six members, two of whom shall be registered Republicans, two of whom shall be registered Democrats and two of whom shall be Unaffiliated voters. The members of the Board shall serve four-year terms, except that at the first appointment by the Board of Selectmen, one Republican, one Democrat and one Unaffiliated voter shall be appointed for two-year terms, with the remaining members appointed for four-year terms. Biennially, thereafter, the Board of Selectmen shall appoint in the manner provided in the Charter of the Town of Simsbury.

B. Organization and Procedure. The Board shall elect a Chairman and Vice Chairman/Secretary and shall establish its own rules and procedures, which shall be available to any elector of the Town upon request to the Board. The first rules and procedures shall be established within six months of the date this chapter becomes effective. The need to maintain confidentiality in order to protect the privacy of public officials, employees and consultants shall be considered when establishing the rules and procedures. It shall keep records of its meetings and shall hold meetings at the call of the Chairman and at such other times as it may determine.

Telephone (860) 658-3230
Facsimile (860) 658-9467

MGlassman@simsbury-ct.gov
www.simsbury-ct.gov

An Equal Opportunity Employer
8:30 – 7:00 Monday
8:30 - 4:30 Tuesday through Friday

C. Powers and Duties.

- (1) The Board shall render advisory opinions with respect to the applicability of the Code of Ethics to specific situations to any agency or any official, employee or consultant pursuant to a written request or upon its own initiative. The Board may also issue guidelines. Such opinions and guidelines, until amended or revoked, shall be binding on the Board and reliance upon them in good faith is an absolute defense in any action brought under the provisions of this chapter or under Section 1103 of the Town Charter. Any request or opinion, the disclosure of which invades the personal privacy of any individual [as that term is used in Connecticut General Statutes §1-19(b)(2) by the Connecticut Freedom of Information Commission and the courts], shall be kept confidential in a personnel or similar file and shall not be subject to public inspection or disclosure. The Board may make available to the public any advisory opinions that do not invade an individual's privacy and may take other appropriate steps in an effort to increase public awareness of this Code of Ethics.
- (2) The Board shall establish procedures by which the public may initiate complaints alleging a violation of this Code of Ethics. The Board itself may also initiate such a complaint. The Board shall have the power to hold hearings concerning the application of this code and its violation and may administer oaths and compel the attendance of witnesses by subpoena. As required by §7-148h (a) of the Connecticut General Statutes, the provisions of §1-82(a) through (e) of the Connecticut General Statutes shall apply to all investigations and hearings held under this ordinance. If the Board determines that there is probable cause it shall continue the investigation and hold such further hearings as may be necessary, and if the Board determines that the respondent has, in fact, violated the provisions of this code, it shall file a memorandum of decision with a recommendation for appropriate action with the Board of Selectmen, except with respect to individuals under the jurisdiction of the Board of Education, in which cases the memorandum of decision shall be filed with the Board of Education. In the case of a consultant, it shall also be filed with the contracting agency. The recommended action may include reprimand, public censure, a fine not to exceed \$100 or other such action as the Board of Selectmen or Board of Education may deem appropriate in accordance with their respective responsibilities under the law provided that in the case of union employees, such recommended action does not constitute a unilateral change in conditions of employment. No such recommendation shall limit the authority of the Board of Selectmen or the Board of Education under the Charter of the Town of Simsbury or under any ordinance, statute or any other law, and the actions hereunder shall be supplemental to any authority the Board of Selectmen or Board of Education has under any ordinance, statute or any other law. Any discussion by the Board of Selectmen, Board of Education or contracting agency of an individual affected by said memorandum of decision shall be in executive session, unless the individual affected requests that such discussion be held in open session.

Chapter 13-3. Definitions.

For the purpose of this chapter, the following terms shall have the indicated meanings:

- A. "Agency" means all boards, commissions, authorities and committees of the Town of Simsbury, including the Board of Education but not including a Town Meeting.

- B. "Official" includes all persons who are members of a Town agency.
- C. "Employee" includes all persons, including but not limited to officers and supervisors, employed by the Town and encompasses all persons, including but not limited to officers and supervisors, employed by the Board of Education.
- D. "Consultant" means any independent contractor or professional person or firm that is engaged by and receives compensation from any agency for the purpose of providing scientific, technical or other specialized opinion to such agency and is in a position to influence any decision of an agency, official or employee.
- E. "Financial Interest" means any interest that: (1) has monetary value of \$100.00 or more or generates a financial gain or loss of \$100.00 or more in a calendar year; and (2) is not common to the other citizens of the Town. An individual's "financial interests" shall include the financial interests of all members of his/her family who reside in his/her household but shall not include any duly authorized compensation from the Town.
- F. "Beneficial Interest" means any non-financial interest or special treatment that is not common to other citizens of the Town. An individual's "beneficial interests" shall include the "beneficial interests" of all members of his/her family who reside in his/her household.
- G. "Confidential Information" means information, whether transmitted orally or in writing, that is obtained by an official or employee by reason of his/her public position and is of such nature that, at the time of transmission, it is not a matter of public record.
- H. "Immediate Family" means a member of a person's family who resides in the person's household.

Chapter 13-4. Consultants.

This Code of Ethics shall be incorporated into all contracts entered into by an agency and a consultant.

Persons or firms who are engaged by and receive compensation from other entities, such as the state or federal government, and who are in a position to influence any decision of an agency, official or employee shall be guided by this Code of Ethics, and the Board of Ethics, upon complaint or its own motion, may make recommendations to the entity employing such persons.

Chapter 13-5. Confidential Information.

Except as otherwise required by law, no official, employee or consultant shall disclose, without proper authorization, confidential information, nor shall he/she use such information to advance his/her financial or beneficial interests or the financial or beneficial interests of others. This section shall not be used to restrict the release of information that is properly available to the public.

Chapter 13-6. Use of Influence.

No official, employee or consultant may inappropriately use his/her position to seek, demand or influence a financial interest or a beneficial interest in his/her favor or in favor of any other person or entity.

Chapter 13-7. Gifts and Favors.

No official, employee or consultant or any member of his/her immediate family nor any agency, employee organization or group of employees shall solicit or accept any valuable gift, whether in the form of a service, a loan at a less than a commercially reasonable rate, a material thing or a promise, from any person or entity who or which is interested directly or indirectly in any business transactions or pending matters that are within the purview of such prospective recipient's official responsibilities. No official or

employee shall accept any special favor, treatment, consideration or advantage beyond that which is generally available to citizens of the Town from any person who, to the official or employee's knowledge, is interested directly or indirectly in any business transactions or pending matters that are within his/her official responsibilities. For purposes of this section, pending matters include, but are not limited to, applications to agencies, bids for work to be performed, applications for employment and bids for the furnishing of supplies, equipment or other items.

The Board of Ethics shall formulate guidelines for delineating gifts and favors deemed not to be of value in order to avoid de minimis situations. Such guidelines shall become effective upon adoption by the Board of Selectmen.

This section shall not apply to a political contribution otherwise reported as required by law.

Chapter 13-8. Equal Treatment.

Without proper authorization, no official, employee or consultant shall grant any special consideration, treatment or advantage to any citizen beyond that which is available to every other citizen.

Chapter 13-9. Conflict of Interest.

An official or employee or consultant has a conflict of interest when he/she engages in or participates in any transaction, including private employment and the rendering of private services, that is incompatible with the proper discharge of his/her official responsibilities in the public interest or would tend to impair his/her independent judgment or action in the performance of his/her official responsibilities.

An official or employee or consultant has a financial interest or beneficial interest that is incompatible with the proper discharge of his/her official responsibilities in the public interest if he/she has reason to believe or expect that he/she will derive such interest by reason of his/her performance of his/her official responsibilities.

An official or employee or consultant does not have a financial or beneficial interest that is incompatible with the proper discharge of his/her official responsibilities in the public interest if any such interest accrues to him/her as a member of a business, profession, occupation or group to no greater extent than it accrues to any other member of the business, profession, occupation or group that he/she represents. This does not relieve an individual from his/her obligation to refrain from voting on any matter that would directly benefit his/her business, profession, occupation, group or immediate family as required by Section 13-10 of this Code of Ethics, Section 1103 of the Charter of the Town of Simsbury and General Statutes §7-148h(b).

Chapter 13-10. Disclosure.

- A. Any official, employee or consultant who has a financial or beneficial interest, direct or indirect, in any contract, transaction or decision within the purview of his/her official responsibilities shall disclose that interest in writing to the Board of Selectmen. Such disclosure also shall be provided, in the case of an official, to the agency of which the official is a member, and, in the case of an employee or consultant, to the agency by which he/she is employed or has been retained. Such disclosure shall disqualify the official, employee or consultant from participation in the matter, and violation of this section shall be grounds for removal by the appropriate agency in accordance with applicable law.

- B. No official or employee or consultant shall appear on behalf of any private person or party before any agency in connection with any cause, proceeding, application or other matter in which he/she has a financial or beneficial interest without first disclosing such interest to the agency, which shall record such disclosure in the record of the agency's proceeding. The Secretary or Clerk of said agency shall notify the First Selectman and, in the case of an official or employee of the Board of Education, the Chairman of the Board of Education, and the Chairman of the Board of Ethics in writing of such disclosure within three business days.

Chapter 13-11. Incompatible Employment and Activities.

- A. No official or employee shall engage in or accept private employment or render services for private interest when the employment or services: (1) are incompatible with the proper discharge of his/her official duties; or (2) would tend to impair his/her independence of judgment or action in the performance of his/her official duty. No consultant shall engage in employment or render services for interests other than the Town when such employment or services: (1) are incompatible with the proper discharge of his/her consulting duties; or (2) would tend to impair the independence of his/her judgment or action on the matter for which he/she has been engaged by the Town.
- B. No former official, employee or consultant shall appear on behalf of any private person or other entity before any agency with which he/she previously was employed or affiliated for a period of one year after the termination of his/her public service or employment. Such an individual may be relieved of his/her duty to refrain from such appearance upon written application to the Board of Ethics, which Board shall review the written application and relevant facts.
- C. No former official, employee or consultant shall appear on behalf of any private person or other entity before any agency in regard to a matter in which he/she previously participated in the course of his/her official responsibilities for a period of one year after the termination of his/her public service or employment. Such an individual may be relieved of his/her duty to refrain from such appearance upon written application to the Board of Ethics, which Board shall review the written application and relevant facts.
- D. Subsections B, C and D of this section shall not prohibit any current or former official, employee or consultant from appearing before any agency on his/her own behalf or on behalf of members of his/her family living in his/her household. To avoid the appearance of impropriety, officials are strongly discouraged from recusing themselves and appearing before their own agency unless extenuating circumstances exist. When in doubt, an official should seek an opinion from the Board of Ethics prior to appearing before his/her own agency.
- E. An official should not appear before, or participate in the proceeding of, another agency in violation of Connecticut General Statutes §8-11 or §8-21 or any other provision of the General Statutes.
- F. To avoid even the appearance of impropriety, an official not otherwise prohibited shall exercise care when appearing before other agencies and shall disclose whether he/she is appearing in his/her official capacity or as a private citizen.

Chapter 13-12. Acknowledgment Form.

- A. Every official shall sign and file with the Board of Selectmen an acknowledgement form, supplied by the First Selectman, indicating his/her awareness of the provisions of this Code of Ethics, the guidelines issued there under and Section 1103 of the Charter of the Town of Simsbury on or before being sworn into office and again thereafter in January of each even numbered year. The

Board of Selectmen shall adopt and implement a procedure for monitoring compliance with the aforesaid filing requirement.

- B. Every consultant shall sign and file with the agency by which he/she is retained an acknowledgement form, supplied by the First Selectman, indicating his/her awareness of the provisions of this Code of Ethics, the guidelines there under and Section 1103 of the Charter of the Town of Simsbury on or before being retained by an agency. The Board of Selectmen shall adopt and implement a procedure for monitoring compliance with the aforesaid filing requirement.
- C. The Board of Selectmen shall adopt and the First Selectman shall implement a plan for making all employees, other than persons who are employed by the Board of Education, aware of the provisions of this Code of Ethics, the guidelines issued there under and Section 1103 of the Charter of the Town of Simsbury. The plan adopted by the Board of Selectmen shall contain a provision requiring that department heads review such provisions with all such employees at an interval to be determined by the Board of Selectmen. The plan shall be completed within 120 days after the adoption of this Code of Ethics, and a copy of the plan shall be filed with the Board of Ethics upon its adoption.

Every employee, other than persons employed by the Board of Education, shall execute an acknowledgment form, supplied by the First Selectman, indicating the employee's awareness of the provisions of this Code of Ethics, the guidelines issued there under and Section 1103 of the Charter of the Town of Simsbury as follows:

- 1. New employees shall execute the form at the time of employment and thereafter in accordance with subparagraph 2 below.
- 2. Current employees shall execute the form within 60 days after the adoption of the procedure set forth in paragraph C above and thereafter at intervals specified by the Board of Selectmen, but in no event shall such intervals be less frequent than a period of 2 years from the date of signing the last acknowledgment form.

- D. The Board of Education shall adopt and the Superintendent shall implement a plan for making all employees of the Board of Education aware of the provisions of this Code of Ethics, the guidelines issued there under and Section 1103 of the Charter of the Town of Simsbury. The plan adopted by the Board of Education shall contain a provision requiring that department heads review such provisions with all employees at an interval to be determined by the Board of Education. The plan shall be completed within 120 days after the adoption of this Code of Ethics, and a copy of the plan shall be filed with the Board of Ethics upon its adoption. Every employee of the Board of Education shall execute an acknowledgment form, supplied by the Superintendent, indicating the employee's awareness of the provisions of this Code of Ethics, the guidelines issued there under and Section 1103 of the Charter of the Town of Simsbury, as follows:

- 1. New employees shall execute the form at the time of employment and thereafter in accordance with subparagraph 2 below.
- 2. Current employees shall execute the form within 60 days after the adoption of the procedure set forth in Paragraph D above and thereafter at intervals specified by the Board of Education, but in no event shall such intervals be less frequent than a period of 2 years from the date of signing the last acknowledgment form.

**TOWN OF SIMSBURY
BOARD OF ETHICS**

GUIDELINES FOR GIFTS AND FAVORS

The following guidelines are issued to delineate gifts and favors deemed to be of no substantial value and permissible under the provisions of Section 13-3 of the Code of Ethics Ordinance for the Town of Simsbury:

1. The acceptance of a small gift, the denial of which would appear discourteous, provided the value of the gift does not exceed approximately \$50.00 from a single donor or \$100.00 per calendar year from a single donor, is permitted.
2. If a gift is received which is of such insignificant consequence that the cost of its return exceeds the value of the gratuity, it may be accepted.
3. Inexpensive advertising novelties, such as pens, calendars and other items customarily distributed to both the public and private sector, may be accepted.
4. An occasional meal or entertainment event may be accepted if it is in the ordinary course of business, but under no circumstances shall a meal or other event be accepted if the value exceeds approximately \$50.00. Occasional means: infrequent, without regularity and generally not to exceed six or eight occasions per year.
5. Any other offer for travel, meals or entertainment is prohibited by the ordinance unless:
 - a) it is part of an event related to the Town's business in which the employee or public officials from other municipalities are also offered the same benefit;
AND
 - b) the event is approved in advance by the First Selectman in the case of Town officials and employees, or the Superintendent of Schools in the case of Board of Education officials and employees.

Any such approvals by the First Selectman or Superintendent of Schools which exceed \$50.00 in value shall be reported in writing to the Chair of the Board of Ethics within ten (10) business days following the date of approval giving a description of the event, the approximate dollar amount involved and the reason for the approval.

6. Acceptance of a gift, meal, entertainment event or other gratuity from a family member or person having a close relationship who would ordinarily be giving or exchanging gifts for special occasions such as religious holidays, birthdays, birth or adoption of a child are allowed unless the donor has a matter pending where the recipient of the gift has decision making authority.

Approved by the Board of Selectmen on September 10, 2001

TOWN OF SIMSBURY

**Acknowledgement Form
and
Charter Section 1103
Code of the Town of Simsbury**

ACKNOWLEDGEMENT FORM

I have read Section 1103 of the Charter of the Town of Simsbury, the Code of Ethics Ordinance, and the Guidelines issued thereunder. I understand my responsibilities as a member of the N/A, an employee of the Town or a consultant retained by the Town, and I am in compliance with the Charter and the Code of Ethics. I have indicated in the space below any areas of conflict should they arise in matters before our board, commission, agency or department, and I agree to report any future conflicts under the provisions of Section 1103 of the Charter.

Areas of Exception

**CONFLICTS OF INTEREST
SECTION 1103**

CONFLICTS OF INTEREST. It is hereby declared to be the policy of the Town that any elected or appointed officer, any member of any board or commission or any employee of the Town who has a financial interest, direct or indirect, in any contract, transaction or decision of any officer or agent of the Town or any board or commission, shall disclose that interest to the Board of Selectmen, which shall record such disclosure upon the official record of its meetings. Such disclosure of a financial interest, direct or indirect, in any contract, transaction or decision of any officer or agent of the Town or of any board or commission shall disqualify such elected or appointed official or such member of a board or commission or such Town employee from participation in the awarding, assignment or discussion of said contract, transaction or decision. Violation by any such official, board or commission member or employee of the provisions of this section shall be grounds for his/her removal.

Signature

Name (Please Print)

Date

SECTION 269000 - PORTABLE GENERATOR SET

1. Scope of Work

- 1.1. It is the intent of this specification to secure an engine-driven generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
- 1.2. Any and all exceptions to the published specifications shall be subject to the approval of the engineer.
- 1.3. The power system shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.
- 1.4. The equipment shall be produced by a manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year.
- 1.5. The equipment shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.

2. General Requirements

- 2.1. It is the intent of this specification to secure a generator set system that has been tested during design verification, in production, and at the final job site. The generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
- 2.2. All equipment shall be new and of current production by a national firm that manufactures the generator sets and controls, transfer switches, and switchgear, and assembles the generator sets as a complete and coordinated system. There will be one-source responsibility for warranty, parts, and service through a local representative with factory-trained servicemen.

3. Submittal

- 3.1. The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator.

4. Codes and Standards

- 4.1. The generator set shall conform to the requirements of the following codes and standards:
 - 4.1.1. CSA C22.2, No. 14-M91 Industrial Control Equipment.
 - 4.1.2. EN50082-2, Electromagnetic Compatibility-Generic Immunity Requirements, Part 2: Industrial.
 - 4.1.3. EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
 - 4.1.4. IEC8528 part 4, Control Systems for Generator Sets.
 - 4.1.5. IEC Std 61000-2 and 61000-3 for susceptibility, 61000-6 radiated and conducted electromagnetic emissions.
 - 4.1.6. IEEE446 Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
 - 4.1.7. Mil Std 461D-1993, Military Standard, Electromagnetic Interference Characteristics.
 - 4.1.8. Mil Std 462D-1993, Military Standard, Measurement of Electromagnetic Interference Characteristics.
 - 4.1.9. NFPA 70, National Electrical Code, Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
 - 4.1.10. NFPA 110, Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit. Component level type tests will not substitute for this requirement.

5. Testing

- 5.1. To ensure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.
- 5.2. **Design Prototype Tests.** Components of the emergency system, such as the engine/generator set, transfer switch, and accessories, shall not be subjected to prototype tests because the tests are potentially damaging. Rather, similar design prototypes and preproduction models shall be subject to the following tests:
 - 5.2.1. Maximum power (kW).
 - 5.2.2. Maximum motor starting (kVA) at 35% instantaneous voltage dip.
 - 5.2.3. Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-32.6.
 - 5.2.4. Governor speed regulation under steady-state and transient conditions.
 - 5.2.5. Voltage regulation and generator transient response.
 - 5.2.6. Harmonic analysis, voltage waveform deviation, and telephone influence factor.
 - 5.2.7. Alternator cooling air flow.
 - 5.2.8. Torsional analysis to verify that the generator set is free of harmful torsional stresses.
 - 5.2.9. Endurance testing.
- 5.3. **Final Production Tests.** Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:
 - 5.3.1. Single-step load pickup
 - 5.3.2. Transient and steady-state governing

- 5.3.3. Safety shutdown device testing
- 5.3.4. Voltage regulation
- 5.3.5. Rated Power @ 0.8 PF
- 5.3.6. Maximum power
- 5.3.7. Upon request, a certified test record sent prior to shipment.

6. Warranty and Maintenance

- 6.1. The generator set shall include a standard one year warranty to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from date of startup.
- 6.2. The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and function tests performed on all systems.

7. Equipment

- 7.1. The generator set shall be a **KOHLER** model **275REOZT** with a LSA462L9 alternator, or acceptable equivalent. It shall provide 243kW/304kVA when operating at 120/208 volts, 60 Hz, three phase, or 277/480 volt, 60 Hz, three phase. The generator set shall be capable of a Standby 27°C rating. The generator set shall be a KOHLER As provided by Kinsley Power Systems – contact Rich Cupillo @ 860-930-3479. The generator set described herein is KOHLER, and it is with the price of this equipment that the contractor of this section shall enter with his proposal. If the contractor proposes equivalent equipment, it shall be submitted in a separate document. All additional costs associated with re-engineering and mechanical & electrical modifications to the installation will be at the contractor's expense. The contractor must also supply the details listed below with his equivalent proposal:
- 7.2. Performance and voltage dip determinations shall be based on the complete generator set. The generator set shall be capable of starting

motor loads with a maximum instantaneous voltage dip of 35%, as measured by a digital RMS transient recorder in accordance with IEEE standard 115. Motor starting performance and voltage dip determination that does not account for all components affecting total voltage dip i.e. engine, alternator, voltage regulator and governor will not be acceptable. As such, the generator set shall be prototype tested to optimize and determine performance as a generator set system.

- 7.3. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

8. Engine

- 8.1. The 549-cubic-inch displacement engine shall deliver a minimum of 422 BHP at a governed speed of 1800 rpm. The engine shall be equipped with the following:
 - 8.1.1. John Deere engine with 12-volt battery charging alternator.
 - 8.1.2. Heavy-duty air cleaner with air restrictor indicator.
 - 8.1.3. Battery, battery rack, and cables..
 - 8.1.4. Engine is compliant with the Environmental Protection Agency (EPA) requirements.
 - 8.1.5. Water separator fuel filter.
 - 8.1.6. Battery disconnect switch.
 - 8.1.7. Block heater, 120 V/2250 W.
- 8.2. The engine shall be fueled by Diesel.
- 8.3. The engine shall have a minimum of 4 cylinders and be liquid-cooled by Unit Mounted Radiator 122°F/50°C.
- 8.4. The engine shall be EPA certified from the factory.

9. Alternator

- 9.1. The alternator shall be 4 pole, rotating field with 12 lead reconnectable, self-ventilated with drip-proof construction and amortisseur rotor

windings and skewed for smooth voltage waveform. The ratings shall meet the NEMA standard (MG21, UTE NF C51.111, VDE 0530, BS 4999) temperature rise limits. The insulation shall be class H per UL1446 and the varnish shall be a fungus resistant epoxy. Temperature rise of the rotor and stator shall be limited to Standby 130°C. The alternator shall have shunt type exciter system and have a solid- state voltage regulator capable of maintaining voltage within $\pm 1.0\%$ at any constant load from 0% to 100% of rating once in proper operation, under severe nonlinear loads and provide individual adjustments for voltage range, stability and volts-per-hertz operations. .

- 9.2. The alternator shall have 1 sealed maintenance-free bearing, designed. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
- 9.3. The generator shall be inherently capable of sustaining at least 250% of rated current for at least 10 seconds under a 1phase symmetrical short circuit without the addition of separate current-support devices.

10. Controller

10.1. Decision-Maker® 1000 Controller

10.1.1. The controller shall include:

- LCD display.
- User buttons for 2-wire start/stop control, and menu scroll and selection.
- Emergency stop button.
- On/ off key switch.
- LED indication for status.
- Panel- mounted battery fuse.
- Panel lights.

LCD Panel Features

- Three lines of text and graphic display.
- Icons for quick identification of system status.

Viewable/ Selectable Parameters (may require optional module)

- Mode of operation.
- Battery voltage
- Frequency

- Time delay countdown
- Hourmeter
- Engine speed
- Fuel level (%)
- Coolant temperature
- Oil pressure
- Voltages: phase, phase-to-neutral, total voltage
- Current

Viewable Faults:

- Overspeed
- Overcrank
- Low Fuel
- Coolant temperature
- Oil pressure
- Battery charger
- Frequency meter
- Ammeter
- Voltmeter
- Emergency stop

11. Accessories

- 11.1. **Battery Charger.** A 6-ampere automatic float to equalize battery charger with the following features:
- 12 VDC output
 - 1% steady-state voltage regulation from no load to full load over 10% AC input line voltage variation
 - LED lamps for charge state indication
 - Temperature compensated for ambient temperatures for -40°C to 70°C
 - Potting for durability
 - Short-circuit and reverse polarity protection
 - UL 1236 listed
- 11.2. **Battery Rack and Cables.** Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.
- 11.3. **Block Heater.** The block heater shall be thermostatically controlled and sized to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA 99 and NFPA 110, Level 1.
- 11.4. **Circuit Breaker.** A UL 1077 listed, rated 800 amperes for 208 volt

operations, and a UL 1077 listed, rated 400 ampere for 480/277 volt operation molded-case type, generator-mounted with load side lugs.

- 11.5. **Flex Exhaust Tube.** The exhaust piping shall be gas proof, seamless, stainless steel, flexible exhaust bellows with threaded NPT connection.
- 11.6. **Flexible Fuel Lines.** The two fuel lines shall have fittings for the engine inlet/return and threaded pipe fittings for connection to the subbase fuel tank (or stationary piping).
- 11.7. **Air Cleaner.** The air cleaner shall provide an engine filter service for typical operating conditions with minimal cost.

12. Trailer/Sound Enclosure Features

- 12.1. A subbase fuel tank used in conjunction with a diesel powered generator set of Standby rating will contain 251 gallons (950 L) of fuel.
- 12.2. The subbase fuel system has 110% environmental containment basin for fuel, oil and coolant.
- 12.3. The above ground steel secondary containment rectangular tank for use as a sub base for diesel generators is manufactured and intended to be installed in accordance with the Flammable and Combustible Liquids Code—NFPA 30, the Standard for Installation and Use of Stationary Combustible Engine and Gas Turbines—NFPA 37, and Emergency and Standby Power Systems—NFPA 110.
- 12.4. Running lights with 7- wire harness and connector.
- 12.5. Dual-axle 3629 kg (8000 lb.) trailer with electric brake system including brakeaway and battery backup
- 12.6. Rear stabilizer trailer jack.
- 12.7. 8-bolt steel wheel and 215/75R17.5 tires with 2180 kg (4805 lb) C tire load rating.
- 12.8. Ball hitch coupler with adaptability for a user- supplied Lunette eye.
- 12.9. Trailer shall be State of Connecticut Department of Transportation certified.

- 12.10 Provide one (1) full-size spare tire.

13. Sound Enclosure

- 13.1. Enclosures to be constructed from high strength, durable galvanized steel sound- attenuated housing.
- 13.2. The enclosure shall be finish coated with powder baked paint for superior finish, durability and appearance. Enclosures will be finished in KOHLER manufacturer's standard color.
- 13.3. The enclosures shall have sound attenuation 71 dB(A) @ 23 FT (7m).
- 13.4. Enclosures must be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum requirements are one door per side. When the generator set controller faces the rear of the generator set, an additional rear facing door is required. Access to the controller and main line circuit breaker must meet the requirements of the National Electric Code.
- 13.5. Doors must be hinged with stainless steel hinges and hardware and be removable.
- 13.6. Doors must be equipped with lockable latches. Locks must be keyed alike.
- 13.7. The enclosure roof must be pitched to prevent accumulation of water.
- 13.8. A duct between the radiator and air outlet must be provided to prevent re-circulation of hot air.
- 13.9. The complete exhaust system shall be internal to the enclosure.
- 13.10. The silencer shall be an insulated with a tailpipe and rain cap.
- 13.11. All acoustical insulation must be fixed to the mounting surface with pressure sensitive adhesive or mechanically fastened. In addition, all acoustical insulation mounted on a horizontal plane must be mechanically fastened. The acoustical insulation must be flame retardant.
- 13.12. The enclosures must include an exhaust scoop to direct the cooling air in a vertical direction.

14. Startup.

The manufacturer's distribution representative shall perform startup. Startup shall be performed by the manufacturer's local representative. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:

- 14.1. Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.
- 14.2. Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery chargers, alternator, etc.
- 14.3. Generator set startup under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during operation, normal and emergency line-to-line voltage and frequency, and phase rotation.

END OF SECTION