



**PASCO COUNTY BOARD OF COUNTY COMMISSIONERS  
PURCHASING DEPARTMENT  
8919 GOVERNMENT DRIVE  
NEW PORT RICHEY, FLORIDA 34654**

TELEPHONE: (727) 847-8194  
FACSIMILE: (727) 847-8065  
pascocountyfl.net

# INVITATION FOR BIDS

## BID NO. 06-162F

### EMERGENCY GENERATOR PROVIDED AND INSTALLED

#### SUMMARY OF WORK

It is the intent of this solicitation to contract with a company to provide and install one each emergency generator at the East Pasco Government Center, 14236 - 6<sup>th</sup> Street, Dade City, Florida 33523.

The Pasco County Purchasing Department will receive sealed bids until 2:00 p.m., local time (our clock), on September 5, 2006, in the Pasco County Purchasing Department, 8919 Government Drive, New Port Richey, Florida. Bids received after this time will not be accepted. Bids will be publicly opened and read at the above-stated time and date. All interested parties are invited to attend. Bidders shall submit one (1) original bid form.

A prebid conference will be held at 10:00 a.m. on August 18, 2006, at the East Pasco Government Center, 14236 - 6<sup>th</sup> Street, Dade City, Florida 33523. All interested vendors will meet in the parking lot of that building. All interested parties are strongly encouraged to attend. The purpose of the prebid conference is to allow potential bidders an opportunity to present questions to staff and obtain clarification of the requirements contained in the issued bid documents.

Insurance coverage is required for this project; please refer to the Special Provisions.

Please immediately advise of address changes or if you wish to have your firm removed from the vendor list. Vendors receiving this notice must submit either a bid/proposal or "NO BID" to remain on our vendor list for the specified commodity or service. A "NO BID" is provided on Page 2 for your convenience.

This cover is only intended to inform vendors of a pending Invitation for Bid or Request for Proposal. For complete details, please refer to the complete bid/proposal package.

Bid documents may be downloaded by visiting [www.PascoCountyFL.net](http://www.PascoCountyFL.net) or by requesting copies from the Purchasing Department at no cost. Pasco County is not responsible for expenses incurred prior to award by the Board of County Commissioners (BCC).

Frank C. Aleskwiz  
Buyer



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**STATEMENT OF NO BID**

We, the undersigned, have declined to submit a bid response to Invitation for Bid No. 06-162F for the following reason(s):

Please check all that apply.

1.  Opening date does not allow sufficient time to complete bid response.
2.  We do not offer the commodities or services requested.
3.  Our schedule would not permit us to perform.
4.  We are unable to meet the issued specification.
5.  Specifications are restrictive (please explain below).
6.  We are unable to meet the surety requirements.
7.  Other: \_\_\_\_\_

Explanations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

We understand that if a "NO BID" is not returned, our firm will be removed from the bidders' list for the subject commodity.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

Fed. ID No.: \_\_\_\_\_

# IMPORTANT!—PLEASE READ CAREFULLY BEFORE MAKING BID

## GENERAL PROVISIONS

These general terms and conditions of the bid quotation and acceptance apply in like force to this inquiry and to any subsequent contract resulting therefrom.

### ACKNOWLEDGMENT OF AMENDMENTS

Bidders shall acknowledge receipt of any amendment to the solicitation by identifying the amendment number in the space provided for this purpose on the bid form, by letter, or by returning a copy of the issued amendment with the submitted bid. The acknowledgment must be received by Pasco County by the time and at the place specified for the receipt of bids. Failure to acknowledge an issued amendment may result in bid rejection and disqualification.

### ADDITIONAL INFORMATION

Questions concerning the contract or technical portions of the bid document must be submitted in writing to Scott P. Stromer, Purchasing Director, Pasco County Purchasing Department; 8919 Government Drive; New Port Richey, Florida 34654; facsimile (fax) machine number (727) 847-8065. Bidders are cautioned that any statements made by individuals, or employees of Pasco County, that materially change any portion of the bid document shall not be relied upon unless subsequently ratified by a formal written amendment to the bid document. No contractual or technical questions will be accepted after ten (10) days prior to the date set for bid opening.

### ALTERNATIVE BIDS

The bidder **WILL NOT** be allowed to offer more than one (1) price (for the goods or services specified). If the said bidder should submit more than one (1) price on any item (or service), ALL prices will be rejected for that item. The bidders offering service delivery methods other than those permitted by the scope of work or specifications may submit a separate envelope clearly marked "Alternative Bid." Alternative bids will be deemed nonresponsive and will not be considered for award. All such responses will, however, be examined prior to award. Such examination may result in cancellation of all bids received to permit rewriting the scope of work or specifications to include the alternative method, or the alternative method may be considered for future requirements of Pasco County.

### ANTITRUST

By entering into a contract, the contractor conveys, sells, assigns, and transfers to Pasco County all rights, titles, and interest it may now have or hereafter acquire under the antitrust laws of the United States and the State of Florida that relate to the particular goods or services purchased or acquired by Pasco County under the said contract.

### APPLICABLE LAW

The contract shall be governed in all respects by the laws of the State of Florida, and any litigation with respect thereto shall be brought in the courts of Pasco County, Florida. The contractor shall comply with all applicable Federal, State, and local laws and regulations. Lack of knowledge by the bidder will in no way be a cause for relief from responsibility.

### ASSIGNMENT

The contractor shall not assign, transfer, convey, sublet, or otherwise dispose of any award or any or all of its rights, title, or interest therein, or delegate the duties hereunder without the prior written consent of Pasco County.

### AWARD

Consideration for award will be by proximity to specifications given, costs, and time of delivery. All purchases, leases, or contracts that are based on competitive bids will be awarded to the lowest, responsive, and responsible bidder. Complete and accurate responses to all items are necessary for the complete and fair evaluation of bids. Bid award, in addition to the above stated, will be based on compliance with the specified requirements as well as the "total-cost" or "life-cycle costing" concept, including the following: 1) Cost: A cost analysis will be conducted and will include all identifiable costs associated with acquisition, installation, maintenance, and operation of the bidder's offered equipment. The analysis will be based upon the bidder's proposal data and other costs which, in the judgment of the evaluators, will be incurred by Pasco County resulting from acceptance of the bidder's proposal; 2) Equipment: Evaluation of equipment will be based on compliance with the specifications, expected life of equipment, output, maintenance, consumption, disposal value, warranty, complexity of operation, required training, and other factors that may contribute to the overall cost of the specified item; and 3) Bidder's Reputation and Experience: Evaluation of the bidder's reputation, past performance, and experience shall be based on the nature and extent of company data furnished, references and financial responsibility of the bidder.

### BID ACCEPTANCE PERIOD

Any bid submitted as a result of the solicitation shall be binding on the bidder for a minimum of ninety (90) calendar days following the bid opening date. Any bid for which the bidder specifies a shorter acceptance period may be rejected.

### BID CLARIFICATIONS

If any party contemplating the submission of a bid on this invitation is in doubt as to the true meaning of any part of the plans, specifications, or other documents, he should submit a written request for an interpretation thereof to the Purchasing Director. The bidder's concerns, regarding clarification of specifications and/or discrepancies and/or omissions and/or changes to the attached specifications shall be made in writing and received by Pasco County no later than ten (10) calendar days prior to the bid opening date. The letter from the bidder shall state clearly, and in detail, the basis for such concern(s) or request(s). The letter shall be addressed to the Purchasing Director, and marked "PREBID QUESTION" on the face of the envelope. The Purchasing Director will respond in writing. An interpretation of the bid invitation document will be made only by addendum duly issued to each party receiving a bid invitation. All such addenda shall become part of the contract documents. Pasco County shall not be responsible for explanations or interpretations of bid invitation documents except as issued in accordance herewith. No oral interpretations will be made as to the meaning of specifications or any other contract documents. Failure to comply with this provision will result in the bidder waiving his/her right to dispute the bid specification.

### BIDDER CERTIFICATION

The bidder agrees that submission of a signed bid form is certification that the bidder will accept an award made to it as a result of the submission.

### BIDDER INVESTIGATIONS

Before submitting a bid, each bidder shall make all investigations and examinations necessary to ascertain all site conditions and requirements affecting the full performance of the contract and to verify any representations made by Pasco County upon which the bidder will rely. If the bidder receives an award as a result of its bid submission, failure to have made such investigations and examinations will in no way relieve the bidder from its obligation to comply in every detail with all provisions and requirements of the contract documents, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim whatsoever by the contractor for additional compensation.

### BIDDERS' LIST

Failure to submit a bid for the item(s) specified will result in removal from the bidders' list for such (an) item(s). If a bid is not submitted, a "NO BID" response must be submitted to remain on the Pasco County's bidders' list for such items. A form for submitting a "NO BID" is provided on Page 2 for your convenience.

### BID ENVELOPES

Envelopes containing bids must be sealed and marked in the lower left-hand corner with the invitation number, commodity, and date and hour of opening of bids. Failure to do so may cause bid not to be considered. Express Company or Express Mail envelopes containing a sealed bid shall also be sealed and marked in the lower left-hand corner with the invitation number, commodity, and date and hour of opening of bids.

### BID FORM SUBMISSION

Bids shall be submitted on the attached forms. Bids concerning separate bid invitations must not be combined on the same form or placed in the same envelope. Bids submitted in violation of this provision shall not be considered. All bids must be signed, in ink, in order to be considered. Erasures are not acceptable on bids; if necessary to make a change, strike out or draw a line through incorrect item and type the correction above, and initial the correction in ink. If the bidder is a firm or corporation, the bidder must show the title of the individual executing the bid, and if the individual is not an officer of the firm or corporation, the bidder must submit proof that the individual has the authority to obligate the firm or corporation. **BIDS MAY NOT BE ALTERED OR AMENDED AFTER THE BID CLOSING.**

### BID RECEIPT AND OPENING

Pasco County will receive sealed bid proposals until date and time indicated on bid cover. Bids must be delivered, by hand or mail, to the Pasco County Purchasing Department, located at 8919 Government Drive, New Port Richey, Florida, where they will be opened at the stated time. Bids must be time stamped in the Purchasing Department before or on the hour and date indicated on the cover sheet (Invitation for Bid) for the bid opening. Bids received after the date and time of the bid opening will be received, date stamped, and returned to the bidder unopened. It is the responsibility of the bidder to ensure that bids arrive at the designated opening place on time. Late or nondelivery due to mail or express delivery company failure will not be considered adequate reason for consideration of late bids. **FAXED BIDS WILL NOT BE ACCEPTED AND SHALL NOT BE CONSIDERED FOR EVALUATION OR AWARD.** Notes may be taken at the public reading of the bid(s) at the specified time and date of the opening or a personal inspection may be made of the bid(s) after award has been made and documents are placed in central and public files.

### BID WITHDRAWAL

Bids may not be changed after the bid closing time.

To withdraw a bid that includes a clerical error after bid opening, the bidder must give notice in writing to Pasco County of claim or right to withdraw a bid. Within two (2) business days after the bid opening, the bidder requesting withdrawal must provide to Pasco County all original work papers, documents, and other materials used in the preparation of the bid. A bidder may also withdraw a bid prior to the time set for the opening of bids by simply making a request in writing to Pasco County; no explanation is required. No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work for the person to whom the contract is awarded or otherwise benefit from the contract. No partial withdrawals of a bid are permitted after the time and date set for the bid opening; only complete withdrawals are permitted. The decision to allow or disallow bid withdrawal remains solely with Pasco County.

### BRAND NAMES

Any catalog, brand name, or manufacturer's reference used in the specifications is intended to be descriptive and not restrictive, and is used **only** to indicate type and quality desired. Any article, equipment, or material, which shall conform to the standards and excellence, so established, and is of equal merit, strength, durability, and appearance to perform the desired function, is deemed eligible for offer as a substitute. The qualifications of the offering shall be judged as to their conformance with these specifications. Any equipment offered other than herein specified shall be subject to a competitive demonstration and evaluation by Pasco County. The determination as to whether any alternate product or service is or is not equal shall be made by Pasco County, and such determination(s) shall be final and binding upon all bidders.

### CANCELLATION

Pasco County reserves the right to cancel a resulting contract, without cause, by giving thirty (30) days' prior written notice to the contractor of the intention to cancel, or with cause if at any time the contractor fails to fulfill or abide by any of the terms or conditions specified. Failure of the contractor to comply with any of the provisions of a resulting contract shall be considered a material breach of contract and shall be cause for immediate termination of the contract at the sole discretion of Pasco County. In addition to all other legal remedies available to Pasco County, Pasco County reserves the right to cancel and obtain from another source, any services which have not been provided within the required period of time or, if no such time is stated, within a reasonable period of time from the date of order or request, as determined by Pasco County.

### CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

The bidder certifies that the prices submitted in response to the solicitation have been arrived at independently and without—for the purpose of restricting competition—any consultation, communication, or agreement with any other bidder or competitor relating to those prices, the intention to submit a bid, or the methods or factors used to calculate the prices bid.

### CHANGE IN SCOPE OF WORK

Pasco County may order changes in the work consisting of additions, deletions, or other revisions within the general scope of the contract. No claims may be made by the contractor that the scope of the project or of the contractor's services has been changed, requiring changes to the amount of compensation to the contractor or other adjustments to the contract, unless such changes or adjustments have been made by written amendment to the contract or

purchase order signed by Purchasing Director. If the contractor believes that any particular work is not within the scope of the project, is a material change, or will otherwise require more compensation to the contractor, the contractor must immediately notify Pasco County in writing of this belief. If Pasco County believes that the particular work is within the scope of the contract as written, the contractor will be ordered to and shall continue with the work as changed and at the cost stated for the work within the scope.

#### COLLUSION AMONG BIDDERS

Each bidder, by submitting a bid, certifies that it is not a party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any or all bids shall be rejected if there is any reason for believing that collusion exists among the bidders. Pasco County may or may not, at its discretion, accept future bids for the same work from participants in such collusion. More than one (1) bid from an individual, firm, partnership, cooperation, or association under the same or different names may be rejected. Reasonable grounds for believing that a bidder has interest in more than one (1) bid for the work being bid may result in rejection of all bids in which the bidder is believed to have interest. Nothing in this clause shall preclude a firm acting as a subcontractor to be included as a subcontractor for two (2) or more primary contractors submitting a bid for the work.

#### CONFLICT OF INTEREST

The contractor, by submission of its proposal, certifies that to the best of his/her knowledge or belief, no elected/appointed official or employee of Pasco County is financially interested, directly or indirectly, in the offer of goods or services specified in this invitation.

#### DEBARMENT

By submitting a bid, the bidder certifies that it is not currently debarred from submitting bids for contracts issued by any political subdivision or agency of the State of Florida and that it is not an agent of a person or entity that is currently debarred from submitting bids for contracts issued by any subdivision or agency of the State of Florida.

#### ERRORS IN EXTENSIONS

If the unit price and the extension price are at variance, the unit price shall prevail.

#### ETHICS IN PUBLIC PROCUREMENT

The contract shall incorporate by reference, but shall not be limited to, the provisions of law contained in Chapter 112, Florida Statutes. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases or real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of thirty-six (36) months from the date of being placed on the convicted vendor list. The bidder certifies that its bid was made without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer, or subcontractor in connection with this bid; and that it has not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services, or anything of value.

### EXCEPTIONS

Bidders taking exception to any part or section of the solicitation shall indicate such exceptions on the bid form or appendix. Failure to indicate any exception will be interpreted as the bidder's intent to comply fully with the requirements as written. Conditional or qualified bids, unless specifically allowed, shall be subject to rejection in whole or in part.

### EXPENSES INCURRED IN PREPARING BID

Pasco County accepts no responsibility for any expense incurred by the bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the bidder.

### FAILURE TO DELIVER

In the event of failure of the contractor to deliver the goods and services in accordance with the contract terms and conditions, Pasco County may procure the goods and services from other sources and hold the contractor responsible for any resulting additional costs. A failure to deliver will result in immediate termination of a resulting contract, and immediate disqualification and debarment from submitting bids to Pasco County for a maximum of three (3) years. These remedies shall be in addition to any other remedies that Pasco County may have available.

### FAILURE TO ENFORCE

Failure by Pasco County at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of Pasco County to enforce any provision at any time in accordance with its terms.

### FAIR LABOR STANDARDS

By submission of a bid, the bidder certifies that the contractor(s) and/or subcontractor(s) providing product(s) or service(s) shall, in the execution or performance of such a contract, maintain fair labor standards as defined in applicable State and Federal regulations.

### FORCE MAJEURE

The contractor shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the contractor, unless otherwise specified in the contract.

### IDENTICAL BIDS

Identical bids or bids which otherwise appear suspicious will be reported to the County Attorney for investigation.

### INDEMNIFICATION

In consideration of the sum of Fifteen and 00/100 Dollars (\$15.00), the receipt and sufficiency of which is acknowledged by the contractor to be included and paid for in the contract price, the contractor shall indemnify, defend, and hold harmless Pasco County and its agents and employees from and against all liabilities, claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from the performance of the work, provided that any such liability, claim, damage, loss, or expense: 1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself), including the loss of use resulting therefrom; and 2) is caused in whole or in part by any negligent act or omission of the contractor and subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, except for those caused by the negligent act or omission of Pasco County.



In any and all claims against Pasco County or any of its agents or employees by any employee of the contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under the previous paragraph shall not be limited in any way as to the amount or type of damages, compensation, or benefits payable by or for the contractor or any subcontractor under Workers' Compensation Acts, disability benefit acts, or other employee benefit acts.

#### INDEPENDENT CONTRACTOR

The contractor shall be legally considered an independent contractor and neither the contractor nor its employees shall, under any circumstances, be considered servants or agents of Pasco County; and Pasco County shall be at no time legally responsible for any negligence or other wrongdoing by the contractor, its servants, or agents. Pasco County shall not withhold from the contractor any Federal or State unemployment taxes, Federal or State income taxes, Social Security tax, or any other amounts for benefits to the contractor. Further, Pasco County shall not provide to the contractor any insurance coverage or other benefits, including workers' compensation, normally provided by Pasco County for its employees.

#### INFORMALITIES AND IRREGULARITIES

Pasco County has the right to waive minor defects or variations of a bid from the exact requirements of the specifications that do not affect the price, quality, quantity, delivery, or performance time of the services being procured. If insufficient information is submitted by a bidder with the bid for Pasco County to properly evaluate the bid, Pasco County has the right to require such additional information as it may deem necessary after the time set for receipt of bids, provided that the information requested does not change the price, quality, quantity, delivery, or performance time of the services being procured. The BCC reserves the right to reject any or all bids in whole or in part; to award by any item, group(s) of items, total bid, or accept the bid that is most advantageous and in the best interest of Pasco County.

#### LIMITATION OF COST

The contractor agrees to perform the work specified and complete all obligations under the contract within the stated amounts.

#### NONAPPROPRIATION

All funds for payment by Pasco County under this contract are subject to the availability of an annual appropriation for this purpose by Pasco County. In the event of nonappropriation of funds by Pasco County for the services provided under the contract, Pasco County will terminate the contract, without termination charge or other liability, on the last day of the then-current fiscal year or when the appropriation made for the then-current year for the services covered by this contract is spent, whichever event occurs first. If at any time funds are not appropriated for the continuance of this contract, cancellation shall be accepted by the contractor on thirty (30) days' prior written notice, but failure to give such notice shall be of no effect, and Pasco County shall not be obligated under this contract beyond the date of termination.

#### NONCONFORMING TERMS AND CONDITIONS

A bid response that includes terms and conditions that do not conform to the terms and conditions in the bid document is subject to rejection as nonresponsive. Pasco County reserves the right to permit the bidder to withdraw nonconforming terms and conditions from its bid response prior to a determination by Pasco County of nonresponsiveness based on the submission of nonconforming terms and conditions.

### NONDISCRIMINATION

By submission of bid, the bidder certifies that the contractor(s) and/or subcontractor(s) providing product(s) or service(s) shall not discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to his/her hire, tenure, terms, conditions, or privileges of employment, because of his/her race, color, religion, sex, disability, or national origin, as outlined in applicable State and Federal regulations.

### ORAL STATEMENTS

No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this contract. All modifications to the contract or purchase order must be made in writing by Pasco County.

### PATENTS AND ROYALTIES

The contractor covenants to save, defend, keep harmless, and indemnify Pasco County and all of its officers, departments, agencies, agents, and employees from and against all claims, loss, damage, injury, fines, penalties, and cost—including court costs and attorney's fees, charges, liability, and exposure, however caused—for or on account of any copyright or patented or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by Pasco County. If the contractor uses any design, device, or materials covered by patent or copyright, it is mutually agreed and understood without exception that the contract price includes all royalties or costs arising from the use of such design, device, or materials in any way in the work.

### PAYMENT PROCEDURES

The BCC has adopted Resolution No. 95-70, incorporating its Invoice Payment Procedures Policy in order to help ensure that vendors providing goods and/or services to the BCC receive payment in a timely manner and in accordance with Chapter 218, Part VII, Florida Statutes (The Florida Prompt Payment Act). A copy of Resolution No. 95-70 (which includes the policy) is available for viewing during normal business hours at the Office of the Pasco County Clerk of the Circuit Court; 38053 Live Oak Avenue; Department of Secretarial Services, Room 205; Dade City, Florida 33525. Copies of the Resolution may be obtained at a cost of One and 20/100 Dollars (\$1.20). Please make your check payable to Jed Pittman, Clerk of the Circuit Court, and forward payment to the Department of Secretarial Services at the address noted above. For further information, please call (352) 521-4347.

Several payment options are available to successful vendor, upon receipt of a correct invoice:

1. Check may be mailed to the remit address on the invoice. The check is sent to the Post Office the day after BCC approval.
2. Check may be picked up in Dade City. The vendor must pick up the check the day after BCC approval. The successful bidder or contractor must call (352) 521-4599 for detailed instructions.
3. Payment may be wire-transferred to the vendor's bank account. The vendor must call (352) 521-4599 for detailed instructions.

### PAYMENT TERMS AND DISCOUNTS

Unless otherwise indicated in the bid documents, payment terms will be net forty-five (45) days. Terms not consistent with this provision are not acceptable and may be cause for rejection. Pasco County will pay the contractor within forty-five (45) days after the receipt of a correct invoice for reasonable work allocable to the contract or after the date of acceptance of work that

meets contract requirements, whichever event occurs later. Payment(s) are considered effective on the date payment is mailed.

Discounts for prompt payment requiring payment by Pasco County within a stipulated number of days will be interpreted as applying within the stipulated number of calendar days after the date of receipt by Pasco County of a correct invoice describing reasonable work allocable to the contract or after the date of acceptance of work that meets contract requirements, whichever event occurs later. Discounts for payment in less than forty-five (45) days will not be considered during evaluation for award, but may be taken if applicable after award.

Payment for construction services will be in accordance with Chapter 218, Part VII, Florida Statutes (The Florida Prompt Payment Act).

### PROCUREMENT REGULATIONS

A copy of the Pasco County Procurement Ordinance is available for review at Pasco County Purchasing Department, 8919 Government Drive, New Port Richey, Florida.

### PUBLIC INFORMATION

Upon public opening of all bids or proposals presented to Pasco County as a result of this solicitation, any and all information contained therein is considered public and may be reviewed by any persons interested in doing so.

### PURCHASE ORDER REQUIREMENT

Purchases of Pasco County are authorized only if a signed purchase order issued in advance of the transaction, showing that the ordering agency has sufficient funds available to pay for the service. Contractors providing services without a signed purchase order do so at their own risk. Pasco County will not be liable for payment for any services provided under the contract unless a valid purchase order has been issued to the contractor.

### QUALIFICATIONS OF BIDDERS

The bidder may be required before the award of any contract to show to the complete satisfaction of Pasco County that it has the necessary facilities, ability, and financial resources to provide the service specified therein in a satisfactory manner. The bidder may also be required to give a past history and references in order to satisfy Pasco County in regard to the bidder's qualifications. Pasco County may make reasonable investigations deemed necessary and proper to determine the ability of the bidder to perform the work, and the bidder shall furnish to Pasco County all information for this purpose that may be requested. Pasco County reserves the right to reject any bid if the evidence submitted by, or investigation of, the bidder fails to satisfy Pasco County that the bidder is properly qualified to carry out the obligations of the contract and to complete the work described therein. Evaluation of the bidder's qualifications shall include:

1. The ability, capacity, skill, and financial resources to perform the work or provide the service required.
2. The ability of the bidder to perform the work or provide the service promptly or within the time specified, without delay or interference.
3. The character, integrity, reputation, judgment, experience, and efficiency of the bidder.
4. The quality of performance of previous contracts or services.

### QUALITY OF GOODS

All goods shall be new, in first class condition, and of the manufacturer's latest design of the model presently in production. All materials, supplies, and equipment furnished or services performed under the terms of this purchase order or contractual agreement shall comply with the requirements and standards specified in the Williams-Steiger Occupational Safety and Health Act of 1970 (Public Law 91-596), as well as other applicable Federal, State, and local codes. Equipment and materials furnished by the bidder having serious defects, corrosion, or scratches which tend to present an "other than new" appearance shall be promptly replaced or such defects promptly corrected by the bidder at no cost to Pasco County. Any existing Material Safety Data Sheets (MSDS) for the products, materials, supplies, or equipment being bid must be submitted with the bid. No product containing asbestos, lead paint, or polychlorinated biphenyl (PCB) in any form will be considered for award by Pasco County.

### RECOVERY OF MONEY

Whenever, under the contract, any sum of money shall be recoverable from or payable by the contractor to Pasco County, the same amount may be deducted from any sum due the contractor under the contract or under any other contract between the contractor and Pasco County. The rights of Pasco County are in addition and without prejudice to any other right Pasco County may have to claim the amount of any loss or damage suffered by Pasco County on account of the acts or omissions of the contractor.

### RIGHT TO AUDIT

The contractor shall maintain such financial records and other records as they relate to the purchase of goods and/or services by Pasco County from the subject vendor. The contractor shall retain these records for a period of three (3) years after final payment, or until they are audited by Pasco County, whichever event occurs first. These records shall be made available during the term of the contract and the subsequent three (3) year period for examination, transcription, and audit by Pasco County, its designees, or other authorized bodies.

### RISK OF LOSS

Pasco County shall be relieved from all risks of loss or damage to goods during periods of transportation, manufacture, and the entire time the goods are in the possession of Pasco County prior to acceptance by Pasco County. At such time, the risk of loss or damage for goods shall pass to Pasco County. The bidder/contractor shall not be responsible for damage to the goods occasioned by negligence of Pasco County or its employees.

### TABULATIONS

Solicitation results, plan holder lists, and related information may be retrieved from our website: [www.PascoCountyFL.net](http://www.PascoCountyFL.net). Click on "Bids," click on "closed solicitations," and look for the solicitation number in the appropriate year. Solicitation results will normally be available online within three (3) working days after opening. Lengthy tabulations may not be available online, but may be viewed in the Purchasing Department. Plan holder lists will normally be available two (2) weeks prior to opening. Plan holder lists will be posted once, based on the information at the time, and will not be updated. Tabulations will not be given over the telephone or via fax.

### TAXES

All bids shall be submitted exclusive of direct Federal, State, and local taxes; however, if the bidder believes certain taxes are properly payable, he/she may list such taxes separately in each case directly below the respective item bid price. Prices quoted must be in units specified, and shall not include the cost of any such taxes, including those on any material, supplies, or equipment used or installed in the work. Pasco County does not pay Federal Excise and Sales

Taxes on direct purchases of tangible personal property. See Exemption Number on face of the resulting purchase order. This exemption does not apply to purchases of tangible personal property made by contractors who use the tangible personal property in the performance of contracts for improvement of County-owned real property. Please refer to Chapter 192, Florida Statutes.

**UNSATISFACTORY WORK**

If, at any time during the contract term, the service performed or work done by the contractor is considered by Pasco County to create a condition that threatens the health, safety, or welfare of the community, the contractor shall, on being notified by Pasco County, immediately correct such deficient service or work. In the event the contractor fails, after notice, to correct the deficient service or work immediately, Pasco County shall have the right to order the correction of the deficiency by separate contract or with its own resources at the expense of the contractor. Notwithstanding the above, Pasco County reserves the right to cancel a resulting contract, without cause, by giving thirty (30) days' prior written notice to the contractor of the intention to cancel.

**END OF GENERAL PROVISIONS**

## SPECIAL PROVISIONS

In addition to the General Provisions of this solicitation, these Special Provisions, along with the specifications that follow, apply in like force to this solicitation and to any subsequent contract resulting therefrom.

### INSURANCE REQUIREMENTS

The insurance required must be written by an insurer authorized to do business in the State of Florida and also have an "A" policyholder's rating and a financial rating of at least Class VIII in accordance with the most current *Best's Key Rating Guide*. Prior to the time the contractor is entitled to commence any part of the project, work, or services under this contract, the contractor shall procure, pay for, and maintain at least the following insurance coverages and limits. The said insurance shall be evidenced by delivery to Pasco County of 1) Certificates of Insurance executed by the insurers listing coverages and limits, expiration dates and terms of policies and all endorsements whether or not required by Pasco County, and listing all carriers issuing the said policies; and 2) upon request, a certified copy of each policy, including all endorsements. The insurance requirements shall remain in effect throughout the term of this contract.

1. Workers' Compensation in at least the limits as required by law; Employers' Liability Insurance of not less than One Hundred Thousand and 00/100 Dollars (\$100,000.00) for each accident. The contractor agrees to waive its right of subrogation as part of this coverage.
2. Comprehensive General Liability Insurance including, but not limited to, Independent, Contractor, Contractual, Premises/Operations, Products/Completed Operation and Personal Injury covering the liability assumed under indemnification provisions of this contract, with limits of liability for personal injury and/or bodily injury, including death, of not less than Two Million and 00/100 Dollars (\$2,000,000.00), each occurrence; and property damage of not less than One Million and 00/100 Dollars (\$1,000,000.00), each occurrence. (Combined single limits of not less than Two Million and 00/100 Dollars [\$2,000,000.00], each occurrence, will be acceptable unless otherwise stated.) Coverage shall be on an "occurrence" basis, and the policy shall include Broad Form Property Damage coverage and Fire Legal Liability of not less than Fifty Thousand and 00/100 Dollars (\$50,000.00) per occurrence, unless otherwise stated by exception herein.
3. Comprehensive Automobile and Truck liability covering owned, hired, and nonowned vehicles with combined single limits of not less than One Million and 00/100 Dollars (\$1,000,000.00), each occurrence. Coverage shall be on an "occurrence" basis, such insurance to include coverage for loading and unloading hazards.

Each insurance policy shall include the following conditions by endorsement to the policy:

1. Each policy shall require that thirty (30) days prior to expiration, cancellation, nonrenewal, or any material change in coverages or limits, a notice thereof shall be given to Pasco County by certified mail to: Pasco County Purchasing Department, 8919 Government Drive, New Port Richey, Florida 34654. The contractor shall also notify Pasco County, in a like manner, within twenty-four (24) hours after receipt, of any

notices of expiration, cancellation, nonrenewal, or material change in coverage received by the said contractor from its insurer; and nothing contained herein shall absolve the contractor of this requirement to provide notice.

2. Companies issuing the insurance policy, or policies, shall have no recourse against Pasco County for payment of premiums or assessments for any deductibles that all are at the sole responsibility and risk of the contractor.
3. The term "County" or "Pasco County" shall include all Authorities, Boards, Bureaus, Commissions, Divisions, Departments, and Offices of County and individual members, employees thereof in their official capacities, and/or while acting on behalf of Pasco County.
4. Pasco County BCC shall be endorsed to the required policy or policies as an additional named insured.
5. The policy clause "Other Insurance" shall not apply to any insurance coverage currently held by Pasco County to any such future coverage, or to Pasco County's self-insured retentions of whatever nature.

Pasco County hereby waives subrogation rights for loss or damage against Pasco County.

#### TRAFFIC CONTROL

The contractor shall conduct its operations in a manner that will not interrupt pedestrian or vehicle traffic except as approved by Pasco County. The work area shall be confined to the smallest area possible to allow maximum use of the street or sidewalk and to reduce any hazard to traffic or pedestrians to a minimum. At all times, the contractor shall use workers and traffic control signs and devices necessary to comply with all applicable Federal, State, and local laws, rules, and regulations. In addition to signs and devices, when the street is obstructed to any extent by contract operations, special workers equipped with flags shall be designated by the contractor to direct vehicle and pedestrian traffic. The workers so designated shall not be assigned to any other duties while engaged in directing traffic. All personnel, signs, barricades, and any other items or devices necessary for the maintenance of traffic and safety shall be provided by the contractor. No separate payment shall be made by Pasco County for this work. All cost of this work is included by the contractor as part of the contract price. The plan for traffic control shall be as directed by Pasco County. A Right-of-Way Use Permit shall be obtained from Pasco County prior to the commencement of any work in such a right-of-way.

#### TRANSPORTATION AND PACKING

Prices quoted shall be net, including transportation and delivery charges fully prepaid by the seller, f.o.b. Dade City, Florida. No additional charges will be allowed for packing, packages, or partial delivery costs. By submitting their bids, all bidders certify and warrant that the price offered for f.o.b. destination includes only the actual freight rate costs at the lowest and best rate and is based upon actual weight of the goods to be shipped. Standard commercial packaging, packing, and shipping containers shall be used, except as otherwise specified herein.

### **END OF SPECIAL PROVISIONS**

# UPGRADE OF EMERGENCY GENERATOR SYSTEM SPECIFICATIONS

## SECTION 03300 - CAST-IN-PLACE CONCRETE

### 1.0 PART 1 - GENERAL

#### 1.1 Summary:

This section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

#### 1.2 Submittals:

Product Data: For each type of product indicated.

#### 1.3 Quality Assurance:

1.3.1 Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1.3.2 ACI Publications: Comply with the following unless modified by requirements in the contract documents:

1.3.2.1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.

1.3.2.2. ACI 11 7, "Specifications for Tolerances for Concrete Construction and Materials."

### 2.0 PART 2 - PRODUCTS

#### 2.1 Formwork:

Furnish formwork and accessories according to ACI 301.

#### 2.2 Steel Reinforcement:

2.2.1 Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

2.2.2 Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's *Manual of Standard Practice*.



2.3 Concrete Materials:

2.3.1 Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout the project:

2.3.1.1. Portland Cement: ASTM C 150, Type I.

2.3.1.2. Normal-Weight Aggregates: ASTM C 33, graded, 1<sup>1</sup>/<sub>2</sub>-inch (38-mm) nominal maximum coarse - aggregate size.

2.3.1.3. Water: ASTM C 94/C 94M and potable.

2.3.1.4. Air-Entraining Admixture: ASTM C 260.

2.4 Concrete Mixtures:

Comply with ACI requirements for concrete mixture as follows:

2.4.1.1. Minimum Compressive Strength: 4,000 psi (20.7 MPa) at twenty-eight (28) days.

2.4.1.2. Slump Limit: Four (4) inches (100 mm), plus or minus one (1) inch (twenty-five [25]mm).

2.5 Concrete Mixing:

Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.

When air temperature is between eighty-five (85) and ninety (90) deg. F (thirty [30] and thirty-two [32] deg. C), reduce mixing and delivery time from 1<sup>1</sup>/<sub>2</sub> hours to seventy-five (75) minutes; when the air temperature is above ninety (90) deg. F (thirty-two [32] deg. C), reduce mixing and delivery time to sixty (60) minutes.

3.0 PART 3 - EXECUTION

3.1 Formwork:

Design, erect, shore, brace, and maintain formwork according to ACI 301 to support.

3.2 Embedded Items:

Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting, drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 Steel Reinforcement:

General: Comply with CRSI's *Manual of Standard Practice* for placing reinforcement.

Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.4 Concrete Placement:

3.4.1 Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that the required inspections have been performed.

3.4.2 Deposit concrete continuously in one (1) layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

3.4.3 Cold-Weather Placement: Comply with ACI 306.1.

3.4.4 Hot-Weather Placement: Comply with ACI 301.

3.5 Finishing Formed Surfaces:

Broom Finish: Apply a broom finish to exterior concrete pads.

3.6 Concrete Protecting and Curing:

3.6.1 General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

3.6.2 Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. X h (one [1] kg/sq. mxh) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding and bull floating, or darbying concrete, but before float finishing.

**END OF SECTION**

## SECTION 16010 - GENERAL PROVISIONS FOR ELECTRICAL WORK

### 1.0 PART 1 - GENERAL

#### 1.1 Related Documents:

1.1.1 Drawings apply to work of this section.

1.1.2 Refer to other sections of these specifications for related work, which is not work of this section.

#### 1.2 Codes:

Work herein shall conform to all applicable laws, ordinances, and to regulations of the local utility companies. Work shall be in accordance with the latest applicable requirements of:

1.2.1.1. National Fire Protection Association (Fire Code).

1.2.1.2. National Electrical Code - 2005.

1.2.1.3. Underwriter's Laboratories, Inc.

1.2.1.4. Pasco County ordinances or codes.

1.2.1.5. Florida Building Code - 2004.

#### 1.3 Quality Assurance:

1.3.1 Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.3.2 Provide only materials that are new, and of the type and quality specified. Where Underwriters' Laboratories, Inc., has established standards for such materials, provide only materials bearing the UL label.

#### 1.4 Substitutions and Submittals:

1.4.1 One (1) manufacturer shall be selected for any specific classification of material, equipment, or systems (i.e. switchgear, panelboards, transformers, etc.) shall be manufactured by one (1) manufacturer. If more than one (1) manufacturer is submitted, the engineer shall select one (1) at his discretion.

1.4.2 Submittals for substitutions of electrical equipment or materials shall be made at least fifteen (15) days prior to the bid date. Prebid substitutions are to be made in writing and properly identified. Such substitutions will be identified in an addendum, if acceptable.

- 1.4.3 Shop drawings shall be reviewed and stamped by the contractor with all items identified and all technical data included. All shop drawings shall be submitted at one (1) time.
- 1.4.4 The review of shop drawings is a general review subject to the contract documents and verification of all measurements at the job. Review does not relieve the contractor from the responsibility of shop drawing errors. The contractor shall carefully check and correct all shop drawings prior to submission for review. Each shop drawing submittal shall bear the stamp and signature of the contractor indicating he has reviewed and corrected all shop drawings.
- 1.4.5 Product data: Within twenty-one (21) calendar days after the contractor has received the owner's notice to proceed, submit:
  - 1.4.5.1. Materials list of items proposed to be provided under this section.
  - 1.4.5.2. Manufacturers' specifications and other data needed to provide compliance with the specified requirements.
  - 1.4.5.3. Manufacturers' recommended installation procedures which, when approved by the engineer, will become the basis for accepting or rejecting actual installation procedures used on the work.
- 1.5 Shop Drawings:

Shop drawings are required for the following:

  - 1.5.1.1. Generator System.
  - 1.5.1.2. Branch Circuit Panels and Breakers.
  - 1.5.1.3. Transfer Switch.
  - 1.5.1.4. Aboveground Fuel Tank.
- 1.6 Handling of Materials:
  - 1.6.1 Properly handle, house, and protect, from damage and the weather, all materials, equipment, and apparatus furnished under this section of the specifications.
  - 1.6.2 Equipment damaged in the course of handling, installation, or test shall be replaced or repaired to the satisfaction of the engineer without any additional charge.
- 1.7 Examination of Site:
  - 1.7.1 Each bidder shall visit the site of the project to acquaint himself with the difficulties which may attend the execution of work as shown on the drawings and as specified herein. The submission of the bid proposal shall be constructed as evidence that such a visit and investigation has been made. Claims for labor, equipment, or materials required for difficulties encountered shall not be considered.

- 1.7.2 Where exact locations are required for conduit entries, request shop drawings, equipment location drawings, foundation drawings, and any other data required to locate the concealed conduit before the floor slab is poured.
- 1.8 Record Drawings:
  - 1.8.1 Provide a set of prints on which actual installation is shown. Any variations from the contract drawings shall be clearly and completely indicated as the work progresses.
  - 1.8.2 At the completion of the work, prepare a new set of sepia reproducible record drawings of the work as actually noted on the marked-up prints, including the DIMENSIONED location of all underground conduits. Sepias may be obtained from the engineer at the contractor's expense.
- 1.9 Electrical Coordination:
  - 1.9.1 The contractor shall check that equipment has proper voltage to operate on this system.
  - 1.9.2 The contractor shall verify exact equipment locations with field conditions. No extra compensation will be granted for reasonable adjustments, as required.
- 1.10 Electrical Temporary Facilities:
  - 1.10.1 Provide three (3) wire grounded power system for construction power.
  - 1.10.2 Provide lighting for all work areas to levels required by OSHA.
  - 1.10.3 Provide double duplex receptacles and 220V outlets in all work areas to allow a maximum fifty (50) foot extension cord to reach any location in the building. Extension cords and supplementary lighting for finishing shall be provided by each trade.
  - 1.10.4 Power wiring, disconnect switches, and connections for major construction equipment and machines, such as hoists, crane, belt loader, etc., shall be the responsibility of the contractor, including moving of these services during the course of construction.
- 1.11 Symbols:
  - 1.11.1 Symbols for outlets and equipment are scheduled on the plans. Some symbols may not be used, others may not be scheduled.
  - 1.11.2 The contractor shall be responsible for request for clarification of unclear or unscheduled symbols prior to bid.

- 1.12 Electrical Identification:
  - 1.12.1 Provide a typewritten directory in each branch circuit panel or switchboard and laminated engraved nameplate on exterior trim. The directory shall be in two (2) columns with odd on left and even on right to match the numbers on breakers.
  - 1.12.2 Safety switches, starters, transformers, control devices, and wall switches used to control motors shall have a legend plate of laminated, rigid engraved plastic.
- 1.13 Maintenance Manual:

Provide maintenance manuals, (two [2] copies), to include the following:

  - 1.13.1.1. Copy of the approved Record Documents for this portion of the work.
  - 1.13.1.2. Copy of all circuit directories.
  - 1.13.1.3. Copies of all warranties and guarantees.
  - 1.13.1.4. Copies of all operating and maintenance manuals for equipment supplied.
  - 1.13.1.5. Approved set of shop drawings.

**END OF SECTION**

## SECTION 16050 - BASIC MATERIALS AND METHODS

### 1.0 PART 1 - GENERAL

#### 1.1 Related Documents:

1.1.1 Drawings apply to work of this section.

1.1.2 Refer to other divisions and sections of these specifications for related work, which is not work of this section.

#### 1.2 Catalog Numbers:

Catalog numbers indicated with equipment, devices, and lighting fixtures are for convenience only. Errors or obsolescence shall not relieve the furnishing of items which meet the technical description given in the specifications noted or required by function designated.

#### 1.3 Standards and Symbols:

Equipment and devices to be manufactured to the General Requirements and Specific Requirements where indicated of NEMA, ANSI and UL.

### 2.0 PART - 2 - MATERIALS

#### 2.1 Raceways:

2.1.1 Steel raceway shall be heavy-wall, threaded, rigid steel, or EMT, either hot-spray, hot-dipped, or electro-galvanized, as required, and bear the UL label.

2.1.2 Flexible conduit is to be galvanized steel or galvanized steel with watertight jacket. Fittings used with jacketed conduit are to be made specifically for that use with grounding sleeve and jacket seal.

2.1.3 EMT electrical metallic tubing shall be steel, zinc coated inside and out. EMT fittings, compression type, shall be all steel type. Sizes 1½-inch and larger shall have insulating throat.

2.1.4 PVC conduit is to be Schedule 40 for direct burial and UL labeled as electrical raceway. Manufactured couplings and fittings are to have UL label.

2.1.5 Bushings shall have metal threads and body with locked-in insulating ring in sizes above one (1) inch. One (1) inch and smaller may be all steel or all plastic.

#### 2.2 Boxes:

2.2.1 Surface mounted boxes in exterior and interior locations, or where otherwise shown, shall be of cast ferrous or aluminum alloys and shall have threaded hubs with minimum thread depth of one-half (½) inch. Box covers shall be galvanized steel, chrome-plated steel, and cast aluminum. Provide gaskets for outdoor and refrigerated locations. No-hub boxes are not acceptable.

- 2.2.2 General outlet boxes shall be galvanized steel of unit construction, sized for NEC wire count and conduit entrances. Field sectional or gangable boxes shall not be used.
- 2.3 Safety Switches:
  - Fused safety switches shall be "Heavy Duty," 200,000 A.I.C. quick make and break, cover interlocked with voiding feature, fused as noted or required, cartridge-type fuses, voltage rating for system used, and current rating as indicated or required. Switches located outdoors shall have NEMA 3, 3R, or 4 enclosure.
- 2.4 Fuses:
  - 2.4.1 Fuses shall be cartridge type with dual element for motor feeders, rated for minimum 200,000 amps interrupting current. Current carrying capacity shall be as indicated or required by code. Provide current limiting, Class R fuses.
  - 2.4.2 Provide spare fuses for each safety switch provided. Spare fuses shall be stored within each safety switch enclosure.
- 2.5 Wire and Cable:
  - 2.5.1 Conductors for building wire and cable and secondary service cable shall have 600-volt insulation, unless specifically indicated or approved otherwise.
  - 2.5.2 Control and systems wire operating at nominal 120 volts to ground or less shall use 300-volt insulation, or as otherwise approved for the system.
  - 2.5.3 Branch circuit wire shall be type THHN/THWN insulation. Service and panel feeders shall have type THHN/THWN insulation, unless noted otherwise.
  - 2.5.4 Wire sizes are AWG copper. Aluminum conductors shall not be acceptable.
- 2.6 Branch Circuit Panels:
  - 2.6.1 Panelboards shall be bolt-on connection type with the following features:
    - 2.6.1.1. Rating for the voltage and current imposed.
    - 2.6.1.2. Four (4) inch wiring gutters and minimum width of twenty (20) inches.
    - 2.6.1.3. Consequent phasing of bus and breaker connection with odd numbers on left, even on right.
    - 2.6.1.4. Separate neutral and equipment ground buses.
    - 2.6.1.5. Hinged and lockable door.
    - 2.6.1.6. Code gauge galvanized-steel enclosure with baked enamel finish.
    - 2.6.1.7. Short circuit rating for current imposed.



- 2.6.1.8. Where space is indicated, space shall be bussed for future breakers.
- 2.6.1.9. Branch connectors, mounting brackets, and other hardware shall be provided for future breakers.
- 2.6.1.10. Ninety-eight (98) percent copper bus bars (phases, neutral and ground busses).
- 2.6.1.11. Individually mounted main breakers.
- 2.6.2. Circuit breakers shall be quick make and break, thermal-magnetic trip-free with temperature compensation; two (2) and three (3) pole breakers shall have internal common trip, minimum one (1) inch wide with separate bus connection for each pole.
- 2.6.3. Main breakers, where applicable, shall be individually mounted within panelboards.
- 2.7. Manual Motor Starters (one [1] HP MAXIMUM):
  - 2.7.1. Thermal overload switches (H.P.R.S.) shall be rated for the horsepower, voltage, and current imposed. Heater elements shall be removable from the front with the trip rating clearly marked in the element. Enclosures shall be provided for the applicable usage.
  - 2.7.2. Where thermal overload switch with pilot light is used, a combination overload switch with pilot light may be used, provided the pilot light is neon type. Incandescent pilot lights shall not be mounted in the same box with thermal overload switches but shall be installed in a separate box adjacent to the thermal switch.
- 2.8. Ground Rods:

Ground rods shall be three-quarters ( $\frac{3}{4}$ ) inch diameter and ten (10) feet long sectional copperweld steel. Obtain five (5) OHMS maximum resistance as read with a ground reading megger using two (2) reference rods. If five (5) OHMS cannot be attained, drive additional sections until five (5) OHMS has been obtained.
- 2.9. Acceptable Manufacturers:

The following manufacturers are acceptable for materials. Catalog numbers set the quality range for all manufacturers indicated:

  - 2.9.1.1. Heavy wall steel conduit and EMT - U.S. Manufacturers.
  - 2.9.1.2. Plastic PVC - Carion.
  - 2.9.1.3. Fittings - Appleton, Adalet, and Killark.
  - 2.9.1.4. Connectors, couplings, locknuts - Steel City, T&B, Appleton, Crouse-Hinds, Gedney, and Raco.
  - 2.9.1.5. Bushings - O.Z. Co., Type "B" or "BBT," Gedney.

- 2.9.1.6. Expansion fittings - O.Z. Co. and Appleton.
- 2.9.1.7. Wire - U.S. Manufacture.
- 2.9.1.8. Switchgear - Square D, Siemens, and General Electric.
- 2.9.1.9. Safety switch - Square D, Siemens, and General Electric.
- 2.9.1.10. Fuses - Bussman.
- 2.9.1.11. Panels - Square D, Siemens, and General Electric.
- 2.9.1.12. Cabinets - Keystone, Columbia, Boss, Square D, and Hoffman.

### 3.0 PART 3 - EXECUTION OF WORK

#### 3.1 Directories and Nameplates:

3.1.1 Provide typewritten directory in each branch circuit panel and nameplate on exterior trim. The directory shall be in two (2) columns with odd on left and even on right to match on breakers.

3.1.2 Distribution panels and individual switches on this panel, safety switches, starters, transformers, control devices, and wall switches used to control motors shall have legend plate on laminated rigid engraved plastic.

#### 3.2 Mounting Hardware:

Fasteners shall be designed for specific surface on which they are used. Mounting hardware for exterior use shall be galvanized, plated, or brass. Nails shall not be used for mounting electrical outlet boxes or devices. Power drive, or "shot" anchors, shall be threaded type to allow removal of equipment.

#### 3.3 As-Built Drawings:

The contractor shall install and circuit all electrical work as indicated on the drawings unless specific building construction requires the change or rerouting of his work. The contractor shall keep a record of the location of all concealed work, including the underground utility lines, and upon completion of the job, shall supply two (2) sets of reproducible as-built drawings.

#### 3.4 Raceways:

3.4.1 Raceway in slab-on-grade shall be the same as underground. Minimum size of conduit in slab-on-grade, or underground, shall three-quarters ( $\frac{3}{4}$ ) inch. Provide heavy-wall rigid galvanized steel conduit for all exposed exterior locations.

3.4.2 Concealed raceway in walls or ceiling spaces shall be galvanized steel, EMT, or aluminum. Exposed and concealed raceways shall be square or parallel with architectural elements. Groups of conduit shall be mounted on common supports at

maximum eight (8) foot centers. Raceway shall be secured with manufactured clamps, straps, or spring steel fasteners. Steel tie wires shall not be used.

- 3.4.3 Underground conduit used for building power and systems wiring shall be heavy-wall, hot-spray or hot-dipped galvanized rigid steel, or Schedule 40 PVC with manufactured couplings and fittings, all with UL label. All ninety (90) degree bends shall be heavy-wall, hot-dipped galvanized steel.
- 3.4.4 Underground conduit, which extends outside the structure, shall be minimum twenty-four (24) inches below finished grade.
- 3.4.5 Schedule 40 PVC, nonmetallic conduit shall rise above grade through slab or into wall cavity with a heavy-wall, hot dipped galvanized steel elbow and riser. Nonmetallic conduit shall not be utilized in exposed, above-grade locations.
- 3.4.6 Raceway embedded in concrete shall be hot-dipped galvanized steel or nonmetallic type. Raceways shall have expansion fittings at structural expansion joints or where necessary to compensate for thermal expansion and contraction. Raceways shall not be routed in slab-on-grade, but shall be routed below the floor slab.
- 3.4.7 Connections to motors and vibrating equipment shall be made with flexible conduit and connectors. Where liquids are present, (i.e., equipment rooms, kitchens, outdoors, etc.) a watertight jacketed flexible conduit shall be used.
- 3.4.8 EMT fittings for overhead and other concealed work shall be all-steel compression-type with insulated throat in fittings 1<sup>1</sup>/<sub>2</sub> inches and larger.
- 3.4.9 Bushings shall have metal threads with locked-in insulating ring in sizes above one (1) inch. Plastic bushings will not be accepted.
- 3.4.10 Conduit stubs and panel terminations shall be closed during construction with bushings and pennies, or manufactured devices. Tape will not be accepted.
- 3.4.11 Raceways for homeruns shall be minimum three-quarters (¾) inch between panel and first outlet. All systems raceway shall be three-quarters (¾) inch minimum.
- 3.4.12 Provide sleeves where conduit passes through concrete structural elements or slabs above grade. Provide O.Z. Gedney fire seals on all required fire rated conduit penetrations.
- 3.4.13 Provide galvanized pull wire or nylon cord in empty conduit. String will not be accepted. Use maximum of four (4) #12 THHN/THWN in one-half (1/2) inch raceway.
- 3.4.14 Where galvanized steel conduit is installed in direct contact with earth, it shall be coated with two (2) coatings of approved bitumastic paint prior to installation.
- 3.5 Outlets:
  - 3.5.1 Provide cast ferrous or aluminum alloy type boxes, with deep threaded internal or external hubs for surface-mounted switch, receptacle, or device outlets. No-hub boxes are not acceptable.

3.5.2 General outlet boxes shall be galvanized steel of unit construction sized for NEC wire count and conduit entrances. Field sectional or gangable boxes shall not be used.

3.5.3 Boxes other than wall or surface mount shall be supported and secured as required in NEC 370-13.

3.6 Wire:

3.6.1 Circuit and feeder sizes indicated or specified shall not be decreased. Outlets shall be connected to circuits as shown. Unavoidable changes are to be made only after engineer approval.

3.6.2 Color-coded branch circuit wiring as indicated:

	<u>120/208V</u>	<u>277/480V</u>
Phase A	Black	Orange
Phase B	Red	Brown
Phase C (high leg)	Orange	Yellow
Neutral	White	Gray
Ground	Green	Green/White

3.6.3 Use same color for same phase throughout. Use different colors for switch legs and travelers. Phase rotation shall be the same in all panels. Identify large cables with colored tape. Where two (2) conductors from the same phase occur in the same conduit, provide additional neutral. The second neutral shall have a tracer or gray jacket. The minimum branch circuit wire shall be #12 AWG.

3.6.4 Conductor sizes shown are AWG copper.

3.6.5 Wire counts indicated in the system conduit show general scheme only. Actual count and raceway size shall be provided to accommodate shop drawings for the system to be installed.

3.7 Connections:

3.7.1 Splices in branch circuit conductors shall be made with pressure connectors using manufacturer-recommended tools or twist-type spring steel pressure-type connectors. Splices shall be adequately insulated with connectors, insulators, or plastic electrical tape. Standard wire nuts shall be used only for stranded fixture wire.

3.7.2 Copper cables shall be terminated with copper or bronze pressure connectors or lugs, except where connectors are furnished as integral parts or panels, switches, or circuit breakers, and have copper ratings. Cable to bus connections shall be made with bronze bolts and washers.

3.7.3 Junction box, duct splices, and joints shall be made with bronze pressure lugs. Joints shall be worked smooth and insulated with plastic electrical tape.

3.7.4 Splices within feeder conductors are not acceptable. Splices below grade are not acceptable.

- 3.8        Grounding:
- 3.8.1      The electrical system shall comply with NEC requirements, and the power system shall be completely and effectively grounded.
- 3.8.2      Provide continuous green grounding conductor from panel grounding bus in all raceways.
- 3.9        Safety Switches:
- 3.9.1      Switches shall have appropriate NEMA enclosure for given atmospheric condition.
- 3.9.2      Interior location where nonfusible disconnect device only is required; a general duty safety switch with horsepower rating may be used. For fractional horsepower motors, a horsepower rated, toggle-type manual motor starter with overload protection may be used, unless indicated otherwise.
- 3.10      Fuses:
- Provide fuses in safety switches as shown or required. All required fuses shall be furnished. Provide 200,000 A.I.C. current limiting fuses.
- 3.11      Branch Circuit Panels:
- 3.11.1     Mount panels in or on walls with top of panel six (6) feet to zero (0) inches above finished floor, unless dimensioned or indicated otherwise.
- 3.11.2     Risers shall be provided for future wiring. One (1) three-quarters ( $\frac{3}{4}$ ) inch riser for each six (6) one (1) pole spare breaker or spaces. Risers shall stub into accessible ceiling space above, and on upper floors, at least one (1) stub into ceiling space below.
- 3.12      Equipment and Appliances:
- 3.12.1     The contractor shall verify exact equipment locations with existing conditions. No extra compensation will be granted for reasonable adjustments to outlets as required.
- 3.12.2     Provide power wiring, conduit and connections to all electrically operated equipment and provide disconnecting means, unless specifically indicated otherwise or furnished as part of the factory packaged equipment.
- 3.12.3     The contractor shall check all equipment to ensure it is of the proper voltage to operate on this system.
- 3.13      Slab Markers:
- 3.13.1     The feeder conduit shall be marked at each end with indication of location of other ends. Use panel designation to identify. A marking pen is acceptable when visible. Underground stubouts shall have terminal position marked by a precast or poured-in

place concrete post approximately four (4) inches square by twelve (12) inches long with the top one (1) inch above the finished grade. Imbed or anchor an aluminum or brass plate with identifying panel or conduit number and provide a metal tag or tape with corresponding identification at the in-plant end of the conduit. Plate shall carry identifying letters as follows: P - Power.

- 3.14 Testing and Inspection:
  - 3.14.1 Provide personnel and equipment, make required tests, and secure required approvals from the engineer and governmental agencies having jurisdiction.
  - 3.14.2 Make written notice to the engineer forty-eight (48) hours in advance of each of the following stages of construction:
    - 3.14.2.1. In the underground condition prior to backfilling when all associated electrical work is in place.
    - 3.14.2.2. When all rough-in is complete, but not covered.
    - 3.14.2.3. At completion of the work of this section.
  - 3.14.3 In the engineer's presence:
    - 3.14.3.1. Test all parts of the electrical system and prove that all such items provided under this section function electrically in the required manner.
    - 3.14.3.2. Submit to the engineer a report of maximum and minimum voltages and a copy of the recording voltmeter chart.
    - 3.14.3.3. Measure voltages between phases and between phase wires and neutrals; report these voltages to the engineer.
    - 3.14.3.4. Cables 600V or less and size No. 3 or larger shall be meggered using an industry-approved "megger" with a minimum of 500V internal generating voltage. All inspection, cleaning, and testing procedures shall be in compliance with the recommendations and standards outline in the *Maintenance Testing Specifications for Electrical Power Distribution Equipment and Systems*, latest edition, published by International Electrical Testing Association (NETA). Readings shall be recorded in the presence of a design engineer or an owner's representative. Provide a schedule of testing to the engineer a minimum of three (3) days prior to testing. Insulation resistance test values shall be no less than 250 megaohms.
- 3.15 Project Completion:
  - 3.15.1 Upon completion of the work, thoroughly clean all exposed portions of the electrical installation, removing all traces of soil, labels, grease, oil, and other foreign material, and using only the type cleaner recommended by the manufacturer of the item being cleaned.

- 3.15.2 Thoroughly indoctrinate the owner's operation and maintenance personnel with the operations and maintenance manual required to be submitted.

**END OF SECTION**

## SECTION 16600 - STANDBY GENERATOR

### 1.0 PART 1 - GENERAL

#### 1.1 Related Documents:

Drawings apply to work of this section.

#### 1.2 Intent of Specifications:

1.2.1 All materials, equipment, and parts comprising the unit specified herein shall be new and unused, of current manufacturer, and of highest grade.

1.2.2 The engine, generator, and all major items of auxiliary equipment shall be manufactured in the U.S. by manufacturers currently engaged in the production of such equipment. The unit shall be shipped to the job site by an authorized dealer having a parts and service facility within a fifty (50) mile radius of the job site. In addition, and in order not to penalize the owner for unnecessary or prolonged periods of time for service or repairs to the emergency system, the bidding generator set supplier must have no less than sixty (60) percent of all engine replacement parts in his stock at all times. Certified proof of this requirement shall be available from the dealer, and a personal inspection of the dealer's facilities may be made by the designing engineer or his appointed representative to substantiate claims made by the generator set supplier.

1.2.3 The emergency standby generator system shall be furnished complete with all materials, apparatus, equipment, components, accessories, fuel, exhaust, and cooling systems to provide a complete and operable generating system.

1.2.4 The complete emergency standby system shall be the sole responsibility of the generator manufacturer and shall be specifically designed, assembled, and factory tested to assure that such conditions as short circuits and load surges due to motor starting, SCR controllers and overspeed, high temperature, overload, and adverse environmental conditions are not likely to render the emergency standby system inoperative.

1.2.5 The emergency standby generator system shall be a current production model of a manufacturer regularly engaged in the production of engine-driven generator units for a period of twenty-five (25) years or more.

1.2.6 The specified standby KW shall be for continuous electrical service during interruption of the normal utility source.

#### 1.3 Specifications and Drawings:

The bidders shall furnish information showing the manufacturers' model numbers, dimensions, and weights for the engine, generator, and major auxiliary equipment. Proposed deviations from the specifications shall be stated in the bid. The successful bidder shall submit copies of pertinent drawings and schematic diagrams for approval and shall include the following:



- 1.3.1.1. Engine generator set including plans and elevations or riser views clearly indicating entrance points for each of the interconnections required.
- 1.3.1.2. Engine generator/exciter control cubicle.
- 1.3.1.3. Ventilation and combustion CFM requirements.
- 1.3.1.4. Exhaust mufflers and vibration isolators.
- 1.3.1.5. Battery charger, battery, and battery racks.
- 1.3.1.6. Fuel connection points.
- 1.3.1.7. Automatic load transfer switch.
- 1.3.1.8. Actual electrical diagrams including schematic diagrams and interconnection wiring diagrams for all equipment to be approved.
- 1.3.1.9. Legends for all devices on all diagrams.
- 1.3.1.10. Sequence of operation explanations for all portions of all schematic wiring diagrams.

#### 1.4 Factory Tests:

- 1.4.1 A certified prototype test certificate shall be furnished at the time of bid, and a certified prototype test supported seal shall be furnished on the generating unit shipped to the job site. The power system consisting of the prime mover, generator, and transfer switches must be tested as a complete system on a representative engineering type model. The test being potentially damaging to the equipment tested must not be performed on equipment sold.
- 1.4.2 This prototype test certificate shall assure the owner that the prime mover and generator has reserve capacity beyond design limits so that surges and transistor overloads are not likely to damage the generator set. The generator, exciter, and voltage regulator characteristic must be matched to the torque curve of the prime mover. Acceptable evidence of this, on the unit delivered to the job site, must undergo the following tests:
  - 1.4.2.1. Calculations must demonstrate that the exciter and voltage regulator will permit utilization of at least eighty (80) percent of maximum available prime mover torque at all speeds between fifty (50) percent of rated speed and, with rated load connected to its terminals, will provide fast and positive recovery from transient disturbance.
  - 1.4.2.2. With the generator set operating at rated speed, voltage, and load; reduce speed to half rated by manually overriding the governor control. The generator set must recover to full speed with rated load connected when the governor control is returned to its normal mode.

- 1.4.3 Determine by using individual thermocouple measurements that all electrical and mechanical components are free of internal hot spots that would result in premature failure of the generator set. Complete thermal evaluation of all electrical parts must include actual measurements by thermocouples of all internal generator and exciter hot spot temperatures. The position measured any place in the windings must exceed the temperature rise limits of NEMA for the particular type of insulation system used (Class F). Temperature rise measurements by resistance are not acceptable.
- 1.4.4 Establish short circuit capability. The generator must withstand without damage ten (10) short circuits, each of thirty (30) seconds in duration. The short circuit tests shall be applied across all phases when the generator is operating at rated voltage, amperage, power factor, and speed. When short circuits are cleared, the generator must build up voltage and perform normally without manual intervention, such as resetting breakers or other tripping devices. After test disassembly and inspection, the generator must not show any electrical or mechanical damage to any system component.
- 1.4.5 Demonstrate the capability of the generator set, its vital controls, and accessories to function reliably and compatibly when in-service demands are made by disturbances commonly occurring in actual load circuits, such as surges caused by motor starting, elevator operation, rectifiers, SCR controllers, X-ray equipment, and reactive discharges.
- 1.4.6 Discover by endurance testing that there are no resonance conditions in the generator set or its accessories that will cause premature fatigue failures of components on production units.
- 1.4.7 Prove a margin of safety, in actual trials, between the generator set and its protective system so that the generator set is not weakened or damaged before the protective system would shut down.
- 1.4.8 Verify that the production generator sets will perform to specifications under all extremes of environment expected in actual service by factory load test at rated P.F., and furnish notarized copy of test report.

## 2.0 PART 2 - MATERIALS

### 2.1 Engine Generator:

Furnish a diesel generator: 400 KW (standby), 500KVA, 0.8 P.F., Sixty (60) Hz, three (3) Phase, four (4) Wire, 277/480Y. The alternator shall be capable of 578 KVA for the motor starting at a maximum of fifteen (15) percent instantaneous voltage dip. The system is to include the following:

- 2.1.1.1. The engine shall have six (6) cylinders, 855 cubic inch displacement, replaceable wet liners, turbo charged, after cooled. Kohler 400REOZDD14M4021, Cummins, Caterpillar, or prior approved equal. Engine has one (1) piece cylinder block and a one (1) piece crankshaft.

- 2.1.1.2. The emergency generator system consisting of a diesel engine directly coupled to an A/C generator shall provide fully automatic operation so that the unit takes full load (life safety) within seven (7) seconds in the event of commercial power failure.
- 2.1.1.3. Cooling system: Engine-driven radiator fan. Radiator rated for an ambient of 105 degrees F, self-sealing prelubricated coolant pump, blower fan, thermostat controlled, low water level shutdown in the event of water loss, and high coolant shutdown controlled at generator panel. Furnish low water temperature contact.
- 2.1.1.4. Fuel System: Fuel injection system, dry element air cleaners, fuel filters, Raycor water separator, fuel transfer pump, return fuel transfer pump, flexible fuel lines, and automatic fuel shutoff.
- 2.1.1.5. Fuel: Provide 385 gallon, double wall, steel-base mounted, diesel fuel storage tank with 385 gallons of No. 2 diesel fuel. The tank shall be "topped off" prior to the owner's acceptance.
- 2.1.1.6. Governor: The electronic governor shall maintain frequency regulation within  $\pm 0.25$  percent steady state from no load to full-rated load.
- 2.1.1.7. Lubrication system: Positive displacement, gear design, lube oil pump, full pressure lube to all bearings, full flow oil filters, oil level indicators, oil pressure gauge, low oil pressure shutdown, filters, and lube oil cooler.
- 2.1.1.8. Prelube system: The engine is to have built-in prelube system when starting to assure lube oil pressure to all parts of the engine. Synchronous speed of 1,800 RPM cannot be obtained unless the oil pressure has reached a preset value.
- 2.1.1.9. Starting system: Remote twenty-four (24) volt, two (2) wire negative ground starting system, positive shift, gear engaging starter and crank limiter. The cranking controller is located in the generator/engine control panel.
- 2.1.1.10. Valves: Dual overhead intake and exhaust valves. Heat and corrosion resistant alloy steel valve fitting and valve seat inserts.
- 2.1.1.11. The engine and generator shall be painted in accordance with engine supplier's standard colors. Paints shall be lead-free. Provide weather-protected enclosure.
- 2.1.1.12. A unit-mounted thermal circulation type water heater incorporating a thermostatic switch shall be furnished to maintain jacket water to seventy (70) degrees F. The heater shall be 208-volt, single phase, sixty (60) Hertz, and 2.5 KW. The unit shall be complete with contactor and thermostat.
- 2.1.1.13. Engine instrument panel: To include water temperature gauge, oil pressure gauge, fuel pressure gauge, and alternator ammeter.

- 2.1.1.14. Safety shutdown contactors: Provide and wire to a common junction box mounted on the engine a set of sensors each for low oil pressure, high jacket water temperature, overspeed, and low water level.
  - 2.1.1.15. Steel base: A structural steel subbase common to an engine and generator shall rigidly maintain alignment during static and running operation.
  - 2.1.1.16. Vibration spring-type isolators suitable for this model and recommended by the generator set supplier shall be installed between fuel tank and engine.
- 2.2 Generator:
- 2.2.1 Provide a single bearing type generator close coupled to the engine flywheel housing of the rating herein specified. The temperature rise at this rating shall not exceed 105 degrees C above an ambient of forty (40) degrees C.
  - 2.2.2 The generator shall be self-ventilated, drip-proof, rotating field, brushless exciter, and the synchronous type.
  - 2.2.3 Other characteristics include:
    - 2.2.3.1. Voltage regulator +.50 percent no load to full load.
    - 2.2.3.2. Volts per Hertz rheostat.
    - 2.2.3.3. Designed for "SCR" loads.
    - 2.2.3.4. Three (3) phase sensing.
    - 2.2.3.5. Circuit breaker in "VR" for low power factor.
    - 2.2.3.6. Permanent magnet short circuit sustained.
  - 2.2.4 Battery system: Engine equipped with a set of lead acid batteries rated sixty-five (65) ampere hour at twenty-four (24) volts. Furnish a battery rack, battery cable, and acid. Furnish automatic battery charger, current limiting type, complete with ammeter, voltmeter, malfunction contact, 120 volt AC single phase input (with cord and plug) and ten (10) ampere D.C. output. The charger is mounted in NEMA 1 enclosure near the battery set within a weatherproof enclosure.
  - 2.2.5 Generator control panel: Shall be an electronic, modulator, microprocessor generator frame mounted type (Kohler #DEC550 or prior approved equal) and shall contain:
    - 2.2.5.1. Two (2) - "Inline" type circuit breakers (400 A.F.; 400 A.T.).
    - 2.2.5.2. One (1) - Voltmeter, 0.5 percent.

- 2.2.5.3. One (1) - Ammeter, 0.5 percent.
  - 2.2.5.4. One (1) - Combination ammeter/voltmeter selector switch for each phase.
  - 2.2.5.5. One (1) - Frequency meter, dial type, 0.3 percent.
  - 2.2.5.6. One (1) - Set of current transformers and potential transformer to be mounted inside of panel.
  - 2.2.5.7. One (1) - Set of automatic engine start-stop controls, single-crank duration, HOA selector switch, safety shutdown for LOP-HWT-OS-OC, pilot light for each safety shutdown condition, and mounting of governor raise-lower switch. Furnish dry set of contacts to close if HOA selector switch is in the "off" position for alarm and a dry set of safety shutdown contacts for remote annunciation; push to test light pushbutton.
  - 2.2.5.8. One (1) - Running hour meter.
  - 2.2.5.9. One (1) - Set of dry contacts for annunciation of all alarms at the remote generator annunciator panel.
  - 2.2.5.10. "Call home" factory control package and smart dialer for remote monitoring.
- 2.2.6 Exhaust Silencer: Furnish an ultra-critical silencer complete with companion flanges and arranged for end-in/side-out of exhaust gases as shown on drawings. Provide bracket support for horizontal installation. Furnish a stainless steel flexible exhaust connector as recommended by the engine manufacturer. All exhaust piping shall be lagged with insulation per the manufacturer's recommendations.
- 2.2.7 Provide remote emergency stop push button within main electrical room. The electrical contractor shall be responsible for all wiring and conduit.
- 2.3 Remote Generator Panel:
- 2.3.1 Remote generator annunciator panel shall be electronic, microprocessor type (Kohler #RSA1000 or prior approved equal), and shall be provided for remote mounting to give audible and visual warning of fault or alarm conditions of the generator set. The panel shall conform with the requirements of the National Electrical Code and the National Fire Protection Association publication NFPA-110 and shall contain, but not be limited to, the following:
- 2.3.1.1. Alarm horn with silence switch and recurring alarm circuitry.
  - 2.3.1.2. Low oil pressure - red lens.
  - 2.3.1.3. High water temperature - red lens.
  - 2.3.1.4. Overspeed - red lens.
  - 2.3.1.5. Overcrank - red lens.

- 2.3.1.6. Loss of engine coolant - red lens.
  - 2.3.1.7. Approaching low oil pressure - amber lens.
  - 2.3.1.8. Approaching high water temperature - amber lens.
  - 2.3.1.9. Low fuel level in skid-mounted base tank - red lens.
  - 2.3.1.10. Low fuel level aboveground tank - red lens.
  - 2.3.1.11. High fuel level aboveground tank - amber lens.
  - 2.3.1.12. Low water temperature - amber lens.
  - 2.3.1.13. Battery charger malfunction - amber lens.
  - 2.3.1.14. Low battery voltage - amber lens.
  - 2.3.1.15. Control switch not in automatic - red lens.
  - 2.3.1.16. Generator main open - red lens. (One [1] for each circuit breaker specified).
  - 2.3.1.17. Generator main closed - green lens. (One [1] for each circuit breaker specified).
  - 2.3.1.18. Generator running - green lens.
  - 2.3.1.19. Containment basin leak detector activated - red lens.
  - 2.3.1.20. Remote start/stop switch (without load transfer to generator).
  - 2.3.1.21. Power failure simulate test switch (with load transfer to generator).
  - 2.3.1.22. Emergency stop, red "mushroom" type pushbutton.
  - 2.3.1.23. Aboveground fuel tank leak detector activated - amber lens.
- 2.3.2 All lamps shall be wired to a press-to-test button and will light and flash on a fault or an alarm condition. Engraved, three (3) ply phenolic nameplates mounted on screw-on type rails for uniformity will identify each function indicated without abbreviation of function description. The face of the panel shall be constructed of stainless steel.
- 2.3.3 The annunciator panel shall be flush mounted and wired by the installing contractor as shown on the drawings.
- 2.4 Automatic Transfer Switch:
- 2.4.1 The automatic transfer switch shall be 400 Amp, 277/148OV, three (3) phase, four (4) pole, 25,000 A.I.C., as manufactured by ASCO, furnished in NEMA 3R enclosure.

The switch shall be mechanically held and electrically operated by a solenoid mechanism energized from the source to which the load is to be transferred. Switches manufactured by Russell Electric and Zenith are acceptable.

2.4.2 The main contacts shall be of silver composition and be protected by arcing contacts. Operating transfer time in either direction shall not exceed 0.3 of a second, including relay response.

2.4.3 The transfer switch shall be furnished with the following accessories mounted and wired:

2.4.3.1. Close differential sensing relays, factory set to drop out at eighty-five (85) percent of nominal and to pick up at ninety-five (95) percent. Voltage and frequency sensing relay on the emergency source.

2.4.3.2. Time delay to override momentary outages, adjustable 0.5 to six (6) seconds, set at six (6) seconds. Provide "digital" read-out type.

2.4.3.3. Retransfer to normal time delay, adjustable zero (0) to thirty (30) minutes, set at five (5) minutes. Provide "digital" read-out type.

2.4.3.4. Adjustable time delay on engine stop after retransfer, zero (0) to thirty (30) minutes, set at fifteen (15) minutes. Provide "digital" read-out type.

2.4.3.5. Transfer to emergency time delay, adjustable zero (0) to thirty (30) minutes, factory set at two (2) minutes. Provide "digital" read-out type.

2.4.3.6. A contact that closes when normal source fails, gold plated for use in the engine start circuit.

2.4.3.7. A contact that opens when normal source fails, gold plated for use in engine battery circuit.

2.4.3.8. Test switch to simulate momentary normal source failure.

2.4.3.9. Three (3) auxiliary contacts on the transfer switch which is closed when the switch is on normal.

2.4.3.10. Three auxiliary contacts on the transfer switch which is open when the switch is on normal.

2.4.3.11. Normal and emergency pilot lights with green and red lenses, respectively.

2.4.3.12. Overlapped neutral contact or four (4) pole type.

2.4.3.13. In-phase monitor.

- 2.5 Protected/Secondarily Contained Aboveground Tank:
- 2.5.1 Provide a 1,000-gallon aboveground fuel tank system approved for listing under U.L Standard 2085, Aboveground Tanks, Protected Type, Secondary Containment with Vehicle Impact and Projectile Resistance. The unit must comply with all provisions of U.F.C. 79-7, Appendix A-11-F. The tank and its enclosure shall be a completed unit at the factory (shop fabricated). The tank system shall be approved for Phase I and Phase II Vapor Recovery by the California Air Resource Board for gasoline and methanol. Convault or prior approved equal.
- 2.5.2 The primary tank shall be rectangular in shape, constructed with a minimum of ten (10) gauge thick carbon steel, listed per U.L. Standard 142, and meet the requirements of N.F.P.A. 30. Welds shall be continuous on all sides, conforming with the American Welding Society Standard for continuous weld. The tank shall be warranted for a minimum of thirty (30) years by the manufacturer.
- 2.5.3 The concrete encasement shall be six (6) inches thick with a minimum design strength of 4,000 psi. The concrete enclosure shall encase and protect both the primary steel tank and the secondary containment. The concrete design shall include the following for long-term durability: less than three (3) percent air entrainment, water-reducing admixture, and steel reinforcing bars. The concrete placement shall be monolithic (without seams) and placement methods shall ensure the absence of voids on all sides and beneath the steel tank. The steel tank shall be prestressed at the factory by pressurizing the primary steel tank to five (5) psi during concrete encasement to allow for expansion and contraction of the primary steel tank. The vault enclosure shall have concrete support legs of unitized monolithic construction raising the concrete enclosure a minimum of three (3) inches above the ground to meet visual inspection requirements.
- 2.5.4 The tank system shall be designed and tested to provide two (2) hour fire protection for the primary tank as per U.L. 2085, two (2) hour furnace fire test, and two (2) hour simulated pool fire test.
- 2.5.5 The tank construction shall include thermal insulation equivalent to .25 inches of polystyrene to protect against temperature extremes and to protect against corrosion by isolating the steel tank from the concrete or other corrosive material. All steel exterior to the concrete encasement shall be antioxidant powder coated to inhibit corrosion and meet A.S.T.M. BI 17.
- 2.5.6 The tank system shall include an impervious barrier of thirty (30) mil high density polyethylene to contain leaks from the primary tank. A monitoring tube shall be located between the inner tank and secondary barrier. Provide electronic leak detection system with alarm for interconnection with generator annunciator/control panel.
- 2.5.7 The tank system shall include a U.L. listed seven (7) gallon spill/overflow container manufactured as an integral part of the primary tank, surrounding the fill pipe, and protected by two (2) hour fire rating of the enclosure. The spill/overflow container shall include a stick port and normally closed valve to release the spilled product into the main tank. The exterior steel shall be antioxidant powder coated to inhibit rust.



- 2.5.8 Overfill protection shall be provided by the following methods: a) direct reading level gauge visible from fill pipe access, b) valve rated for pressurized delivery located within fill pipe to close automatically at ninety-five (95) percent full level, and c) electronic high fuel and low-level probes for interconnection with generator annunciator/control panel.
- 2.5.9 Exterior Finish: The tank system shall be a low maintenance exposed aggregate exterior concrete finish. Painted concrete, fiber clad steel, or painted steel vault tanks are not acceptable.
- 2.5.10 Signage: The tanks shall be marked on all sides as per State and local codes. The signs will be recessed in concrete exterior to insure against damage during off-loading, refilling, or general functions.
- 2.5.11 Venting: The tank system shall include a two (2) inch atmospheric vent and emergency venting in accordance with 14.F.P.A. 30.
- 2.5.12 Provide 1,000 gallons of No. 2 diesel fuel. The tank shall be "topped off" prior to owner's acceptance.
- 2.5.13 The tank system, including accessories, shall be installed in strict accordance with the manufacturer's recommendations and applicable fire and environmental codes. All State and local permits shall be obtained by the contractor prior to installation.
- 2.5.14 The system installation shall be inspected and approved by the system supplier or its certified contractor. The system supplier shall submit a comprehensive checklist of quality and safety items critical to the system and verify that the installation has been in accordance with these standards and applicable fire and environmental codes.
- 2.5.15 Provide "hurricane hold-downs" supported from anchors imbedded within the concrete pad.

### 3.0 PART 3 - EXECUTION

#### 3.1 Warranty and Test:

- 3.1.1 The equipment furnished shall be guaranteed against defective parts of workmanship under the terms of the manufacturer's and dealer's standard warranties. In no event shall it be for a period of less than two (2) years from the date of acceptance. The warranty is to include full parts and labor during this period without cost to the initial user.
- 3.1.2 The electric set shall receive the manufacturer's standard testing. Prior to acceptance of the installation, the equipment shall be tested to show it will start automatically, subjected to full load test or that load which is available at the job site shutdown, and reset as required in these specifications. Provide cost of furnishing 500 KVA, unity power factor, and load bank test on the generator system for final acceptance. Duration of the test shall be four (4) hours.

3.2 Start-Up and Instructions:

3.2.1 On completion of the installation, the initial start-up shall be performed by a factory-trained service representative of the engine supplier. At the time of start-up, operating instructions and maintenance procedures shall be thoroughly explained to the building operating personnel. Two (2) copies of operating and maintenance instruction books shall be supplied.

3.2.2 The service representative shall demonstrate and test the ability of the engine controls to automatically shut off the engine for hot water temperature, low oil pressure, overspeed, and overcrank.

3.2.3 A factory-trained service representative shall perform all start-up tests. Include eight (8) hours of factory service for start-up in the bid price.

3.3 System Service Contract:

The supplier of the standby power system must provide a copy of and make available to the owner his standard service contract and extended warranty, which at the owner's option may be accepted or refused. This contract can accompany documents, drawings, etc., submitted for approval to the designing engineer. The contract shall be for the complete services rendered over a period of two (2) years.

3.4 Scheduled Oil Sampling:

3.4.1 In order to forecast and minimize engine failure, the supplier of the equipment shall include as part of his bid quarterly (every three [3] months) oil sampling analyses for a period of two (2) years from date of acceptance.

3.4.2 All equipment needed to take oil samples shall be provided in the kit form at the time of acceptance and shall include the following:

3.4.2.1. One (1) Sample gun kit.

3.4.2.2. Five (5) Bottles.

3.4.2.3. Five (5) Mailers.

3.4.2.4. Ten (10) Written instruction.

3.4.3 Scheduled oil sampling shall be of the atomic absorption spectrophotometry and shall be accurate to within a fraction of one (1) part per million for the following elements:

3.4.3.1. Iron.

3.4.3.2. Chromium.

3.4.3.3. Copper.

3.4.3.4. Aluminum.

- 3.4.3.5. Silicon.
- 3.4.3.6. Water and fuel dilution.
- 3.4.4 Immediate notification shall be provided to the owner when the analysis results show any critical reading. If the readings are normal, a report showing that the equipment is operating within established requirements shall be provided.
- 3.4.5 This scheduled oil sampling program shall be made available at additional cost to the owner beyond the mandatory two (2) year time specified above and shall be optional for the owner to continue the program after that time period has elapsed.

**END OF SPECIFICATIONS**

# BID FORM

Business Name: \_\_\_\_\_

Item No.	Quantity	Description	Lump Sum Total
1.	1 Each	Emergency generator provided and installed per specifications and conditions of bid document. Blueprints and drawings may be picked up at the Pasco County Purchasing Department, 8919 Government Drive, New Port Richey, Florida, or by calling (727) 847-8194, at no charge.	\$ _____

Manufacturer: \_\_\_\_\_

Warranty: \_\_\_\_\_

Model: \_\_\_\_\_

Delivery: \_\_\_\_\_ Calendar Days After  
Receipt of Order

"We offer to sell/provide Pasco County, Florida, the above item(s) and/or service(s) at the price(s) stated, in accordance with the terms and conditions contained herein. In addition, the item(s) and/or service(s) offered above meet all specifications contained herein or attached, unless otherwise stipulated by exception. This offer to sell/provide is firm for ninety (90) days."

\_\_\_\_\_  
(Signature of Bidder—Ink)

\_\_\_\_\_  
(Printed Name and Title)

\_\_\_\_\_  
(Business Name)

Receipt of Addendum No. \_\_\_\_\_ through No. \_\_\_\_\_ is acknowledged.

Business Name: \_\_\_\_\_  
(The Name on File with the Internal Revenue Service)

Doing Business as (Fictitious Name): \_\_\_\_\_

Business Organization:

Corporation:

Partnership:       General       Limited

Limited Liability Company (LLC):

State Registered In: \_\_\_\_\_ Year: \_\_\_\_\_

Sole Proprietorship:      Owner: \_\_\_\_\_

Other: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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