



**CITY OF ELKO, NEVADA**

**REQUIREMENTS, SPECIFICATIONS, AND CONTRACT DOCUMENTS**

**TO FURNISH**

**EMERGENCY DIESEL GENERATOR FOR THE CITY OF ELKO  
WATER RECLAMATION FACILITY**

**JANUARY 2018**

**CITY OF ELKO  
WATER RECLAMATION FACILITY**

**PREPARED BY:**



P.O. Box 2561  
Elko, Nevada 89803

**SET NO. \_\_\_\_\_**

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**CITY OF ELKO  
INVITATION TO BID**

Sealed bids will be received until **3:00 P.M., local time, on Friday, February 2<sup>nd</sup>, 2018**, at the office of the Elko City Clerk; 1751 College Avenue; Elko, Nevada 89801, for the following purchase:

**EMERGENCY DIESEL GENERATOR FOR THE CITY OF ELKO WATER RECLAMATION  
FACILITY**

Proposals received after the time indicated above will not be accepted. Bidders mailing their bids assume the risk of late delivery.

The submitted bids will be opened at the Elko City Hall immediately after the published deadline for acceptance of bids with City staff present. All interested parties are invited to be in attendance at the bid opening.

The City Council may formally accept or reject the bids at its regular meeting commencing at **4:00 P.M., Local Time, Tuesday, February 13<sup>th</sup>, 2018**.

Specifications and other information may be obtained at the office of the Elko City Clerk. **All potential bidders shall register with the City Clerk prior to submitting bids, by contacting the City Clerk by telephone, fax or email, as indicated below:**

City of Elko City Clerk:  
Shanell Owen, MMC  
(775)777-7126  
(775)777-7129 fax  
[sowen@elkocitynv.gov](mailto:sowen@elkocitynv.gov)

The City of Elko reserves the right to accept or reject any or all items specified in the bid request as is deemed in the best interest of the City of Elko.

Dated this January 11<sup>th</sup>, 2018

CITY OF ELKO,  
CITY COUNCIL

BY: \_\_\_\_\_  
Mike Haddenham  
WRF Superintendent

Publish: Elko Daily Free Press - January 11<sup>th</sup>, 2018

**CITY OF ELKO  
BIDDING INFORMATION**

The City of Elko reserves the right to accept or reject any or all items specified in the bid documents and reserves the right to waive any minor technicalities in the bids submitted, so long as the waiver does not give any bidder a competitive advantage over any other bidder.

Subject to the right of the City to reject all bids in its sole discretion and except as otherwise permitted by law (to include giving preference to recycled products in accordance with NRS 332.065(2)), the award will be made to the lowest responsive and responsible bidder. The lowest responsive and responsible bidder will be judged based on price; warranty (including extended warranties); conformance to specifications; qualifications; performance or delivery date; quality and utility of services, supplies, materials or equipment offered and the adaptability of those services, supplies, materials or equipment to the required purpose of the contract; and the best interests of the public. Each of the foregoing factors will be considered in light of any special conditions (e.g., equipment selection criteria) included in the bid documents.

The following requirements shall apply to all bidders and bids:

- A. All bidders must register with the City Clerk's office in accordance with the Invitation to Bid.
- B. All addenda must be acknowledged and the acknowledgment must be returned to the City via fax or e-mail on a form supplied by the City. The addenda acknowledgement form shall also be attached to the "Bid Proposal Form".
- C. Three (3) copies of bids shall be submitted to the City.
- D. Sealed bids shall be filed with the Office of the City Clerk; 1751 College Avenue; Elko, Nevada, prior to 3:00 P.M., Pacific Standard Time, on Friday, February 2<sup>nd</sup>, 2018.
- E. All bids shall be enclosed and sealed in an envelope, and endorsed as follows:

**EMERGENCY DIESEL GENERATOR FOR THE CITY OF ELKO WATER RECLAMATION FACILITY**

- F. The submitted bids will be opened at Elko City Hall immediately after the published deadline for acceptance of said bids with Elko City staff present. All interested parties are invited to be in attendance at the bid opening.
- G. The City Council may formally accept or reject bids at their regular meeting commencing at 4:00 P.M. Local Time, Tuesday, February 13<sup>th</sup>, 2018.
- H. The following is a summary description of the purchase to be bid:

**EMERGENCY DIESEL GENERATOR EQUIPMENT FOR THE CITY OF ELKO WATER  
RECLAMATION FACILITY:**

- Bid Item #1: One Emergency Diesel Generator.
- I. Bidders shall submit a price corresponding to each Bid Item within the Contract Completion Schedule. Award, if made, will be to one (1) bidder for each of the listed Bid Items. Bidders shall include profit,

overhead, costs and other amounts for which the bidder is to be compensated within the price corresponding to each Bid Item.

- J. Bids will be accepted only on the Bid Proposal Form provided by the City, along with a completed specification sheet that complies with all instructions and contains any other information requested in the bid documents.
- K. A “Notice of Award” will be provided to the winning Vendor within 30 calendar days of the date the City Council approves the award.
- L. Following the Notice of Award, the City will supply the Vendor with a completed “Purchase Agreement for Supplies, Materials or Equipment (Nevada Revised Statutes Chapter 332)” (the “Purchase Agreement”) substantially similar to the document included in the bid documents. Vendor shall thereupon promptly, but in any case, within no more than five (5) business days, execute and return the Purchase Agreement to the City. The Purchase Agreement will become effective upon approval by the City Council and execution by the Mayor or Mayor Pro Tem.

**PURCHASE AGREEMENT FOR SUPPLIES, MATERIALS OR EQUIPMENT  
(NEVADA REVISED STATUTES CHAPTER 332)**

**THIS PURCHASE AGREEMENT FOR SUPPLIES, MATERIALS OR EQUIPMENT** (the “Agreement”) is entered into this \_\_\_\_ day of \_\_\_\_\_, 2018 (the “Effective Date”), by and between the CITY OF ELKO, NEVADA, a municipal corporation and political subdivision of the State of Nevada (“the City”) and the following person(s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(“Vendor”).

**RECITALS**

**WHEREFORE**, the City desires to purchase Goods (defined below) from Vendor; and

**WHEREFORE**, Vendor has been selected in accordance with Chapter 332 of the Nevada Revised Statutes for the purpose of selling Goods to the City.

**NOW, THEREFORE**, for and in consideration of the above recitals and the terms and conditions contained herein, the parties agree as follows:

**I.**

**PURCHASE OF GOODS**

The City will purchase from Vendor the supplies, materials or equipment, generally referred to as the Emergency Diesel Generator, described at **Attachment 4 (entitled “CITY OF ELKO, NEVADA EQUIPMENT TECHNICAL SPECIFICATIONS”)** (hereinafter referred to as the “Goods”). No substitutions shall be permitted without the prior written consent of the City.

**II.**

**PURCHASE PRICE, PAYMENT AND TERM**

- A. **DATE OF SALE AND DELIVERY.** Vendor will sell, transfer and deliver the Goods to the City on or before the following date:

\_\_\_\_\_, 20\_\_\_\_.

- B. **PAYMENT.** The City will pay to the Vendor the sum of:

\$ \_\_\_\_\_ (USD) (the “Price”)

on or before the following dates or events:

1. Ten percent (10%) of the Price upon receipt of all documents which must be provided to the City prior to delivery of the Goods;
  2. Eighty percent (80%) of the Price upon delivery of the Goods to the City in accordance with this Agreement;
  3. The remaining ten percent (10%) of the Price following the first successful start-up of the Emergency Diesel Generator after installation of the Goods.
- C. **SUFFICIENCY OF CONSIDERATION.** Vendor acknowledges that the foregoing is sufficient consideration for its performance under this Agreement.
- D. **TERM.** The Term of this Agreement shall commence on the Effective Date and shall end on either the date the Vendor delivers to Goods to the City or the date the City makes final payment to the Vendor, whichever is later.

### III.

#### **SHIPMENT AND DELIVERY OF GOODS**

- A. **SHIPPING SCHEDULE AND SUBMITTAL DOCUMENTS.** Following the receipt of "Notice of Award," Vendor shall immediately inform the City of Vendor's submittal and shipping schedule for the Goods (the "Schedule"). Vendor shall further promptly thereafter provide all Submittal Documents, including shop drawings and other information required, specified in **Attachment 4** (Equipment Technical Specifications). The City may accept or reject the Schedule and/or Shipping Documents, in its sole discretion.
- B. **RECEIPT UPON DELIVERY.** The Goods will be deemed received by the City when delivered to the City at the following location:
- Elko Water Reclamation Facility, 1600 Sewer Treatment Plant Road, Elko, Nevada.
- C. **SHIPMENT.** Vendor shall be responsible for shipment and delivery by any generally accepted means, to include common carrier.
- D. **COST OF SHIPMENT.** Vendor shall be responsible for the cost of shipment.
- E. **RISK OF LOSS.** Vendor shall bear the risk of loss until delivery to the City.

### IX.

#### **PAYMENT OF TAXES, ASSESSMENTS, LIENS AND THE LIKE**

Vendor agrees to pay any and all taxes, fees or assessments of whatever nature or kind are levied, required or imposed as a consequence of its performance under this Agreement. Vendor shall pay in full for all material furnished to City property, and shall keep City property, free and clear of all materialmen's, laborers and mechanics liens and all other liens, security interests and encumbrances arising from its performance under this Agreement. If any such lien or

liens shall be filed against City property, or any part thereof, Vendor shall have the right to contest any such lien or liens, but shall, within ten (10) days after the filing of such liens, discharge every lien filed against City property by bonding or otherwise.

**X.**

**WORK PERFORMED AT VENDOR'S RISK**

Vendor's performance under this Agreement shall be at its own risk.

**XI.**

**SUPPLEMENTAL TERMS AND CONDITIONS**

The parties agree that any supplemental terms and conditions applicable to this Agreement are contained in the following document(s) attached hereto:

- A. Contract Completion Schedule (**Attachment 1**);
- B. General Condition Specifications (**Attachment 2**);
- C. Bid Proposal Forms (**Attachment 3**); and
- D. Equipment Technical Specifications (**Attachment 4**).

Except as otherwise specifically provided in this Agreement, in the event of an inconsistency between the terms and conditions contained in this Agreement and the document(s) attached at **Attachments 1, 2, 3, and 4**, the terms and conditions contained in this Agreement shall prevail.

**XII.**

**WARRANTIES AND EXCEPTIONS**

- A. Vendor warrants to the City that the Goods will conform with the specifications, drawings, and other descriptions supplied for the purposes for which they are intended, and that they will be of good material, design and workmanship, free from defects, and will satisfactorily perform under reasonably expected operating conditions at the Elko Water Reclamation Facility.
- B. At the request of the City, Vendor shall promptly, at no cost to the City, either repair or replace (including prepayment of all packing and transportation costs) any Goods which within one (1) year after being placed in regular use by the City in normal use and service and under proper operation, fail to conform with the foregoing warranty of Vendor. Any extended warranties offered to and accepted by the City shall be in addition to the one-year warranty stated in the preceding sentence.
- C. Vendor shall not be responsible for repairs made to the Goods by the City unless Vendor has been given written notice of such failure and thereafter has failed to take prompt and effective action to correct the failure in accordance with the foregoing warranties.



### XIII.

#### **LIMITATION ON DISCLOSURE OF PROPRIETARY INFORMATION SUPPLIED BY VENDOR**

Except as otherwise provided in this Agreement, NRS 239.0115 and NRS 332.061 and this Agreement, proprietary information does not constitute public information and is confidential. Accordingly, unless otherwise required by law, the City will not disclose proprietary information unless the disclosure is made for the purpose of a civil, administrative or criminal investigation or proceeding.

### XIV.

#### **LIQUIDATED DAMAGES**

- A. **LIQUIDATED DAMAGES FOR FAILURE TO MEET DEADLINES IN CONTRACT COMPLETION SCHEDULE.** It is acknowledged that the Vendor's failure to perform by the dates indicated in the Contract Completion Schedule at **Attachment 1** will cause the City to incur substantial economic damages and losses of types and in amounts which are impossible to compute and ascertain with certainty as a basis for recovery by the City of actual damages, and that liquidated damages represent a fair, reasonable and appropriate estimate thereof. Accordingly, in lieu of actual damages for such delay, the Vendor agrees that liquidated damages may be assessed and recovered by the City as against the Vendor, in the event of delayed completion and without the City being required to present any evidence of the amount or character of actual damages sustained by reason thereof; therefore Vendor shall be liable to the Owner for payment of liquidated damages in the amount of Five Hundred Dollars (\$500.00) for each calendar day that performance is delayed beyond the dates stated in the Contract Completion Schedule.
- B. **INTEREST.** Interest shall accrue on all unpaid liquidated damages at a rate equal to the prime rate at the largest bank in Nevada as ascertained by the Commissioner of Financial Institutions on January 1 or July 1, as the case may be, immediately preceding the date of the liquidated damages accrue, plus 2%. The rate shall be adjusted accordingly on each January 1 and July 1 thereafter until the liquidated damages are paid in full.
- C. **CITY'S RIGHT OF OFFSET.** In the event there are sums due to Vendor from the City subsequent to the date upon which liquidated damages begin to accrue, the City may thereafter offset and deduct from such sums the amount of any liquidated damages then accrued and Vendor shall not thereafter be entitled to recover the difference from the City.
- D. **REMEDY NOT EXCLUSIVE.** Liquidated damages are intended to represent estimated actual damages and are not intended as a penalty. Vendor shall pay liquidated damages to the City without limiting the City's right to terminate this Agreement for default as provided elsewhere herein. Liquidated damages only represent damages for administrative costs, overhead and loss of public use caused by Vendor's delay. The imposition or recovery of liquidated damages by the City shall in no manner affect the City's ability to recover any other damages caused by Vendor's default to include, without limitation, the cost of procuring substitute goods from another vendor in the event of Vendor's breach.

**XV.**

**GENERAL TERMS AND CONDITIONS**

The following general terms and conditions shall apply to this Agreement:

- A. **TERMS TO BE EXCLUSIVE.** The entire agreement between the parties with respect to the subject matter hereunder is contained in this Agreement, including the exhibits hereto. The provisions of this Agreement are exclusively for the benefit of the parties hereto and not for the benefit of any other person, persons or legal entities.
- B. **WAIVER OR MODIFICATION INEFFECTIVE UNLESS IN WRITING.** No waiver, alteration or modification of any of the provisions of this Agreement shall be binding unless in writing and signed by the parties hereto or their duly authorized representatives.
- C. **ASSIGNMENT.** This Agreement may not be assigned to any other person without the consent of the Elko City Council or its Authorized Representative (as defined in NRS 332.025(1)). Notwithstanding the foregoing, under no circumstances shall this Agreement be assigned to any person who was declared by the Elko City Council or its Authorized Representative (as defined in NRS 332.025(1)) not to be a responsible person to perform the particular contract.
- D. **GOVERNING LAW.** This Agreement or any dispute arising under or in connection with this Agreement shall be governed by the laws of the State of Nevada, United States of America, to include, without limitation, Chapter 332 of the Nevada Revised Statutes.
- E. **JURISDICTION AND VENUE.** The parties agree that in the event of a dispute arising under or in relation to this Agreement, the Fourth Judicial District Court for the County of Elko, State of Nevada, shall have jurisdiction and venue over said dispute.
- F. **PRIOR AGREEMENTS.** This Agreement, together with its attached exhibit, contains the entire agreement between the parties hereto with respect to the subject matter hereof and any prior agreements, discussions or understandings, written or oral, are superseded by this Agreement and shall be of no force or effect.
- G. **COMPLIANCE WITH APPLICABLE LAWS.** Vendor shall at all times comply in all material respects with all municipal, State and Federal ordinances, rules and statutes applicable to Vendor's performance hereunder.
- H. **ATTORNEY FEES.** Should either party pursue legal action to enforce any term of condition of this Agreement, or any legal action arising from or in relation to the performance of services under this Agreement, the prevailing party shall be entitled to reasonable attorney fees and costs.
- I. **CONSTRUCTION OF DOCUMENT.** The parties agree that they were each represented by legal counsel in connection with the preparation of this instrument or had the opportunity to consult with legal counsel; accordingly, the parties waive the usual rule of construction that Agreements are to be strictly construed against the drafting party.
- J. **BINDING EFFECT.** This Agreement is binding upon and shall inure to the benefit of the parties' heirs, administrators, successors and assigns, subject to the restriction on assignment herein contained.

K. **NOTICE.** Service of all notices pursuant to this Agreement shall be sufficient if made my certified mail to the specific party involved herein at the respective addresses hereinafter set forth or as such party may provide from time-to-time in writing:

**CITY:** Elko City Clerk  
1751 College Avenue  
Elko, NV 89801

**VENDOR:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

L. **SURVIVAL OF OBLIGATIONS.** All duties and obligations of Vendor contained herein shall survive the Term and shall continue thereafter in perpetuity unless and until satisfied or except as otherwise provided herein.

M. **SUCCESSORS.** References to Vendor in this Agreement shall include its respective successors, heirs, assigns, agents, employees, Vendors, representatives, affiliates, parent companies and subsidiaries. The term “successor” shall mean any person, firm, corporation or other business entity which at any time by merger, purchase or otherwise shall acquire all or substantially all of the assets or business of either party.

N. **COUNTERPARTS.** This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same.

O. **SIGNATURES.** A facsimile, electronic or pdf signature may be used in lieu of an original signature.

P. **PARTIAL INVALIDITY.** If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement or the application of such term or provision to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be effected thereby, and each remaining term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

Q. **NO WAIVER.** No waiver of any right under this Agreement shall be effective for any purpose unless in writing, signed by the party hereto possessing the right, nor shall any such waiver be construed to be a waiver of any subsequent right, term or provision of this Agreement. Moreover, the failure to enforce at any time any of the provisions of this Agreement or to require at any time performance by any party any of the provisions hereof shall in no way be construed to be a waiver of such provisions or to affect either the validity of this Agreement or any part hereof, or the right of each party thereafter to enforce each and every provision in accordance with the terms of this Agreement.

R. **FORCE MAJEURE.**

1. **FORCE MAJEURE, SCOPE AND DEFINITION.** Except for payment of sums due, neither party shall be liable to the other nor deemed in default under the Agreement in the event that and to the extent that such party's performance of the Agreement is prevented by reason of force majeure. Force majeure means an occurrence that is beyond the control of the party affected and occurs without its fault or negligence. Without limiting the foregoing, force majeure includes acts of God, acts of the public enemy, war, riots, mobilization, labor disputes, civil disorders, fire, floods, lockouts, injunctions, failures or refusal to act by

government authority, and other similar occurrences beyond the control of the party declaring force majeure which such party is unable to prevent by exercising reasonable diligence.

2. **EXCLUSIONS.** Force majeure shall not include the following occurrences: (a) late delivery of Goods caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, inefficiencies, or similar occurrences; or (b) late performance by a subcontractor.

3. **NOTIFICATION.** If either party is delayed at any time in the progress of its performance by force majeure, then the delayed party shall notify the other party in writing of such delay within forty-eight (48) hours of the commencement thereof and shall specify the causes of such delay in the notice. Such notice shall be hand delivered or sent via overnight mail by means of any national courier services (to include the United States Postal Service, Federal Express or United Parcel Service) and shall make a specific reference to this clause, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing by hand delivery or certified mail when it has done so. The time of completion shall be extended by Agreement modification for a period of time equal to the time that the results or effects of such delay prevent the delayed party from performing in accordance with the Agreement.

S. **BREACH OF REPRESENTATIONS AND COVENANTS.** Each party shall be responsible to the other for any claims, demands, liabilities, damages, suits, actions, judgments, fines, penalties, loss, costs and expense (including but not limited to attorneys' fees) arising or resulting from, or suffered, sustained or incurred as a result (direct or indirect) of the material untruth or inaccuracy of any of the matters represented and warranted by one party to the other or the material breach of any of the covenants, representations, and warranties of the parties as set forth herein.

T. **REMEDIES.** This Agreement and any of the requirements contained herein may be enforced by an action at law or in equity to include, without limitation, an action for specific performance.

U. **AUTHORITY.** Vendor warrants to the City that entering into this Agreement is within its authority, does not violate any agreement to which it is a party and does not require the consent of any other person.

V. **TIME IS OF THE ESSENCE.** Time is of the essence with respect to all provisions of this Agreement that specify a time for performance.

W. **LIMITATION ON VENDOR'S DAMAGES.** Vendor's only remedy against the City for a breach of this Agreement shall be recovery of an amount equal to no more than the Price plus any reasonable costs actually incurred in shipping the Goods to the City. Vendor shall not be entitled to recover incidental, consequential, punitive or exemplary damages from the City.

X. **INDEMNIFICATION.** Vendor shall hold harmless, defend and indemnify the City from and against all liability to others and all claims, causes of action and suits of others, including without limitation employees, subcontractors or agents of the City for personal injury (including death) or property damage, arising out of acts or omissions of Vendor, or its employees, contractors, or agents; or arising out of defects in the Goods; or based on a claim that the manufacture, use or sale of the Goods constitutes infringement of any patent, copyright, trademark, or proprietary information rights of others.

**CITY OF ELKO:**

**VENDOR:**

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

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

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

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

**ATTEST:**

\_\_\_\_\_  
**SHANELL OWEN  
CITY CLERK**

**CITY OF ELKO  
SPECIAL TERMS AND CONDITIONS**

- A. Bidder is required to submit descriptive data or printed specifications describing the Goods. Failure to comply with this request may be cause for non-acceptance of bid. Include in each proposal the following information. Any additional information shall be requested in the attached Equipment Technical Specifications (**Attachment 4**).
1. Name and address of Vendor and its authorized agent.
  2. Price (**Attachment 3** – Bid Proposal Form).
  3. Lead time to prepare technical submittals (**Attachment 1** – Contract Completion Schedule).
  4. Lead time to deliver Goods. (**Attachment 1** – Contract Completion Schedule).
  5. General cut sheets for Goods.
  6. List of at least five (5) references for sales of similar Goods with a design flow of at least 2.0 MGD, including organization, contact person, phone number, and number of years of operating experience at each location where the Goods were installed.
  7. List of recommended spare parts and their costs (not included in Price). In addition to this list, provide information detailing availability and estimated delivery time of each spare part.
  8. Detailed equipment specifications for the City (or its consultant) to evaluate during the selection process.
  9. Name and number of contact person to whom technical questions may be directed.
  10. Materials used in manufacture or fabrication of Goods.
  11. Local service available or nearest service center.
  12. Standard warranties included with the purchase.
  13. Time at which warranties become effective.
  14. Availability and cost of extended warranties.
  15. Estimated operation and maintenance costs associated with normal operation conditions, including but not limited to estimated power and chemical usage.
  16. Schedule of maintenance and description of maintenance requirements.
- B. DEVIATION FROM SPECIFICATIONS: Deviation from any specifications or other requirements set forth in this bid package (also referred to as the “bid documents”) shall be so stated in written form in the space provided or attached on separate sheet if additional space is required. Any deviations may be grounds for rejection of the bid as nonresponsive.

C. Delivery: Unit shall be transported to the City of Elko WRF; 1600 Sewer Treatment Plant; Elko, Nevada, 89801, and shall be ready for installation upon delivery. The City of Elko and/or its representatives or contractor(s) will inspect the Goods upon delivery and the City may thereafter reject the Goods as nonconforming if not all of the Goods have been delivered or if the Goods are damaged. The failure of the City to reject the Goods as nonconforming following delivery shall not be interpreted as a waiver of any claim that the Goods were nonconforming upon delivery or that the Vendor breached its contractual obligations to the City.

D. Warranty: Minimum warranty shall be manufacturer's standard warranty, except as otherwise provided in the Purchase Agreement. **Copy of warranty must be furnished with submitted bid.**

E. **All potential bidders shall register with the City Clerk prior to submitting bids, by contacting the City Clerk by telephone, fax or email, as indicated below:**

City of Elko City Clerk  
Shanell Owen, MMC  
(775)777-7126  
(775)777-7129 fax  
sowen@elkocitynv.gov

F. Questions pertaining to bid documents shall be directed to the Elko City Clerk; 1751 College Avenue; Elko, NV 89801, or by calling (775) 777-7126. Written questions or objections to specifications or bidding procedures must be received by the City at least ten (10) business days before the date and time upon which bids are scheduled to be opened. Written responses will be issued to all registered potential bidders via an Addendum.

G. The laws of the State of Nevada shall govern the validity, construction, performance and effect of the Purchase Agreement, which the successful bidder shall execute following approval of the Award by the Elko City Council. Jurisdiction and venue for any action related to the Purchase Agreement shall be in the District Court of the Fourth Judicial District, Elko County, Nevada.

H. EVALUATION OF BIDS

1. The City (or its designee) shall evaluate the bids and bidders based upon the following criteria:

**Installed Capital Cost** – Compares the actual cost of the Goods to the City, as well as any other factors that may affect the total installation cost associated with the Goods. Each piece of equipment included with the Goods is unique, and the Vendor shall provide as much information as possible to assist the City in determining final installation cost.

**Experience** – Used to compare the experience of the Vendors with respect to facilities of similar size and complexity.

**References** – The City may contact references and a comparison may be made of the level of satisfaction with the products and services provided by the vendors.

**Local Service** – Addresses the location of the nearest service providers and their ability to assist with questions and potential problems.

**Warranties** – Evaluates the warranty(ies) provided and any differences between vendor warranties. Preference will be given to vendors that provide the following:

- Warranties of extended duration.
- Warranties that are not limited by proration.
- Warranties that also include service.
- Warranties that cover all parts and components of the Goods.

**Time of Delivery** – Time to prepare Submittal Documents and deliver the Goods will be considered in the evaluation. Favorable scores will be given to vendors that can provide shorter delivery times.

The following table indicates the established, weighted rating system:

| Evaluation Criteria    | Weighted Value |
|------------------------|----------------|
| Installed Capital Cost | 5              |
| Experience *           | 5              |
| References *           | 3              |
| Local Service*         | 3              |
| Warranties*            | 3              |
| Time of Delivery*      | 2              |

\*The bid must address all the above items. If any of the above items are not addressed in the bid, the bid will be rejected as non-responsive.

2. The City will evaluate each bid using the evaluation criteria. A rating score between 1 and 5 will be assigned for the evaluation criteria for each bid. These scores will be totaled and the vendor that submits the bid with the highest score will be awarded the contract, except as other provided by law or permitted under Chapter 332 of the Nevada Revised Statutes. Any information that will assist the City in evaluating the bid based on the evaluation criteria listed above is encouraged.
3. The included Bid Proposal Form (**Attachment 3**) must be completed and attached to the front of each bid submitted.



**CITY OF ELKO, NEVADA**

**ATTACHMENTS**

**CONTRACT COMPLETION SCHEDULE**  
(to be filled in by Bidder)

The Bidder/Vendor shall complete all Work within the following number of calendar days following the date of "Notice to Award":

The Contract Completion Schedule shall commence on the date the Bidder/Vendor receives the Notice to Award.

The Work shall be completed within the number of calendar days listed in the Contract Completion Schedule below under the column titled "Bidder's Completion Time." The time for completion for all Items of Work shall commence on the date shown on the Notice to Award, which is the date the contract is awarded by the City. Time of delivery will be considered in evaluating the Bids, thus, the Bidder may list below an alternate number of calendar days for completion of work. Bidder shall consider and include in the calendar days listed the time necessary for shop drawing review.

**Contract Completion Schedule**

| Item of Work (Bid Item)   | Calendar Days for Completion         |                          |
|---|--------------------------------------|--------------------------|
|   | Anticipated Contract Completion Time | Bidder's Completion Time |
| 1. Receipt by City of complete, approved manufacturer's shop drawings and installation instructions (includes 14 days for Engineer's review). | 45 days*                             | _____                    |
| 2. Delivery of Goods to the Water Reclamation Facility:   |                                      |                          |
| a. Complete and Operable Equipment Ready for Delivery   | 140 days*                            | _____                    |

\*Commencing on Date of "Notice to Award"

Work shall be completed per the Contract Completion Time, unless Alternate Completion Times, herein references as "Bidder's Completion Time", is proposed by Bidder, as set forth herein, and is approved by Owner.

Vendor is advised that "Liquidated Damages" of \$500.00 per calendar day, including Saturdays, Sundays, and Holidays, may be assessed for each calendar day each item or sub-item of work remains incomplete after the Contract Completion Time stated in this Contract Completion Schedule. Goods shall, upon delivery, be complete and operable requiring only some assembly and installation. Contract is also subject to "Liquidated Damages" due to delays in performing warranty, repair or other remedial work if the Goods do not conform to the specifications or other contract requirements. Total amount of Liquidated Damages shall not exceed ten percent (10%) of the Price.

The City will deliver a "Notice of Award" to winning bidder (Vendor). Thereafter, the Vendor shall immediately commence ordering any items needed to deliver the Goods to the City, procuring any needed transportation (to

include contracting with commercial carriers, if necessary) and preparing all documents that must be delivered to the City in connection with the work, to include shop drawings.

## GENERAL CONDITION SPECIFICATIONS

### A. DELIVERY OF CONFORMING GOODS:

The Goods (as that term is used in the Purchase Agreement) will be delivered by Vendor to and subsequently installed under a separate contract at the City of Elko Water Reclamation Facility located in Elko, Nevada. The Vendor shall be responsible for ensuring the delivery of conforming Goods pursuant to the Purchase Agreement (to include attachments).

### B. SITE CHARACTERISTICS:

Listed below are the general site characteristics:

- Mean daily maximum Temperature = 92°F
- Mean daily minimum Temperature = 15°F
- Site Elevation = 5,050 feet
- Relative Humidity (max) = 83%
- Relative Humidity (min) = 24%

### C. INFLUENT WASTEWATER CHARACTERISTICS:

#### **Plant Influent Design Parameters**

- Average Daily Design Flow: 4.025 MGD
- Peak Hour Flow: 7.41 MGD
- Average Water Temperature: 18°C
- Minimum Water Temperature: 10°C
- Maximum Water Temperature: 24°C

#### **Effluent Design Parameters**

- Effluent BOD: <10 mg/L
- Effluent TSS: <10 mg/L
- Effluent TN: <10 mg/L

### D. General Instructions

1. Scope: Vendor shall furnish the Goods in accordance with the Purchase Agreement, to include complete equipment packages as described below and in the Bid Documents, together with all associated equipment, sufficient for a complete and functional system upon assembly and installation.
2. Field Service: Included in the Price and as part of Vendor's performance under the Purchase Agreement, Vendor shall provide qualified representatives for two (2) site visits for one (1) day each (total of two (2) days) to inspect the mechanical installation of the Goods, assist in start-up/initial operations, and instruct plant personnel in the proper operation and maintenance of the mechanism unless otherwise noted in the specific bid item specifications below. If more or less time is anticipated, the Vendor must indicate how many additional or fewer trips and days of field service will be provided, and provide a cost adjustment with the bid.

3. Operations Service: Unless otherwise noted, the Vendor shall include in the bid the cost of one (1) additional trip of three (3) days after the first six (6) months of operation to determine whether components of the Emergency Diesel Generator are operating properly. At the end of the first year of operation of the Emergency Diesel Generator, the Vendor shall provide written certification that proper operations and maintenance are in place or, alternatively, identify any deficiencies in operation or maintenance. The Vendor shall promptly address and resolve any deficiencies in the Goods during the warranty period and shall exercise best efforts to minimize any potential for plant operation disruptions.
4. Submittals:
  - A. Submittals: Vendor shall submit three copies of all Submittal Documents in accordance with the requirements of the technical specifications (**Attachment 4**).
  - B. Operating and Maintenance Manuals: Vendor shall submit three (3) hard copies and one (1) electronic copy of a complete Operating and Maintenance Manual that complies with all corresponding requirements of the technical specifications (**Attachment 4**) for all Goods. Vendor shall also supply all manufacturer's instructions for equipment start-up, operation, preventive maintenance, servicing, and troubleshooting procedures, together with parts lists for maintenance and servicing.

**CITY OF ELKO, NEVADA  
BID PROPOSAL FORMS**

**CITY OF ELKO  
BID PROPOSAL FORM**

**Bid Proposal to furnish and deliver  
EMERGENCY DIESEL GENERATOR FOR CITY OF ELKO WATER RECLAMATION FACILITY**

**Bid Item #1: One (1) Emergency Diesel Generator**

**\*Vendor shall include in bid cost Nevada State Sales Tax\***

**Total Bid Price in Numbers:** \$ \_\_\_\_\_

**Total Bid Price in written form:** \_\_\_\_\_

**\*\*\*In case of discrepancy bid in written form shall prevail\*\*\***

Model No.: \_\_\_\_\_

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

*The City of Elko reserves the right to award the bid, including any or all of the options listed, based upon the best interests of the public.*

\_\_\_\_\_  
The undersigned declares that he/she has carefully examined, understands the bid documents and certifies that all information requested in the bid documents has been included with this Bid Proposal Form.

\_\_\_\_\_  
Company Submitting Bid

\_\_\_\_\_  
By: Company Representative

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Fax Number

**\*\*\*USE THIS FORM TO SUBMIT BID PROPOSAL. ATTACH COMPLETED CONTRACT COMPLETION SCHEDULE, SPECIFICATION SHEET, DESCRIPTIVE DATA, BROCHURES, "EXCEPTIONS TO BIDDING CONDITIONS AND SPECIFICATIONS" (IF APPLICABLE) AND ANY OTHER INFORMATION REQUIRED IN THE BID DOCUMENTS\*\*\***

**EXCEPTIONS**

Please provide a detailed description of any and all exceptions to any specifications or other requirements set forth in the bid documents. If not addressed below, the Vendor shall comply with all terms and conditions of the bid documents, to include the proposed Purchase Agreement. Please use additional sheets if necessary.

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**ADDENDUM ACKNOWLEDGEMENT**

Bidder acknowledges receipt of the following addenda:

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**CITY OF ELKO, NEVADA  
EQUIPMENT TECHNICAL SPECIFICATIONS**

## PART 1 - GENERAL

### 1.1 SCOPE OF WORK

- A. It is the intent of this specification to secure an engine driven generator set that has been prototype tested, factory built, production tested, and site tested, together with all accessories necessary for a complete installation as specified herein. All equipment shall be new and of current production by a national firm which manufactures the generator and controls.

### 1.2 GENERAL REQUIREMENTS

- A. It is the intent of this specification to secure a generator system that has been tested during design verification, production and at the final job site. The generator set will be of the latest industrial design and will be complete with all of the necessary accessories for complete installation as shown on the specifications herein. All equipment shall be new and of current production of a national firm which manufactures the generator and controls, transfer switches, switchgear, and assembles the generator sets as a complete and coordinated system. There will be one source responsible for warranty, parts, and service through a local representative with factory-trained servicemen.

### 1.3 CODES AND STANDARDS

- A. The supply of all equipment, materials and services and the design and construction of the Generator shall be to the specifications and standards referred to in the Technical Specification. Where no specific requirement is stated, the design and construction shall meet or exceed the requirements of applicable Codes and Standards listed in this section, which form part of the Technical Specifications. In the case of conflict between Codes, Standards and this Technical Specification, the most stringent requirements shall apply, unless otherwise approved by the Purchaser. All reference to Codes, Standards, and/or material specifications shall be to the latest revision, including all effective supplements or addenda thereto, current on the date of issue of the Request for Purchase Enquiry:
  1. ANSI - American National Standards Institute;
  2. ASME - American Society of Mechanical Engineers;
  3. IEEE - Institute of Electrical and Electronic Engineers;
  4. NEMA - National Electrical Manufacturers Association;
  5. NFPA - National Fire Protection Association;
  6. UL - Underwriters Laboratory;
  7. ANSI S1.13-2005 (R2010) - Method for the Measurement and Sound Level in Air. IEC 8528 Part 4 Control Systems for Generator Sets;
  8. IEEE 446 – 1995 - Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications;
  9. ISO 3046/1, Part II - Reciprocating Internal Combustion Engines –Performance;
  10. ISO 8528 - Reciprocating Internal Combustion Engine Driven Alternating Current Generator Sets;
  11. NEMA MG1-1994 - Motors and Generator;

12. NFPA110 - Emergency and Standby Power Systems;
13. NFPA70 - National Electrical Code; and
14. UL2200 - The genset shall be listed to UL2200 or submit to an independent third party certification process to verify compliance as installed.

#### 1.4 QUALITY CONTROL AND QUALITY ASSURANCE STANDARDS

- A. The generator modules manufacturer shall be specialized in the design, manufacture and assembly of diesel engine powered modular generators and have a minimum of ten (10) years' experience. The Generator shall conform to the standards prepared by the following authorities:
  1. ASNT - American Society for Non-destructive Testing;
  2. ASTM - American Society for Testing and Materials;
  3. ISO9001 - International Standards Organization – Model for Quality Assurance in Design/Development, Production, Installation and Servicing;
  4. ISO9002 - International Standards Organization – Model for Quality Assurance in Production and Installation; and
  5. ISO9003 - International Standards Organization – Model for Quality Assurance in Final Inspection and Test.

#### 1.5 SAFETY STANDARDS

- A. The Generator shall conform to standards prepared by the following authorities:
  1. NBFU National Board of Fire Underwriters;
  2. NFPA National Fire Protection Association;
  3. OSHA U.S. Department of Labor, Occupational Safety and Health Administration; and
  4. MSHA Mine Safety and Health Administration.

#### 1.6 SUBMITTAL

- A. The submittal shall include specification sheets showing all standard and optional accessories to be supplied, dimension drawings, and interconnection diagram showing each required interconnection between the generator sets.

#### 1.7 TESTING

- A. Design Prototype Tests: Components of the emergency system such as the engine/generator, and accessories shall not be subjected to prototype tests since the tests are potentially damaging. Rather, similar design prototypes and preproduction models, which will not be sold, shall have been used for the following tests:
  1. Maximum power (kW);
  2. Maximum motor starting (kVA) at 35% instantaneous voltage dip;
  3. Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-22.40 and 16.40;

4. Governor speed regulation under steady-state and transient conditions;
5. Voltage regulation and generator transient response;
6. Fuel consumption at 1/4, 1/2, 3/4, and full load;
7. Harmonic analysis, voltage waveform deviation;
8. 3-phase short circuit tests;
9. Alternator cooling air flow;
10. Torsional analysis to verify that the generator set is free of harmful torsional stresses; and
11. Endurance testing.

**B. Production Tests**

1. Final Production Tests: Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:
  - a. Single-step load pickup;
  - b. Transient and steady - state governing;
  - c. Safety shutdown device testing;
  - d. Voltage regulation;
  - e. Rated Power @ 0.8 PF; and
  - f. Maximum Power.
2. Upon request, arrangements to either witness this test will be made, or a certified test record will be sent prior to shipment.

**C. Site Tests**

1. Site Tests: An installation check, start-up, and building load test shall be performed by the manufacturer's local representative. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:
2. Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.
3. Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery charger, generator strip heaters, remote annunciator, etc.
4. Start-up under test mode to check for movement during starting and stopping, vibration during running, normal and emergency line-to-line voltage and frequency, and phase rotation.
5. Automatic start-up by means of simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator voltage, amperes, and frequency shall be monitored throughout the test. An external load bank shall be connected to the system if sufficient building load is unavailable to load the generator to the nameplate kW rating.

**1.8 WARRANTY & MAINTENANCE**

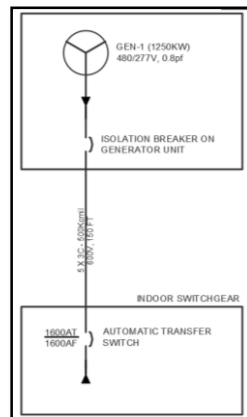
- A. A one (1) year warranty for the generator set shall be included to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from date of start-up. Optional warranties shall be available upon request.

- B. The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall be regularly engaged in a maintenance contract program to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions, adjustment to the generator, transfer switch, and controls as required, and certification in the owner's maintenance log of repairs made and proper functioning of all systems.

**PART 2 - PRODUCTS**

**2.1 EQUIPMENT**

- A. The generator shall provide **1250KW**, when operating at **480/277 volts, 60Hz, 0.80 power factor**. The generator set shall be capable of this rating while operating in an ambient condition of 77°F (59.2°C) and 5100 feet above sea level.
- B. The generator shall be equipped with an isolation breaker located on the unit.
- C. The generator shall be equipped with bussing capable of 5×500Kcmil conductors per phase for terminations.
- D. Vibration isolators shall be provided between the engine-generator and heavy-duty steel base.



**2.2 ENGINE**

- A. The engine shall be governed speed of 1800 rpm. The engine shall be equipped with the following:
  1. An electronic isochronous governor capable of +.25% steady-state frequency regulation.
  2. 24 Volt positive engagement solenoid shift-starting motor.
  3. 40-Ampere minimum automatic battery charging alternator with solid-state voltage regulation.
  4. Positive displacement, full pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain.
  5. Dry-type replaceable air cleaner elements for heavy-duty applications.
  6. Engine-driven or electric fuel transfer pump capable of lifting fuel 10 feet, fuel filters, and electric solenoid fuel shut-off valve.

- B. The engine shall be fueled with No. 2 diesel.
- C. The engine shall be EPA certified Tier 2 Nonroad equivalent emission standards.

### 2.3 GENERATOR

- A. The alternator shall be salient-pole, brushless, 12-lead reconnectable, self-ventilated of drip-proof construction with amortisseur rotor windings and skewed stator for smooth voltage waveform. The insulation shall meet the NEMA standard (MG1-22.40 and 16.40) for Class H and be insulated with epoxy varnish to be fungus resistant per MIL 1-24092. The excitation system shall be of brushless construction controlled by a solid- state voltage regulator capable of maintaining voltage within  $\pm 2\%$  at any constant load from 0% to 100% of rating. The regulator must be isolated to prevent tracking when connected to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operations; and be protected from the environment by conformal coating.
- B. The generator shall meet the transient performance requirements of ISO 8528-5, level G-3.
- C. The alternator excitation shall be of a permanent magnet exciter design.
- D. The generator shall be inherently capable of sustaining at least 250% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current support devices.
- E. The generator, having a single maintenance-free bearing, shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.

### 2.4 NOISE

- A. The design and provision of sound attenuation shall include complete Generator with the air inlet and exhaust gas attenuating devices, and all auxiliary equipment. The noise level produced at any diesel generating set within an electrical output range from no load to 110 % maximum continuous rating (MCR) shall not exceed 75 dB(A) at any point 4 feet (1.2 m) above ground level and 3 feet (1 m) from the enclosure or cooler support frame. Sound levels shall be measured in accordance with ISO 3740 & 3744. Any enclosure or area where noise levels in excess of 80 dB(A) occur shall be labeled with large clear signs to indicate to personnel entering the enclosure or area, that hearing protection must be worn.

### 2.5 SUB-BASE FUEL DAY TANKS

- A. The Supplier shall provide UL 142 certified, above ground, double wall fuel tank which is factory built into the base of the generator module. Tank sized for minimum twenty-four (24) hours generator operation under full load conditions. Bidder shall provide fuel consumption data from generator engine manufacturer for typical continuous operating conditions under full load. The sub-base day tank shall be above ground double wall fuel tank which is factory built into the base of the generator module. Double wall containment volume shall be 110% that of internal tank. Tank shall be constructed from heavy gauge steel plate greater than 10-gauge. Plate that is 10-gauge or less is not acceptable. Tank welding shall be continuous. Primary atmospheric venting of fuel tank shall be by means of schedule 40 pipe that extends minimum 2 feet (600 mm) above roof of generator module.

- B. Tank structure cross members shall be internal to the tank and be generally located below equipment mounting positions. Through base wiring transitions shall be made with welded hollow columns passing through the tank where required. External sides of tank shall include removable lifting supports located so that completed generator enclosure module can be lifted with the use of spreader bars. Provide fuel transfer spout at a conveniently accessible location along the side of the enclosure sub-base.

## PART 3 - EXECUTION

### 3.1 CONTROLLER

#### A. Applicability:

- 1. Environment:
  - a. -40°C to +70°C operating temperature range; and
  - b. 5-95% humidity, non-condensing.

#### B. Hardware Requirements:

- 1. The control shall have a run-off/reset-auto three-position selector switch.
- 2. A controller mounted push type emergency stop push button must be supplied.
- 3. It shall be possible to adjust alternator output voltage at the control.
- 4. Five indicating lights:
  - a. system ready – green;
  - b. not in auto – yellow;
  - c. programming mode – yellow;
  - d. system warning – yellow; and
  - e. system shutdown – red.
- 5. Panel lights must be supplied as standard.
- 6. For ease of use, an operating guide must be on the controller faceplate.

#### C. Control Functional Requirements

- 1. Field programmable time delay for engine start. Adjustment range, 0-5 minutes in 1 second increments.
- 2. Field programmable time delay engine cooldown. Adjustment range, 0-10 minutes in 1 second increments.
- 3. It shall be possible to start the generator and run it at an idle speed during warm-up. The idle time must be user adjustable. Engine cooldown at idle must also be available. Required for ECM equipped engines only.
- 4. Real time clock and calendar for time stamping of events.
- 5. Output with adjustable timer for an ether injection starting system. Adjustment range, 0-10 seconds.
- 6. Output for shedding of loads if the generator reaches a user programmable percentage of its kW rating. Load shed must also be enabled if the generator output frequency falls below 59 Hz (60 Hz system) or 49 Hz (50 Hz system).
- 7. Programmable cyclic cranking that allows up to six crank cycles and up to 45 seconds of crank time per crank cycle.

8. The controller firmware must provide alternator protection for overload and short circuit matched to each individual alternator and duty cycle.
9. A  $\pm 0.25\%$  digital voltage regulator must be incorporated into the controller software. No separate voltage regulator is acceptable. The digital voltage regulator must be applicable on single or 3-phase systems.

D. Generator System Monitoring Requirements

1. All monitored functions must be viewable on the digital display.
2. The following generator functions must be monitored:
  - a. all output voltages - single phase, 3-phase, line to line, and line to neutral, 0.25% accuracy;
  - b. all single phase and 3-phase currents, 0.25% accuracy;
  - c. output frequency, 0.25% accuracy;
  - d. power factor by phase with leading/lagging indication;
  - e. total instantaneous kilowatt loading and kilowatts per phase, 0.5% accuracy;
  - f. kVARs total and per phase, 0.5% accuracy;
  - g. kVA total and per phase, 0.5% accuracy;
  - h. kW hours; and
  - i. a display of percent generator duty level - actual kW loading divided by the kW rating.
3. Engine parameters listed below shall be monitored:
  - a. coolant temperature both in English units;
  - b. oil pressure in English units;
  - c. battery voltage;
  - d. rpm;
  - e. lube oil temperature;
  - f. lube oil level;
  - g. coolant level;
  - h. coolant pressure;
  - i. fuel pressure; and
  - j. fuel rate.
4. Operational records since system start up must be stored in the controller:
  - a. run time hours;
  - b. run time loaded;
  - c. run time unloaded;
  - d. number of starts;
  - e. factory test date;
  - f. last run data including date, duration, and whether loaded or unloaded; and
  - g. kW hours.
5. The following operational records must also be available in a resettable form for maintenance purposes:
  - a. run time hours;
  - b. run time loaded;



- c. run time unloaded;
  - d. kilowatt hours;
  - e. days of operation;
  - f. number of starts; and
  - g. start date after reset.
6. The controller must store the last one hundred generator system events with date and time of the event.
7. For maintenance and service purposes, the following information must be stored in the control and displayed on demand:
- a. manufacturer's model and serial number;
  - b. battery voltage;
  - c. generator set kilowatt rating;
  - d. rated current;
  - e. system voltage;
  - f. system frequency; and
  - g. number of phases.
- E. The control must be capable of detecting the following conditions, indicate if the condition will shut down the generator or provide a warning, and annunciate the situation, using words and phrases, on the digital display.
1. Will cause a system shutdown:
- a. air damper tripped (if used);
  - b. customer programmed digital auxiliary input ON;
  - c. customer programmed analog auxiliary input out of bounds;
  - d. emergency stop;
  - e. high coolant temperature;
  - f. high oil temperature;
  - g. controller internal fault;
  - h. locked rotor - fail to rotate;
  - i. low coolant level;
  - j. low oil pressure;
  - k. master switch error;
  - l. overcrank;
  - m. overspeed with user adjustable level, range 65-70 Hz on 60 Hz systems and 55-70 Hz on 50 Hz systems;
  - n. generator overvoltage with user adjustable level, range 105% to 135%;
  - o. overfrequency with user adjustable level, range 102% to 140%;
  - p. underfrequency with user adjustable level, range 80% to 90%;
  - q. generator undervoltage with user adjustable level, range 70% to 95%;
  - r. coolant temperature signal loss; and
  - s. oil pressure gauge signal loss.

2. Will cause a warning but leave the generator running:
  - a. battery charger failure;
  - b. customer programmed digital auxiliary input on;
  - c. customer programmed analog auxiliary input on;
  - d. power system supplying load;
  - e. high coolant temperature;
  - f. load shed;
  - g. loss of AC sensing;
  - h. underfrequency;
  - i. low battery voltage – level must be user adjustable;
  - j. low coolant temperature;
  - k. low fuel pressure;
  - l. low oil pressure;
  - m. overcurrent;
  - n. speed sensor fault;
  - o. weak battery; and
  - p. alternator protection activated.

F. Inputs and Output

1. Communication Port:
  - a. An Ethernet port for future monitoring by owner SCADA system shall be available.
2. Inputs:
  - a. There shall be 6 dry contact inputs that can be user configured to shut down the generator or provide a warning.
  - b. There shall be 6 user programmable analog inputs for monitoring and control.
  - c. It must be possible to view the analog value on the display.
  - d. It shall be possible to define each user configured input using words or phrases that will be viewable on the digital display.
3. Outputs:
  - a. There shall be 6 outputs available for interfacing to other equipment:

G. System Programming

1. It shall be possible to program the control with the controller keypad.
2. Programming access is to be enabled only at the controller and must be password protected.
3. The following must be programmable from the controller keypad:
  - a. Time delay settings:
    - 1) generator run time (0 to 72 hours) – exercise;
    - 2) load shed;
    - 3) engine start;
    - 4) engine cooldown;
    - 5) overvoltage and undervoltage delays;
    - 6) starting aid;

- 7) crank on and crank pause time; and
  - 8) idle time.
- b. Trip point settings:
- 1) high battery voltage;
  - 2) low battery voltage;
  - 3) overspeed;
  - 4) underfrequency;
  - 5) overfrequency;
  - 6) overvoltage;
  - 7) undervoltage; and
  - 8) load shed.

H. Communications

1. If the generator engine is equipped with an ECM (engine control module), the controller must communicate to the ECM for control, monitoring, and diagnostics. SAE J1939 standard communications is required.

3.2 ACCESSORIES

- A. Engine block heater. Thermostatically controlled and sized to maintain manufacturers recommended engine coolant temperature.
- B. Weather housings shall be as follows:
1. Enclosures will be finished in the manufacturer's standard color.
  2. The enclosures must allow the generator to operate at full load in an ambient of 40°C with no additional derating of the electrical output.
  3. Enclosures must be equipped with lockable. Flush-mounted door latches.
  4. Doors must be hinged and be removable.
  5. The enclosure roof must be pitched to prevent accumulation of water
  6. A duct between the radiator and air outlet must be provided to prevent re-circulation of hot air.
  7. The silencer shall be a critical silencer with a tailpipe and rain cap
  8. Air inlet louvers and baffles shall be designed to reduce rain and snow entry.
  9. Enclosure to be weatherproof and sound attenuated.
- C. Battery rack, and battery cables, capable of holding the manufacturer's recommended batteries, shall be supplied.
- D. 12-volt battery(ies) capable of delivering the manufacturer's recommended minimum cold-cranking Amps required at 0°F, per SAE Standard J-537, shall be supplied.
- E. Air cleaner restriction indicator to indicate the need for maintenance of the air cleaners.

### 3.3 CONTROL PANEL

- A. Individual genset digital electrical metering displays, with the ability to simultaneously display all read-outs, to be as follows:
  - 1. AC amperes in each of the 3 phases;
  - 2. AC voltage of each phase to phase;
  - 3. Frequency;
  - 4. Kilowatts, 3-phase;
  - 5. kVARs, 3-phase;
  - 6. Power factor; and
  - 7. Kilowatt hours, 3-phase, accumulative.
  
- B. Engine automatic start/stop cranking controls --- requires engine manufacturer installed engine speed switch with contacts for crank termination / overspeed, engine shutdown switch contacts (low lube oil pressure, high water temperature as a minimum), engine alarm – warning switch contacts and any additional shutdown or alarm contacts (normally open voltage free that close on fault). Control system logic to involve cranking (start) signal, cycle crank feature, overcrank (fail to start monitoring), normal engine stop signal, engine fault shutdown signal with all monitored fault indications displayed on the operator interface module.
  
- C. Genset control mode selector plus interface logic to function with the engine start-stop cranking controls -- modes for auto/manual/off-reset/stop-cooldown.
  - 1. In “auto” mode, genset to be activated by contact signal (local or remote) with automatic parallel closing of the generator circuit breaker to a “live” bus and the ability for circuit breaker closing to a “dead” bus.
  - 2. In “manual” mode, genset locally activated and to attain operating voltage/frequency but without auto-closing of the generator circuit breaker. To place the genset on the bus, station personnel to utilize manual synchronization and the generator circuit breaker control switch with a permissive synchronizing feature (25 function) completing the close signal to the generator circuit breaker.
  - 3. In “off-reset” mode, a running genset circuit breaker shall trip open and genset shutdown shall occur in conjunction with the engine cranking controls. For any monitored genset fault shutdown, station personnel to use this mode to reset a sealed in fault circuit before a genset can be re-activated.
  - 4. In “stop- cooldown” mode, a running genset circuit breaker shall trip open and genset shall continue to run, unloaded, until the preset cooldown time period has expired.
  
- D. Fault annunciation displays for genset to be alarm (warning) and shutdown monitoring circuits --- involving the individual generator protection functions both alarm (warnings) and shutdowns, engine summary alarm (warning) and summary shutdown via field contact inputs plus up to sixteen (6) remote discrete inputs (programmable) for alarm/warnings and/or shutdowns.
  - 1. Loss of communication data link shall result in an alarm annunciation display.
  - 2. Alarm/warning annunciation display shall seal-in and require manual reset.
  - 3. Fault shutdown annunciation displays to require station personnel to use the “off-reset” mode of the genset control selector before genset can be re-activated.
  
- E. Additional control monitoring for genset to involve the following as a minimum:

1. Group of electro-mechanical auxiliary relays with output contact signals to start/stop the genset, to close/trip the genset circuit breaker, to activate and de-activate genset remote devices (3 contacts) and for system logic;
  2. Emergency stop push button, pull to reset, with tripping of the genset circuit breaker plus genset shutdown and annunciation display;
  3. Genset circuit breaker control switch with positions trip/lock-out, auto, close plus circuit breaker open/close position LED's (press to test types);
  4. Synchronizing on/off switch for use in manual paralleling; and
  5. LED illumination on failure of the microprocessor based control logic and genset shutdown.
- F. System digital electrical meter displays, integral to the system operator interface module, shall monitor the utility source with the following read-outs:
1. AC amperes in each of the 3 phases;
  2. AC voltage of each phase to phase;
  3. Frequency;
  4. Kilowatts, 3-phase;
  5. kVARs, 3-phase; and
  6. Power factor.
- G. Time delay settings shall also be capable of being displayed and programmed:
1. Time delay/genset start on a utility failure;
  2. Time delay on utility return, prior to source transfer; and
  3. Time delay for open transition transfer (both sources simultaneously disconnected).
- H. Digital read-outs of gensets bus AC voltage and frequency plus synchroscope display and incoming source voltage/frequency shall be activated for manual initiated return of the utility source.
- I. Manuals --- three (3) manuals shall be provided in hard covered binders. Each manual to include a general description of operation (not point to point), standard manufacturer's catalogs of major components plus a set of drawings (outlines, schematics, bill of material, wiring diagrams, interconnect drawings).

END OF SECTION