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February 7, 2025

Cheryl Taylor, P.E.
Director of Public Works - Town of Westlake
1500 Solana Boulevard - The Terraces
Building 7, Suite 7200
Westlake, TX 76262

Re: Generator Early Procurement Package
Recommendation of Award

Dear Ms. Taylor:

Bids were received for the above-referenced package on January 20/21, 2025 via the Sourcewell Cooperative Purchasing Process. The early procurement package consists of a back-up diesel generator for the Town's Pump Station. A total of two bids were received. A summary of the bid results is provided in the table below.

Bid Summary

Bidder	Base Bid	Lead Time
Holt Power Systems - Caterpillar	**$342,481.28***	**26 Weeks**
Cummins	$384,244.00	48 Weeks

* Holt Power Systems base bid was $334,157.78. The cost listed in the table above includes $823.50 for spare filters for the generator and $7,500 for one year of service maintenance that were required per the generator specification.

Holt Power Systems submitted the low bid for the generator at $342,481.28.

Holt Power Systems - Caterpillar is a reputable supplier/generator manufacturer, and they are currently providing generators for other current Freese and Nichols Water/Wastewater Projects. It is recommended that a contract for the purchase of the generator be awarded to Holt Power Systems in the amount of $342,481.28.

If you have any questions, please call me at (817) 735-7369.

Sincerely,

Jeffrey N. Hensley

Jeffrey N. Hensley, P.E.
Project Engineer

Attachments – Bid Proposals

HOLT POWER SYSTEMS – CATERPILLAR PROPOSAL

Austin • Brownsville • Corpus Christi • Dallas • Edinburg • Ft Worth • Laredo • Longview • Pflugerville • San Antonio • Victoria • Waco

Quote No: 31455409 C
Quote Date: January 23, 2025
Expires: February 23, 2025

Sourcewell Contract no: 092222-CAT

Re: West Lake Pump Station
1-C18 Caterpillar 700kw diesel generator set
1-Free Stand fuel polisher system

We are pleased to submit the following confirmation of our quote. Holt Power Systems proposes to furnish this equipment at the attached quoted price.

We will arrange for initial start-up services at no additional charge. These services include a check of wiring continuity, safety shutoffs and controls; including automatic transfer switches or paralleling gear on and related to the unit that we supply. A load bank test is also included per the specifications. We will arrange for the load banks and the personnel to conduct the test, however we look to you to provide the fuel for the test. All work is to be conducted during normal Holt working hours (Monday –Friday, 7:30 AM – 4:30 PM, excluding national holidays) unless otherwise stated with in this quotation. (Please provide at least two-week notification before startups). Installation is to be by others.

Thank you for the opportunity of quoting this project. Holt Power Systems remains at your disposal for any additional information or assistance that you may require.

Sincerely yours,

Ronnie Tyler
Engine Sales Representative
Phone: 817/307-8410
E-mail: Ronald.tyler@holtcat.com

CATERPILLAR C18 700KW Standby RATED TIER II

STANDBY POWER
EPA/CARB TIER II
UL 2200 LISTED PACKAGE GEN SET
NO IBC CERTIFICATION
60HZ 480 VOLT (WYE)
60 Hz, 700 kW W/Fan
C18 480V 60 HZ PKG 500 CERTF II
LC7224L AREP ALT
ECS 100 CONTROL PANEL
ENGLISH INSTRUCTION LANGUAGE
YEAR GOLD POLICY ESC (WARRANTY)
GENERAL EPG
CONSTRUCTION
STANDBY POWER
STANDARD ELECTRONIC GOVERNOR
CONTRO PANEL MOUNTING LEFT
LOCAL ANNUNCIATOR
1500:5 CT RATIO
SINGLE CIRCUIT BREAKER
1200A SINGLE MANUAL CB LS/I
GENERATOR TESTED AT FLC
POWER CENTER - RH MOUNTED
NEUTRAL BAR NDTS1
CB CABLE GP ABB/T6-1200
NEUTRAL CABLE GP 1200A
WIDE BASE
GEN MOUNTING DUCT PLATE
SOUND ATTENUATED CAT ENCLOSURE
STANDARD RADIATOR
FLEXIBLE EXHAUST CONNECTION
AIR CLEANER – STANDARD DUTY
INTEGRATED VOLTAGE REGULATOR
STANDARD WET BATTERY
STD TESTING - GENERATOR SET
CAT DECALS
PGS TEST REPORT @ 0.8 PF

HOLT SUPPLIED ACCESSORIES

UL142 48HOUR BASE TANK
Start up after installation by others
On site load banking
Cable for load banking
Travel for tech
Miles for tech

Local, state or TERP taxes, which may be applicable, are not included.

Sourcewell Pricing with discounts as displayed below:

Caterpillar List Price DG700-PGAM	$340,228.57
Sourcewell discount for the above 33%	(112,275.43)

Other items essential to order which also includes a 5% Sourcewell discount

	Retail	5% discount	Total
Freight-Factory	5,684.33	284.22	5400.11
Freight-Local	1,768.46	88.42	1680.04
Engineer fee (Holt)	2,273.73	113.69	2,160.05
Remote fuel polisher	22,611	1,130.55	21,480.45
Startup Service	17,143.94	857.20	16,286.74
12' vents	8,842.29	442.11	8,400.18
On site Pressure test (tank)	7,617.00	380.85	7,236.15
Commissioning	6,821.20	341.06	6,480.14
Electronic O&M	63.16	3.16	60.00
Platforms:	25,895.28	1,294.76	24,600.52
Platforms made of aluminum	4,421.15	221.06	4,200.09
Freight for platforms	4,231.67	211.58	4,020.08

Total with all Sourcewell discounts **$ 334,157.78**
(Revised to include platforms)

Additional options available (for additional cost) for platforms if desired:

Adjustable legs for platforms
Aluminum construction
Extra stairs
Additional lengths

One set of filters **add $ 823.50**

Budgets for periodic maintenance programs:

PM contracts are based upon the level of service expected as well as accessibility to the package with maintenance vehicles etc. However, estimates would be as follows:

Assuming good accessibility: quarterly checks and filter changes as recommended by the manufacturer, along with a 2 hour annual load bank test

Year-1	**$7,500**
Year-2	**8,000**
Year-3	**11,000**

Total for three years $26,500 estimate

Notes:

The above proposal is based upon our review of specifications section WSK24577.

Please see the specifications review comments, which are a part of this proposal under separate cover.

Load banks. Load bank service is not included but is available for additional cost upon request. It is assumed that the generator set(s) for this project are easily accessible, and within a short distance from the area where the test load bank is to be placed. 50 feet of cable per phase (unless stated otherwise in this quote) has been allowed for this test. If longer or tougher distances are expected we will need to be notified of this and our quote will need to be adjusted accordingly.

Commissioning: No commissioning of the generator equipment is included at this time but is available upon request for additional cost. Additional trips will be charged at the prevailing field service rate appropriate for the time and date the service is rendered.

The proposed generator set above is capable of paralleling with other generator sets. It includes on board paralleling controls which will work in conjunction with the on board, electrically operated circuit breaker which also serves as the paralleling breaker. Because of this arrangement a second on board breaker can not be provided. However, an option is shown for a free-standing docking station with cam loc lugs. This arrangement would provide for both load banking as well as future paralleling without issue. (A common point of coupling would be needed in the future when paralleling is planned).

HOLT POWER SYSTEMS TERMS & CONDITIONS

Proposal	**This proposal is provided to meet the spirit and intention of the project equipment requirements. Some interpretational differences between our proposal and the specifications may exist, therefore the above bill of material contains our offer for this project, none other is expressed or implied unless stated in writing.**
Pricing	**Recently the cost of some of our vendor products has experienced severe price swings in the upward direction. Therefore it has become increasingly difficult to hold our prices for a prolonged period of time. If our quote is older than 20 days please call to verify our price.**
Taxes	The above price(s) does(do) not include state and local taxes unless otherwise specifically stated**. A 1-1/2% additional ser charge is required by the state of Texas for all stationary engine equipment due to emission restrictions. This is in addition to any state and local taxes that may be required.**
Lead Time	Standard delivery of proposed Caterpillar Generator Set to jobsite will be confirmed after receipt of order and submittals are approved and credit terms are agreed. Automatic transfer switch(es) is(are) quoted to jobsite in approximately __ weeks after receipt of order and approved submittals and approved credit terms are agreed. **The above quoted lead-times are standard lead-times from the factory at the time of this quotation. In some cases lead-times maybe able to be improved to assist in customer needs. Please call and inquire about possible improved lead-times.** Please note: The Caterpillar factory has mandatory factory shutdowns for two weeks in December/January and one week in July. The length of those shutdowns will extend lead-times on orders entered at those times. Orders, which include non-standard features, may require additional time before shipment. Consult with your Caterpillar dealer at the time of order. Holt Power Systems has made a significant commitment to ensuring we are able to quickly respond to opportunities by maintaining a substantial inventory that may reduce the lead-time above.
Special Notes	***Please verify the voltage, number of poles in ATS, terminal conductor sizes and other Bill of Material items quoted above as compared to the requirements of this project. Lugs for terminations above 1200A are not included.***
Fuel Tank	**Increasingly we are seeing dramatic changes occur at the municipal level in regard to fire code requirements. They are too numerous and variable to keep track of for each of the area municipalities. Unless otherwise stated within the body of this quotation, the fuel tank included is as specified by the written specifications of this project (if specifications were supplied at the time of quotation). The specifications may be in conflict with City Fire Codes for the location of the project. We will make every attempt to notify you of specification variances with local codes when known, however responsibility for compliance lies with the specifying engineer and those that pull the permit for the project.**
Payment	Terms are NET 30 DAYS at the time of shipment to jobsite based on Holt credit department approval, otherwise terms are C.O.D.
Term's	Payment due in full Net 30 after delivery with approved Holt credit or COD at time of shipment.

Sales tax will be added to invoice. Resale tax certificate must be on file with the Holt credit department for tax-exempt sales.

Warranty Caterpillar standard (5year warranty applies for standby applications. Standard manufacturer's warranty applies to all non-Caterpillar equipment. Copies of warranty statements are available upon. GOLD POLICY

Cancellation There will be a minimum 25% cancellation fee for orders cancelled, once placed and accepted by Holt Power Systems. Cost of custom components, completed fabrication, or any other work performed at the time of cancellation will be added to the cancellation fee. If all material have been acquired the cancellation fees will be 100%. Caterpillar content, 14 days after orders placed will be 100% of the order.

Other Holt Power Systems is an equipment supplier only. No fuel, wiring, connecting, hook-up, plumbing, or other installation type labor is included in the proposal unless noted herein. This would include any control wiring to and from the generator set(s) to any automatic transfer switch(es), paralleling gear or other devices which we may or may not provide.

The customer is responsible for any and all installation of the above equipment. Holt personnel will perform an installation audit prior to start-up.

Unless stated otherwise in this proposal, service and/or maintenance for this equipment are not included. Our company product support service group will be glad to quote the end user of this equipment for those services under a separate proposal.

All equipment needed to perform any loading or unloading of the equipment supplied by Holt Power Systems is the responsibility of the buyer.

Holt Power Systems limits the scope of supply for this quotation to the equipment and services listed in our bill of material. Unless specifically listed in our bill of material, equipment not indicated is to be supplied by others. We have detailed the equipment proposed in the bill of material. Please carefully review it to be certain it meets your requirements.

No NETA, infrared scanning, meg-testing or other third party testing is included unless expressly indicating in writing above.

We reserve the right to correct any errors or omissions.

Contracts which include penalty or liquidated damage clauses for failure to meet promised shipping dates are not acceptable or binding on Holt Power Systems, unless accepted and confirmed in writing by an officer of Holt Power Systems and it's headquarters.

Holt Power Systems standard terms and conditions are included in the quotation and hereby become part of this quotation. These same terms need to be noted on any purchase order received by Holt Power Systems.

Holt Power Systems will not be responsible for any labor or material charged by others associated with the start-up and installation of this equipment unless previously agreed upon in writing by Holt Power Systems. Star-ups are to be conducted between Monday through Friday during normal business hours and excluding nights, weekends, or holidays unless agreed otherwise in writing. Otherwise our standard overtime rates will apply. All permits are to be by others.

We value your confidence in us, and the products we represent and appreciate your business. If there are any terms, conditions, or any other aspect of this quotation you do not understand, please contact us immediately and we will gladly clarify.

Paralleling Unless otherwise explicitly stated above, it is assumed that the above proposal is for a single unit generator application. Startup labor, controls conversion or additions and load banking for the above equipment for a system arrangement has not been included.

Coordination Studies Coordination studies, unless specifically shown above to be included, is the responsibility of others.

Ask about our Caterpillar UPS Systems, Transfer Switches, or Paralleling Switchgear systems!

"The sweetness of a low price evaporates as soon as the bitterness of low quality begins"

Thank you for the opportunity of quoting this project. Holt Power Systems remains at your disposal for any additional information or assistance that you may require.

Sincerely yours,

Ronnie Tyler
Holt Power Systems
Engine Sales Representative
Phone: 817/307-8410
Fax: 972/721-5844

Jeff Hensley

From: Ronald Tyler <Ronald.Tyler@holtcat.com>
Sent: Thursday, February 6, 2025 3:41 PM
To: Jeff Hensley
Cc: Andrew Franko; Kyle Flanagan; Kristin Feng; Cheryl Taylor; Jose Rodriguez
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase
Attachments: Project Report - Westlake Pump Station _11155262 (2).pdf; ProposalForQuote31455409 C.pdf; Generator Early Procurement Package Specs - Final Sealed reviewed.pdf

Please see comments below in RED:

From: Jeff Hensley <Jeff.Hensley@freese.com>
Sent: Tuesday, February 4, 2025 2:04 PM
To: Ronald Tyler <Ronald.Tyler@holtcat.com>
Cc: Andrew Franko <asf@freese.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Kristin Feng <Kristin.Feng@freese.com>; Cheryl Taylor <ctaylor@westlaketx.gov>; Jose Rodriguez <Jose.Rodriguez@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Ronnie,

We reviewed the proposal and had the following questions/clarifications:

1. Verify attendance at pre-submittal meeting and post submittal meeting (if required) per Spec 26 32 13, paragraph 1.04.B. Yes. We would be available.
2. On Attachment A, the table is incomplete. It is unclear on what the exact dimensions are for the generator including the service platforms. Also, the wet weight of the generator seemed low when compared to the other proposals. The capacity of the fuel tank was also left blank. The tank is 2640-Gallons. Which would be around 2376 gallons usable. I believe the spec called for 8 hours and the run time on this tank would be in excess to that run time. Dimensions: The base tank appears to be with lifting eyes, 92.78” wide. The length of the base tank is 299.52” long. The over all package height is 124.01” tall. The platforms which would sit next to the set would be 220” long and 54” wide each. SO the overall width with the generator set and the platforms would be200 .78” wide. The height of the platforms would be 48” high on each side. Weight would be: 16,700 lbs approx.. dry weight fuel would add approximately 20,000 lbs. for a total estimate of 36,700 lbs, on the pad (estimated).
3. Can you verify that the warranty requirements of Spec 26 32 13, paragraph 1.09 are met and what is the exact warranty CAT is proposing. Warranty period is for 2-years (24 months) from the start-up date/in service.

4. Can you verify if the Maintenance Service required per Spec 26 32 13, paragraph 1.10 was included in your quote. Maintenance Contract offer is to be under separate cover. Proposal to follow. Estimates on revised proposal.
5. Verify reactive load bank testing is being provided. Yes, reactive load banking at the jobsite is included.
6. Provide revised PDF of generator sizing analysis. The sizing analysis provided in the proposal had information cut off on the sides. Attached.
7. Sizing analysis shall be run using an ambient temperature of 45 deg C and ab altitude of 660 feet. Yes.
8. Sizing analysis appears to show no load on the 30kVA transformer. The transformer should be loaded to 80% per Spec 26 32 13, paragraph 2.03.K.3.a. revised
9. Can the 3rd party onsite sound testing be provided per Spec 26 32 13, paragraph 3.04.D.10. None has been included. We can go out for a proposal and adjust accordingly.
10. Verify CAT is responsible for costs to ship, deliver and offload at the site. Ship to location is included. Off loading is to be by other.
11. Verify spares are being provided per Spec 26 32 13, paragraph 1.11. Spare filters added onto proposal
12. Verify that two separate circuit breakers are being provided, one for normal generator connection and one to connect an external load bank. Yes, 1-1200A CB for loads, 1-1200A CB for load bank.
13. Verify generator breakers are provided with LSIG protection and are 100% rated. The CBs are LS/I and the generator controls includes a protective ground fault relay for the package. The CBs are 100% rated.
14. Are service platforms being provided in aluminum material construction per Spec. 26 32 13, paragraph 2.15. Apologies, the adder for aluminum platforms were mistakenly shown as platform frt. And platform freight was omitted. Revised proposal shows new totals.
15. The proposal sheet with all the pricing has a typo. The cost for the freight of the platforms should be $4200.09. Correct. That has been corrected, and now is reflected as adder for Aluminum platforms and platform frt. is now additionally shown.
16. The proposal includes a cost for commissioning, but it also states "....No Commissioning is included...." Which is correct. Start-up is traditionally considered commissioning and is included.

If we can get answers to these and any revisions to your proposal by the end of the day Wednesday that would be great. We need to provide a letter of recommendation to the City by this Friday, February 7th to take to their Council for approval. If you have any questions or need clarification let me know.

Thanks

Jeffrey N. Hensley, P.E.
Principal/Vice President
Electrical Group

Freese and Nichols, Inc.
801 Cherry Street, Suite 2800
Fort Worth, Texas 76102
817-735-7369 office
817-735-7491 fax

www.freese.com

From: Ronald Tyler <Ronald.Tyler@holtcat.com>
Sent: Thursday, January 23, 2025 12:34 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>

Cc: Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Kristin Feng <Kristin.Feng@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Hi Cheryl, sorry for the shortage of information.

1. Attached is the sizing report which confirm the C18 PGAM as the appropriately sized generator package
2. The lead time on this particular product after approval is roughly 20-26 weeks after release of submittals
3. Submittal lead times:
4. 4-8 weeks estimate
5. Attachment A now included with weight and dimensions estimates, consumption rates etc.
6. Platform detail now included and added to proposal.

Please let me know what else you may need.

Thanks!

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Thursday, January 23, 2025 8:57 AM
To: Ronald Tyler <Ronald.Tyler@holtcat.com>
Cc: Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Kristin Feng <Kristin.Feng@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Ronald,

Just glancing at the proposal, it is missing the following:

Generator sizing analysis
Attachment A (end of generator specification) needs to be filled out.
Proposal was missing lead times to get submittal drawings and lead times to manufacturer generator

I have emailed our design consultant in case I've missed something. Please reply to all with any responses or additional submittals.

Thanks,

Cheryl Taylor, P.E.
Director of Public Works

From: Ronald Tyler <Ronald.Tyler@holtcat.com>
Sent: Wednesday, January 22, 2025 2:11 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Subject: [EXTERNAL] RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

CAUTION: This email is from an EXTERNAL source.

Cheryl, thanks so much for the opportunity. Here is our proposal. Please let me know of any questions you may have.

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Tuesday, January 14, 2025 12:23 PM
To: Ronald Tyler <Ronald.Tyler@holtcat.com>
Subject: RE: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

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That's great news! Thanks so much.

Cheryl Taylor, P.E.
Director of Public Works

From: Ronald Tyler <Ronald.Tyler@holtcat.com>
Sent: Tuesday, January 14, 2025 11:34 AM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Subject: [EXTERNAL] Re: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

CAUTION: This email is from an EXTERNAL source.

Hi Cheryl, Sorry for the slow response. We'll get this turned around for you!

My goal is to provide legendary customer service.

Did I earn a 10 today? Please share your feedback.

Holt-Cat

Ronnie Tyler

817/307-8410 cell phone

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Tuesday, January 14, 2025 11:29 AM
To: Ronald Tyler <ronald.tyler@holtcat.com>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>; Kristin Feng <Kristin.Feng@freese.com>
Subject: [EXTERNAL]: RE: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

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Good morning, Ronald.

Just following up to see if you had any questions on the attached specification and to see if we can expect pricing from you for our project. We look forward to hearing back from you. If there is someone else we need to send this to, please forward their information.

Thanks,

Cheryl Taylor, P.E.
Director of Public Works

From: Cheryl Taylor
Sent: Friday, December 20, 2024 12:27 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>; Kristin Feng <Kristin.Feng@freese.com>
Subject: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Good afternoon.

The Town of Westlake is interested in purchasing a generator to replace the outdated generator at the town's pump station. Attached are specifications from the design engineer with submittal procedures and a Submittal Data Sheet for 26 32 13 Engine Generators (Attachment A). Due to lead times, the Town of Westlake will prepare plans and bid documents for the installation and site prep that will be completed prior to delivery of the generator. This solicitation is for the procurement of the generator.

Purchase of the generator shall be through Sourcewell – Town of Westlake Account #183219.

Please confirm receipt and let us know if you plan to submit a bid. Bids shall be accepted through Wednesday, January 22, 2025 at 5:00 p.m. Bids will be evaluated, and a recommendation will be taken to Town Council for approval in February, 2025.

Please respond to all on this email with confirmation and submittal of your bid.

We appreciate your consideration of our project and look forward to hearing from you.

Happy holidays to all.

Cheryl Taylor, P.E.
Director of Public Works

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TOWN OF WESTLAKE

SPECIFICATIONS FOR

Generator
Early Procurement

Bid Set

THE TOWN OF WESTLAKE

DISTINCTIVE BY DESIGN

December 2024

paralleling is available on or off skid. one skid only allows 1 CB due to it being used to synch and close with electronic operation. off skid still possible with off skid controls and EO breaker(s).

00 01 07 DESIGN PROFESSIONAL SEALS

	**Division:** **01, 26**

TOWN OF WESTLAKE
GENERATOR – EARLY PROCUREMENT

TABLE OF CONTENTS

DIVISION 01

GENERAL REQUIREMENTS

01 33 00 DOCUMENT MANAGEMENT

1.00 GENERAL

c 1.01 WORK INCLUDED

A. Submit documentation as required by the Procurement Contract Documents and as reasonably requested by the Owner's Project Team.

c 1.02 QUALITY ASSURANCE

A. Submit legible, accurate, complete documents presented in a clear, easily understood manner. Documents not meeting these criteria will be returned without review.

c 1.03 MANUFACTURER'S RESPONSIBILITIES

A. Review documents prior to submission. Make certifications as required by the Procurement Contract Documents and as indicated on the forms provided by the Project Construction Manager.

B. Provide a list of the documents that are to be submitted, the dates on which documents are to be sent to the Project Construction Manager for review, and proposed dates that submittals must be returned to comply with the project schedule. Use the form provided by the Project Construction Manager for this list.

c 1.04 SUBMITTAL PROCEDURES

A. Submit all documents in digital format for processing.

1. Provide all information requested for each type of document. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.

2. Submit all attached documents in Portable Document Format (PDF).

we are unfamilar with Bluebeam but submittals to be PDF

a. Create PDF documents using Bluebeam Revu software or other compatible software that will create files that can be opened and annotated using Bluebeam Revu software.

b. Create PDF documents from native format files unless files are only available from scanned documents.

c. Rotate pages so that the top of each document appears at the top of the monitor screen when opened in PDF viewing software.

d. Submit PDF documents with adequate resolution to allow documents to be printed in a format equivalent to the document original. Documents are to be scalable to allow printing on standard 8-1/2 x 11 or 11 x 17 paper.

e. Submit color PDF documents where color is required to interpret the document.

f. Create or convert documents to allow text to be selected for comments or searched using text search features. Run scanned documents through Optical Character Recognition (OCR) software if necessary.

g. Flatten markups in documents to prevent markups made by Manufacturer from being moved or deleted. Flatten documents to allow markup recovery.

h. Use Bluebeam Revu software to reduce file size using default settings except the option for “Drop Metadata”. Uncheck the “Drop Metadata” box when reducing file size.

i. Add footers to each document with the Project name.

C 1.05 SUBMITTAL REQUIREMENTS

A. Furnish documents as indicated in individual Specification Sections. Submit documents per the procedures described in the Procurement Contract Documents.

B. Submit documents per the Specification Sections shown in the following table:

Document Type	Specification Section
Certified Test Report	01 33 02
Equipment Installation Report	01 75 00
Notification by Manufacturer	01 31 13
Operation & Maintenance Manuals	01 33 04
Shop Drawing	01 33 02

2.00 PRODUCTS (NOT USED)

3.00 EXECUTION (NOT USED)

END OF SECTION

01 33 02 SHOP DRAWINGS

1.00 GENERAL

C 1.01 WORK INCLUDED

A. Shop Drawings are required for those Goods that cannot adequately be described in the Procurement Contract Documents to allow fabrication, erection, or installation of the Goods without additional detailed information from the Manufacturer.

B. Submit Shop Drawings required by the Procurement Contract Documents and as requested by the Owner's Project Team to:

1. Record the Goods to be provided to the Owner for the Project;
2. Provide detailed information for fabricating, installing, commissioning, and testing of the Goods; and
3. Allow the Design Professional to advise the Owner if Goods proposed for the Project by the Manufacturer conform, in general, to the design concepts of the Procurement Contract Documents.

C. Participate in submittal related meetings in accordance with Section 01 31 13 "Project Coordination."

D. Manufacturer's responsibility for full compliance with the Procurement Contract Documents is not relieved by Owner's Project Team's review of Shop Drawings. Modifications can only be approved by Change Order or Field Order.

C 1.02 QUALITY ASSURANCE

A. Submit legible, accurate, complete documents presented in a clear, easily understood manner. Shop Drawings not meeting these criteria will be rejected.

B. Demonstrate that the proposed Goods fully comply with the design criteria and requirements of the Procurement Contract Documents or will comply if the deviations requested per Paragraph **1.07** are approved.

C. Furnish and install Goods that fully comply with the information included in the submittal.

C 1.03 MANUFACTURER'S RESPONSIBILITIES

A. Shop Drawings are required for the following items:

1. Generator submittals shall be as described in the Division 26 technical specifications.

B. Schedule:

1. Submit Shop Drawings so production of the Goods will not be delayed.
2. Allow a reasonable time for the review of Shop Drawings and include time for making revisions to the Shop Drawings as well as resubmitting the Shop Drawing for a least a second review. Assume a 21-day review cycle for each time a Shop Drawing is submitted for review unless a longer period is indicated in the Procurement Contract Documents.

3. Allow adequate time for ordering, fabricating, delivering, and installing Goods so construction of the Project is not delayed.

as they pertain to the generator package

C. Review Shop Drawings before they are submitted.

1. Prepare and review the Shop Drawing. Coordinate the Shop Drawing with other Shop Drawings and the Procurement Contract Documents.

2. Determine and verify specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to Shop Drawings.

3. Determine and verify the suitability of Goods offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the work.

4. Determine and verify information relative to Manufacturer's responsibilities for means, methods, techniques, sequences, procedures of installation, and safety precautions and programs incident thereto.

D. Determine and verify:

1. Field measurements, quantities, and dimensions are shown on the Shop Drawing and are accurate;

2. Location of existing structures, utilities, and equipment related to the Shop Drawing have been shown and conflicts between the Goods, existing structures, utilities, and equipment have been identified;

3. Conflicts that impact the installation of the Goods have been brought to the attention of the Owner's Project Team through the Project Construction Manager; and

4. Shop Drawings are complete for their intended purpose.

E. Review Shop Drawings prior to submitting to the Project Construction Manager. Certify that all Shop Drawings have been reviewed by the Manufacturer and are in strict conformance with the Procurement Contract Documents as modified by Addenda, Change Order, or Field Order when submitting Shop Drawings.

F. Fabrication or installation of any Goods prior to the approval of Shop Drawings is done at the Manufacturer's risk. Defective Goods will be rejected.

G. Payment will not be made for Goods for which Shop Drawings are required until these are approved by the Owner's Project Team.

1.04 SUBMITTAL REQUIREMENTS

A. Provide adequate information in Shop Drawings so Design Professional can:

1. Assist the Owner in selecting colors.

2. Compare the proposed features of the Goods with the specified features and advise Owner that the product does, in general, conform to the Procurement Contract Documents.

3. Compare the performance features of the proposed Goods with those specified and advise the Owner that the Goods do, in general, conform to the performance criteria specified in the Procurement Contract Documents.

4. Review required certifications, guarantees, warranties, and service agreements for compliance with the Procurement Contract Documents.

B. Include a complete description of the Goods to be furnished, including:

1. Type, dimensions, size, arrangement, model number, and operational parameters of the components;

2. Weights, gauges, materials of construction, external connections, anchors, and supports required;

3. Performance characteristics, capacities, design data, motor curves, and other information necessary to allow a complete evaluation of mechanical components;

4. All applicable standards including ASTM or Federal specification numbers;

5. Fabrication and installation drawings, setting diagrams, manufacturing instructions, templates, patterns, and coordination drawings; and

6. Wiring and piping diagrams and related controls.

C. Submit Shop Drawings that require coordination with other Shop Drawings at the same time. Shop Drawings requiring coordination with other Shop Drawings will be rejected until a complete package is submitted.

D. Submit information for all of the components and related equipment required for a complete and operational system in one Shop Drawing.

1. Include electrical, mechanical, and other information required to indicate how the various components of the system function together as a system.

2. Provide certifications, warranties, written guarantees, and service contracts with the submittal package for review when these are required.

1.05 SPECIAL CERTIFICATIONS AND REPORTS

A. Provide all required special certifications, reports, and other documentation with the Shop Drawings as specified in the individual Specification Sections which may include:

Testing agency by others

1. Certified Test Reports (CTR): A report prepared by an approved testing agency giving results of tests performed on Goods to indicate their compliance with the Specifications. This report is to demonstrate that the Goods will meet the requirements of the Procurement Contract Documents when installed and is part of the Shop Drawing. Field tests may be performed by the Owner to determine that installed Goods meet the same quality as indicated in the CTR submitted as part of the Shop Drawing.

2. Certificate of Adequacy of Design (CAD): A certified letter from the Manufacturer of the equipment stating that the equipment has been designed to be structurally stable and to withstand all imposed loads without deformation, failure, or adverse effects to the performance and operational requirements of the unit. The letter must state that

mechanical and electrical components have been adequately sized to be fully operational for the conditions specified or normally encountered by the product's intended use.

1.06 SHOP DRAWING SUBMITTAL PROCEDURES

A. Submit all documents in digital format for processing.

1. Provide all information requested for Shop Drawings. Do not leave any blanks incomplete. If information is not applicable, enter NA in the space provided.

2. Submit all attached documents in Portable Document Format (PDF) per Section 01 33 00 "Document Management."

3. Submit each specific product, class of material, or equipment system separately so these can be tracked and processed independently. Do not submit Shop Drawings for more than one system in the same Shop Drawing.

4. Submit items specified in different Specification Sections separately unless they are part of an integrated system.

5. Define abbreviations and symbols used in Shop Drawings.

a. Use terms and symbols in Shop Drawings consistent with the Procurement Contract Drawings.

b. Provide a list of abbreviations and their meaning as used in the Shop Drawings.

c. Provide a legend for symbols used on Shop Drawings.

6. Mark Shop Drawings to reference:

a. Related Specification Sections;

b. Drawing number and detail designation;

c. Equipment designation or name;

d. Schedule references;

e. System into which the product is incorporated; and

f. Location where the product is incorporated into the Project.

B. Markup Shop Drawings for review using the following procedure:

1. Make comments and corrections in blue.

2. Highlight in black or redact items that are not being furnished when the supplier's standard drawings or information sheets are provided so that only the Goods to be provided are in their original color.

3. Make comments in green where selections or decisions by the Design Professional are required. Add explanatory comments to the markup to indicate the action proposed to be taken by the Design Professional.

4. Mark dimensions with the prefix FD to indicate field verified dimensions on the Shop Drawings.

5. Dimensions or other data that do not appear to conform to the Procurement Contract Documents will be marked as “At Variance With” (AVW) the Procurement Contract Documents or other information provided. The Manufacturer is to make revisions as appropriate to comply with Procurement Contract Documents.

C. Complete certifications required by Paragraph **1.03.E**.

1.07 REQUESTS FOR DEVIATION

A. Submit a Change Proposal per Section 01 31 14 “Change Management” to request modifications to the Procurement Contract Documents, including those for approval of a substitution for specified Goods or procedures, for deviations from the Procurement Contract Documents. A Change Proposal is required for any feature of the Goods that does not fully comply with the Procurement Contract Documents.

B. Identify each deviation as a separate item in the Change Proposal. Include all requested deviations that must be approved as a group at one time and identify them as a single item. If approval or rejection of a requested deviation will impact other requested deviations, then all related deviations should be included in that item, so the status and action can be determined on the requested deviation as a whole.

C. Include a description of why the deviation is required and the impact on Procurement Contract Price or Procurement Contract Times. Include the amount of any cost savings to the Owner for a deviation that will result in a reduction in cost.

D. Submit a Change Proposal prior to submitting the Shop Drawing. A Change Order or Field Order must be issued by the Project Construction Manager to approve a deviation.

1. A Field Order will be issued by the Project Construction Manager for deviations approved by the Design Professional if the requested deviation is acceptable and if the requested deviation will not result in a change in Procurement Contract Price or Procurement Contract Times.

2. A requested deviation will be rejected if the requested deviation is acceptable, but the requested deviation will or should result in a change in Procurement Contract Price or Procurement Contract Times.

1.08 DESIGN PROFESSIONAL AND PROJECT CONSTRUCTION MANAGER RESPONSIBILITIES

A. Shop Drawings will be received by the Project Construction Manager. Project Construction Manager will log the documents and forward to the Design Professional for review per this Section for general conformance with the Procurement Contract Documents.

1. Design Professional’s review and approval will be only to determine if the Goods described in the Shop Drawing will, after installation or incorporation into the work, conform to the information given in the Procurement Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Design Professional’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or related programs.

3. Design Professional's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

B. Comments will be made on items called to the attention of the Design Professional for review and comment. Any marks made by the Design Professional do not constitute a blanket review of the submittal or relieve the Manufacturer from responsibility for errors or deviations from the Procurement Contract requirements.

1. Design Professional will respond to Manufacturer's markups by either making markups directly in the Shop Drawing file using red or by attaching a Document Review Comments form with review comments keyed to the Shop Drawing.

2. Shop Drawings that are reviewed will be returned with one or more of the following status designations:

   a. Approved: Shop Drawing is found to be acceptable as submitted.

   b. Approved as Noted: Shop Drawing is approved so long as corrections or notations made by Design Professional are incorporated into the Shop Drawing.

   c. Not Approved: Shop Drawing or Goods described are not acceptable.

3. Shop Drawing will also be designated for one of the following actions:

   a. Final Distribution: Shop Drawing is acceptable without further action and has been filed as complete.

   b. Shop Drawing Not Required: A Shop Drawing was not required by the Procurement Contract Documents.

   c. Cancelled: This action indicates that for some reason, the Shop Drawing is to be removed from consideration and all efforts regarding the processing of that document are to cease.

   d. Revise and Resubmit: Submittal has deviations from the Procurement Contract Documents, significant errors, or is inadequate and must be revised and resubmitted for subsequent review.

4. A Shop Drawing with a significant or substantial number of markings by the Manufacturer may be marked "Approved as Noted" and "Revise and Resubmit." These drawings are to be revised to provide a clean record of the submittal. Proceed with ordering Goods as the documents are revised.

5. A Shop Drawing will be returned without review if it apparently:

   a. Contains excessive deficiencies;

   b. Clearly does not meet the requirements of this Section for presentation or content to the point where continuing to review the document would be counterproductive; or

   c. Goods clearly do not meet the requirements of the Procurement Contract Documents

   Revise the Shop Drawing to comply with the requirements of this Section and resubmit.

6. Actions “a” through “c” will close out the Shop Drawing review process and no further action is required as a Shop Drawing. Actions “d” through “f” require follow up action to close out the review process.

7. Manufacturer is to resubmit the Shop Drawing until it is acceptable and marked “Approved” or “Approved as Noted” and is assigned an action per Paragraph **1.08.B.3** that indicates that the Shop Drawing process is closed.

1.09 RESUBMISSION REQUIREMENTS

A. Make all corrections or changes in the Shop Drawings required by the Design Professional and resubmit to the Project Construction Manager until approved.

1. Revise initial drawings or data and resubmit as specified for the original submittal.

2. Highlight or cloud in green those revisions which have been made in response to the previous reviews by the Design Professional. This will include changes previously directed to the attention to Design Professional requiring selections or decisions by the Design Professional or comment in red made by the Owner’s Project Team.

3. Highlight and cloud new items in green where selections or decisions by the Design Professional are required. Add explanatory comments to the markup to indicate the action requested of the Design Professional.

B. Pay for excessive review of Shop Drawings.

1. Excessive review of Shop Drawings is defined as any review required after the original review has been made and the first resubmittal has been checked to see that corrections have been made.

2. Review of Shop Drawings will be an additional service requiring payment by the Manufacturer if the Manufacturer submits a substitution for a product for which a Shop Drawing has previously been approved, unless the need for such change is beyond the control of Manufacturer.

3. Cost for additional review time will be billed to the Owner by the Design Professional for the actual hours required for the review of Shop Drawings by Design Professional and in accordance with the rates listed in Section 00 73 00 “Supplementary Conditions.”

4. A Set-off will be included in each Payment Application to pay cost for the additional review submitted to the Owner on a monthly basis. The Set-off will be based on invoices submitted to Owner for these services.

5. Need for more than one resubmission or any other delay in obtaining Design Professional’s approval of Shop Drawings will not entitle the Manufacturer to an adjustment in Procurement Contract Price or an extension of Procurement Contract Times.

2.00 PRODUCTS (NOT USED)

3.00 EXECUTION (NOT USED)

END OF SECTION

01 33 04 OPERATION AND MAINTENANCE DATA

1.00 GENERAL

1.01 SUMMARY

A. Prepare a complete and detailed operation and maintenance manual (manual) for each type and model of equipment or product furnished under this Procurement Contract.

B. Prepare manuals in the form of an instruction manual for the Owner. The manuals must be suitable for use in providing the operation and maintenance instructions required by Section 01 79 00 “Training of Operation and Maintenance Personnel.”

C. Provide complete and detailed information specifically for the products or systems provided for this Project. Include the information required to operate and maintain the product or system.

D. Manuals are to be provided in addition to any information packed with or attached to the product when delivered. Remove information packed with or attached to the product and include this information as an attachment to the manual.

E. Include cost for manuals provided by Suppliers and Subcontractors as described in this Section in the Cost of Work for that equipment item.

1.02 DOCUMENTATION

A. Submit manuals in accordance with Section 01 33 00 “Document Management.” Attach a copy of the Operation and Maintenance Manual Review Report form provided by the Project Construction Manager to each manual with pertinent information completed.

B. Provide one preliminary electronic copy of the manual to the Project Construction Manager for review within 15 days after review of any equipment submittal by the Owner’s Project Team.

C. Provide one electronic copy and three printed copies of the final manual after:

1. Preliminary manuals have been approved;

2. Field test records have been incorporated into the manual; and

3. Record Documents per Section 01 31 13 “Project Coordination” have been approved and have been incorporated in the final manual.

D. Provide copies of the manufacturer’s warranties, guarantees, or service agreements in accordance with Section 01 70 00 “Execution and Closeout Requirements.”

2.00 PRODUCTS

2.01 MATERIALS

C A. Provide digital files for each manual as specified in Paragraph 2.02.

1. Use filenames that correspond to the equipment designation shown in the Procurement Contract Documents or other equipment designations provided by the Owner’s Project Team.

2. Submit a preliminary version of the electronic manual for review. Provide a final version of the manual incorporating Owner's Project Team's comments.

B. Provide printed copies of each manual as specified in Paragraph **2.03**.

2.02 ELECTRONIC MANUAL FORMAT

A. Provide individual electronic files for each manual.

1. Maximum file size is 100 MB. If manual is greater than maximum allowable file size, provide individual files for each major section of manual.

2. Acceptable file types for written documents are Portable Document File (PDF) or provide manual text in Microsoft Word. Provide drawings in native format and PDF format. All files must be compatible with the latest software version available.

3. Filename must identify the equipment location, equipment manufacturer, and date equipment placed in service, e.g. Pump Room-Manufacturer-200503.pdf.

4. Each electronic file must contain a table of contents at the beginning of the file which includes hypertext links or bookmarks to navigate the file contents per section/chapter.

5. Scanned images of written documents are not acceptable. Document must allow character selection. Text within a file must be transferable to other documents.

6. Drawing files must have the ability to turn on/off drawing layers within the file.

2.03 PRINTED MANUAL FORMAT

A. Printed copies of each manual are to be submitted as follows:

1. Print manuals on heavy, first quality 8-1/2 x 11 paper.

a. Reduce drawings and diagrams to 8-1/2 x 11 paper size.

b. When reduction is not practical, fold drawings and place each separately in a clear, super heavy weight, top loading polypropylene sheet protector designed for three-ring binder use. Provide a typed identification label on each sheet protector.

c. Punch paper for standard three-ring binders.

2. Place manuals in heavy duty presentation binders with clear front, back, and spine covers.

3. Identify each manual by placing a printed cover sheet in the front cover of the binder and as the first page in the manual. The first page is to be placed in a clear polypropylene sheet protector. The information on first page and the cover page are to include:

a. Name of Owner;

b. Project name;

c. Volume number; and

d. Table of contents.

4. Insert the name of the Project and volume number into the spine covers.
5. Sheet lifters are to be provided.
6. Minimum size is 2-inch capacity. Maximum size is 3-inch capacity. Fill binders to only three-fourths of its indicated capacity to allow for addition of materials to each binder by the Owner.
7. Provide index tabs for each section of the manual. Indexes are to be constructed of heavy-duty paper with a reinforced binding edge. The designation on each index tab is to correspond to the number and letter assigned in the Table of Contents.
8. Manuals for several products or systems may be provided in the same binder. Correlate the data into related groups when multiple binders are used.
    a. Sections for each product or system must be included in the same binder.
    b. Sections must be in numerical order from volume to volume.

3.00 EXECUTION

3.01 MANUAL ORGANIZATION AND CONTENTS

A. Provide a table of contents listing each section of the manual for each product or system.
    1. Assign a number and letter to each section in the manual.
        a. The number is to correspond to the Owner's equipment numbering system or other system designated in the Procurement Contract Documents.
        b. The letter assigned will represent the part of the manual, consistent with the manual contents as required by this Section.
    2. Identify each product or system using the nomenclature shown in the Procurement Contract Documents. Provide a cross reference to the Owner's numbering system and designations for equipment indicated in the Procurement Contract Documents if these are different.

B. Include only the information that pertains to the product described. Annotate each sheet to:
    1. Clearly identify the specific product or component installed;
    2. Clearly identify the data applicable to the installation; and
    3. Delete or strike through references to inapplicable information.

C. Supplement manual information with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, and control and flow diagrams.

3.02 EQUIPMENT AND SYSTEMS MANUAL CONTENT

A. Provide the following information in the first tabbed section of each manual:
    1. A description of the unit and component parts and how it functions.
    2. Operating instructions for pre-startup, startup, normal operations, regulation, control, shutdown, emergency conditions, and limiting operating conditions.

3. The sequence of operation by the controls manufacturer. Provide control diagrams by the manufacturer, modified to reflect the as-built, as-installed condition.

4. Include general assembly drawings, sections, and photographic views as necessary to completely depict and properly identify the equipment. Indicate the dimensions, weight, capacity, and design conditions for the equipment.

B. Include detailed information to allow for the proper installation, calibration, testing, preventative, and corrective maintenance procedures in the second section of the manual or of each section of the manual information if the manual covers a multi-component equipment system:

1. Maintenance instructions including assembly, installation, alignment, clearances, tolerances, and interfacing equipment requirements, adjustment, and checking instructions. Include any special rigging required to place the equipment into place, and any special test equipment required to place the equipment in service.

2. A safety subsection which addresses all safety and tag-out procedures necessary to safely operate and maintain the equipment.

3. Lubrication schedule and lubrication procedures. Include a cross reference for recommended lubrication products.

4. Troubleshooting guide.

5. Provide a table showing the schedule of routine maintenance requirements and seasonal work which is not performed at a set frequency. Preventative maintenance tasking which addresses:

   a. Daily/weekly inspections performed by operations personnel;

   b. Routine preventative maintenance scheduled weekly, monthly, quarterly, semi-annually, or annually through major overhauls by maintenance personnel; and

   c. Predictive maintenance work such as alignment, analysis of the equipment, vibration, flow, oil sampling, etc.

6. Description of sequence of operation by the control manufacturer.

7. Warnings for detrimental maintenance practices.

8. Include detailed corrective maintenance procedures.

   a. Detail equipment for complete disassembly and assembly;

   b. Provide cross-sectional drawings or exploded views with all parts numbered to correspond with the numbers in the parts list to permit identification of the various parts;

   c. Provide a table of normal clearances, diameters, thickness of new parts, and limits permissible for wearing parts; and

   d. List torque settings for nuts, bolts, and fasteners when critical to the equipment's performance.

C. Include all necessary diagrammatic piping and wiring diagrams and miscellaneous drawings and equipment in the third section of the manual or of each section of the manual if the manual covers a multi-component equipment system.

D. Provide spare parts information in the fourth section of the manual including:

1. Part numbers for ordering new parts;
2. Assembly illustrations showing an exploded view of the complex parts of the product;
3. Predicted life of parts subject to wear;
4. List of the manufacturer's recommended spare parts, current prices with effective date, and number of parts recommended for storage;
5. Directory of a local source of supply for parts with company name, address, and telephone number;
6. Complete nomenclature and list of commercial replacement parts; and
7. Complete list of spare parts, spare equipment, tools, and materials that are turned over to the Owner.

E. Provide statistical information from the original equipment manufacturer as to performance such as pump curves, flow charts insulation resistance, calibration, or test data sheets in the fifth section of the manual, including all field testing records used to verify actual performance.

F. Provide equipment name plate data installed on equipment and valves and equipment data sheets as required and furnished by the Owner in the sixth section of the manual.

G. Provide a copy of warranties and the date the warranty expires for equipment in the seventh section of the manual.

3.03 ELECTRICAL AND ELECTRONICS SYSTEMS MANUAL

A. Provide all of the information listed in Paragraph **3.02** as appropriate and include the following information:

1. Control schematics and point to point wiring diagrams prepared for field installation;
2. Circuit directories of panel boards and terminal strips and as installed color coded wiring diagrams; and
3. Other information as may be required by the individual Specification Sections.

3.04 LIST OF SERVICE ORGANIZATIONS

A. Provide a directory of authorized service organizations with company name, address, telephone number, email address, and the contact person for warranty repair.

END OF SECTION

01 75 00 STARTING AND ADJUSTING

1.00 GENERAL

c 1.01 WORK INCLUDED

A. Provide step-by-step procedures for starting and operating Goods.

B. Provide pre-startup inspections.

C. Place Goods in service and operate to prove performance and to provide for initial correction of defects in workmanship, calibration, and operation.

D. Provide for initial maintenance and operation of Goods.

E. Provide Special Services required by the Procurement Contract Documents.

c 1.02 DOCUMENTATION

A. Provide the following documents in accordance with Section 01 33 00 “Document Management”:

1. Assist the Contractor in preparing a Plan of Action for testing, checking, and starting major equipment and process piping systems.

2. Equipment Installation Reports on the form provided by the Project Construction Manager.

installation by others

1.03 STANDARDS

A. Comply with the specified standards associated with the testing or startup of equipment.

2.00 PRODUCTS

2.01 TESTING INSTRUMENTATION

A. Provide the instrumentation and devices needed to conduct tests for startup and calibration.

start up and load testing equipment is included.

3.00 EXECUTION

3.01 SERVICES OF MANUFACTURER’S REPRESENTATIVES

A. Provide the services of experienced and technically competent, factory-trained representative of the Manufacturer for inspections, tests, supervision of installation, and assistance with placing equipment in operation. The Manufacturer’s representative must have a minimum of 5 years of experience in the installation and adjustment of similar equipment and be acceptable to the Owner.

B. Perform installation, adjustment, and testing of the equipment. Certify that the equipment and related appurtenances have been thoroughly examined and approved for startup and operation in the Equipment Installation Reports.

C. Provide on-site services for the time necessary to assist in the installation and adjustment of the equipment, making field acceptance tests required and providing other services necessary for proper and trouble free operation of the equipment.

3.02 INSPECTION AND STARTUP

A. Inspect equipment prior to placing any equipment or system into operation. Make adjustments as necessary for proper operation. Do not start or test any apparatus until the complete unit has been installed and thoroughly checked.

1. Check for adequate and proper lubrication.
2. Determine that parts or components are free from undue stress from structural members, piping, or anchorage.
3. Adjust equipment for proper balance and operations.
4. Determine that vibrations are within acceptable limits.
5. Determine that equipment operates properly under full load conditions.
6. Determine that the equipment is in true alignment.
7. Ensure that the proper procedure is employed in startup of systems.

3.03 STARTING REQUIREMENTS

A. Refer to the individual Specification Sections for specific startup procedures.

c 3.04 INITIAL OPERATION

A. Start, test, and place equipment and systems into operation for 30 days to allow the Owner's Project Team to observe the operation and overall performance of the equipment and to determine that controls function as intended.

B. Operate equipment which is used on a limited or part-time basis in the presence of the Owner's Project Team for a period long enough to demonstrate that controls function as specified.

C. Perform acceptance test as specified in individual Specification Sections. Demonstrate that equipment and systems meet the specified performance criteria.

D. Equipment and systems may be considered as substantially complete at the end of this initial operation period if the equipment is placed in continuous beneficial use by the Owner, unless specifically stated otherwise in the individual equipment Specification Section.

3.05 INITIAL MAINTENANCE

A. Service equipment in accordance with the operation and maintenance manual immediately before releasing the equipment to the Owner.

a separate proposal for periodic maintenance is to be provided under separate cover.

END OF SECTION

01 78 36 WARRANTIES AND SERVICE AGREEMENTS

1.00 GENERAL

1.01 REQUIREMENTS

C A. Provide Warranties and Extended Warranties that comply with the requirements of this Section. Do not provide Goods for which these Warranties and Extended Warranties are not available.

B. Warranties required by this Section are in addition to and not a limitation of any other warranty or remedy required by law or by the Procurement Contract Documents.

1.02 WARRANTY REQUIREMENTS

A. Guarantee and warrant Goods against:

1. Defects due to faulty or inadequate design;
2. Defects due to improper assembly, erection, or improper installation of the equipment;
3. Defective workmanship or materials;
4. Performance that fails to comply with the requirements of the Procurement Contract Documents; and
5. Damage to equipment and associated systems resulting from operation of the equipment prior to acceptance of the equipment by the Owner in accordance with the provisions of the Procurement Contract Documents.

C B. Warranty does not cover routine or normal deterioration or damage of the product resulting from using the product under the specified operational parameters and assumes that routine maintenance as required by supplier-provided detailed operation and maintenance manuals and startup instructions have been performed.

C C. The correction period is defined in the General Conditions. Individual Specification Sections may have more stringent requirements than those stated in the General Conditions.

C D. Extended Warranties and Extended Service Agreements may be required by this Section or by Specifications for the Goods and Special Services.

C E. Provide the longer or more stringent warranty in the event of conflicts between the requirements of this Section and other Specification Sections.

1.03 DOCUMENTATION

C A. Provide all required Warranties, Extended Warranties, and related documents with the Shop Drawings for approval.

C B. Include an additional copy of Warranties, Extended Warranties, and related documents with operation and maintenance manuals.

c C. Extended warranties require that the warranty be accompanied by a letter from the Manufacturer, signed by an officer of the Manufacturer's organization, that specifically indicates:

1. The identification number(s) of the Goods;
2. Project name;
3. Owner's name;
4. The beginning and ending date of the Extended Warranty; and
5. Any other items required by the Procurement Contract Documents.

c D. Provide an Equipment Installation Report to document proper installation and startup of Goods after corrective actions are completed.

bonds by others E. Provide copies of bonds with Extended Warranties and Extended Service Agreements if bonds are required.

F. Issue warranty certificates or bonds in the name of the Owner.

1.04 NOT USED

1.05 WARRANTY COVERAGE AND CORRECTIVE ACTION

c A. Correct Defective Goods during the one-year correction period in accordance with the General Conditions. standard warranty is 2 years with etensions if requested

c B. Correct Defective Goods during the Extended Warranty Period by furnishing, delivering, and installing parts required to correct the defect.

c C. Owner will remove and load the Goods on a vehicle provided by the Manufacturer if it is necessary to return the Goods to the Manufacturer for correction of defects during the Extended Warranty Period. Owner will reinstall the Goods when they are returned to the Site after defects have been corrected. The Manufacturer is to provide all parts, labor, and incidental cost for making repairs, shipping the Goods to the Site, and providing startup services in accordance with Section 01 75 00 "Starting and Adjusting."

c D. Begin correction of defects within 7 days after notification of defects by the Owner. Continue to work without delay or interruption until the Defective Goods have been corrected and returned to the Site if removed for repairs.

c E. Owner may correct Defective Goods if corrective action is not completed within 3 months, unless Owner agrees to a longer period of time. Manufacturer will pay cost for corrective action, including cost for design and legal fees. Manufacturer is not obligated to obtain competitive bids or take other action to reduce the cost of repairs for work to corrective Defective Goods if Owner takes corrective action under this paragraph.

F. Correction of Defective Goods during the Extended Warranty Period does not extend the correction period as is required under the provisions of the one-year correction period included in the General Conditions.

2.00 PRODUCTS (NOT USED)

3.00 EXECUTION (NOT USED)

END OF SECTION

01 79 00 TRAINING OF OPERATION AND MAINTENANCE PERSONNEL

1.00 GENERAL

1.01 SUMMARY

A. Provide services of Supplier's operation and maintenance training specialists to instruct Owner's personnel in recommended operation and maintenance procedures for equipment furnished. Details for training may be established in the specifications for that equipment.

B. Provide a combination of classroom and hands on training.

C. Training may be conducted at Manufacturer's or Supplier's facilities provided Manufacturer pays for travel, lodging, and per diem costs of the Owner.

D. Record training sessions on video and submit to the Owner on DVD disk in MPEG-4 format for Owner's later use in instructing Owner's personnel. Include this recording as part of the final operation and maintenance manual. Provide legal releases or pay additional fees required to allow training by the manufacturer to be recorded.

E. Include the cost for training and startup in the Cost of the Work for each equipment package.

1.02 DOCUMENTATION

A. Provide documentation in accordance with Section 01 33 00 "Document Management" and include:

1. Equipment Installation Reports in accordance with Section 01 75 00 "Starting and Adjusting" on forms provided by the Project Construction Manager;

2. Operation and maintenance manuals per Section 01 33 04 "Operation and Maintenance Data";

3. A lesson plan for training in accordance with Paragraph **3.01.C**; and

4. Credentials of Supplier's proposed operation and maintenance instructors demonstrating compliance with requirements of Paragraph **1.04**.

1.03 SCHEDULING OF TRAINING

A. Coordinate training services with startup and initial operation of equipment on days and times Owner is available.

B. Training may be required outside of normal business hours to accommodate schedules of operation and maintenance personnel.

C. Provide training of Owner's personnel after acceptable preliminary operation and maintenance manuals have been approved.

D. Coordinate training with equipment startup and testing and availability of Owner's personnel.

E. Provide a proposed training schedule for review and acceptance by Owner showing all training required in the Procurement Contract Documents. Demonstrate compliance with

specified training requirements relative to number of hours of training, number of training sessions, and scheduling.

F. Submit initial training schedule at least 60 days before scheduled start of first training session. Submit final training schedule, incorporating revisions in accordance with Owner's comments, no later than 30 days prior to starting the first training session.

G. Owner reserves the right to modify personnel availability for training in accordance with process or emergency needs.

H. Schedule for training is to be approved by Owner.

1. Schedule training and startup operations for no more than one piece of equipment or system at a time.

2. Owner may require re-scheduling of training if operations personnel are not available for training on a scheduled date.

3. Provide a minimum of 2 weeks' notice if training must be rescheduled.

4. Training is to be limited to 24 hours per week.

5. Time required for training is to be included in the development of the Project schedule.

I. Schedule and coordinate training for equipment or systems which depend upon other equipment or systems for proper operation so that trainees can be made familiar with the operation and maintenance of the entire operating system.

1.04 SERVICES OF SUPPLIER'S REPRESENTATIVE

A. Supplier's instructors must be factory-trained by the equipment manufacturer.

B. Instructors must have knowledge of the theory of operation and practical experience with the equipment or system.

C. Instructors must be proficient and experienced in conducting training of the type required and must have successfully conducted similar training courses.

D. Qualifications of instructors are subject to acceptance by Owner. Provide services of replacement instructor with acceptable qualifications if Owner does not accept qualifications of proposed instructor. Include each instructor's résumé and specific details of instructor's operating, maintenance, and training experience relative to the specific equipment for which instructor will provide training to demonstrate their qualifications.

2.00 PRODUCTS (NOT USED)

3.00 EXECUTION

3.01 OPERATOR TRAINING

A. Provide classroom and hands-on training of the care and operation of the equipment to the Owner's personnel.

B. Provide training in adequate detail to ensure that the trainees who complete the program will be qualified and capable of operating and maintaining the equipment, products, and systems provided.

C. Provide a training plan that indicates the schedule and sequence of the training programs. The training plan is to include for each course:

1. Number of hours for the course;
2. Agenda and narrative description, including the defined objectives for each lesson;
3. Draft copy of training handbooks;
4. A descriptive listing of suggested reference publications;
5. Audio-visual equipment required for training; and
6. Type and number of tools or test equipment required for each training session.

D. Provide and use training aids to complement the instruction and enhance learning.

1. Provide training handbooks for use in both the classroom and the hands-on phases of training for each course.
2. Provide instructional materials that include references to the operation and maintenance manuals and identify and explain the use of the manual.
3. Provide a copy of all audio/visual training materials used in the presentations to the Owner.

E. Operations training is to include:

1. Orientation to provide an overview of system/subsystem configuration and operation;
2. Terminology, nomenclature, and display symbols;
3. Operations theory;
4. Equipment appearance, functions, concepts, and operation;
5. Operating modes, practices, and procedures under normal, diminished, and emergency conditions;
6. Startup and shutdown procedures;
7. Safety precautions;
8. On-the-job operating experience for monitoring functions, supervisory, or command activities. Include functions and activities associated with diminished operating modes, failure recognition, and responses to system/subsystem and recovery procedures; and
9. Content and use of operation and maintenance manuals and related reference materials.

F. Provide training for performing on-site routine, preventive, and remedial maintenance of the equipment or system. Maintenance training is to include but not be limited to:

1. Orientation to provide an overview of system/subsystem concept, configuration, and operation;
2. Operations theory and interfaces;

3. Instructions necessary to ensure a basic theoretical and practical understanding of equipment appearance, layout, and functions;
4. Safety precautions;
5. Use of standard and special tools and test equipment;
6. Adjustment, calibration, and use of related test equipment;
7. Detailed preventive maintenance activities;
8. Troubleshooting, diagnostics, and testing;
9. Equipment assembly and disassembly;
10. Repair and parts replacement;
11. Parts ordering practices and storage;
12. Failure and recovery procedures;
13. Cabling and/or interface connectors;
14. Content and use of operation and maintenance manuals and related reference materials;
15. Procedures for warranty repairs;
16. Lubrication; and
17. Procedures, practices, documentation, and materials required to commence system maintenance.

END OF SECTION

DIVISION 26

ELECTRICAL

26 32 13 ENGINE GENERATORS

1.00 GENERAL

1.01 SUMMARY

c

A. This Section includes packaged diesel engine generator sets with the following features and accessories:

1. Battery charger.
2. Sub-base fuel tank.
3. Engine generator set.
4. Muffler.
5. Outdoor enclosure.
6. Starting battery.
7. Generator overcurrent and fault protection.
8. Load bank circuit breaker.
9. Provisions for future generator paralleling.
10. Auxiliary power distribution panelboard.
11. Service platforms.
12. Generator shall be suitable for operation with existing automatic transfer switch.

additional information on existing ATS needs to be provided.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

aknowledged

1.03 DEFINITIONS

A. VFD: Variable Frequency Drive

B. RVAT: Reduced Voltage Autotransformer

C. Standby Rating: Power output rating equal to the power the generator set delivers continuously under normally varying load factors for the duration of a power outage.

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

E. Steady State Voltage Modulation: The uniform cyclical variation of voltage within the operational bandwidth, expressed in Hertz or cycles per second.

1.04 SUBMITTALS

Submittals shall be in accordance with Section 01 33 00, “Document Management” and shall include:

A. Bid Proposal: In order to evaluate the bids, submit the following information.

1. Data Sheet: Submit information requested on the Data Sheet included with the Bid Proposal. The Data Sheet is included at the end of this specification.
2. Preliminary generator sizing analysis.
3. Maximum ambient temperature generator can continuously operate in.
4. Generator lead time: include time to get approval shop drawings and time to manufacturer generator.
5. Generator total enclosure dimensions including 48 hour sub base fuel tank and service platforms.
6. All exceptions to specification shall clearly be stated in Bid Proposal.

B. Pre-and Post-Submittal Meeting

1. Supplier shall include in his bid the cost of attending a one-day pre-submittal meeting and a one-day post-submittal meeting in the City of Westlake office or Freese and Nichols' Fort Worth office – exact location to be determined at a later date.
2. A pre-submittal meeting shall be held before any shop drawings are submitted and shall be attended by the Owner, Engineer, and Equipment Manufacturer.
3. Representative(s) from the generator supplier shall include individuals who have technical knowledge of the equipment and will be responsible for putting together the submittal. A salesperson may attend, but not as a substitute for the individuals indicated above. Manufacturer shall determine the number of people attending the meeting and cover each person's cost.
4. A post-submittal meeting, if needed, with the same parties shall be held to discuss review comments in order to resolve issues and allow equipment to be released for manufacturing upon completion of the Shop Drawing review by the Engineer. This second meeting may only be waived at the Engineer's discretion.
5. Any shop drawings submitted before the pre-submittal meeting will be rejected and sent back Not Approved, Revise and Resubmit. The Generator Supplier shall provide an unofficial draft copy of the actual submittal a minimum of 5 business days before the pre-submittal meeting.
6. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
7. Dimensioned outline plan and elevation drawings of engine generator set and other components specified.
8. Thermal damage curve for generator, include X and R information, transient and sub-transient reactance, etc.
9. Time-current characteristic curves for generator protective device.

Or the output of the generator set can be channeld through a docking station with a 2nd Kirk-key CB which would serve as load bank feed. You would lock out the gen output during load banking. Current proposal ins included with 2-manual CBs and no on board parallelingf

C. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Design Calculations: Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
2. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
3. Wiring Diagrams: Project specific detail wiring for power and control connections and differentiate between factory installed and field installed wiring.
4. Generator sizing analysis.
   a. Detailed sizing analysis shall clearly identify assumptions made for loads being started/operated by the generator.
      1). The maximum voltage drop allowed shall be 15%.
      2). The maximum frequency drop allowed shall be 10%.
      3). The nominal load on the generator shall not exceed 80% of the rated load capacity.
      4). The generator shall be sized to start and run the loads as indicated under Section 2.03. Manufacturer shall certify that the generator will not stall under these conditions.
      5). The generator shall be sized to operate continuously at an ambient temperature of 113 degrees Fahrenheit.
      c 6). Calculations shall be for a Diesel Fuel generator set.
   b. The generator manufacturer shall be responsible for obtaining all information to run the generator sizing analysis, including nameplate rating listed on the motors. The manufacturer shall be responsible for obtaining actual load data.
   c. The kW rating listed in Section 2.02 is anticipated and varies by manufacturer.
5. Provide a detailed layout of the generator enclosure that shows the location of the fuel maintenance system, the low voltage terminal box, generator control panel, lights, receptacles, etc.
6. Provide project specific interconnection diagrams for all customer connections for alarms, level, etc. Interconnections that are not specific to the project shall not be shown. Generic drawings are not acceptable. Submittals that do not include project specific diagrams will be sent back NOT APPROVED, REVISE AND RESUBMIT.
7. Clearly indicate the elevation to the main circuit breaker handle and load bank circuit breaker handle.
8. Clearly indicate the vertical distance between lugs/terminations at the main breaker and load bank breaker to where the conduits are stubbed up.
9. Provide cut sheets for all equipment being provided for the generator including but not limited to:

a. Generator and Enclosure
b. Generator circuit breaker and load bank breaker with time current curves
c. Exhaust Fans and louvers
d. Conduits
e. Wiring
f. Lights
g. Switches
h. Receptacles
i. Panelboard
j. Batteries and charging system
k. Service Platform
l. Fuel Maintenance System

10. Provide a detailed panelboard schedule for the panelboard provided in the generator enclosure.
11. Certified summary of prototype-unit test report.
12. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
13. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
14. Report of sound generation.
15. Report of exhaust emissions showing compliance with applicable regulations.

D. Letter of Compatibility: The Generator supplier in conjunction with the existing ATS supplier shall issue a letter of compatibility stating that the Generator and existing ATS are compatible. Generator supplier shall field verify existing ATS data to determine compatibility. more data on ATS to be provided.

c E. Prior to Shipment: The manufacturer shall provide detailed addresses (memory map) for the software I/O points that are communicated over Ethernet, RS485, etc. that are applicable to this project – this would include but not be limited to the data highways associated with the generator. Coordinate with Owner/Engineer for the list of I/O that will be transmitted over the data highways, the manufacturer shall verify with the Owner if any changes have been made to the lists prior to submitting the memory map.

with submittal data

3rd party sound test to be by others

t. Field quality-control test reports. Indicate and interpret test results and inspection records relative to compliance with performance requirements. Provide load bank and 3rd Party Sound testing results. All Generator Testing Report(s) shall be submitted to Engineer for approval no later than two weeks after testing has been conducted.

c G. Factory Test Data: Submit factory test data to Engineer for approval prior to shipping generator to job site.

c H. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
2. Include all features and operating sequences, both automatic and manual. List all factory setting relay and provide relay-setting and calibration instructions, including software, where applicable.
3. Operation and maintenance manuals shall be prepared by the equipment manufacturer and contain the shop drawings, submittals, list of manufacturer recommended spare parts, schematics, equipment installation report, and maintenance procedures. O&M manuals shall include all field changes made during startup and testing.
4. Operation and maintenance manuals shall include warranty information as well as a warranty information page that shall include information on the warranty start and end date as well as contact information for service.
5. Manuals shall be prepared by the Equipment Manufacturer and shall also incorporate appropriate final certified shop drawings. Manuals may be manufacturer's standard instructions but shall be supplemented as necessary to cover any special feature not included in standard material.
6. Submit preliminary manuals for review prior to start-up of equipment.

c I. Warranty: Special warranty specified in this Section.

c J. Qualification Data: For firms and persons specified in “Quality Assurance” Article.

c K. Factory Test Reports: For units to be shipped for this Project, showing evidence of compliance with specified requirements. Factory test reports shall be provided to the Engineer for approval prior to the unit being released for shipment.

c L. Field Test Data – Equipment Installation Report

a. Equipment Installation Report: Field test data shall include summary of all tests performed in the field specifically identified in this specification and other factory standard tests.

b. Field Test and Observation Reports: Indicate and interpret test results and inspection records relative to compliance with performance requirements.

1.05 QUALITY ASSURANCE

c A. Source Limitations: Obtain packaged engine generator and auxiliary components specified in this Section through one source from a single manufacturer.

install by others B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

c C. Manufacturer Qualifications: Maintain a service center capable of emergency maintenance and repairs at the Project with 12 hours maximum response time.

test agency by others D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

as they apply

E. Comply with ASME B15.1.

F. Comply with ANSI/NETA ATS Standard.

G. Comply with NFPA 37, 70, 99, 101, and 110, latest edition.

H. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

I. Comply with NEMA MG-1 and SG-1.

J. Comply with UL 1008. ATS standard

K. Engine Exhaust Emissions: Comply with EPA Tier requirements and applicable state and local government requirements for stationary emergency applications.

L. Submit written reports for all required factory and field tests.

1.06 FACTORY INSPECTION AND TESTS

A. TESTS

c 1. GENERAL

a. Generator manufacturer shall provide to the Engineer a complete list of all tests to be performed on the generator as a formal submittal to the Engineer a minimum of 30 days prior to the generator being tested.

c 2. The generator manufacturer shall provide the actual test data, observations, and certification that the tests have been completed to the Engineer for approval

B. Factory Testing.

1. The generator set manufacturer shall perform a complete operational test on the generator set prior to shipping from the factory. All testing shall be conducted at the factory. No exceptions. A certified test report shall be provided. All testing shall be performed with calibrated metering.

c 2. Generator set factory tests on the equipment shall be performed at rated load and rated power factor. Generator sets that have not been factory tested at rated power factor will not be acceptable. Tests shall include:

a. Reactive Load Bank Testing, 20 minutes at 25% load, 20 minutes at 50% load, 20 minutes at 75% load, 4 hours at 100% load.

b. Transient testing, 0-25-0%, 0-50-0%, 0-75-0%, 0-100-0%.

c. Standard factory test procedures" maximum power, voltage regulation, transient and steady-state governing, single step load pickup, and function of safety shutdowns.

d. Provide a certified copy of the testing report to the engineer after shipment.

3. Provide sound testing at the Generator Manufacturer's factory with unit operating at full load and no load. Measurements shall be at all points around the enclosure at 4 feet above grade to ensure compliance with sound levels specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver engine generator set and system components to their final locations in protective wrappings, containers, and other protection that will exclude dirt and moisture and prevent damage from construction operations. Remove protection only after equipment is safe from such hazards.

B. The generator supplier shall be responsible for shipment, delivery and offloading of equipment at the jobsite (13590 Denton Hwy, Westlake, TX 76262).

1.08 COORDINATION

A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases.

1.09 WARRANTY ● Warranty is 2 years from date of in service/start up

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace packaged engine generator and auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 2 years from date of shipment. The generator may be used during the course of the project.

2. The warranty period shall be interpreted as the twenty-four (24) month period following the installation, adjusting and acceptance testing, and the start of actual operation of the equipment or thirty (30) months after complete delivery, whichever occurs first.

C. Manufacturer shall send a representative out to the job site 1 year after final completion to re-test the generator at no extra cost to the owner.

1.10 MAINTENANCE SERVICE under separate cover See estimates on revised proposal.

A. Initial Maintenance Service: Beginning at installation, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

1. In accordance with OCA 252:565-7-4(b)(1), post a complete set of operational instructions, emergency procedures and maintenance schedules at the station.

1.11 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses: Three for every ten of each type and rating, but not less than three of each.

2. Indicator Lamps: Two for every six of each type used, but not less than two of each.

All lamps are LED and therefore replacement lamps not necessary or included.

One set of Filters to be added to proposal

3. Filters: One set each of lubricating oil, fuel, and combustion air filters.

2.00 PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

c 1. Caterpillar, Inc.; Engine Div.

2. Cummins.

3. Kohler.

4. No approved equal.

2.02 ENGINE GENERATOR ASSEMBLY DESCRIPTION

c A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.

c B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

c C. Power Output Ratings: Depending on the manufacturer and based on preliminary sizing, generator ranged in size from 600 kW to 800 kW, but generator manufacturer shall verify rating based on loads identified below and requirements within this specification.

D. Power Rating: Standby.

110%not available E. Overload Capacity: 110 percent of service load for 1 hour in 12 consecutive hours.

c F. EPSS Class: Engine generator shall be classified according to NFPA 110.

c G. Output Connections: Three phase, four wire, wye.

c H. Power Factor: 0.80

c I. Frequency: 60 Hz.

c J. Voltage: 480Y/277V

c K. Phase: 3-phase

c L. Governor: Adjustable isochronous, with speed sensing.

c M. Nameplates: Each major system component is equipped with a conspicuous nameplate of component manufacturer. Nameplate identifies manufacturer of origin and address, and model and serial number of item. Limiting dimensions indicated for system components are not exceeded.

c N. Power Output Ratings: Nominal ratings as indicated, with capacity as required to operate as a unit as evidenced by records of prototype testing.

c O. Skid: Adequate strength and rigidity to maintain alignment of mounted components without depending on a concrete foundation. Skid is free from sharp edges and corners. Lifting attachments are arranged to facilitate lifting with slings without damaging any components.

P. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.

2.03 GENERATOR SET PERFORMANCE

A. Steady State Voltage Modulation Frequency: Less than 1 Hz.

B. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step load increase or decrease. Voltage shall recover and remain within the steady state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.

C. Steady State Frequency Operational Bandwidth: 0.25 percent of rated frequency from no load to full load.

D. Steady State Frequency Stability: When system is operating at any constant load within rated load, there are no random speed variations outside the steady state operational band and no hunting or surging of speed.

E. Transient Frequency Performance: Less than 15 percent variation for a 50 percent step load increase or decrease. Frequency recovers to remain within the steady state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.

F. Output Waveform: At no load, harmonic content measured line to line or line to neutral does not exceed 2 percent total and 3 percent for single harmonics. At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. The telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.

G. Sustained Short Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 8 seconds without damage to generator system components. For a 1-phase, bolted short circuit at system output terminals, system shall regulate both voltage and current to prevent over-voltage conditions on the non-faulted phases.

H. Start Time: Comply with NFPA 110, Type 10, system requirements.

I. Generator shall produce 480Y/277 V, 60 Hz.

J. Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.

1. Provide permanent magnet excitation for power source to voltage regulator.

K. Generator Sizing:

1. Generator manufacturer shall provide a detailed sizing analysis to the Engineer for approval. Detailed sizing analysis shall clearly identify assumptions made for loads being started/operated by the generator. When conducting the generator sizing analysis the voltage drop of the generator shall be set at a maximum of 15%. The generator manufacturer shall be responsible for obtaining all information to run the generator

sizing analysis. Any changes to the generator size shall be brought to the Engineer's attention. Sizing analysis shall be submitted to the Engineer with the generator's initial submittal. Ambient Temperature: Minus 15 to 45 deg C.

C 2. When conducting the generator sizing analysis, the voltage drop of the generator shall be set at a maximum of 15% and the maximum frequency dip shall be 10%. The nominal load on the generator shall not exceed 80% of the rated load capacity of the generator under any operation scenarios as described below.

C 3. Load and step list

a. Generator shall be sized to start and run the loads in the steps list provided below while maintaining the generator performance criteria within this specification. Motor loads and motor starter type identified are shown on the one-line diagram(s) in the drawings.

Step 1:

- (2) 1.5HP Exhaust Fans
- (2) 1HP MOVs
- (1) 10 Ton HVAC Unit
- 30kVA, 480 - 208Y/120VAC, 3-Phase Transformer @ 80% load

Step 2:

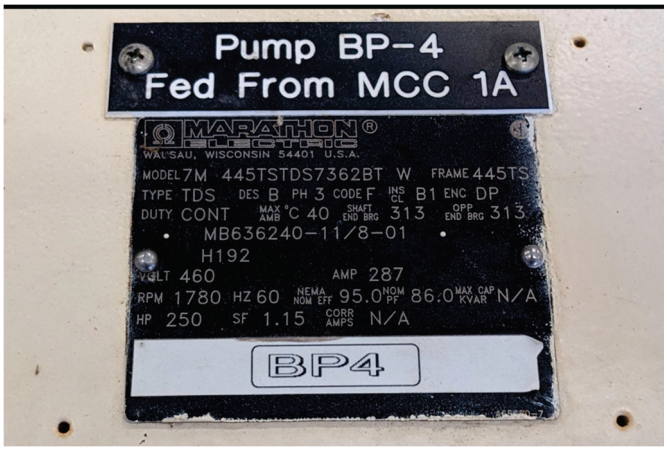
- (1) 250HP Motor w/ 18-Pulse or active front end (AFE) VFD

Step 3:

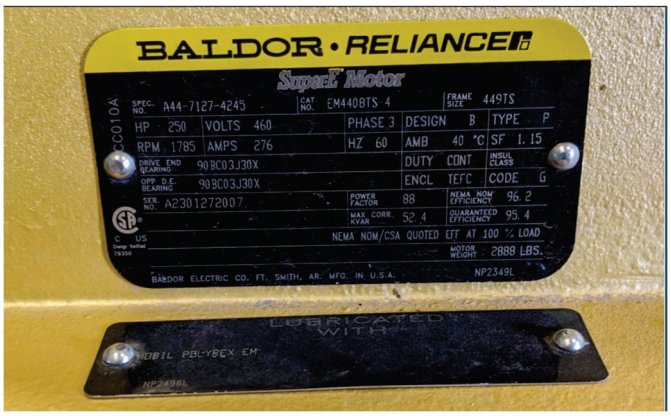
- (1) 250HP (Code G) Motor w/ RVAT starter @ 80% voltage tap

See below for motor nameplate data for existing 250 HP Motors:

RVAT Driven Pump Motor Nameplate



VFD Driven Pump Motor Nameplate



C L. Generator manufacturer shall provide a detailed sizing analysis to the Engineer for approval.

1. Detailed sizing analysis shall clearly identify assumptions made for loads being started/operated by the generator.
2. The generator manufacturer shall be responsible for obtaining all information to run the generator sizing analysis.
3. Any changes to the generator size shall be brought to the Engineer's attention. Sizing analysis shall be submitted to the Engineer with the generator's initial submittal. Submittals submitted without sizing analysis shall not be accepted.

2.04 SERVICE CONDITIONS

C A. Environmental Conditions: Engine generator system withstands the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Ambient Temperature: -15 to 45 Deg C.
2. Altitude: 1074 feet.

C 2.05 ENGINE

A. Comply with NFPA 37.

B. Fuel: Fuel oil, Grade DF 2.

C. Rated Engine Speed: 1800 rpm.

D. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm.

E. Lubrication System: Pressurized by a positive displacement pump driven from engine crankshaft. The following items are mounted on engine or skid:

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.

2. Thermostatic Control Valve: Controls flow in system to maintain optimum oil temperature. Unit is capable of full flow and is designed to be fail-safe.

3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps or siphons or special tools or appliances.

F. Engine Fuel System: Comply with NFPA 37. System includes the following:

1. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.

2. Relief/Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

G. Coolant Jacket Heater: Electric immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment.

C 2.06 GOVERNOR

A. Type: Adjustable isochronous, with speed sensing.

C 2.07 ENGINE COOLING SYSTEM

A. Description: Closed loop, liquid cooled, with radiator factory mounted on engine generator set skid and integral engine driven coolant pump.

B. Radiator: Rated for specified coolant.

C. Coolant: Solution of 50 percent ethylene glycol based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

D. Expansion Tank: Constructed of welded steel plate and equipped with gage glass and petcock.

E. Temperature Control: Self-contained, thermostatic control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

F. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging, ultraviolet, and abrasion resistant fabric.

1. Rating: 50-psig (345-kPa) maximum working pressure with 180 F (82 C) coolant, and non-collapsible under vacuum.

2. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

C G. The generator shall be rated for continuous standby duty with a temperature rise of 80 C.

2.08 FUEL SUPPLY SYSTEM

A. Comply with NFPA 30 and NFPA 37.

B. The tank shall be clearly labeled indicating the type of product, the volume capacity, the top loading capacity, and the manufacturer.

~~paralleling is available on or off skid. one skid only allows 1 CB due to it being used to synch and close with electronic operation. off skid still possible with off skid controls and EO breaker(s).~~

C. The tank is intended for stationary installation and in accordance with NFPA 30 and NFPA 37. Comply with all federal, state and local codes.

D. Sub-Base Mounted Fuel Oil Tank: Factory installed and piped, U.L. 142 listed and labeled fuel oil tank. Features include the following:

1. Tank level indicator.
2. Capacity: Fuel for 48 hours continuous operation at 100 percent rated power output.
3. Vandal resistant fill cap.
4. Containment Provisions: U. L. listed double wall.
5. Emergency pressure relief vent.
6. Fuel leak alarm.
7. Low Fuel Alarm with a spare dry contact.
8. Electrical stub-up, rectangular type, located directly beneath the generator terminal box.
9. Engine supply pick-up tube and return connections with suction drop tube.
10. Mechanical fill limiter, Morrison 9095A or equal, with tight fill adapter, installed inside spill containment fill area. or equal
11. Spill containment fill, 7.5 gallon capacity, affixed to the top of the tank. Provide a handle pull drain to allow spilled fuel to return to the tank.
12. Continuous fuel monitoring (4-20mA output).

2.09 ENGINE EXHAUST SYSTEM

A. Muffler: Residential type, sized as recommended by engine manufacturer. Measured sound level at a distance of 10 feet (3 m) from exhaust discharge, is 85 dBA or less.

B. Connection from Exhaust Pipe to Muffler: Stainless steel expansion joint with liners.

C. Generator mufflers shall be mounted within enclosure.

2.10 STARTING SYSTEM

A. Description: 24-V electric, with negative ground and including the following items:

1. Components: Sized so they will not be damaged during a full engine cranking cycle with ambient temperature at maximum specified in “Environmental Conditions” Paragraph in “Service Conditions” Article above.
2. Cranking Motor: Heavy duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Adequate capacity within ambient temperature range specified in “Environmental Conditions” Paragraph in “Service Conditions” Article above to provide specified cranking cycle at least three times without recharging.

C 5. Battery Cable: Size as recommended by generator set manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.

C 6. Battery Charging Alternator: Factory mounted on engine with solid state voltage regulation and 35-A minimum continuous rating.

C 7. Battery Charger: Current limiting, automatic equalizing and float charging type. Unit complies with UL 1236 and includes the following features:

a. Operation: Equalizing the charging rate of manufacturer's recommended amps is initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit then automatically switches to a lower float charging mode and continues operating in that mode until battery is discharged again.

b. Automatic Temperature Compensation: Adjusts float and equalizes voltages for variations in ambient temperature from minus 40 C to plus 60 C to prevent overcharging at high temperatures and undercharging at low temperatures.

c. Automatic Voltage Regulation: Maintains output voltage constant regardless of input voltage variations up to plus or minus 10 percent.

d. Ammeter and Voltmeter: Flush mounted in door. Meters indicate charging rates.

e. Safety Functions: Include sensing of abnormally low battery voltage arranged to close contacts providing low battery voltage indication on control and monitoring panel. Also include sensing of high battery voltage and loss of ac input or dc output of battery charger. Either condition closes contacts that provide a battery charger malfunction indication at system control and monitoring panel.

f. Enclosure and Mounting: NEMA 250, Type 4X, wall mounted cabinet.

C g. Charger shall operate on 120 V, single phase.

2.11 CONTROL AND MONITORING

C A. Functional Description: When the mode selector switch on the control and monitoring panel is in the automatic position, remote control contacts in one or more separate automatic transfer switches initiate starting and stopping of the generator set. When the mode selector switch is switched to the on position, the generator set manually starts. The off position of the same switch initiates generator set shutdown. When the generator set is running, specified system or equipment failures or derangements automatically shut down the generator set and initiate alarms. The operation of a remote emergency stop switch also shuts down the generator set.

C B. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gauges are grouped on a common control and monitoring panel mounted on the generator set. Mounting method isolates the control panel from generator set vibration.

C C. Provide a fully solid-state, microprocessor based, generator set control. The control panel shall be designed and built by the engine manufacturer. The control shall provide all operating, monitoring, and control functions for the generator set. The control panel shall provide real time digital communications to all engine and regulator controls via SAE J1939.

or Modbus and twisted pair as appropriate

c

D. Environmental: The generator set control shall be tested and certified to the following environmental conditions:

1. –40°C to +70°C Operating Range.
2. 95% humidity non-condensing, 30°C to 60°C.
3. IP22 protection.
4. 5% salt spray, 48 hours, +38°C, 36.8V system voltage.
5. Sinusoidal vibration 4.3G's RMS, 24-1000Hz.
6. Electromagnetic Capability (89/336/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC, BS EN 50081-2, 50082-2).
7. Shock: withstand 15G.

E. Functional Requirements: The following functionality shall be integral to the control panel:

description and dimensions may be slightly different than called for.

1. The control shall include a minimum 64 x 240 pixel, 28mm x 100mm, white backlight graphical display with text based alarm/event descriptions. 132x64 pixel
2. The control shall include a minimum of 3-line data display.
3. Audible horn for alarm and shutdown with horn silence switch.
4. Standard ISO labeling.
5. Multiple language capability.
6. Remote start/stop control.
7. Local run/off/auto control integral to system microprocessor.
8. Cooldown timer.
9. Speed adjust.
10. Lamp test.
11. Push button emergency stop button.
12. Voltage adjust.
13. Voltage regulator V/Hz slope – adjustable.
14. Password protected system programming.

c

F. Digital Monitoring Capability: The controls shall provide the following digital readouts for the engine and generator. All readings shall be indicated in either metric or English units:

1. Engine
    a. Engine oil pressure.
    b. Engine oil temperature.
    c. Engine coolant temperature.
    d. Engine RPM.
    e. Battery volts.
    f. Engine hours.
    g. Engine crank attempt counter.

h. Engine successful start counter.
i. Service maintenance interval.
j. Real time clock.

c 2. Generator

a. Generator AC volts (Line to Line, Line to Neutral and Average).
b. Generator AC current (Avg and Per Phase).
c. Generator AC Frequency.
d. Generator kW (Total and Per Phase).
e. Generator kVA (Total and Per Phase).
f. Generator kVAR (Total and Per Phase).
g. Power Factor (Avg and Per Phase).
h. Total kW-hr.
i. Total kVAR-hr.
j. % kW.
k. % kVA.
l. % kVAR.

c 3. Voltage Regulation

a. Excitation voltage.
b. Excitation current.

c G. Alarms and Shutdowns: The control shall monitor and provide alarm indication and subsequent shutdown for the following conditions. All alarms and shutdowns are accompanied by a time, date, and engine hour stamp that are stored by the control panel for first and last occurrence:

1. Engine Alarm/Shutdown

a. Low oil pressure alarm/shutdown.
b. High coolant temperature alarm/shutdown.
c. Loss of coolant shutdown.
d. Overspeed shutdown.
e. Overcrank shutdown.
f. Emergency stop depressed shutdown.
g. Low coolant temperature alarm.
h. Low battery voltage alarm.
i. High battery voltage alarm.
j. Control switch not in auto position alarm.
k. Battery charger failure alarm.

2. Generator Alarm/Shutdown

a. Generator over voltage.
b. Generator under voltage.
c. Generator over frequency.
d. Generator under frequency.
e. Generator reverse power.
f. Generator overcurrent.

3. Voltage Regulator Alarm/Shutdown

or equalOR

a. Loss of excitation alarm/shutdown.
b. Instantaneous over excitation alarm/shutdown.
c. Time over excitation alarm/shutdown.
d. Rotating diode failure.
e. Loss of sensing.
f. Loss of PMG.

H. Inputs and Outputs

1 input module and 1-output module is included which provides 8 contact points

1. Digital Inputs: The Controller shall include the ability to accept six (6) to eighteen (18) programmable digital input signals. The signals may be programmed for either high or low activation using programmable Normally Open or Normally Closed contacts.
2. Digital Outputs: The control shall include the ability to operate six (6) programmable relay output signals, integral to the controller. The output relays shall be rated for 2A @ 30VDC and consist of six (6) Form A (Normally Open) contacts and two (10) Form C (Normally Open & Normally Closed) contacts.
3. Discrete Outputs: The control shall include the ability to operate two (2) discrete outputs, integral to the controller, which are capable of sinking up to 300mA.

c I. Maintenance: All engine, voltage regulator, control panel and accessory units shall be accessible through a single electronic service tool. The following maintenance functionality shall be integral to the generator set control.

Modbus RTU & RS485 compatible

1. Engine running hours display.
2. Service maintenance interval (running hours or calendar days).
3. Engine crank attempt counter.
4. Engine successful starts counter.
5. 20 events are stored in control panel memory.

c J. Remote Communications

1. Remote Communications: The control shall include Modbus RTU and Ethernet communications as standard via RS-485 half duplex with configurable baud rates from 2.4k to 57.6k. The remote communications shall also be capable of communicating Modbus RTU and Ethernet.
2. Remote Monitoring Software: The control shall provide Monitoring Software with the following functionality:
   a. Provide access to all dates and events on generator set communications network.
   b. Provide remote control capability for the generator set.
   c. Ability to communicate via Modbus RTU and Ethernet.

data registry available for SCADA

3. Remote Indication: Provide a remote indication to SCADA.
   a. Provide the following individual digital outputs for the following indications for protection and diagnostics:
      1). Overcrank.
      2). Low coolant temperature.
      3). High coolant temperature warning.
      4). High coolant temperature shutdown.

5). Low oil pressure warning.
6). Low oil pressure shutdown.
7). Overspeed.
8). Low coolant level.
9). EPS supplying load.
10). Control switch not in auto.
11). High battery voltage.
12). Low battery voltage.
13). Battery charger AC failure.
14). Emergency stop.
15). Low Fuel Level.
16). Fuel Leak.
17). Spare.
18). Spare.

b. The following additional metering shall be provided via Ethernet Communication protocol and Modbus RTU for each Engine:
1). Generator kW, kVA, kVAR, PF, Volts, Amps and frequency.
2). Generator AC Amperes – Phase A, Phase B and Phase C.
3). Generator AC Voltage – Phase A-B, Phase B-C, Phase C-A, Phase A, Phase B and Phase C (verify phase rotation).
4). Engine RPM Meter.
5). Engine Battery Voltage Meter.
6). Engine Oil Pressure Gauge.
7). Engine Coolant Temperature Gauge.
8). Engine Running Hour Meter.
9). Engine Start Counter.
10). Atmospheric Pressure.
11). Boost Pressure.
12). Air Filter Restriction.
13). Left Turbo Inlet Pressure. not available
14). Right Turbo Inlet Pressure. not available
15). Engine Hour Meter.
16). Total Fuel Burned.
17). Engine Coolant Level Status.
18). Local Engine Control Switch Position.
19). Overspeed Switch Status.
20). Remote Emergency Stop Actuated.
21). Percent Engine Load.
22). Oil Filter Pressure Differential. not available
23). Fuel Filter Pressure Differential. not available
24). After-coolant Temperature.
25). Right Exhaust Temperature. not available
26). Left Exhaust Temperature. not available
27). Crankcase Air Pressure.
28). Filtered Fuel Pressure.
29). Right Air Filter Restriction.
30). Left Air Filter Restriction.
31). Fuel Consumption Rate.

32) Engine Oil Temperature.

K. Indicating and Protective Devices and Controls: Include those required by NFPA 110 for a Level 1 system, and the following:

1. AC voltmeter.
2. AC ammeter.
3. AC frequency meter.
4. DC voltmeter (alternator battery charging).
5. Engine coolant temperature gauge.
6. Engine lubricating oil pressure gage.
7. Running time meter.
8. Ammeter voltmeter, phase selector switch(es).
9. Generator voltage adjusting rheostat.
10. Start-stop switch.
11. Overspeed shutdown device.
12. Coolant high temperature shutdown device.
13. Oil low pressure shutdown device.

L. Supporting Items: Include sensors, transducers, terminals, relays, and other devices, and wiring required to support specified items. Locate sensors and other supporting items on engine, generator, or elsewhere as indicated. Where not indicated, locate to suit manufacturer's standard.

M. Common Remote Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems.

2.12 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator and Load Bank Circuit Breakers:

1. Generator shall include a main circuit breaker and a dedicated load bank circuit breaker.
2. Molded-case, thermal-magnetic type; 100 percent rated; complying with NEMA AB 1 and UL 489.
3. Breakers shall be individually mounted circuit breakers (100% rated).
4. Breakers shall have solid-state adjustable trip settings with Long time, Short time, Instantaneous and Ground settings (LSIG). ~~ground fault relay to be added to the package~~

LS/I plus ground fault relay included (not in CB)

5. All circuit protective devices shall have the following minimum symmetrical current interrupting capacity: 65kA. 50KAIC at 480v
6. Series rated feeder devices shall not be acceptable.
7. Breakers shall have trip indication of Overload, Short Circuit, and Ground Fault trip.

B. All breakers shall be capable of being locked in the OFF position.

C. Tripping Characteristic: Designed specifically for generator protection.

~~ground fault relay to be added to the package~~

Or the output of the generator set can be channeld through a docking station with a 2nd Kirk-key CB which would serve as load bank feed. You would lock out the gen output during load banking. Cuaaarrent proposal ins included with 2-manual CBs and no on board parallelingf

D. Trip Rating: Matched to generator rating.

E. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.

F. Mounting: Adjacent to or integrated with control and monitoring panel.

2.13 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1 and specified performance requirements.

B. Drive: Generator shaft is directly connected to engine shaft. Exciter is rotated integrally with generator rotor.

C. Electrical Insulation: H.

D. Stator Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction prevents mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Excitation uses no slip or collector rings, or brushes, and is arranged to sustain generator output under short circuit conditions as specified.

G. Enclosure: Drip proof.

H. Voltage Regulator: Solid state type, separate from exciter, providing performance as specified.

1. Adjusting rheostat on control and monitoring panel provides plus or minus 5 percent adjustment of output voltage operating band.

2.14 OUTDOOR GENERATOR SET ENCLOSURE

A. Description: Vandal resistant, weatherproof steel housing with sound shield, wind resistant up to 100 mph (160 km/h). Multiple panels are lockable and provide adequate access to components requiring maintenance. Panels are removable by one person without tools. Instruments and control are mounted within enclosure.

150 MPH

inside enclosure may not be hockey puck design

B. Muffler Location: Generator mufflers shall be mounted inside the enclosure with a disc (hockey puck) style silencer.

C. Engine Cooling Airflow through Enclosure: Adequate to maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.

D. Louvers: Fixed engine cooling air inlet and discharge. Louvers prevent entry of rain and snow.

E. Enclosure shall dampen noise to 75 dB within 7 meters of enclosure.

F. The manufacturer shall provide a minimum of one (1) 120VAC duplex receptacle in the enclosure.

G. The manufacturer shall provide a minimum of two (2) LED light fixtures with a minimum of one (1) fixture on each side of the genset that has an access door. The light fixtures shall be

as factory standard for adaquate illumination inside enclosure

Or the output of the generator set can be channeld through a docking station with a 2nd Kirk-key CB which would serve as load bank feed. You would lock out the gen output during load banking. Current proposal ins included with 2-manual CB

switched. A light switch for the light fixture shall be located near each set of access doors. The light fixture shall be located such that the light illuminates the control panel in the generator.

2.15 SERVICE PLATFORMS

included Type text here

A. Service platforms shall be provided for generator enclosure door access. Design and construction shall comply with the local building code, and OSHA regulations.

prcing can be quoted if deemed necessary.

B. Platform design shall be sealed by licensed Professional Engineer in the State of Texas.

C. Materials: Hardware shall be Type 316 stainless steel. Platform members shall be aluminum alloy 6061-T6 in accordance with ASTM B221, unless noted otherwise. extra pricing for aluminum

E

D. Delegated-Design: Engage a qualified professional engineer to prepare design calculations, shop drawings, and other structural data for service platform design.

—

E. Structural Performances: Provide engineered service platforms capable of withstanding design loads within limits and under conditions indicated.

engineering for platforms not necessary, but $5000 added if still desired.

1. Design Loads as follows:
   a. Dead Loads: Weights of materials and construction. c
   b. Live loads: 100psf to be varified with manufacturer
   c. Wind Loads: In accordance with applicable project local code requirements.

c

to be varified with manufacturer

2. Deflection Limits: Design framing systems to withstand service loads without deflections greater than a horizontal deflection of 1/240 of the span or ¼" whichever is smaller.

c F. Clearance: The gap between the platform walking surface and the generator shall be a maximum of 2" and minimum of 1".

c G. A platform with guardrails shall be provided on two sides of the enclosure and shall extend the full length of the generator enclosure.

c H. Access stairs shall be on each end of each platform.

c I. Grating, treads, and nosings shall be slip resistant. Grating and treads shall be fastened to the frame with clips and bolts per manufacturer's recommendations.

c J. Fasten service platforms to the generator foundation with adhesive anchors.

c K. Platforms shall ship for field assembly.

c 2.16 FINISHES Standard Caterpillar pain finishes

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

B. Outdoor Enclosure: Manufacturer's standard enamel over corrosion resistant pretreatment and compatible standard primer.

1. Color: Manufacturer's standard. to be White.

C. Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color.

There is not adaquate space for a fuel "polishing system" with in the enclosure space. However, a freestand unit that sits next to the unit is available. separate wiring and plumbing would be required by others. separate unit pricing is shown as an option.

2.17 FUEL MAINTENANCE SYSTEM

A. Each fuel storage tank shall include two stage fuel maintenance (fuel polishing) system that will remove dirt and water. The maintenance system shall be plumbed into the tank per the manufacturer's recommendations.

B. The separator shall remove 99.9% of the water in the fuel line and 95% of the solids.

C. The stabilizer shall decontaminate and stabilize the fuel without the use of chemical additives.

D. The system shall operate on 120V, 1 phase, 60HZ, 20A circuit breaker.

E. Programmable controller:

1. The controller shall be a UL 508 listed assembly.

2. Provide dry contact for general alarms.

F. The system shall be capable of treating the maximum amount of fuel that the entire sub-base tank fuel system is capable of being filled with. Acceptable manufacturer is Fuel Technologies International LLC, product number FTI-2.8.

G. The fuel tank shall be provided with all the necessary and required pipes and fittings for installation and proper operation of the system.

2.18 SOURCE QUALITY CONTROL

C A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.

C 1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.

C B. Project Specific Equipment Tests: Factory test engine generator set and other system components and accessories before shipment. Perform tests at rated load and power factor. Include the following tests:

1. Four (4) hour full load run.

2. Maximum power.

3. Voltage regulation.

4. Transient and steady state governing.

5. Single step load pickup.

6. Safety shutdown.

7. Report factory test results within 10 days of completion of tests.

2.19 AUXILLIARY POWER DISTRIBUTION

C A. Provide one molded case, thermal magnetic type circuit breaker in the generator enclosure to distribute power to the panelboard.

C B. Provide 208Y/120V three phase, 4-wire, panelboard inside enclosure for distributing power to generator block heater, battery charger, lights, receptacles and any other devices

requiring 208Y/120V power. Panelboard shall be minimum 12 pole with 60 amp main breaker, in a NEMA 12 enclosure, have bolt-on breakers with a minimum 10,000 AIC rating and tin-plated copper bus for phase, neutral and ground. Panelboards shall be manufactured by ABB/GE, Eaton, or Square-D/Schneider Electric.

2.20 GENERATOR PARALLELING

due to electrically operated CB being included with on board paralleling, per discussion with specifying engineer we are leaving on board paralleling off the package

This will not preclude paralleling in the future (either by control modification or off skid paralleling.)

A. Generator as furnished shall be capable of paralleling with other generators in the future through a dedicated communication link between the controller.

B. Support up to eight generators on a common bus.

C. Support paralleling a single generator with a utility source using kW, kVAR, and power factor settings.

D. Synchronization:

1. First-on logic to determine which generator will close to the dead bus first.
2. Synchronization logic to allow matching of voltage, frequency, and phase before closing circuit breaker or contactor to connect the generator to the bus including the following methods:
    a. Automatic: Synchronize and close breaker.
    b. Sync-Check: Synchronize and no closure.
    c. Permissive: No active synchronization, allows manual close if generator is synchronized with bus.
3. Fail-to-sync alarm generated if automatic synchronization is not successful within a user-adjustable time period.
4. Active synchronization will continue after expiration of the fail-to-sync time delay.
5. Specifically designed interface screen to actively display synchronizing parameters for both generator and bus when synchronizing including:
    a. Voltage.
    b. Frequency.
    c. Slip.
    d. Phase angle.
    e. Phase rotation.

E. Load Sharing: not currently provided.

1. Actively share real and reactive power between all generators connected to common bus on a per-unit or percentage basis.
2. Soft loading and unloading of generator.
3. Capable of droop control.

F. Circuit Breaker/Contactor Control:

paralleling is available on or off skid. one skid only allows 1 CB due to it being used to synch and close with electronic operation. off skid still possible with off skid controls and EO breaker(s)

Type text here

Or the output of the generator set can be channeld through a docking station with a 2nd Kirk-key CB which would serve as load bank feed. You would lock out the gen output during load banking.

Proposal is currently without on board paralleling and 2-manual CBs.

1. Capable of directly operating a circuit breaker or contactor to connect or disconnect from the common bus.
2. Normally closed (fail-safe) contact for trip to ensure paralleling device remains open until all conditions are met to allow closure.
3. Normally open contact to provide energizing signal to close paralleling device.
4. Fail-to-close alarm generated after one unsuccessful close attempt.
5. Fail-to-close shutdown after a user-adjustable number of attempts.

G. Generator Management:

c

1. Automatically start or stop generators based on load demand or state of other generators.

Outage?

   a. Start power.
   b. Stop power.
   c. Start accumulator.
   d. Stop accumulator.
   e. Total online capacity.
   f. Total available capacity.
   g. Total bus power.
   h. Total bus capacity.
   i. Negotiated order.
   j. Stopped by generator management.
   k. Start command.

We need to understand more about these requirements

2. Generator management configurable to operate based on:
   a. Engine run time.
   b. Fuel level.
   c. User-assigned order.
   d. User programmable disconnect point in kW, below which the generator device will trip.

3.00 EXECUTION

3.01 EXAMINATION

c

A. Examine areas, equipment foundations, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

c

B. Examine roughing in of electrical connections. Verify actual locations of connections before packaged engine generator installation.

3.02 INSTALLATION installation by others

A. Generator to be installed by Contractor, to be determined at a later date.

B. Comply with packaged engine generator manufacturers' written installation and alignment instructions, and with NFPA 110.

C. Generator to be installed on concrete pad by others.

D. Packaged engine generator to provide access for periodic maintenance, including removal of drivers and accessories.

E. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not factory mounted.

1. Verify that electrical wiring is installed according to manufacturers' submittal and installation requirements in Division 26 Sections. Proceed with equipment startup only after wiring installation is satisfactory.

c F. The generator supplier shall test the generator voltage and configuration on site prior to connecting to Owner's system.

c G. The generator supplier shall provide an inductive (reactive) load bank test on site for 4 hours.

H. The generator supplier shall provide all fuel for testing of the generator. The generator supplier shall be responsible for providing a full tank of fuel upon completion of this project.

fuel by others

3.03 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

c B. Provide two NEMA 2-hole ground pads located at the corners of the generator. Ground pads shall be stainless steel and suitable for terminating #4/0 ground conductor.

3.04 FIELD QUALITY CONTROL

c A. Manufacturer's Field Service: Engage a factory authorized service representative to inspect field assembled components and equipment installation, including piping and electrical connections, and to assist in testing. Report results in writing. Provide on-site field service as needed for start-up.

fuel by others B. Generator supplier shall be responsible for providing all diesel fuel during all electrical testing, including switchboard load transfer testing, and step loading voltage and frequency response for existing generators. Generator supplier shall fill the tank after testing.

c C. Testing: Perform field quality control testing under the supervision of the manufacturer's factory authorized service representative.

c D. Field Tests: Include the following:

1. Tests recommended by manufacturer, including under load tests.

2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, the following:

OR
or EqualOR

a. Single step full load pickup test.

b. 4 hour load bank test.

c 3. Perform a reactive load bank test of each generator set at full load and 0.80 power factor for 4 hours at full load. Record system data at 15 minute intervals as recommended by the engine manufacturer.

c 4. Battery Tests: Measure charging voltage and voltages between available battery terminals for full charging and float charging conditions. Check electrolyte level and specific gravity under both conditions. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery. Verify acceptance of charge for each element of battery after discharge. Verify measurements are within manufacturer's specifications.

c 5. Battery Charger Tests: Verify specified rates of charge for both equalizing and float charging conditions.

c 6. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.

c, meter other than O-scope to be used. 7. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step load increases and decreases and verify that performance is as specified.

c 8. Harmonic Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.

c 9. Perform field load testing of the Generator set. Field load testing shall include but not be limited to simulating a power outage and running the generator under load with the number and size of loads it is specified to be rated for.

10. Noise Level Testing

3rd party sound testing to be by others

a. The manufacturer shall have 3rd Party testing performed in the field on the equipment after installation to confirm the generator noise level does not exceed the specified noise restrictions when operating at full generator capacity. If it does not meet the specified levels it is the manufacturer's responsibility to make any changes necessary to meet the values specified.

b. The decibel level of the generator shall be measured while operating the generator at full rated capacity. The decibel level shall be measured from a minimum of 5 points spanned across the perimeter of the generator 7 meters from the generator enclosure and a minimum of 5 points along the property line.

c. Testing shall be conducted as a minimum under the following operating conditions:
   1) Without the generator running to document ambient noise levels
   2) With the generator running at full capacity

d. The Testing Report shall clearly indicate:
   3) The weather conditions of when the tests were conducted this includes but is not limited to the weather conditions: temperature, wind direction/speed, barometric pressure, etc.

4) The location of where each measuring point was taken indicated on a site plan/layout.

fuel by others

11. The generator supplier shall provide fuel for the testing of the generator and shall tap off the fuel tank upon final completion.

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

F. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

G. Test instruments shall have been calibrated within the last 12 months, traceable to standards of the National Institute for Standards and Technology, and adequate for making positive observation of test results. Make calibration records available for examination on request.

3.05 COMMISSIONING

A. Battery Equalization: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.

3.06 EQUIPMENT INSTALLATION REPORT

c

A. Submit Equipment Installation Reports from the generator manufacturer field service representative indicating the equipment was installed in accordance with the manufacturers' instructions and that the equipment was adjusted and aligned to be in the best operating condition. The report shall also indicate that the equipment is operating satisfactorily in accordance with the project specifications.

3.07 CLEANING

cleaning only for items caused by field tech or manufacturer

A. On completion of installation, inspect system components. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish. Clean components internally using methods and materials recommended by manufacturer.

B. Provide one gallon of touchup paint.

3.08 DEMONSTRATION

c

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

1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment. Owner Training: Provide one day for Owner Training. These times do not include travel time and include a minimum of 4 working hours per day.

2. Review data in maintenance manuals. Refer to Section 01 33 00, SUBMITTALS, 01 77 00, CONTRACT CLOSEOUT, and Section 01 78 23, EQUIPMENT OPERATIONS AND MAINTENANCE DATA.
3. Schedule training with Owner, with at least 7 days advance notice.
4. Minimum Instruction Period: 4 hours.

paralleling is available on or off skid. one skid only allows 1 CB due to it being used to synch and close with electronic operation. off skid still possible with off skid controls and EO breaker(s). O

ATTACHMENT A - SUBMITTAL DATA SHEET FOR
26 32 13, ENGINE GENERATORS

Submit the following data with Bid Proposal and with Shop Drawing:

Item No.	Description	480V Generator for Pump Station
1	Manufacturer of Generator:	
2	Generator kW:	
3	Total Equipment Dimensions for Generator including service platforms (inches): Length x Width x Height	
4	Total (wet) Weight (lbs.):	
5	Fuel Consumption (gallons/hour)	_____at 25% generator KW rating _____at 50% generator KW rating _____at 75% generator KW rating _____at 100% generator KW rating
6	Capacity of Fuel Tank (gallons)	

END OF SECTION

CUMMINS PROPOSAL

January 20, 2025

Prepared by

Matthew Bole
(469) 600-5364
oo180@cummins.com

Per Sourcewell Contract: 092222

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**DQCB, Commercial Diesel Generator Set, 750kW Standby 60Hz** **750DQCB, Diesel Genset, 60Hz, 750kW** **U.S. EPA, Stationary Emergency Application** **Duty Rating - Standby Power (ESP)** **Emission Certification, EPA, Tier 2, NSPS CI Stationary Emergency** **Listing - UL 2200** **Voltage - 277/480, 3 Phase, Wye, 4 Wire** **Alternator - 60Hz, Wye, BR, 125/105C - Standby/Prime** **Alternator Heater, 120 Volt AC** **Steel Sound Attenuated Level 2 Enclosure, with Exhaust System *75dba@23ft*** **Enclosure Color - Green, Steel** **Cooling Air Outlet - Horizontal, Sound Attenuated** **Distribution Panel - Prewired AC Features** **Service Receptacle - 120V, 20A, External GFCI, NEMA 5 - 20R** **Enclosure Lighting - 120 Volts AC** **Fuel Water Separator** **Control Mounting - Left Facing** **PowerCommand 3.3 Controller, Paralleling Capable** **Analog Meters - AC Output** **LCD Control Display** **Display, Running Time** **Relays - Genset Status, User Configured** **Alarm - Audible, Engine Shutdown** **Stop Switch - Emergency, Externally Mounted** **Signals - Auxiliary, 8 Inputs/8 Outputs**	1

	Relay - Alarm Shutdown	
	Relays - Paralleling Circuit Breaker Control	
	Control Display Language - English	
	Circuit Breaker or Entrance Box or Terminal Box - Right And Left	
	Circuit Breaker - 1200A, Left, 3P, 600/415V, UL/IEC, Serv Ent, 100%UL	
	Circuit Breaker - 1200A, Right, 3P, UL 600, IEC 415, UL Serv Ent, 100%	
	Bottom Entry, Left and Right	
	Indication - Ground Fault, Terminal Box (or) Circuit Breaker Box - Left	
	Circuit Breaker Accessory, 24 Volts DC Trip, Aux and Trip Contacts, Right Side	
	Circuit Breaker Accessory, 24 Volts DC Trip, Aux and Trip Contacts, Left Side	
	Engine Air Cleaner - Normal Duty	
	Engine Cooling - Radiator, 50C Ambient	
	Shutdown - Low Coolant Level	
	Coolant Heater - 208/240/480 Volts AC, 40F Minimum Ambient Temperature	
	Test Record - Strip Chart	
	Test - Extended, Standby Load, 4 Hour	
	Test Record - Safety Shutdowns	
	Cummins Certified Test Record	
	Genset Warranty - 2 Years Base	
	Literature - English	
	Packing - None, Base Mounted Housing	
	Remote Emergency Stop Switch	1
	PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway (Ship Loose)	1
	Battery	1
	Annunciator-panel mount with enclosure (Ship Loose)	1
	Spare parts (Ship Loose)	1
	Platform (Ship Loose)	1
	2600gallon UL142 Fuel Tank with 4-20mA Fuel Gauge and FTI-2.8 Fuel Polisher	1
	Freight	1
	Startup	1trip
	4Hour Load Bank Test / 2Hour Building Load Test (System)	1trip
	Training	1trip
	Preventive maintenance agreement 12-months	1-year

QUOTE TOTAL: $ 384,244.00

ADDERS/DEDUCTS:

- If a factory 2400gallon UL142 fuel tank with NO fuel polisher is acceptable, **please Deduct $26,800 from the above total**
- If a separate remote monitoring device is preferred (Cummins Acumen), **Please Add $6,500 to above total**
- If custom enclosure with Hockey Puck Style Silencer is preferred, **please Add $275,000 to above total.**
- If a 3-phase panel is required, **please add $10,250 to above total**
- If Resistive load bank testing is acceptable, **please deduct $15,000 from above total**

Quote value does not include any tax.

EXCEPTIONS AND CLARIFICATIONS:

- 263213-1 Cummins is quoting to 263213 ONLY.
- 263213-7 1.11: Cummins standard spare filters provided ONLY.
- 263213-12 2.07,G: Cummins is utilizing Alternator as recommended by sizing report ONLY.
- 263213-14 SENS does not manufacture NEMA 4X Battery chargers. Cummins Standard NEMA 1 provided.
- 263213-17 2.11,J,2: Cummins Controller has built in monitoring points capable of exporting the requested information.
- 263213-18 2.11,J,3,b: Cummins standard points provided.
- 263213-20 2.14,B: Cummins standard cigar style mufflers provided.
- 263213-22 2.19, Cummins standard and manufacture recommended 1-phase 240V 150A Panel provided to feed generator accessories. If a 3-phase panel is required, please reference deduct above
- 263213-24 3.01-3.03: By others
- 263213-25 3.04: Cummins standard startup and testing provided. NETA, Battery, Transient, Harmonic, Noise Level and Infrared testing by others.
- 263213-26 3.04,D,3: The more expensive Reactive Load Bank Testing has been quoted. If Resistive testing is acceptable, please reference deduct above
- 263213-26 3.04,D,11: Fuel is by others.
- 263213-27 3.07: By Others

NOTES:

- Current Submittal Lead Time: **2-4** weeks
- Current Production Lead Time (*after receipt of approved submittal and accepted PO*):
  - Generator: **40-48** weeks
- Proposal based upon supplied **263213** documents only.
- Price quoted is F.O.B. factory with freight allowed to the first U.S. destination.
- Price does not include any applicable taxes unless listed above.
- All ship loose items installed by others.
- Unloading, installation, and fuel are not included and will be the responsibility of others.
- **Warranty:**
  Cummins **2**-year warranty begins at the successful completion of startup and testing in lieu of acceptance or substantial completion.
- **Startup & Training:**
  - Providing Cummins standard startup and the specific testing listed above only. All other testing including NETA testing is provided by others.
  - Our proposal includes **3** trips during normal business hours to complete the onsite services listed above. If additional trips or after-hours trips are required, additional cost will be incurred.
  - Training for maintenance personnel will be concurrent at time of startup unless otherwise noted.
  - No videotaping is included with this quotation. All taping is supplied by others.
- **PMA:**
  Generator Maintenance Agreement is not included and will be negotiated directly with the owner once equipment has been successfully started up and tested.
- *NOTICE: As a result of the outbreaks of the disease COVID-19 arising from the novel coronavirus, temporary delays in delivery, labor, or services from Cummins and its sub-suppliers or subcontractors may occur. Among other factors, Cummins' delivery is subject to correct and punctual supply from our sub-suppliers or subcontractors, and Cummins reserves the right to make partial deliveries or modify its labor or service. While Cummins shall make every commercially reasonable effort to meet the delivery, service, or completion described herein, such date(s) is(are) subject to change.*

Please feel free to contact me if you require any additional information; or if you have any further questions or concerns that I may be of assistance with.

Thank you for choosing Cummins.

Submitted by:

Abby Walker, Sales Application Engineer
tr606@cummins.com
(214) 912-1054

SUBMITTALS. An order for the equipment covered by this quotation will be accepted on a hold for release basis. Your order will not be released and scheduled for production until written approval to proceed is received in our office. Such submittal approval shall constitute acceptance of the terms and conditions of this quotation unless the parties otherwise agree in writing.

THERE ARE ADDITIONAL CONTRACT TERMS AND CONDITIONS ATTACHED TO THIS QUOTATION, INCLUDING LIMITATIONS OF WARRANTIES AND LIABILITIES, WHICH ARE EXPRESSLY INCORPORATED HEREIN. BY ACCEPTING THIS QUOTATION, CUSTOMER ACKNOWLEDGES THAT THE CONTRACT TERMS AND CONDITIONS HAVE BEEN READ, FULLY UNDERSTOOD AND ACCEPTED.

Authorized Signature _____ Date _____

Company Name _____

Printed Name & Title _____

Purchase Order No _____

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TERMS AND CONDITIONS FOR SALE OF POWER GENERATION EQUIPMENT

These Terms and Conditions for Sale of Power Generation Equipment, together with the quote ("Quote"), sales order ("Sales Order"), and/or credit application ("Credit Application") on the front side or attached hereto, are hereinafter collectively referred to as this "Agreement" and shall constitute the entire agreement between the customer identified in the Quote ("Customer") and Cummins Inc. ("Cummins") and supersede any previous representation, statements, agreements or understanding (oral or written) between the parties with respect to the subject matter of this Agreement. Customer shall be deemed to have made an unqualified acceptance of these Terms and Conditions and it shall become a binding agreement between the parties on the earliest of the following to occur: (i) Cummins' receipt of Customer's purchase order or purchase order number; (ii) Customer's signing or acknowledgment of this Agreement; (iii) Cummins' release of equipment to production pursuant to Customer's oral or written instruction or direction; (iv) Customer's payment of any amounts due to Cummins; or (v) any other event constituting acceptance under applicable law. No prior inconsistent course of dealing, course of performance, or usage of trade, if any, constitutes a waiver of, or serves to explain or interpret, the Terms and Conditions set forth in this Agreement. Electronic transactions between Customer and Cummins will be solely governed by the Terms and Conditions of this Agreement, and any terms and conditions on Customer's website or other internet site will be null and void and of no legal effect on Cummins. In the event Customer delivers, references, incorporates by reference, or produces any purchase order or document, specifications, agreement (whether upstream or otherwise), or any other terms and conditions related thereto, then such specifications, terms, document, or other agreement: (i) shall be null and void and of no legal effect on Cummins, and (ii) this Agreement shall remain the governing terms of the transaction.

1. SCOPE. Cummins shall supply power generation equipment and any related parts, materials and/or services expressly identified in this Agreement (collectively, "Equipment"). No additional services, parts or materials are included in this Agreement unless mutually agreed upon by the parties in writing. A Sales Order for Equipment is accepted on a hold for release basis. The Sales Order will not be released and scheduled for production until written approval to proceed is received from Customer. A Quote is limited to the plans and specifications section specifically referenced in the Quote. No other sections shall apply. Additional requirements for administrative items may require additional costs. The Quote does not include off unit wiring, off unit plumbing, offloading, rigging, installation, exhaust insulation or fuel, unless otherwise stated and mutually agreed to in writing by the parties. Unless otherwise agreed by Cummins in writing, this Quote is valid for a maximum period of thirty (30) days from the date appearing on the first page of this Quote ("Quote Validation Period"). At the end of the Quote Validation Period, this Quote will automatically expire unless accepted by Customer prior to the end of the Quote Validation Period. The foregoing notwithstanding, in no event shall this Quote Validation Period be deemed or otherwise considered to be a firm offer period nor to establish an option contract, and Cummins hereby reserves its right to revoke or amend this Quote at any time prior to Customer's acceptance.

2. SHIPPING; DELIVERY; DELAYS. Unless otherwise agreed in writing by the parties, Equipment shall be delivered FOB origin, freight prepaid to first destination. For consumer and mobile products, freight will be charged to Customer. Unless otherwise agreed to in writing by the parties, packaging method, shipping documents and manner, route and carrier and delivery shall be as Cummins deems appropriate. Cummins may deliver in installments. A reasonable storage fee, as determined in Cummins' sole discretion, may be assessed if delivery of the Equipment is delayed, deferred, or refused by Customer. In the event Customer fails to take any or all shipments of Equipment ordered hereunder within thirty (30) days of the agreed upon delivery date, Cummins shall have the right, in its sole discretion to either (i) charge a minimum storage fee in the amount of one and one-half percent (1.5%) per month of the total quoted amount; or (ii) consider the Equipment abandoned and, subject to local laws, may (a) make the Equipment available for auction or sale to other customers or the public, or (b) otherwise use, destroy, or recycle the Equipment at Customer's sole cost and expense. The foregoing remedies shall be without prejudice to Cummins' right to pursue other remedies available under the law, including without limitation, recovery of costs and/or losses incurred due to the storage, auction, sale, destruction, recycling, or otherwise of the Equipment. Offloading, handling, and placement of Equipment and crane services are the responsibility of Customer and not included unless otherwise stated. All shipments are made within normal business hours, Monday through Friday. Any delivery, shipping, installation, or performance dates indicated in this Agreement are estimated and not guaranteed. Further, delivery time is subject to confirmation at time of order and will be in effect after engineering drawings have been approved for production. Cummins shall use commercially reasonable efforts to meet estimated dates, but shall not be liable to customer or any third party for any delay in delivery, shipping, installation, or performance, however occasioned, including any delays in performance that result directly or indirectly from acts of Customer or any unforeseen event, circumstance, or condition beyond Cummins' reasonable control including, but not limited to, acts of God, actions by any government authority, civil strife, fires, floods, windstorms, explosions, riots, natural disasters, embargos, wars, strikes or other labor disturbances, civil commotion, terrorism, sabotage, late delivery by Cummins' suppliers, fuel or other energy shortages, or an inability to obtain necessary labor, materials, supplies, equipment or manufacturing facilities. *AS A RESULT OF COVID-19 RELATED EFFECTS OR INDUSTRY SUPPLY CHAIN DISRUPTIONS, TEMPORARY DELAYS IN DELIVERY, LABOR OR SERVICES FROM CUMMINS AND ITS SUB-SUPPLIERS OR SUBCONTRACTORS MAY OCCUR. AMONG OTHER FACTORS, CUMMINS' DELIVERY OBLIGATIONS ARE SUBJECT TO CORRECT AND PUNCTUAL SUPPLY FROM OUR SUB-SUPPLIERS OR SUBCONTRACTORS, AND CUMMINS RESERVES THE RIGHT TO MAKE PARTIAL DELIVERIES OR MODIFY ITS LABOR OR SERVICE. WHILE CUMMINS SHALL MAKE COMMERCIALLY REASONABLE EFFORTS TO MEET THE DELIVERY, SERVICE OR COMPLETION*

OBLIGATIONS SET FORTH HEREIN, SUCH DATES ARE SUBJECT TO CHANGE. IN THE EVENT DELIVERY, SHIPPING, INSTALLATION, OR PERFORMANCE IS DELAYED, HOWEVER OCCASSIONED, DUE TO EVENTS BEYOND CUMMINS' REASONABLE CONTROL, THEN THE DATE OF DELIVERY, SHIPPING, INSTALLATION, OR PERFORMANCE FOR THE EQUIPMENT OR SERVICES SHALL BE EQUITABLY EXTENDED FOR A PERIOD EQUAL TO THE TIME LOST, PLUS REASONABLE RAMP-UP.

3. PAYMENT TERMS; CREDIT; RETAINAGE. Unless otherwise agreed to by the parties in writing and subject to credit approval by Cummins, payments are due thirty (30) days from the date of the invoice. If Customer does not have approved credit with Cummins, as solely determined by Cummins, payments are due in advance or at the time of supply of the Equipment. If payment is not received when due, in addition to any rights Cummins may have at law, Cummins may charge Customer eighteen percent (18%) interest annually on late payments, or the maximum amount allowed by law. Customer agrees to pay Cummins' costs and expenses (including reasonable attorneys' fees) related to Cummins' enforcement and collection of unpaid invoices, or any other enforcement of this Agreement by Cummins. Retainage is not acceptable nor binding, unless required by statute or accepted and confirmed in writing by Cummins prior to shipment. If Customer fails to make any payments to Cummins when due and payable, and such failure continues for more than sixty (60) days from the date of the invoice, or less if required by applicable law, then Cummins may, at Cummins' sole discretion and without prejudice to any other rights or remedies, either (i) terminate this Agreement; or (ii) postpone delivery of any undelivered Equipment in Cummins' possession and/or suspend its services until payment for unpaid invoices is received.

4. TAXES; EXEMPTIONS. Unless otherwise stated, the Quote excludes all applicable local, state and federal sales and/or use taxes, permits and licensing. Customer must provide a valid resale or exemption certificate prior to shipment of Equipment or applicable taxes will be added to the invoice.

5. TITLE; RISK OF LOSS. Unless otherwise agreed in writing by the parties, title and risk of loss for the Equipment shall pass to Customer upon delivery of the Equipment by Cummins to freight carrier or to Customer at pickup at Cummins' facility.

6. INSPECTION AND ACCEPTANCE. Customer shall inspect the Equipment upon delivery, before offloading, for damage, defects, and shortage. Any and all claims which could have been discovered by such inspection shall be deemed absolutely and unconditionally waived unless noted by Customer on the bill of lading. Where Equipment is alleged to be non-conforming or defective, written notice of defect must be given to Cummins within three (3) days from date of delivery after which time Equipment shall be deemed accepted. Cummins shall have a commercially reasonable period of time in which to correct such non-conformity or defect. If non-conformity or defect is not eliminated to Customer's reasonable satisfaction, Customer may reject the Equipment (but shall protect the Equipment until returned to Cummins) or allow Cummins another opportunity to undertake corrective action. In the event startup of the Equipment is included in the services, acceptance shall be deemed to have occurred upon successful startup.

7. LIEN; SECURITY AGREEMENT. Customer agrees that Cummins retains all statutory lien rights. To secure payment, Customer grants Cummins a Purchase Money Security Interest in the Equipment. If any portion of the balance is due to be paid following delivery, Customer agrees to execute and deliver such security agreement, financing statements, deed of trust and such other documents as Cummins may request from time to time in order to permit Cummins to obtain and maintain a perfected security interest in the Equipment; or in the alternative, Customer grants Cummins a power of attorney to execute and file all financing statements and other documents needed to perfect this security interest. Cummins may record this Agreement, bearing Customer's signature, or copy of this Agreement in lieu of a UCC-1, provided that it shall not constitute an admission by Cummins of the applicability or non-applicability of the UCC nor shall the failure to file this form or a UCC-1 in any way affect, alter, or invalidate any term, provision, obligation or liability under this Agreement. The security interest shall be superseded if Customer and Cummins enter into a separate security agreement for the Equipment. Prior to full payment of the balance due, Equipment will be kept at Customer's location noted in this Agreement, will not be moved without prior notice to Cummins, and is subject to inspection by Cummins at all reasonable times.

05.01.2023

8. CANCELLATION; CHARGES. Orders placed with and accepted by Cummins may not be cancelled except with Cummins' prior written consent. If Customer seeks to cancel all or a portion of an order placed pursuant to this Agreement, and Cummins accepts such cancellation in whole or in part, Customer shall be assessed cancellation charges as follows: (i) 10% of total order price if cancellation is received in Cummins' office after Cummins has provided submittals and prior to releasing equipment to be manufactured; (ii) 25% of total order price if cancellation is received in Cummins' office after receipt of submittal release to order, receipt of a purchase order for a generator already on order with the factory, or is asked to make any hardware changes to the equipment already on order with the factory; (iii) 50% of total order price if cancellation is received in Cummins' office sixty (60) or fewer days before the scheduled shipping date on the order; or (iv) 100% of total order price if cancellation is received in Cummins' office after the equipment has shipped from the manufacturing plant.

9. TERMINATION. Cummins may, at any time, terminate this Agreement for convenience upon sixty (60) days' written notice to Customer. If the Customer defaults by (i) breaching any term of this Agreement, (ii) becoming insolvent or declared bankrupt, or (iii) making an assignment for the benefit of creditors, Cummins may, upon written notice to Customer, immediately terminate this Agreement. Upon such termination for default, Cummins shall immediately cease any further performance under this Agreement, without further obligation or liability to Customer, and Customer shall pay Cummins for any Equipment or services supplied under

this Agreement, in accordance with the payment terms detailed in Section 3. If a notice of termination for default has been issued and is later determined, for any reason, that the Customer was not in default, the rights and obligations of the parties shall treat the termination as a termination for convenience.

10. MANUALS. Unless otherwise stated, electronic submittals and electronic operation and maintenance manuals will be provided, and print copies may be available upon Customer's request at an additional cost.

11. TRAINING; START UP SERVICES; INSTALLATION. Startup services, load bank testing, and owner training are not provided unless otherwise stated. Site startup will be subject to the account being current and will be performed during regular Cummins business hours, Monday to Friday. Additional charges may be added for work requested to be done outside standard business hours, on weekends, or holidays. One visit is allowed unless specified otherwise in the Quote. A minimum of two-week prior notice is required to schedule site startups and will be subject to prior commitments and equipment and travel availability. A signed site check sheet confirming readiness will be required, and Cummins personnel may perform an installation audit prior to the startup being completed. Any issues identified by the installation audit shall be corrected at the Customer's expense prior to the start-up. Portable load banks for site test (if offered in the Quote) are equipped with only 100 feet of cable. Additional lengths may be arranged at an extra cost. Cummins is not responsible for any labor or materials charged by others associated with start-up and installation of Equipment, unless previously agreed upon in writing. Supply of fuel for start-up and/or testing, fill-up of tank after start up, or change of oil is not included unless specified in the Quote. All installation/execution work at the site including, but not limited to: civil, mechanical, electrical, supply of wall thimbles, exhaust extension pipe, elbows, hangers, expansion joints, insulation and cladding materials, fuel/oil/cooling system piping, air ducts, and louvers/dampers is not included unless specified in the Quote. When an enclosure or sub-base fuel tank (or both) are supplied, the openings provided for power cable and fuel piping entries, commonly referred to as "stub-ups", must be sealed at the site by others before commissioning. All applications, inspections and/or approvals by authorities are to be arranged by Customer.

12. MANUFACTURER'S WARRANTY. Equipment purchased hereunder is accompanied by an express written manufacturer's warranty ("Warranty") and, except as expressly provided in this Agreement, is the only warranty offered on the Equipment. A copy of the Warranty is available upon request. While this Agreement and the Warranty are intended to be read and applied in conjunction, where this Agreement and the Warranty conflict, the terms of the Warranty shall prevail.

13. WARRANTY PROCEDURE. Prior to the expiration of the Warranty, Customer must give notice of a warrantable failure to Cummins and deliver the defective Equipment to a Cummins location or other location authorized and designated by Cummins to make the repairs during regular business hours. Cummins shall not be liable for towing charges, maintenance items such as oil filters, belts, hoses, etc., communication expenses, meals, lodging, and incidental expenses incurred by Customer or employees of Customer, "downtime" expenses, overtime expenses, cargo damages and any business costs and losses of revenue resulting from a warrantable failure.

14. LIMITATIONS ON WARRANTIES.

THE REMEDIES PROVIDED IN THE WARRANTY AND THIS AGREEMENT ARE THE SOLE AND EXCLUSIVE WARRANTIES AND REMEDIES PROVIDED BY CUMMINS TO THE CUSTOMER UNDER THIS AGREEMENT. EXCEPT AS SET OUT IN THE WARRANTY AND THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY LAW, CUMMINS EXPRESSLY DISCLAIMS ALL OTHER REPRESENTATIONS, WARRANTIES, ENDORSEMENTS, AND CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY STATUTORY OR COMMON LAW IMPLIED REPRESENTATIONS, WARRANTIES AND CONDITIONS OF FITNESS FOR A PURPOSE OR MERCHANTABILITY.

The limited warranty does not cover Equipment failures resulting from: (a) inappropriate use relative to designated power rating; (b) inappropriate use relative to application guidelines; (c) inappropriate use of an EPA-SE application generator set relative to EPA's standards; (d) normal wear and tear; (e) improper and/or unauthorized installation; (f) negligence, accidents, or misuse; (g) lack of maintenance or unauthorized or improper repair; (h) noncompliance with any Cummins published guideline or policy; (i) use of improper or contaminated fuels, coolants, or lubricants; (j) improper storage before and after commissioning; (k) owner's delay in making Equipment available after notification of potential Equipment problem; (l) replacement parts and accessories not authorized by Cummins; (m) use of battle short mode; (n) owner or operator abuse or neglect such as: operation without adequate coolant, fuel, or lubricants; over fueling; over speeding; lack of maintenance to lubricating, fueling, cooling, or air intake systems; late servicing and maintenance; improper storage, starting, warm-up, running, or shutdown practices, or for progressive damage resulting from a defective shutdown or warning device; or (o) damage to parts, fixtures, housings, attachments and accessory items that are not part of the generating set.

15. INDEMNITY. Customer shall indemnify, defend and hold harmless Cummins from and against any and all claims, actions, costs, expenses, damages and liabilities, including reasonable attorneys' fees, brought against or incurred by Cummins related to or arising out of this Agreement or the Equipment supplied under this Agreement (collectively, the "Claims"), where such Claims were caused or contributed to by, in whole or in part, the acts, omissions, fault or negligence of the Customer. Customer shall present any Claims covered by this indemnity to its insurance carrier unless Cummins directs that the defense will be handled by Cummins' legal counsel at Customer's expense.

16. LIMITATION OF LIABILITY

NOTWITHSTANDING ANY OTHER TERM OF THIS AGREEMENT, IN NO EVENT SHALL CUMMINS, ITS OFFICERS, DIRECTORS, EMPLOYEES, OR AGENTS BE LIABLE TO CUSTOMER OR ANY THIRD PARTY, WHETHER IN CONTRACT OR IN TORT OR UNDER ANY OTHER LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, STRICT LIABILITY OR NEGLIGENCE), FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, LIQUIDATED, OR CONSEQUENTIAL DAMAGES OF ANY KIND (INCLUDING WITHOUT LIMITATION DOWNTIME, LOSS OF PROFIT OR REVENUE, LOSS OF DATA, LOSS OF OPPORTUNITY, DAMAGE TO GOODWILL, ENHANCED DAMAGES, MONETARY REQUESTS RELATING TO RECALL EXPENSES AND REPAIRS TO PROPERTY, AND/OR DAMAGES CAUSED BY DELAY), OR IN ANY WAY RELATED TO OR ARISING FROM CUMMINS' SUPPLY OF EQUIPMENT UNDER THIS AGREEMENT OR THE USE OR PERFORMANCE OF EQUIPMENT SUPPLIED UNDER THIS AGREEMENT. IN NO EVENT SHALL CUMMINS' LIABILITY TO CUSTOMER OR ANY THIRD PARTY CLAIMING DIRECTLY THROUGH CUSTOMER OR ON CUSTOMER'S BEHALF UNDER THIS AGREEMENT EXCEED THE TOTAL COST OF EQUIPMENT SUPPLIED BY CUMMINS UNDER THIS AGREEMENT GIVING RISE TO THE CLAIM. BY ACCEPTANCE OF THIS AGREEMENT, CUSTOMER ACKNOWLEDGES CUSTOMER'S SOLE REMEDY AGAINST CUMMINS FOR ANY LOSS SHALL BE THE REMEDY PROVIDED HEREIN.

17. DEFAULT; REMEDIES. Customer shall be in breach and default if: (a) any of the payments or amounts due under this Agreement are not paid; (b) Customer fails to comply, perform, or makes any misrepresentation relating to any of the Customer's obligations or covenants under this Agreement; or (c) prior to full payment of the balance due, Customer ceases to do business, becomes insolvent, makes an assignment for the benefit of its creditors, appoints a receiver, commences an action for dissolution or liquidation, or becomes subject to bankruptcy proceedings, or the Equipment is attached, levied upon, seized under legal process, is subjected to a lien or encumbrance, or transferred by operation of law or otherwise to anyone other than Cummins. Upon the occurrence of any event of Customer's default, Cummins, at its sole option and without notice, shall have the right to exercise concurrently or separately any one or all of the following remedies, which shall be cumulative and not alternative: (a) to declare all sums due, and to become due, under this Agreement immediately due and payable; (b) to commence legal proceedings, including collection actions and specific performance proceedings, to enforce performance by Customer of any and all provisions of this Agreement, and to be awarded damages or injunctive relief for the Customer's breach; (c) to require the Customer to deliver the Equipment to Cummins' branch specified on the face of this Agreement; (d) to exercise one or more of the rights and remedies available to a secured party under applicable law; and (e) to enter, without notice or liability or legal process, onto any premises where the Equipment may be located, using force permitted by law, and there to disconnect, remove and repossess the Equipment, the Customer having waived further right to possession after default. A waiver of any event of default by Cummins shall not be a waiver as to any other or subsequent default.

18. CUSTOMER REPRESENTATIONS; RELIANCE. Customer is responsible for obtaining, at its cost, permits, import licenses, and other consents in relation to the Equipment, and if requested by Cummins, Customer shall make these permits, licenses, and consents available to Cummins prior to shipment. Customer represents that it is familiar with the Equipment and understands operating instructions and agrees to perform routine maintenance services. Until the balance is paid in full, Customer shall care for the Equipment properly, maintain it in good operating condition, repair and appearance; and Customer shall use it safely and within its rated capacity and only for purpose it was designed. Even if Customer's purchase of Equipment from Cummins under this Agreement is based, in whole or in part, on specifications, technical information, drawings, or written or verbal advice of any type from third parties, Customer has sole responsibility for the accuracy, correctness and completeness of such specifications, technical information, drawings, or advice. Cummins make no warranties or representations respecting the accuracy, correctness and completeness of any specifications, technical information, drawings, advice or other information provided by Cummins. Cummins makes no warranties or representations respecting the suitability, fitness for intended use, compatibility, integration or installation of any Equipment supplied under this Agreement. Customer has sole responsibility for intended use, for installation and design and performance where it is part of a power, propulsion, or other system. Limitation of warranties and remedies and all disclaimers apply to all such technical information, drawings, or advice. Customer acknowledges and agrees by accepting delivery of the Equipment that the Equipment purchased is of the size, design, capacity and manufacture selected by the Customer, and that Customer has relied solely on its own judgment in selecting the Equipment.

19. CONFIDENTIALITY. Each party shall keep confidential any information received from the other that is not generally known to the public and at the time of disclosure, would reasonably be understood by the receiving party to be proprietary or confidential, whether disclosed in oral, written, visual, electronic, or other form, and which the receiving party (or agents) learns in connection with this Agreement including, but not limited to: (a) business plans, strategies, sales, projects and analyses; (b) financial information, pricing, and fee structures; (c) business processes, methods, and models; (d) employee and supplier information; (e) specifications; and (f) the terms and conditions of this Agreement. Each party shall take necessary steps to ensure compliance with this provision by its employees and agents.

20. GOVERNING LAW AND JURISDICTION. This Agreement and all matters arising hereunder shall be governed by, interpreted, and construed in accordance with the laws of the State of Indiana without giving effect to any choice or conflict of law provision. The parties agree that the federal and state courts of the State of Indiana shall have exclusive jurisdiction to settle any dispute or claim

arising in connection with this Agreement or any related matter, and hereby waive any right to claim such forum would be inappropriate, including concepts of forum non conveniens.

21. INSURANCE. Upon Customer's request, Cummins will provide to Customer a Certificate of Insurance evidencing Cummins' relevant insurance coverage.

22. ASSIGNMENT. This Agreement shall be binding on the parties and their successors and assigns. Customer shall not assign this Agreement without the prior written consent of Cummins.

23. INTELLECTUAL PROPERTY. Any intellectual property rights created by either party, whether independently or jointly, in the course of the performance of this Agreement or otherwise related to Cummins pre-existing intellectual property or subject matter related thereto, shall be Cummins' property. Customer agrees to assign, and does hereby assign, all right, title, and interest to such intellectual property to Cummins. Any Cummins pre-existing intellectual property shall remain Cummins' property. Nothing in this Agreement shall be deemed to have given Customer a license or any other rights to use any of the intellectual property rights of Cummins.

24. PRICING. To the extent allowed by law, actual prices invoiced to Customer may vary from the price quoted at the time of order placement, as the same will be adjusted for prices prevailing on the date of shipment due to economic and market conditions at the time of shipment. Subject to local laws, Cummins reserves the right to adjust pricing on goods and services due to input and labor cost changes and/or other unforeseen circumstances beyond Cummins' control.

25. MISCELLANEOUS. Cummins shall be an independent contractor under this Agreement. All notices under this Agreement shall be in writing and be delivered personally, mailed via first class certified or registered mail, or sent by a nationally recognized express courier service to the addresses set forth in this Agreement. No amendment of this Agreement shall be valid unless it is writing and signed by an authorized representative of the parties hereto. Failure of either party to require performance by the other party of any provision hereof shall in no way affect the right to require such performance at any time thereafter, nor shall the waiver by a party of a breach of any of the provisions hereof constitute a waiver of any succeeding breach. Any provision of this Agreement that is invalid or unenforceable shall not affect the validity or enforceability of the remaining terms hereof. These terms are exclusive and constitute the entire agreement. Customer acknowledges that the provisions were freely negotiated and bargained for, and Customer has agreed to purchase of the Equipment pursuant to these Terms and Conditions. Acceptance of this Agreement is expressly conditioned on Customer's assent to all such Terms and Conditions. Neither party has relied on any statement, representation, agreement, understanding, or promise made by the other except as expressly set out in this Agreement. In the event Cummins incurs additional charges hereunder due to the acts or omissions of Customer, the additional charges will be passed on to the Customer, as applicable. Headings or other subdivisions of this Agreement are inserted for convenience of reference and shall not limit or affect the legal construction of any provision hereof. The Parties' rights, remedies, and obligations under this Agreement which by their nature are intended to continue beyond the termination or cancellation of this Agreement, including but not limited to the Section 16. Limitation of Liability provision contained herein, shall survive the expiration, termination, or cancellation of this Agreement.

26. COMPLIANCE. Customer shall comply with all laws applicable to its activities under this Agreement, including, without limitation, any and all applicable federal, state, and local anti-bribery, environmental, health, and safety laws and regulations then in effect. Customer acknowledges that the Equipment, and any related technology that are sold or otherwise provided hereunder may be subject to export and other trade controls restricting the sale, export, re-export and/or transfer, directly or indirectly, of such Equipment or technology to certain countries or parties, including, but not limited to, licensing requirements under applicable laws and regulations of the United States, the United Kingdom and other jurisdictions. It is the intention of Cummins to comply with these laws, rules, and regulations. Any other provision of this Agreement to the contrary notwithstanding, Customer shall comply with all such applicable all laws relating to the cross-border movement of goods or technology, and all related orders in effect from time to time, and equivalent measures. Customer shall act as the importer of record with respect to the Equipment and shall not resell, export, re-export, distribute, transfer, or dispose of the Equipment or related technology, directly or indirectly, without first obtaining all necessary written permits, consents, and authorizations and completing such formalities as may be required under such laws, rules, and regulations. In addition, Cummins has in place policies not to distribute its products for use in certain countries based on applicable laws and regulations including but not limited to UN, U.S., UK, and European Union regulations. Customer undertakes to perform its obligations under this Agreement with due regard to these policies. Strict compliance with this provision and all laws of the territory pertaining to the importation, distribution, sales, promotion and marketing of the Equipment is a material consideration for Cummins entering into this Agreement with Customer and continuing this Agreement for its term. Customer represents and warrants that it has not and shall not, directly or through any intermediary, pay, give, promise to give or offer to give anything of value to a government official or representative, a political party official, a candidate for political office, an officer or employee of a public international organization or any other person, individual or entity at the suggestion, request or direction or for the benefit of any of the above-described persons and entities for the purposes of inducing such person to use his influence to assist Cummins in obtaining or retaining business or to benefit Cummins or any other person in any way, and will not otherwise breach any applicable laws relating to anti-bribery. Any failure by Customer to comply with these provisions will constitute a default giving Cummins the right to immediate termination of this Agreement and/or the right to elect not to recognize the warranties associated with the Equipment.

Customer shall accept full responsibility for any and all civil or criminal liabilities and costs arising from any breaches of those laws and regulations and will defend, indemnify, and hold Cummins harmless from and against any and all fines, penalties, claim, damages, liabilities, judgments, costs, fees, and expenses incurred by Cummins or its affiliates as a result of Customer's breach.

27. To the extent applicable, this contractor and subcontractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, protected veteran status or disability. The employee notice requirements set forth in 29 CFR Part 471, Appendix A to Subpart A, are hereby incorporated by reference into this contract.

Jeff Hensley

From: Matthew J Bole <matthew.bole@cummins.com>
Sent: Tuesday, February 4, 2025 11:42 PM
To: Jeff Hensley
Cc: Kyle Flanagan; Andrew Franko; Cheryl Taylor; Jose Rodriguez
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Jeff,
Absolutely. Please see below.

1. Verify attendance at pre-submittal meeting and post submittal meeting (if required) per Spec 26 32 13, paragraph 1.04.B.
    a. Confirmed
2. Can you verify if the Maintenance Service required per Spec 26 32 13, paragraph 1.10 was included in your quote. The quotation says Preventative Maintenance agreement - 1 year. But the notes on the following page in the quote say PMA – Generator Maintenance Agreement is not included. Can you clarify this.
    a. Confirmed, 1-year PMA included in proposal
3. Can the 3rd party onsite sound testing be provided per Spec 26 32 13, paragraph 3.04.D.10.
    a. Cummins does not provide this as this is seen as an act of self governance. Cummins sound data sheet from our factory WILL be provided for reference. Sound data sheet is based on free field data.
4. Verify Cummins is responsible for costs to ship, deliver and offload at the site. It appears that offloading is being excluded.
    a. Delivery to site is included. Offloading is by others.
5. Verify spares are being provided per Spec 26 32 13, paragraph 1.11. Quote says Cummins standard spare filters provided only, What does this mean.
    a. Cummins will provide standard spare parts, this includes Oil, Coolant, Fuel and Air Filters only. Everything else would be covered by our 2 year warranty.
6. Verify generator breakers are provided with LSIG protection and are 100% rated.
    a. 100% rated 1200A breakers provided. Ground fault indication provided as ground fault trip is not recommended for an emergency power generation system. If required, Cummins will provide ground fault trip at owners discretion.
7. Verify warranty includes sending a representative out to the jobsite 1 year after the generator has been started up per Spec 26 32 13, paragraph 1.09.C.
    a. A Cummins representative will be on site 1 year after commissioning of the system.

Let me know if you have any other questions.

Thank you,
Matthew Bole
Commercial Power Generation Sales Representative

Cummins Sales and Service
4855 Mountain Creek Pkwy, Dallas, TX 75236
Cell 469-600-5364

Fax 972-708-0014
salesandservice.cummins.com
matthew.bole@cummins.com

From: Jeff Hensley <Jeff.Hensley@freese.com>
Sent: Tuesday, February 4, 2025 8:02 PM
To: Matthew J Bole <matthew.bole@cummins.com>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>; Cheryl Taylor <ctaylor@westlaketx.gov>; Jose Rodriguez <Jose.Rodriguez@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Matthew,
We reviewed the proposal and had the following questions/clarifications:

1. Verify attendance at pre-submittal meeting and post submittal meeting (if required) per Spec 26 32 13, paragraph 1.04.B.
2. Can you verify if the Maintenance Service required per Spec 26 32 13, paragraph 1.10 was included in your quote. The quotation says Preventative Maintenance agreement - 1 year. But the notes on the following page in the quote say PMA – Generator Maintenance Agreement is not included. Can you clarify this.
3. Can the 3rd party onsite sound testing be provided per Spec 26 32 13, paragraph 3.04.D.10.
4. Verify Cummins is responsible for costs to ship, deliver and offload at the site. It appears that offloading is being excluded.
5. Verify spares are being provided per Spec 26 32 13, paragraph 1.11. Quote says Cummins standard spare filters provided only, What does this mean.
6. Verify generator breakers are provided with LSIG protection and are 100% rated.
7. Verify warranty includes sending a representative out to the jobsite 1 year after the generator has been started up per Spec 26 32 13, paragraph 1.09.C.

If we can get answers to these and any revisions to your proposal by the end of the day Wednesday that would be great. We need to provide a letter of recommendation to the City by this Friday, February 7th to take to their Council for approval. If you have any questions or need clarification let me know.

Thanks

Jeffrey N. Hensley, P.E.
Principal/Vice President
Electrical Group

Freese and Nichols, Inc.

801 Cherry Street, Suite 2800
Fort Worth, Texas 76102
817-735-7369 office
817-735-7491 fax

www.freese.com

LEADS

From: Matthew J Bole <matthew.bole@cummins.com>
Sent: Tuesday, January 21, 2025 9:43 AM
To: Jeff Hensley <Jeff.Hensley@freese.com>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>; Cheryl Taylor <ctaylor@westlaketx.gov>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Jeff,
Apologies, I felt like I was one attachment short.
Please see attached for your reference.

Thank you,
Matthew Bole
Commercial Power Generation Sales Representative

Cummins Sales and Service
4855 Mountain Creek Pkwy, Dallas, TX 75236
Cell 469-600-5364
Fax 972-708-0014
salesandservice.cummins.com
matthew.bole@cummins.com

From: Jeff Hensley <Jeff.Hensley@freese.com>
Sent: Monday, January 20, 2025 10:22 PM
To: Matthew J Bole <matthew.bole@cummins.com>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>; Cheryl Taylor <ctaylor@westlaketx.gov>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

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Matthew,

I glanced at the Cummins proposal, and I did not see the generator sizing analysis as part of the bid proposal, can you provide that with your proposal.

Thanks

Jeffrey N. Hensley, P.E.
Principal/Vice President
Electrical Group

Freese and Nichols, Inc.
801 Cherry Street, Suite 2800
Fort Worth, Texas 76102
817-735-7369 office
817-735-7491 fax

www.freese.com

From: Matthew J Bole <matthew.bole@cummins.com>
Sent: Monday, January 20, 2025 6:00 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

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Cheryl,

Please see the attached proposal for your records.
Let me know if you have any questions on the scope we are providing.

Sincerely,
Matthew Bole
Commercial Power Generation Sales Representative

Cummins Sales and Service
4855 Mountain Creek Pkwy, Dallas, TX 75236
Cell 469-600-5364
Fax 972-708-0014
salesandservice.cummins.com
matthew.bole@cummins.com

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Thursday, January 16, 2025 8:43 AM
To: Matthew J Bole <matthew.bole@cummins.com>; Jeff Hensley <Jeff.Hensley@freese.com>
Cc: Henry Egbo <Henry.Egbo@cummins.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Wonderful news. Thanks so much, Matthew.

Cheryl Taylor, P.E.
Director of Public Works

THE TOWN OF WESTLAKE
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From: Matthew J Bole <matthew.bole@cummins.com>
Sent: Wednesday, January 15, 2025 9:30 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>
Cc: Henry Egbo <Henry.Egbo@cummins.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>
Subject: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

No further questions. We should have pricing to you Tuesday for your review.

Thank you,
Matthew Bole
Commercial Power Generation Sales Representative

Cummins Sales and Service
4855 Mountain Creek Pkwy, Dallas, TX 75236
Cell 469-600-5364
Fax 972-708-0014
salesandservice.cummins.com
matthew.bole@cummins.com

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Tuesday, January 14, 2025 11:27 AM
To: Jeff Hensley <Jeff.Hensley@freese.com>; Matthew J Bole <matthew.bole@cummins.com>
Cc: Henry Egbo <Henry.Egbo@cummins.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Good morning, Matthew. Just following up to see if you had any further questions and to see if we can expect pricing from Cummins for our project. We look forward to hearing back from you.

Cheryl Taylor, P.E.
Director of Public Works

THE TOWN OF WESTLAKE
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From: Jeff Hensley <Jeff.Hensley@freese.com>
Sent: Monday, December 23, 2024 1:03 PM
To: Matthew J Bole <matthew.bole@cummins.com>
Cc: Henry Egbo <Henry.Egbo@cummins.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Andrew Franko <asf@freese.com>; Cheryl Taylor <ctaylor@westlaketx.gov>
Subject: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Matthew,

The generator will connect to an existing Automatic Transfer Switch (ATS). The specification discusses connecting to the existing ATS and compatibility in several places.

Thanks

Jeffrey N. Hensley, P.E.
Principal/Vice President
Electrical Group

Freese and Nichols, Inc.
801 Cherry Street, Suite 2800

Fort Worth, Texas 76102
817-735-7369 office
817-735-7491 fax

www.freese.com

LEADS

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Monday, December 23, 2024 11:08 AM
To: Matthew J Bole <matthew.bole@cummins.com>
Cc: Henry Egbo <Henry.Egbo@cummins.com>; Kyle Flanagan <kflanagan@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Matthew,

I have looped a couple of others in on this email to help answer your questions.

Cheryl Taylor, P.E.
Director of Public Works

THE TOWN OF WESTLAKE
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From: Matthew J Bole <matthew.bole@cummins.com>
Sent: Monday, December 23, 2024 9:22 AM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Cc: Henry Egbo <Henry.Egbo@cummins.com>
Subject: [EXTERNAL] RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Cheryl,
I have received your request and will be sizing a generator to match the loads listed.
I am going to assume since no ATS or gear is mentioned in this contract that the existing equipment will remain and be utilized for transfer between utility and generator.
If you have any need for replacement of the ATS, please let me know so I can arrange for a site visit and quotation.
Be safe and have a Very Merry Christmas!

Thank you,
Matthew Bole
Commercial Power Generation Sales Representative

Cummins Sales and Service
4855 Mountain Creek Pkwy, Dallas, TX 75236
Cell 469-600-5364
Fax 972-708-0014
salesandservice.cummins.com
matthew.bole@cummins.com

From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Monday, December 23, 2024 8:35 AM
To: Jim L Stalnaker <james.l.stalnaker@cummins.com>
Cc: Matthew J Bole <matthew.bole@cummins.com>; Jamie Ferguson <jamie.ferguson@cummins.com>; Henry Egbo <Henry.Egbo@cummins.com>
Subject: RE: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Thanks so much, Jim. We look forward to working with your team in the new year.

Cheryl Taylor, P.E.
Director of Public Works
THE TOWN OF WESTLAKE
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From: Jim L Stalnaker <james.l.stalnaker@cummins.com>
Sent: Saturday, December 21, 2024 7:50 AM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Cc: Matthew J Bole <matthew.bole@cummins.com>; Jamie Ferguson <jamie.ferguson@cummins.com>; Henry Egbo <Henry.Egbo@cummins.com>
Subject: [EXTERNAL] FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Hi Cheryl,
Matthew Bole will be responding to your solicitation. Should he be out, his manager Henry Egbo can assist.

Jamie, on my team, is simply the contract manager and is the point person to get you connected with the right Territory Manager.

Hope all is well with you.

Regards,

Jim Stalnaker
Director, National Sales Leader
Power Generation

Cummins Sales and Service North America
C. 503-806-0330
james.l.stalnaker@cummins.com

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From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Friday, December 20, 2024 10:29 AM
To: Jim L Stalnaker <james.l.stalnaker@cummins.com>
Subject: FW: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

James,

We received an out of office notification from Jamie Ferguson and wanted to be sure someone received our solicitation.

Have a great holiday.

Cheryl Taylor, P.E.
Director of Public Works

THE TOWN OF WESTLAKE
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From: Cheryl Taylor <ctaylor@westlaketx.gov>
Sent: Friday, December 20, 2024 12:27 PM
To: Cheryl Taylor <ctaylor@westlaketx.gov>
Cc: Kyle Flanagan <kflanagan@westlaketx.gov>; Jeff Hensley <Jeff.Hensley@freese.com>; Andrew Franko <asf@freese.com>; Kristin Feng <Kristin.Feng@freese.com>
Subject: Town of Westlake Pump Station Generator Specifications - Sourcewell Purchase

Good afternoon.

The Town of Westlake is interested in purchasing a generator to replace the outdated generator at the town's pump station. Attached are specifications from the design engineer with submittal procedures and a Submittal Data Sheet for 26 32 13 Engine Generators (Attachment A). Due to lead times, the Town of Westlake will prepare plans and bid documents for the installation and site prep that will be completed prior to delivery of the generator. This solicitation is for the procurement of the generator.

Purchase of the generator shall be through Sourcewell – Town of Westlake Account #183219.

Please confirm receipt and let us know if you plan to submit a bid. Bids shall be accepted through Wednesday, January 22, 2025 at 5:00 p.m. Bids will be evaluated, and a recommendation will be taken to Town Council for approval in February, 2025.

Please respond to all on this email with confirmation and submittal of your bid.

We appreciate your consideration of our project and look forward to hearing from you.

Happy holidays to all.

Cheryl Taylor, P.E.
Director of Public Works
THE TOWN OF WESTLAKE
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