



REQUEST FOR PROPOSAL (RFP)

WELLHOUSE STANDBY POWER UPGRADES SUPPLY OF GENERATOR AND AUTOMATIC TRANSFER SWITCH

RFP #: 2020-02

Closing location

Hard Copy

Or

BC Bid Electronic Submission

Submission Deadline

Wednesday, December 23, 2020

2:00 p.m.

Contact Person

Tom Csimá

Manager, Operations and Projects

tcsima@pemberton.ca

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1 PROCUREMENT AND CONTRACTING REQUIREMENTS

01 INFORMATION TO PROPONENTS

ARTICLE 1 CONTRACT TITLE

- 1.1 Water Wellhouse Standby Power Upgrades - Supply of Generator and Automatic Transfer Switch

ARTICLE 2 SCOPE OF WORK

- 2.1 Village of Pemberton's (VOP) current water wellhouse operates 2 pumps (600V, 3Ph, 150HP and 100HP respectively) using soft-starters and additional 45kW of miscellaneous motor, heating and lighting loads. VOP is considering provisions of standby power systems to operate these loads during periods of utility power outage.
- 2.2 This request for proposal covers the design, fabrication, delivery, startup and commissioning of the standby power generator and automatic transfer switch for the VOP.

ARTICLE 3 PURPOSE AND PROCEDURE

- 3.1 The purpose of receiving submissions in accordance with these documents is to permit examination of a variety of standby power generators and automatic transfer switches on a comparable basis to select option that best fulfills the Buyer's requirements. Submissions will be evaluated as per ARTICLE 16.
- 3.2 Work for this Contact covers the design, fabrication and delivery of equipment to the VOP.
- 3.3 The procedure, in general, will be as follows:
- .1 Conduct a competitive pre-selection for the supply and delivery for equipment, referred to as the RFP;
 - .2 Request clarification as required;
 - .3 RFP close on submission deadline;
 - .4 Conduct an evaluation of the Submissions received that meet the mandatory Submission requirements, and select a successful Proponent;
 - .5 The Buyer shall provide written Notice of Award of the Contract to the successful Seller or will give notice that no award will be made;
 - .6 Agreement is executed between Buyer and Seller;
 - .7 Buyer issues a Notice to Proceed;
 - .8 The Consultant receives, reviews and returns Shop Drawings as outlined in Submittals Section 2 01;
 - .9 The Seller will complete fabrication and deliver to site the equipment as described in these Contract Documents.

ARTICLE 4 QUALIFICATIONS OF PROPONENTS

- 4.1 Proponents may be investigated by the Buyer to determine if they are qualified to perform the Work. All Proponents shall be prepared to submit within five days of the Buyer's or Consultant's request, written evidence of such information and data necessary to make this determination as described in 4.2.

- 4.2** A Proponent shall provide the following to be considered Qualified: size of the organization, is authorized to do business in the jurisdiction where the project is located, examples of previous experience, detailed of engineering resources in Canada, information on available equipment and financial resources to assure the Buyer that the Work will be completed in accordance with the terms of the Agreement. Ability to meet schedule.
- 4.3** In evaluating Submissions, the Buyer will consider the qualifications of only those Proponents that are in compliance with the prescribed requirements.
- 4.4** The Buyer reserves the right to reject any Submission if the evidence submitted by, or the investigation of, such Proponent fails to satisfy the Buyer that such Proponent is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

ARTICLE 5 COPIES OF CONTRACT DOCUMENTS

- 5.1** Complete sets of Contract Documents shall be used in preparing Submissions; neither Buyer nor Consultant assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

ARTICLE 6 SUBMISSION

- 6.1** The Proponent accepts sole responsibility for the preparation and submission of its Submission including satisfying itself as to the requirements of all documents and the submission of materials and the Submission within the required time frames.
- 6.2** The issuance of this RFP constitutes only an invitation to submit Submissions. It does not commit the Buyer to enter into an Agreement with any of the Proponents. The Buyer is not bound to accept any Submissions and may proceed as it, in its sole discretion, determines on receipt of Submissions. The rights reserved by the Buyer include the right at any time and for whatever reason and without liability to any Proponent to:
- .1 Conduct investigations with respect to the qualifications and experience of the Proponent and its members;
 - .2 Require one or more Proponents to supplement, clarify, provide additional information in order for the Buyer to evaluate the Submission submitted;
 - .3 Waive any defect or technicality in any Submission received;
 - .4 Reject the Proponent as organized and suggest changes to the Proponent's members prior to the execution of any Agreement;
 - .5 Terminate, in its sole and absolute discretion, any and all subsequent consideration of, or Agreement with, any Proponent, if it believes a change in the membership of the Proponent, from that described in its Submission, adversely affects the scoring of the Proponent's Submission or the Proponent's ability to carry out the Engagement in accordance with the terms and conditions stated herein;
 - .6 Supplement, amend, substitute or otherwise modify any part or all of this RFP including by extending any schedule or period of time;
 - .7 Issue one or more addenda to this RFP;
 - .8 Reject any or all Submissions or any portion thereof;
 - .9 Suspend, postpone or cancel this RFP in whole or in part with or without substitution of another RFP or Submission process;

- .10 Take any action affecting this RFP, the RFP process or the Engagement that would be in the best interests of the Buyer; and
- .11 Use any concept or approach suggested in any Submission including its use in negotiating an agreement with the Successful Proponent or any other Proponent.

6.3 The Submission shall be submitted using one of the submission methods below:

- .1 One hard copy of the Submission must be received no later than the submission deadline at the following location:

Village of Pemberton
7400 Prospect Street
PO Box 100
Pemberton, BC V0N 2L0

Submissions should be submitted in a sealed package and should be marked "ATTN: Tom Csima, Manager, Operations and Projects" with the name and address of the Proponent and the request for proposal title clearly marked on the outside.

- .2 Proponents may submit their Submission electronically using BC Bid before the submission deadline. Submissions must be submitted in accordance with the BC Bid requirements and e-bidding key requirements (<http://www.bcbid.ca>). Only pre-authorized electronic bidders registered on the BC Bid system can submit an electronic response using the BC Bid system. Any Proponent is free to register to become a pre-authorized electronic bidder.

6.4 Submission Deadline

- .1 The submission deadline is 2:00 p.m., Pacific Standard Time, Wednesday 23rd December 2020.
- .2 Submissions received after the submission deadline may be rejected.
- .3 The submission deadline may be extended via addendum any time prior to the date and time specified in Article 6.4.1.
- .4 Substitute request timelines as per Article 8.2.

6.5 Submission Opening

- .1 The submissions will not be opened publicly.

6.6 The Submission shall consist of the following components:

- .1 Proponent Submission
 - .1 All Submissions must be accompanied by manufacturer's literature describing in detail the equipment being offered and outline drawings showing principal performance, dimensions and weights, a copy of the manufacturer's warranty and other submittal information requested herein. A specific warranty is being specified as a minimum requirement, however, details must be provided on the Submission Form of additional warranties being offered for consideration in the purchase of this equipment. Failure to provide these documents may invalidate a Submission. In particular provide the following:
 - .1 General Layout plan/section drawings

- .2 Equipment cut sheets and data; for each item of equipment, include as appropriate.
 - .3 All electrical details and ratings.
 - .4 Outline of the proposed control arrangement. List all alarms and all interfacing contact requirements.
 - .5 A list of all loose shipped pieces. For all pieces in excess of 25 kg, indicate the weight.
 - .6 Cranage requirements for installation
 - .7 A detailed description of the assembly tasks that will be required by the Contractor.
 - .8 A list of all items required for the equipment that is NOT included in the Proponent's scope of supply.
- .2 A letter from their surety indicating that the Proponent currently qualifies for a performance bond as required in Section 1 05 ARTICLE 5. Surety shall be licensed to transact such business in the Province of British Columbia, Canada. Execution of an agreement between the Buyer and the Seller for the Contract shall be contingent on receipt of this letter.
- .2 Technical Submission Forms (Section 1 02)
- .1 Form A: Technical Submission Form
 - .2 Form B: Technical Questionnaire
 - .3 Form C: References
 - .4 Form D: Financial Breakdown
- 6.7** All components of the Submission should be fully completed or provided and submitted by the Proponent and received by the Buyer no later than the Submission Deadline, with required entries made clearly and completely, to constitute a responsive Submission.
- 6.8** No Liability
- .1 Buyer, its Board of Directors, officers, employees, consultants and agents accept no liability for any costs, expenses, damages or otherwise of any Proponent in the event the Successful Proponent selected fails to comply with any terms, conditions or requirements of the RFP, any addenda to the RFP or the Agreement.
- 6.9** Disclosure of Information and Communication Procedures
- .1 All information contained within the Submission will remain confidential and may only be released if required by the Buyer's policy or procedures, by the Freedom of Information and Protection of Privacy Act, by other authorities having jurisdiction, or by law.
 - .2 The Buyer will have the right to make copies of all Submissions received for its internal review process and to provide copies to its staff, technical and financial advisors and representatives.
- 6.10** Notwithstanding the foregoing, the Proponent acknowledges and agrees that the Buyer will not be responsible or liable in any way for any losses that the Proponent may suffer from disclosure of information or materials to third parties.
- .1 The Proponent shall not disclose any details pertaining to its Submission or any part of the selection process to anyone not specifically involved in its Submission, without the prior approval of the Buyer.

The Proponent shall not issue a news release or other public announcement pertaining to details of its Submission or the selection process without the prior approval of the Buyer.

6.11 Costs and Expenses of the Proponent

- .1 Buyer accepts no liability for any costs or expenses incurred by the Proponent in responding to this RFP, responses to clarification requests and re-submittals, potential meetings, tours and interviews, subsequent negotiations, or any other cost incurred prior to the execution of the Agreement by the Buyer and the Successful Proponent. By submitting a Submission, the Proponent agrees that it shall prepare the required materials and undertake the required investigations at its own expense and with the express understanding that it cannot make any claims whatsoever for reimbursement from the Buyer for any costs and expenses associated with the RFP process in any manner whatsoever or under any circumstances including, without limitation, the rejection of all or any of the Submissions or cancellation of the RFP or the Engagement.

6.12 Clarification of Submissions

- .1 Buyer is not obliged to seek clarification from the Proponent regarding any aspect of its Submission.
- .2 Buyer shall have the right to request the Proponent to submit information to clarify or interpret any matters contained in its Submission and to seek the Proponent's written acknowledgement of that clarification or interpretation. In addition, Buyer may request supplementary documentation from the Proponent when there is an irregularity or omission in its Submission or the documents submitted therewith. The Proponent should not assume Buyer will request clarifications.

6.13 No Conflict of Interest

- .1 The Proponent and members of the Proponent are requested to disclose any conflict of interest, real or perceived, which exists now or which may in the opinion of the Proponent exist in the future. Buyer reserves the right to disqualify the Proponent if, in the opinion of Buyer acting reasonably, it has a conflict of interest, whether such conflict exists now or arises in the future.

6.14 Good Faith

- .1 The Seller declares that, in submitting a Submission for the Work and in entering into the Contract, the Seller:
 - .1 does so in good faith and that to the best of the Seller's knowledge no member of Buyer's Board, or any employee of Buyer has any undeclared pecuniary interest, direct or indirect, in the Contract;
 - .2 has not participated in any collusive scheme or combine;
 - .3 shall forfeit all claims under the Contract as well as refund to Buyer any monies paid to him, beyond his actual proven expenses for Work done, if 6.13.1.1 or 6.13.1.2 are shown to be false.

ARTICLE 7 CLARIFICATION AND ADDENDA

- 7.1** Notification of omissions, errors or ambiguities found in the RFP must be sent via email not less than five (5) working days before the Submission Deadline to the VOP:

Tom Csima,
Manager, Operations and Projects
Village of Pemberton
7400 Prospect Street
PO Box 100
Pemberton, BC V0N 2L0

tcsima@pemberton.ca

- 7.2** Responses to enquiries which, in the sole judgment of the Buyer or Consultant, require a correction to or a clarification of the RFP will be provided by the Buyer or Consultant to all Proponents by issuing an addendum through BC Bid. All addenda will form part of the RFP.
- 7.3** Responses to enquiries which, in the sole judgment of the Buyer or Consultant, do not require a correction to or a clarification of the Request for Submission will be provided by the Buyer or Consultant only to the Proponent who made the enquiry.
- 7.4** The Proponent should acknowledge receipt of all addendums on the Technical Submission Form. Failure to acknowledge receipt of each addendum does not absolve the proponent from being required to meet the changes in the addendum.
- 7.5** The Proponent shall not be entitled to rely on any response or interpretation received unless the response or interpretation is provided by the Buyer or Consultant in writing.

ARTICLE 8 SUBSTITUTES

- 8.1** The Work is based on the materials, equipment, methods and products specified in the Contract Documents. Substitutions shall not be allowed unless approved under this section. No equals will be considered after the RFP process is closed.
- 8.2** No substitute produce request will be considered if submitted less than 10 days before the submission deadline. The Consultant will be allowed a reasonable time within which to evaluate each Submission or submittal made pursuant to Paragraph 8.3.1 and 8.3.2. Consultant will be the sole judge of whether to accept or reject such a Submission or submittal. No "or-equal" will be ordered, manufactured or utilized until Consultant's review is complete. Consultant will advise proponent in writing of any negative determination. Notwithstanding Consultant's approval of an "or-equal" item, Proponent shall remain obligated to comply with the requirements of the RFP Documents.
- 8.3** Or-Equals
- .1 All submissions under 8.3 are to meet the requirements in Section 1 01 Article 15 and 8.2.
 - .2 Whenever the Goods, or an item of material or equipment to be incorporated into the Goods, are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Proponent or manufacturer, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that, or "or-equal" item is permitted, other items of material or equipment or material or equipment of other Proponents or manufacturers may be submitted to Buyer for Consultant's review during the RFP process.

- .3 Proponent shall provide data in support of any such proposed “or-equal” at Proponent’s expense that allows the Consultant the ability to review it as per 8.3.5.1 and 8.3.5.2.
- .4 If in Consultant’s sole discretion, such an item of material or equipment proposed by Proponent is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Consultant as an “or-equal” item.
- .5 For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if:
 - .1 In the exercise of reasonable judgment, Consultant determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and
 - .2 Proponent certifies that if approved: 1) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and 2) the proposed item will conform substantially to the detailed requirements of the item named in the Contract Documents.

ARTICLE 9 PROJECT FUNDING

- 9.1** Proponents are advised that the funding for the procurement of Goods and Services in relation to this project is subject to approval by the Buyer.

ARTICLE 10 SUBMISSION FORMS

- 10.1** Each Submission shall be submitted on the Submission Forms provided in Section 1 02. All blank spaces for Submission prices should be filled in with the lump sum for which the Submission is made or the words “Not Applicable” entered.
- 10.2** Prices listed on the Financial Submission Form D Section 1 02 must be in Canadian dollars (CDN\$) and must include and cover all contingencies and provisional sums; all patents and licensing fees, duties, and handling charges, transportation profit and all compensation and all other charges associated with the items identified on the Financial Submission Form.
- 10.3** The Submission prices on the Financial Submission Form D shall be stated in words, and figures as indicated. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 10.4** The Submission should contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Submission Form).
- 10.5** The contact person shall be at the address to which communications regarding the Submission are to be directed.
- 10.6** Pricing shall exclude Goods and Services Sales Tax (GST) but shall include all Provincial Sales Tax (PST).

ARTICLE 11 IRREVOCABLE SUBMISSION

- 11.1** The Submission(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 7 on the Technical Submission Form.

11.2 The acceptance by the Buyer of any Proponent's Submission shall not release the other Proponents of their commitment to pricing on the Financial Submission Form for the time period specified in Paragraph 7 on the Technical Submission Form.

ARTICLE 12 WITHDRAWAL OF SUBMISSION

12.1 A Proponent may withdraw his Submission without penalty by giving written notice to the Buyer via email specified in Article 7.1 at any time prior to the Submission Deadline.

ARTICLE 13 INTERVIEWS

13.1 The Consultant and or the Buyer may, in his sole discretion, interview any or all Proponents during the evaluation process.

ARTICLE 14 NEGOTIATIONS

14.1 The Buyer reserves the right to negotiate details of the Contract with any Proponent. Proponents are advised to present their best offer, not a starting point for negotiations.

14.2 If a written Contract cannot be finalized with provisions satisfactory to the Buyer within thirty days of notification of the preferred Proponent, the Buyer may, at its sole discretion at any time thereafter, terminate discussions with that Proponent and either commence finalization of a Contract with the next ranked Proponent or choose to terminate the RFP process and not enter into a Contract with any of the Proponents.

ARTICLE 15 PROPONENT QUALIFICATIONS

15.1 The Proponent should:

- .1 be financially capable of carrying out the terms of the Contract;
- .2 have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- .3 provide their quality management plan for review by the Consultant or the Buyer;
- .4 have carried out work similar in nature, scope and value to the Work;
- .5 be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract;
- .6 have a written workplace safety and health program; and
- .7 complete the list of not less than three (3) references of similar scope and magnitude as requested in Form C: References.

ARTICLE 16 EVALUATION OF SUBMISSIONS

16.1 This Submission is part of an evaluated selection process. The Buyer and Consultant will evaluate and accept a Submission which, in the Buyer's sole and absolute judgment, will best serve the interests of the Buyer. Submissions shall be evaluated based on achieving the mandatory requirements of the Submission as well as meeting the technical requirements.

16.2 Evaluation Matrix

Description	Evaluation	Results
Demonstrated qualifications of the Proponent pursuant to Article 15	Pass/Fail	
Technical Requirements		
References	Pass/Fail	
Meets all the requirements of the technical specifications	Pass/Fail	
Schedule	Pass/Fail	
Financial Requirements		
Price in \$CDN	Pass/Fail	
Price	/100	

16.3 The Buyer may, but will not be required to, reject a Submission as being non-responsive if the Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Buyer may reject all or any part of any Submission or waive technical requirements or minor informalities or irregularities if the interests of the Buyer so require.

ARTICLE 17 AWARD OF CONTRACT

17.1 The Buyer shall provide written Notice of Award of the Contract to the successful Proponent or will give notice that no award will be made.

17.2 The Buyer will have no obligation to award a Contract to a Proponent, even though one or all of the PropONENTS are determined to be responsible and qualified, and the Submissions are determined to be responsive where:

- .1 The prices exceed the available funds for the Work; further to Article 9.
- .2 Only one Submission is received; or
- .3 In the sole judgment of the Buyer, the interests of the Buyer would be best served by not awarding the Contract.

17.3 Where an award of Contract is made by the Buyer, the award will be made to the responsible and qualified Proponent submitting the most advantageous Submission.

17.4 The successful Proponent agrees to execute the Contract no later than ten (10) Calendar Days after receipt of the Contract.

ARTICLE 18 AGREEMENT

18.1 The successful Proponent shall enter into an Agreement on the form attached in Section 1 03.

ARTICLE 19 NOTICE TO PROCEED

19.1 The Buyer shall provide a written notice to the Proponent fixing the dates on which the Contract Times commence to run and on which the Proponent shall start to perform under the Contract. No work shall commence until the Seller is in receipt of a notice to proceed from the Buyer authorizing the commencement of the work.

ARTICLE 20 EXECUTION OF THE CONTRACT

- 20.1** The Seller shall execute the Contract in the manner stipulated by the Buyer and return the Contract, within ten (10) Calendar Days of receipt of the Contract, to the Buyer.
- 20.2** If the Seller does not execute and return the Contract as set out in 18.1, the Seller may be deemed by the Buyer to have abandoned the Contract, whereupon the acceptance of the Submission by the Buyer shall be null and void, and the Buyer shall be entitled to all rights and remedies available to it at law.
- 20.3** No payments will be made by the Buyer to the Seller until the Seller has executed and returned the Contract as set out in 18.1.

ARTICLE 21 BONDS AND INSURANCE

- 21.1** Seller shall furnish to the Buyer performance bond of the types and coverage's and in the amounts stipulated in the Section 1 05 ARTICLE 5.

Seller shall provide insurance of the types and coverage's and in the amounts stipulated in the Section 1 05 ARTICLE 4 Supplementary Conditions.

END OF SECTION

02 SUBMISSION FORMS

FORM A: **TECHNICAL SUBMISSION FORM**

1. Contract Title

Water Wellhouse Standby Power Upgrades
Supply of Generator and Automatic Transfer Switch

2. Proponent

Name of Proponent

Street

City Province/State Postal Code/Zip

Mailing Address

Street or P.O. Box

City Province/State Postal Code/Zip

3. Contact Person

Contact Person Title

Telephone Number Facsimile Number

Email Address

4. Definitions

All capitalized terms used in the Contract shall have the meanings ascribed to them in the General Conditions.

5. Contract

The Proponent agrees that the Request for Proposal in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Submission.

6. Addenda

The Proponent certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract:

No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____
No.	_____	Dated	_____

7. Time

This offer shall be open for acceptance, binding and irrevocable for a period of ninety (90) Calendar Days following the Submission Deadline.

If an Agreement is executed within ninety (90) Calendar Days the Proponent shall hold the Proponents price in the Proposal Form, for 12 months from the Submission deadline.

10. Signatures

The Proponents or the Proponent's authorized official or officials have signed this

_____ day of _____, 20 _____	
Signature	_____ Name and Title (Printed)
Signature	_____ Name and Title (Printed)
Signature	_____ Name and Title (Printed)

FORM B: **TECHNICAL QUESTIONNAIRE**

1. **SUBMISSIONS OF QUESTIONNAIRE**

- .1 It is mandatory that proponents provide responses to questionnaire in blank spaces provided. If response is not applicable, write N/A on the space indicated.
- .2 Proponents may attach additional pages to their questionnaire submission as needed to provide complete responses.

2. **GENERAL INFORMATION**

Proponent's Name: _____

Proponent's Organization: _____

Equipment Manufacturer: _____

Model Number: _____

Quantity Provided: _____

Delivery Time: _____

3. **DESIGN PARAMETERS**

Use the following electrical load information: Pump 1 – 600V, 3PH, 150HP, Soft-starter; Pump 2 – 600V, 3PH, 100HP, Soft-starter; Miscellaneous motor, heating and lighting loads – 600V, 3PH, 45kW. At the start of generator, Pump 1 and Miscellaneous loads shall be brought online in Step 1, followed by Pump 2 after a delay of 120 seconds. Altitude – 210m, Ambient temp – 35 degC.

Max Voltage Dip	_____
Max Frequency Dip	_____
Main Breaker Rating	_____
Fuel Requirements at Full Load in L/hr	_____

All empty cells must be filled in by the manufacturer

Note: _____

Please specify the authorized distributors that service Village of Pemberton, British Columbia with parts and maintenance service. For each distributor please complete the following table. If there is other pertinent information that should be included, please include it with the comments or attach as appropriate. If there are some parts that cannot be readily accessible at a distributor, please specify them along with the time it would take to get those parts in one of the comments sections or attach as appropriate.

	Regular Hours Service (7:00am to 5:00pm)	After Hours Service (5:00pm to 7:00am)	Saturdays, Sundays and Holidays)
--	---	---	---

Distributor Name:

Location:

Phone Number:

Cell Number:

Pager Number:

Answering Service:

Additional Comments:

	Regular Hours Service (7:00am to 5:00pm)	After Hours Service (5:00pm to 7:00am)	Saturdays, Sundays and Holidays)
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Distributor Name:

Location:

Phone Number:

Cell Number:

Pager Number:

Answering Service:



Additional Comments:

Notes:

1. Attachments are acceptable

The following Subcontractors and/or Suppliers will be used in this project. Please specify the names, addresses, and the work being performed by each.

No.	Subcontractor / Supplier's Name	Address	Work Being Performed
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Notes:

1. Attachments are acceptable

Proponent's Deviations

The Proponent shall describe where deviations from the specification have occurred, and how they may or may not affect the intended operation of the equipment.

Notes:

1. Attachments are acceptable

FORM C: REFERENCES

- 1.1 List of previous installations: Provide a minimum of three (3) installations, that have been in operation for a minimum of two (2) years, with design conditions similar to the requirements herein, where possible.

**Item
No.**

Project Information

Owner:

Owner Representative (Contact Information):

Brief Description (Provide project cut sheet or describe below):

1.

Date of Substantial Completion:

Approximate Contract Value \$:

General Contractor Contact Info:

**Item
No.**

Project Information

Owner:

Owner Representative (Contact Information):

Brief Description (Provide project cut sheet or describe below):

2

Date of Substantial Completion:

Approximate Contract Value \$:

General Contractor Contact Info:

**Item
No.**

Project Information

Owner:

Owner Representative (Contact Information):

Brief Description (Provide project cut sheet or describe below):

3

Date of Substantial Completion:

Approximate Contract Value \$:

General Contractor Contact Info:

Name of Proponent: _____

FORM D: **SUBMISSION PRICE BREAKDOWN**

Item No.	Description	Amount (\$)
1.	Price for Shop Drawing preparation and submission: Delivery Period for approved Shop Drawings: Max. 6. weeks from Issue of Notice to Proceed.	
2.	Diesel Generator c/w sub-base fuel tank and sound-proof enclosure	
3.	Automatic Transfer Switch	
4.	Onsite services, testing and, start-up services Refer to Electrical Sections	

Note:
 Items 2.0 to 3.0, Max. 20 weeks from issue of Notice to Proceed.

The Proposed Contract Price being the sum of Item 1 to 4: \$ _____ (CDN)
 (GST Excluded)
 _____/100 CDN Dollars

Contract Price to be completed in Canadian Dollars in numerical form on the line bounded by parenthesis above, with cents expressed as a decimal of a dollar. Contract Price to be completed in written form on the lines provided above with cents expressed as numerical fraction of a dollar. Where there is a conflict, written word will govern.

Proponent's GST Registration No. (if applicable): _____

Name of Proponent: _____

Signatures

The Proponents or the Proponent's authorized official or officials have signed this

_____ day of _____, 20 _____

_____ Signature	_____ Name and Title (Printed)
_____ Signature	_____ Name and Title (Printed)
_____ Signature	_____ Name and Title (Printed)

03 AGREEMENT

THIS AGREEMENT made as of the _____ day of _____ in the year 2020 by and between Village of Pemberton (VOP), hereinafter called the Buyer and _____ with legal address and principal place of business at: _____ hereinafter called Seller.

Buyer and Seller in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 GOODS AND SPECIAL SERVICES

1.1 Seller shall furnish the Goods and Special Services as specified or indicated in the Contract.

ARTICLE 2 THE WORK

2.1 Seller shall perform the Work as specified or indicated in these documents.

2.2 A General Contractor will be awarded construction of Water Wellhouse Standby Power Upgrades in 2021. The General Contractor shall be responsible for installation of the equipment supplied by seller.

ARTICLE 3 CONSULTANT

3.1 The RFP for the Goods and Services have been prepared in part by ISL Engineering and Land Services Ltd., (ISL) who will act as the Consultant in connection with completion of the Work in accordance with the RFP.

ARTICLE 4 POINT OF DESTINATION

4.1 The place where the Goods are to be delivered is:

Village of Pemberton
7400 Prospect Street
Pemberton, BC V0N 2L0

ARTICLE 5 CONTRACT TIMES

5.1 Time of the Essence

.3 All time limits for Milestones, if any, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Contract, are of the essence of the Contract.

5.2 Milestones

.4 Date for Submittal of Shop Drawings: Seller shall submit all Shop Drawings required by the Contract Documents to the Buyer for Consultant's review within four (4) weeks after Notice to Proceed. It is the intent of the parties that (1) Consultant conduct such review and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within two (2) weeks of Seller's submittal of such Shop Drawings and Samples; and (2) resubmittals be limited whenever possible. If more than one resubmittal is necessary for reasons not the fault and beyond the

control of Seller, then Seller shall be entitled to seek appropriate relief under Article 10 of the General Conditions.

- .5 Seller shall hold his price from the Submission, for the entirety of the Contract.
- .6 Delivery of Goods: The Goods are to be delivered to the Point of Destination and ready for the Buyer's receipt of delivery within 20 weeks of the Buyer issuing Notice to Proceed.

ARTICLE 6 CONTRACT PRICE

- 6.1** The Buyer will pay Seller in accordance with these documents in \$CDN at the Price agreed upon in Form D.

ARTICLE 7 PAYMENT PROCEDURES

- 7.1** Seller shall submit Application of Payment in accordance with Article 11 Payment defined in Section 1 04, General Conditions. Applications for Payment will be processed by the Consultant.

ARTICLE 8 ASSURANCE

- 8.1** Seller has familiarized themselves with the nature and extent of these documents, and Federal, Provincial and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Goods and Services.
- 8.2** Seller has given the Buyer or Consultant written notice of any conflict, error or discrepancy that Seller has discovered in these documents and the written resolution thereof by the Buyer or Consultant is acceptable to Seller.
- 8.3** Seller agrees that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

ARTICLE 9 CONTRACT DOCUMENTS

- 9.1** The Contract Documents consist of the following:
 - .7 Information to Proponents (pages ____ to ____, inclusive);
 - .8 This Agreement (pages ____ to ____, inclusive);
 - .9 Performance Bond (pages ____ to ____, inclusive);
 - .10 General Conditions (pages ____ to ____, inclusive);
 - .11 Supplementary Conditions (pages ____ to ____, inclusive);
 - .12 Specifications (as listed in the Table of Contents);
 - .13 Addendum (numbers ____ to ____, inclusive);
 - .14 Seller's Form of Proposal, solely as the prices set forth therein (pages ____ to ____, inclusive);
 - .15 Documentation submitted by the Seller prior to the Notice of Award (pages ____ to ____, inclusive);
 - .16 The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - .1 Notice to Proceed;
 - .2 Change Order(s);

- .3 Work Change Directive(s);
- .17 The Documents listed in Paragraph 9.1 are attached to this Agreement (except as expressly noted otherwise above).
- .18 The Contract Documents may only be amended or supplemented as provided in Section 1 04 Article 10.

ARTICLE 10 MISCELLANEOUS

- 10.1** Terms used in this Agreement which are defined in Article 1, Section 1 04 of the General Conditions shall have the meanings assigned in the General Conditions.
- 10.2** Neither Buyer nor Seller shall, without the prior written consent of the other, assign or sublet in whole or in part any interest under any of the Contract Documents; and specifically but without limitation, Seller shall not assign any monies due or to become due without the prior written consent of the Buyer. In case the Seller assigns all or any part of any monies due or to become due under this Agreement, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Seller shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for in the Contract.
- 10.3** Buyer and Seller each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract.
- 10.4** The Contract Documents constitute the entire agreement between Buyer and Seller and may only be altered, amended or repealed by a Change Order.
- 10.5** Terms used in this Agreement will have the meanings indicated in the General Conditions and the Supplementary Conditions.
- 10.6** Limitations
 - .1 Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Contract. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (c) intentional or reckless wrongful conduct, or (d) rights conferred by any bond provided by Seller under this Contract.

Mutual Limitation of Liability: Buyer and Seller further agree that the total liability of each party to the other for claims, costs, losses, and damages arising from this Contract shall be limited to the amount established in this Agreement as the Contract Price.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in sextuple. One (1) copy has been delivered to the Buyer, and one (1) copy each to Seller and Consultant. All portions of the Procurement Documents have been signed or identified by the Buyer and Seller or by Consultant on their behalf.

This Agreement will be effective on _____, 2020.

BUYER:

Village of Pemberton

By: _____

[Corporate Seal]

SELLER:

By: _____

[Corporate Seal]

Attest

Address for giving notices

Attest

Address for giving notices

END OF SECTION

04 GENERAL CONDITIONS

ARTICLE 1 DEFINITIONS AND TERMINOLOGY

- 1.1** Whenever used in the Submission or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
- .1 Addenda - Written or graphic instruments issued prior to the opening of Submissions which clarify, correct, or change the Submission Requirements or the proposed Contract Documents.
 - .2 Agreement - The written instrument signed by both the Buyer and Proponent covering the Goods and Special Services and which lists the Contract Documents in existence on the Effective Date of the Agreement.
 - .3 Buyer – Means the Buyer (VOP) and includes the Buyer’s personal representatives or successors.
 - .4 Change Order - A document which is signed by Seller and the Buyer and authorizes an addition, deletion, or revision to the Contract Documents or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement. Change Orders may be the result of mutual agreement by the Buyer and Seller, or of resolution of a Claim.
 - .5 Claim - A demand or assertion by the Buyer or Seller seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 - .6 Consultant - The individual or entity designated as such in the Agreement. The Consultant is the Consultant, or entity licensed to practice in the province or territory of the Place of Work. The term Consultant means the Consultant or the Consultant’s authorized agent.
 - .7 Contract - The entire and integrated written agreement between the Buyer and Seller concerning the Goods and Special Services. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
 - .8 Contract Documents - Those items so designated in the Agreement. Shop Drawings and other Seller submittals are not Contract Documents, even if accepted, reviewed, or approved by Consultant or the Buyer.
 - .9 Contract Times - The times stated in the Agreement by which the Goods must be delivered and Special Services must be furnished.
 - .10 Drawings – the part of the Contract Documents prepared or approved by the Consultant which graphically show the scope, intent, and character of the Goods and Special Services to be furnished by the Seller.
 - .11 General Contractor – the Prime Contractor is the contractor hired by VOP to install the Goods provided under the Contract Documents.
 - .12 General Requirements - Sections of Division 01 of the Specifications. The General Requirements pertain to all sections of the Specifications.
 - .13 Goods - The tangible and movable personal property that is described in the Contract Documents, regardless of whether the property is to be later attached to realty.
 - .14 Goods and Special Services - The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein.

This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

- .15 Laws and Regulations; Laws or Regulations - Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
- .16 Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to the Contract Times.
- .17 Notice of Award - The written notice by the Buyer to the Successful Proponent stating that upon timely compliance by the successful Proponent with the conditions precedent listed therein, the Buyer will sign and deliver the Agreement.
- .18 Notice to Proceed - A written notice given by the Buyer to Seller fixing the date on which the Contract Times commence to run and on which Seller shall start to perform under the Contract.
- .19 Owner – For the purpose of this contract Owner and Buyer shall be interchangeable
- .20 Place of the Work – The Place of Work is the designated site or location of the Work identified in the documents.
- .21 Point of Destination - The specific address of the location where delivery of the Goods shall be made, as stated in the Agreement.
- .22 Project - The total undertaking of which the Goods and Special Services may be the whole, or only a part.
- .23 Proponent- The individual or entity that submits a Submission directly to the Buyer.
- .24 RFP - The complete set of Request for Proposal as posted to BC Bid and as amended from time to time through Addendum.
- .25 Seller - The individual or entity furnishing the Goods and Special Services. The term “Supplier” may also be used in these Contract Documents to refer to the Seller.
- .26 Shop Drawings - All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services.
- .27 Specifications - That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.
- .28 Submission - An offer submitted on the prescribed forms setting forth the prices for the Goods and Special Services to be provided.
- .29 Submission Documents - The Submission Requirements and the proposed Contract Documents (including all Addenda).
- .30 Submission Requirements - Submission Form and any supplements.
- .31 Successful Proponent - The Proponent submitting a responsive Submission, to whom the Buyer makes an award.
- .32 Supplementary Conditions - That part of the Contract Documents which amends or supplements these General Conditions.
- .33 Work – Means the carrying out and doing of all things, whether of a temporary or permanent nature, that are to be done by the Seller pursuant to the Contract and, without limiting the generality of the

foregoing, includes the furnishing of all material, labour and services necessary for or incidental to the fulfilment of the requirements of the Contract, including all Changes on Work which may be ordered as herein provided.

- .34 Work Change Directive - A written statement to Seller issued on or after the Effective Date of the Agreement and signed by the Buyer ordering an addition, deletion, or other revision in the Contract Documents with respect to the Goods and Special Services. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

ARTICLE 2 GENERAL INFORMATION

2.1 Copies of Documents

- .1 Consultant shall furnish Seller up to four copies of the Contract Documents. Additional copies will be furnished upon request as the cost of reproduction.

2.2 Commencement of Contract Times

- .1 The Contract Times will commence to run on the date indicated in the Notice to Proceed.

2.3 Progress Schedule

- .1 Within 10 days of issue of Notice to Proceed, Seller shall submit to the Buyer and Consultant as acceptable progress schedule of activities including at a minimum milestones, Contract Times, stages of the work, Shop Drawings, and deliveries as required by the Contract Documents.
- .2 The progress schedule will be acceptable to Buyer and Consultant if it provides an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Contract Times. Such acceptance will not impose on Buyer or Consultant responsibility for the progress schedule, for sequencing, scheduling, or progress of the work nor interfere with or relieve Seller from Seller's full responsibility therefor. Such acceptance shall not be deemed to acknowledge the reasonableness and attainability of the schedule.

2.4 Preliminary Conference

- .1 Within 5 days of issue of Notice to Proceed, a conference attended by Seller, Buyer, Consultant and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedule, procedures for handling Shop Drawings and other submittals, processing Payments, and maintaining required records.

ARTICLE 3 PRELIMINARY MATTERS

3.1 Delivery of Bonds

- .1 Within 10 calendar days of notice of award, Seller shall deliver the executed counterparts of the Agreement to Buyer, Seller also shall deliver such bonds as Seller may be required to furnish as per Section 1 05 ARTICLE 5.

3.2 Evidence of Insurance

- .1 Within 10 calendar days of notice of award, Seller shall deliver the executed counterparts of the Agreement to Buyer, Seller shall deliver to Buyer, with copies to each additional insured identified by name in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Seller is required to purchase and maintain in accordance with Section 1 05 ARTICLE 4.

ARTICLE 4 CONTRACT DOCUMENTS

- 4.1 The intent of the Contract Documents is to include the design, labour, Goods and Special Services necessary for the performance of the Goods by the Seller in accordance with these documents. It is not intended, however, that the Seller shall supply products or perform work not consistent with, not covered, or not properly inferable from the Contract Documents.
- 4.2 The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- 4.3 Words and abbreviations which have well known technical or trade meaning are used in the Contract Documents in accordance with such recognized meanings.
- 4.4 References in the Contract Documents to the singular shall be considered to include the plural as the context requires.
- 4.5 If there is a conflict within the Contract Documents the order of priority of documents, from highest to lowest, shall be:
 - .1 Addenda;
 - .2 Information to Proponents;
 - .3 Written Amendments;
 - .4 Change Orders;
 - .5 Work Change Directive;
 - .6 Consultants written interpretations and clarifications;
 - .7 the written executed agreement between the Buyer and Proponent shall govern over all schedules or other documents forming part of the contract;
 - .8 the Supplemental Conditions shall govern over the General Conditions;
 - .9 the General Conditions shall govern over Specifications;
 - .10 Specifications of a later date shall govern over Specifications of an earlier date;
 - .11 Specifications shall govern over Drawings;
 - .12 Drawings of a later date shall govern over Drawings of an earlier date;
 - .13 Figured dimensions shown on a Drawing shall govern over scaled or implied dimensions on the same Drawing; and
 - .14 Drawings shall govern over the Submission.
 - .15 Submission.

- 4.6** The Buyer and the Seller acknowledge and agree that the Seller is an independent contractor and neither the Seller, nor any officer, servant or agent of the Seller, shall be deemed to be an employee, agent, representative or servant of the Buyer.
- 4.7** The Contract shall constitute the entire agreement between the Buyer and the Seller. There are no representations, warranties, covenants or agreements other than those contained in the Contract.
- 4.8** Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of, except as may be otherwise specifically stated in the Contract Documents.
- 4.9** Clarifications and interpretations of, or notifications of minor variations and deviations in, the Contract Documents, will be issued by Consultant.
- 4.10** No provision of any such standard, specification, manual or code, or any instruction of a Seller shall be effective to change the duties or responsibilities of Buyer or Consultant or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to Buyer or Consultant, or any of their consultants, agents, or employees any duty or authority to supervise or direct the performance of Seller's obligations or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- 4.11** Compliance with Laws and Permits. All permits and licenses which are required to construct, install and/or operate Buyer's facility or equipment, to use the Equipment, or to manage and dispose of any wastes and residues resulting from Buyer's use of the Equipment, shall be obtained and maintained by Buyer at Buyer's sole expense. Buyer is responsible for compliance with all laws and regulations applicable to the storage, use, handling, installation, maintenance, removal, registration and labeling of all Equipment after delivery of the Equipment, as well as for the proper management and disposal of all wastes and residues.
- 4.12** Reporting and Resolving Discrepancies
- .1 Reporting Discrepancies: Seller's Review of Contract Documents Before the Performance of the Contract: Before performance of the Contract, Seller shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Seller shall promptly report in writing to Consultant any conflict, error, ambiguity, or discrepancy which Seller discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Consultant before proceeding with the furnishing of any Goods and Special Services affected thereby.
 - .2 Seller's Review of Contract Documents During the Performance of the Contract: If, during the performance of the Contract, Seller discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Contract, any standard, specification, manual or code, or of any instruction of any Seller, Seller shall promptly report it to Consultant in writing. Seller shall not proceed with the furnishing of the Goods and Special Services affected thereby until an amendment to or clarification of the Contract Documents has been issued.
 - .3 Seller shall not be liable to Buyer or Consultant for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Seller had actual knowledge thereof.

- 4 Resolving Discrepancies: Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - .1 the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - .2 the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

4.13 Amending and Clarifying Contract Documents

- .1 The Contract Documents may be amended to provide for additions, deletions, and revisions to the Goods and Special Services or to modify contractual terms and conditions by a Change Order. Notwithstanding anything to the contrary, all changes to the Equipment or Services shall be subject to mutual agreement via a written Change Order or variation, which shall only become effective once signed by both Parties.
- .2 Buyer may issue a Work Change Directive providing for additions, deletions, or revisions to the Goods and Special Services, in which case (1) the Contract Price shall be equitably adjusted to account for any reasonable and necessary credits to Buyer for any such deletion, or for costs (including reasonable overhead and profit) incurred by Seller to accommodate such an addition or revision and (2) the Contract Times shall be equitably adjusted to account for any impact on progress and completion of performance. Such adjustments subsequently shall be duly set forth in a Change Order.
- .3 The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Goods and Special Services may be authorized, by one or more of the following ways:
 - .1 A Field Order;
 - .2 Consultant's approval of a Shop Drawing; or
 - .3 Consultant's written interpretation or clarification.

4.14 Conflicts

- .1 If there is any conflict between this Contract and any written Submission or quotation provided by Seller, then the terms and conditions set forth in this Contract shall prevail. If any term or condition of this Contract or any accompanying terms and conditions are held invalid or illegal, then such terms and conditions shall be reformed to be made legal or valid, or deleted, but the remaining terms and conditions shall remain in full force and effect, and this Contract shall be interpreted and implemented in a manner which best fulfills our intended agreement.

ARTICLE 5 AUTHORITY OF THE CONSULTANT

- 5.1** The Consultant will be the Buyer's representative throughout the duration of the Contract and shall have authority to act on behalf of the Buyer to the extent expressly provided for in the Contract.
- 5.2** The Consultant will interpret or clarify the Contract or any part thereof which appears indefinite, not clear or contradictory to the Seller.
- 5.3** The Consultant may examine or inspect the Work or any part thereof and determine whether the Work meets the requirements of the Contract. The Consultant may reject the Work or any part thereof which does not meet the requirements of the Contract.

5.4 The Consultant may give orders to the Seller to the extent necessary to ensure that the Work is performed in an orderly manner and meets the requirements of the Contract.

.2 The Consultant may give orders to the Seller's supervisor and such orders shall be deemed to have been given to the Seller.

5.5 The Consultant will determine the date of when final acceptance of the Covers has been achieved as per Electrical Sections.

ARTICLE 6 SELLER'S RESPONSIBILITY

6.1 General

.1 Except as otherwise provided in the Contract, the Seller shall be solely responsible for means, methods, techniques, sequences and procedures, and for coordinating the various parts of the Work so as to ensure its proper completion in a sound and workmanlike manner, in all respects in strict conformity with the Contract and in accordance with the approved work schedule.

.2 The Seller shall direct and supervise the Work so as to ensure conformance with the Contract.

.3 The Seller shall provide all Plant, Material, labour, services and incidentals necessary for the performance of the Work.

.4 The Seller shall be responsible for any Work not explicitly set out in the Contract but which may be reasonably implied for the proper completion of the Work.

6.2 Laws and Regulations

.1 The Seller shall comply with all laws, by-laws, ordinances, regulations, codes and orders of authorities having jurisdiction which are or come into force during the performance of the Work and which relate to the Work. Where there are two or more laws, by-laws, ordinances, regulations or codes applicable to the Work, the most restrictive shall apply.

.2 The Seller shall procure approvals, clearances, permits, licenses and certificates required for the performance of the Work, by law or by any by-laws, ordinances, regulations, codes or orders of the authorities having jurisdiction, but this shall not include the obtaining of permanent easements.

.3 The Seller shall give any notices required by law or by by-laws, ordinances, regulations, codes or orders of the authorities having jurisdiction and which relate to the Work.

.4 Where required by the Workers Compensation Board (British Columbia), the Seller shall be registered and shall provide and maintain workers compensation coverage throughout the term of the Contract and shall provide the Consultant with evidence thereof upon request.

.5 The Seller shall not be responsible for verifying that the Contract complies with the applicable laws, by-laws, ordinances, regulations, codes and orders relating to the Work.

.6 Changes in Laws or Regulations not known at the time of opening of Submissions having an effect on the cost or time of performance shall be the subject of an adjustment in Contract Price or Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made.

6.3 Supervision

- .1 Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Contract Documents. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Contract Documents. Seller shall not be responsible for the negligence of Buyer or Consultant in the design or specification of a specific means, method, technique, sequence, or procedure that is shown or indicated in and expressly required by the Contract Documents.
- .2 The Seller shall obey, perform and comply with the Consultant's orders, rules and procedures with respect to the Work or concerning the conduct thereof, promptly, efficiently and to the satisfaction of the Consultant and the Seller will assist other contractors, their employees and agents to do the same.
- .3 The Seller shall employ and keep on the Work, at all times during the performance of the Work, a competent supervisor and assistants, if necessary, acceptable to the Consultant. The supervisor shall represent the Seller. The supervisor shall not be replaced without the prior consent of the Consultant unless the supervisor proves to be unsatisfactory to the Seller and ceases to be in his employ.
- .4 If the Consultant orders a person to be removed from the Work, the Seller shall comply forthwith. Any person so removed shall not be re-employed on the Work by the Seller or by a Subcontractor.

6.4 Taxes

- .1 Buyer shall be responsible for all sales and use taxes arising out of the purchase of the Goods and the furnishing of Special Services.

6.5 Shop Drawings

- .1 Seller shall submit Shop Drawings to Buyer for Buyer's and Consultant's Review and approval in accordance with the scheduled required in the Contract Documents. Submittals shall be in accordance with the Section 2 01.

6.6 Patents and Royalties

- .1 If the Contract requires or the Seller desires the use of any design, device, material or process covered by letters patent, copyright, trademark or trade name, the Seller shall provide for such use by suitable legal agreement with the Buyer or licensee.
 - .1 Upon request of the Consultant, the Seller shall provide the Buyer with a copy of the said agreement.
- .2 If the Buyer or the Seller is served with a claim or notice of an infringement or alleged infringement of any patent, copyright, trademark or trade name, the party so served shall immediately give notice thereof to the other party.
- .3 If the Buyer or the Seller is prevented by injunction from using any design, device, material or process covered by letters patent, copyright, trademark or trade name, the Seller shall, at his own cost, substitute an equally suitable design, device, material or process, all subject to the prior approval of the Consultant.

6.7 Continuing Performance

- .1 Seller shall adhere to the progress schedule established in accordance with Contract Documents, and the Goods shall be delivered and the Special Services furnished within the Contract Times specified in the Agreement.
- .2 Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services shall be delayed or postponed pending resolution of any disputes or disagreements, or as Buyer and Seller may otherwise agree in writing.

6.8 Seller's Warranties and Guarantees

- .1 Seller warrants and guarantees to Buyer that the title to the Goods conveyed shall be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.
- .2 Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Contract Documents, and with the standards established by any Samples approved by Consultant. Consultant shall be entitled to rely on Seller's warranty and guarantee.
- .3 Seller's warranty and guarantee hereunder excludes defects or damage caused by:
 - .1 abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;
 - .2 corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Contract Documents and the Contract Documents required the Goods to withstand such conditions;
 - .3 use in a manner contrary to Seller's written instructions for installation, operation, and maintenance;
 - .4 normal wear and tear under normal usage; or
 - .5 proper handling, storage, installation, or commissioning of the Equipment by Buyer or third parties, repairs or alterations made by Buyer without Seller's written consent, or influent water which does not comply with agreed parameters.
- .4 Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents:
 - .1 observations by Buyer or Consultant
 - .2 recommendation by Consultant or payment by Buyer of any progress or final payment;
 - .3 use of the Goods by Buyer;
 - .4 any acceptance by Buyer or any failure to do so;
 - .5 the issuance of a notice of acceptance by Buyer;
 - .6 any inspection, test or approval by others; or
 - .7 any correction of non-conforming Goods and Special Services by Buyer.

- .5 Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.
- .6 Seller makes no implied warranties under this Contract.

ARTICLE 7 DELIVERY, STORAGE AND HANDLING

- 7.1** Assemblies shall be shipped and piece-marked to facilitate field erection.
- 7.2** The Seller shall co-operate with the Buyer in the matter of packaging, time of delivery and shipping.
- 7.3** The equipment and appurtenances shall be delivered to the Site of the work in a condition satisfactory to the Consultant and the Buyer and any omissions, discrepancies or damage evident on delivery shall be made good by the Seller.
- 7.4** The Buyer at the Site shall arrange for unloading the Seller's equipment, sign the carrier's pro bill to indicate receipt of the required number of crates, packages, note any apparent shortages of or visible damage to such crates and packages and shall assume care and custody of the equipment. The Seller shall furnish to the Buyer lists showing the contents of the crates and packages available at the job site when delivery of the equipment and appurtenances is made. Within seven (7) days after the date of delivery to the job site, the Buyer will notify the Seller in writing of shortages or damage in the equipment delivered.
- 7.5** The Seller shall supply instructions and to ensure proper receiving, handling, storage and completeness of shipped components.
- 7.6** Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling and any other costs associated with shipment and delivery.
- 7.7** Seller shall deliver the Goods F.O.B. the Point of Destination in accordance with the Contract Times set forth in the Agreement, or other date agreed to by Buyer and Seller.
- 7.8** Seller shall provide written notice at least 10 days before shipment of the manner of shipment and the anticipated delivery date. The notice shall also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours notice by telephone prior to the anticipated time of delivery.
- 7.9** Buyer will assure that adequate facilities are available to receive delivery of the Goods during the Contract Times for delivery set forth in the Agreement, or another date agreed by Buyer and Seller.
- 7.10** No partial deliveries shall be allowed, unless permitted or required by the Contract Documents or agreed to in writing by Buyer.
- 7.11** Title and risk of loss to the Equipment shall be transferred from Seller to Buyer upon delivery in accordance with the Contract. Title and risk of loss to the Services shall pass as they are performed.

7.12 Progress Schedule

- .1 Seller shall adhere to the progress schedule established in accordance with the Contract Documents as it may be adjusted from time to time as provided below.
 - .1 Seller shall submit to Consultant for acceptance proposed adjustments in the progress schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - .2 Proposed adjustments in the progress schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 8. Adjustments in Contract Times may only be made by a Change Order.

ARTICLE 8 CHANGES: SCHEDULE AND DELAY

- 8.1 Buyer may at any time, without notice to any surety, make an addition, deletion, or other revision to the Contract Documents with respect to the Goods and Services, within the general scope of the Contract, by a Change Order or Work Change Directive. Upon receipt of any such document, Seller shall promptly proceed with performance pursuant to the revised Contract Documents (except as otherwise specifically provided).
- 8.2 If Seller concludes that a Work Change Directive issued by Buyer affects the Contract Price or Contract Times, then Seller shall notify Buyer within 15 days after Seller has received the Work Change Directive and submit written supporting data to Buyer within 45 days after such receipt. If seller fails to notify Buyer within 15 days, Seller waives any Claim for such adjustment. If Buyer and Seller are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.7.
- 8.3 Seller shall not suspend performance while Buyer and Seller are in the process of making such changes and any related adjustments to Contract Price or Contract Times.
- 8.4 The Contract Price or Contract Times may only be changed by a Change Order.
- 8.5 Any Claim for an adjustment in the Contract Price or Contract Times shall be based on written notice submitted by the party making the Claim to the Consultant and the other party to the Contract in accordance with the provisions of Paragraph 10.7.
- 8.6 The parties acknowledge that the Contract has been entered into during the on-going COVID-19 pandemic (the "Pandemic"). The Seller advises that it is able to proceed with the Work under the Pandemic conditions and restrictions (collectively the "Pandemic Restrictions") as they exist as of the Submission Deadline. The parties acknowledge that Pandemic Conditions may change so as to cause unavoidable interruptions or interference to the Seller's performance of the Work. (1) notwithstanding the known existence of the Pandemic, 8.7 will apply to new Pandemic Restrictions, which arise after the Submission Deadline, whether anticipated or not, which reasonably interfere with the Seller's performance of the Work, such that upon giving required notice the Seller shall be entitled to an extension of the Contract Time, but shall not be entitled to reimbursement of any costs; (2) if new Pandemic Restrictions occur that cause or threaten Work interruptions the Seller will, as required by 8.5 give the Buyer immediate notice, and a written plan of the interim steps the Seller will take, if any, during the Work interruption, and when Pandemic Restrictions permit, provide the Buyer with a written plan for the resumption of the Work.

- 8.7** If Seller is prevented from delivering the Goods or performing the Special Services within the Contract Times for any unforeseen reason beyond its control and not attributable to its actions or inactions, then Seller shall be entitled to an adjustment of the Contract Times to the extent attributable to such reason. Such reasons include but are not limited to acts or neglect by Buyer, inspection delays, fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters. If such an event occurs and delays Seller's performance, Seller shall notify Buyer in writing within 15 days of knowing or having reason to know of the beginning of the event causing the delay, stating the reason therefor.
- 8.8** Seller shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Seller. Delays attributable to and within the control of Seller's subcontractors or Sellers shall be deemed to be delays within the control of Seller.
- 8.9** If Seller is prevented from delivering the Goods or furnishing the Special Services within the Contract Times due to the actions or inactions of Buyer, Seller shall be entitled to any reasonable and necessary additional costs arising out of such delay to the extent directly attributable to Buyer.
- 8.10** Neither Buyer nor Seller shall be entitled to any damages arising from delays which are beyond the control of both Buyer and Seller, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters.
- 8.11** Seller shall not be liable nor in breach or default of its obligations under this Contract to the extent performance of such obligations is delayed or prevented, directly or indirectly, due to causes beyond the reasonable control of Seller, including, but not limited to: acts of God, natural disasters, unusually severe weather, fire, terrorism, war (declared or undeclared) epidemics, material shortages, insurrection, act (or omissions) of Buyer or Buyer's Sellers or agents, any act (or omission) by any governmental authority, strikes, labor disputes, transportation shortages, or vendor non-performance.

ARTICLE 9 BUYER'S RIGHTS

9.1 General

- .1 The Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.
- .2 Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Consultant's representatives, for inspections and tests specified in the Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Consultant's representatives, and all expenses of reinspection or retesting.
- .3 Buyer shall bear all expenses of inspections and tests that are not specified in the Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.
- .4 Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Contract Documents specify are to be observed by Buyer prior to shipment.
- .5 Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination.

- .6 If, on the basis of any inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of said inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 11.4.
- .7 Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections shall constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Contract.

9.2 Inspection on Delivery

- .1 Buyer or Consultant will visually inspect the Goods upon delivery solely for purposes of identifying the Goods and general verification of quantities and observation of apparent condition in order to provide a basis for a progress payment. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.
- .2 Within ten days of such visual inspection, Buyer shall provide Seller with written notice of Buyer's determination regarding conformity of the Goods. In the event Buyer does not provide such notice, it will be presumed that the Goods appear to be conforming and that Buyer has acknowledged their receipt upon delivery.
- .3 If, on the basis of the visual inspection specified in Paragraph 9.2.1 the Goods appear to be conforming, Buyer's notice thereof to Seller will acknowledge receipt of the Goods.

9.3 Final Inspection

- .1 After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as indicated, Buyer or Consultant will make a final inspection.
- .2 If, on the basis of the final inspection, the Goods are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods.
- .3 If, on the basis of the final inspection, the Goods are non-conforming, Buyer will identify the non-conformity in writing.

9.4 Non-Conforming Goods and Special Services

- .1 If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer or Consultant has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.4.9, Buyer or Consultant determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer or Consultant, replace the non-conforming goods with conforming goods.
- .2 If Buyer or Consultant elects to reject the Goods in whole or in part, Buyer's or Consultant's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Contract Times, remove and replace the rejected Goods.
- .3 Seller shall bear costs for direct damages attributable to the removal and replacement of the non-conforming Goods.
- .4 Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

- .5 If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.
- .6 Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer with Consultants approval may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such nonconforming Goods.
- .7 Prior to the start of the equipment warranty period, Seller shall pay all claims and costs for direct damages, including the correction or removal and replacement of the nonconforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, or the obtaining of conforming Special Services from others.
- .8 If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of consultants, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.
- .9 Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year "correction period" after the earlier of the date on which Buyer has placed the Goods in continuous service or the date of final payment, or for such longer period of time as may be prescribed by Laws or Regulations or by the terms of any specific provisions of the Contract Documents. During the equipment warranty period, Seller's obligation under the mechanical equipment and membrane warranty shall be limited to the repair or replacement, at its factory, of any device or part thereof which shall prove to have been thus defective. All costs associated with the removal and shipment of the defective part from the Buyer's facility to the Seller's factory and all costs related to return shipment to the Buyer's facility and installation of a repaired or replacement part shall be the Buyer's responsibility.

ARTICLE 10 ROLE OF THE CONSULTANT

- 10.1** The duties and responsibilities and the limitations of authority of Consultant are set forth in the Contract Documents.
- 10.2** Consultant will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as Consultant may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Such written clarifications and interpretations will be binding on Buyer and Seller. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Contract Price or Contract Times, either may make a Claim therefor.
- 10.3** Consultant may authorize minor deviations or variations in the Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations or 2) a Field Order.
- 10.4** Rejecting Non-Conforming Goods and Special Services
 - .1 Consultant will have the authority to disapprove or reject Goods and Special Services that Consultant believes to be non-conforming. Consultant will also have authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.1 whether or not the Goods are fabricated or installed, or the Special Services are completed.
- 10.5** Decisions on Requirements of Contract Documents

- .1 Consultant will be the initial interpreter of the Contract Documents and judge of the acceptability of the Goods and Special Services. Claims, disputes and other matters relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to Seller's performance will be referred initially to Consultant in writing with a request for a formal decision in accordance with this paragraph.
- .2 The Consultant will be, in the first instance, the interpreter of the requirements of the Contract Documents and shall make findings as to the performance, thereunder by both parties to the Contract. Interpretations and findings of the Consultant shall be consistent with the intent of the Contract Documents. When making such interpretations and findings the Consultant will not show partiality to either the Buyer or the Seller.

10.6 The Consultant will review and take appropriate action upon such Seller's shop drawings, product data, and samples, as provided in the Contract Documents.

10.7 Claims and Disputes

- .1 Notice: Written notice of each Claim relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to either party's performance shall be delivered by the claimant to Consultant and the other party to the Agreement within 15 days after the occurrence of the event giving rise thereto, and written supporting data shall be submitted to Consultant and the other party within 45 days after such occurrence unless Consultant allows an additional period of time to ascertain more accurate data.
- .2 Consultant's Decision: Consultant will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- .3 If Consultant does not render a formal written decision on a Claim within the time stated in Paragraph 10.7.2, Consultant shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- .4 No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with Paragraph 8.7.
- .5 The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the time periods established in this Paragraph 8.7; if so, a written record of such mutual agreement should be made and jointly executed.

ARTICLE 11 PAYMENT

11.1 The amounts to be paid by the Buyer to the Seller shall be the sums certified by the Buyer in accordance with the Contract Documents. The Seller shall prepare and submit milestone payment invoices for the Work in accordance with the payment schedule. Prices stated on Form of Submission shall be deemed to include:

- .1 Duty;
- .2 Freight and cartage;
- .3 Provincial and Federal taxes [except the GST, which shall be extra where applicable and listed separately] and all charges governmental or otherwise paid;
- .4 Profit and all compensation which shall be due to the Seller for the Work and all risks and contingencies connected therewith.

11.2 Increased or Decreased Costs

- .1 The Contract Price shall not be increased or decreased by reason of any increase or decrease in the cost of the Work to the Seller except as provided for herein.
- .2 The Contract Price shall be adjusted if any change in a tax imposed under the Excise Act, the Excise Tax Act, the Customs Act, the Customs Tariff) or Goods and Services Sales Tax (GST):
 - .1 occurs after the Submission Deadline;
 - .2 applies to Material; and
 - .3 affects the cost of that Material to the Seller.
- .3 If a change referred to in 11.2.2 occurs, the Contract Price shall be increased or decreased by an amount equal to the amount that is established, by an examination of the relevant records of the Seller, to be the increase or decrease in the cost incurred that is directly attributable to that change.
- .4 For the purpose of 11.2.2, where a tax is changed after the Submission Deadline but public notice of the change has been given by either the Federal or Provincial Minister of Finance before that date, the change shall be deemed to have occurred before the Submission Deadline and the Seller shall not be entitled to an increase in the Contract Price.

11.3 Review of Applications for Milestone Payments

- .1 Consultant will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Consultant's reasons for refusing to recommend payment. In the latter case, Seller may make the necessary corrections and resubmit the Application.
- .2 Consultant may refuse to recommend that all or any part of a milestone payment be made, or Consultant may nullify all or any part of any payment previously recommended if, in Consultant's opinion, such recommendation would be incorrect or if on the basis of subsequently discovered evidence or subsequent inspections or tests Consultant considers such refusal or nullification necessary to protect Buyer from loss because the Contract Price has been reduced, Goods are found to be non-conforming, or Seller has failed to furnish acceptable Special Services.

11.4 Amount and Timing of Progress Milestone Payments

- .1 Subject to Paragraph 13.3, the amounts of the progress milestone payments will be as provided in the Agreement. Buyer shall within 30 days after receipt of each Application for Payment with Consultant's recommendation pay Seller the amount recommended; but, in the case of the Application for Payment upon Buyer's acknowledgment of receipt of the Goods, said 30-day period may be extended for so long as is necessary (but in no event more than 60 days) for Buyer to examine the bill of sale and other documentation submitted therewith. Buyer shall notify Seller promptly of any deficiency in the documentation and shall not unreasonably withhold payment.

ARTICLE 12 CANCELLATION, PAYMENT AND TERMINATION

12.1 Cancellation

- .1 Buyer has the right to cancel the Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph shall not constitute a breach of contract by Buyer. Upon cancellation:
 - .1 Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

- .2 For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Contract Price of such Goods.

12.2 Suspension of Performance by Buyer

- .1 Buyer has the right to suspend performance of the Contract for up to a maximum of ninety days (90), without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Contract Times caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller. Any suspension of the Contract that exceeds 90 calendar days, in the aggregate, shall, at the Seller's sole discretion, constitute termination of the Contract for Buyer's convenience in accordance with Paragraph 12.1.

12.3 Suspension of Performance by Seller

- .1 Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:
 - .1 Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Contract; and,
 - .2 Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Contract, and Buyer has failed to provide such assurances within 30 days of Seller's written request.

12.4 Breach and Termination

- .1 Buyer's Breach:
 - .1 Buyer shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including but not limited to:
 - .1 failure to make payments in accordance with the Contract Documents, or
 - .2 wrongful repudiation of the Contract.
 - .2 Seller shall have the right to terminate the Contract for cause by declaring a breach should Buyer fail to comply with any material provisions of the Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
 - .1 In the event Seller believes Buyer is in breach of its obligations under the Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have thirty (30) days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.
- .2 Seller's Breach:
 - .1 Seller shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including, but not limited to:
 - .1 failure to deliver the Goods or perform the Special Services in accordance with the Contract Documents,
 - .2 wrongful repudiation of the Contract, or
 - .3 delivery or furnishing of non-conforming Goods and Special Services.

- .2 Buyer may terminate Seller's right to perform the Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.
 - .1 In the event Buyer believes Seller is in breach of its obligations under the Contract, and except as provided in Paragraph 12.4.2.2.2, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have seven days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.
 - .2 If and to the extent that Seller has provided a performance bond under the provisions of Section 1-05 ARTICLE 5, the notice and cure procedures of that bond, if any, shall supersede the notice and cure procedures of Paragraph 12.4.2.1.

ARTICLE 13 DISPUTE RESOLUTION

13.1 Dispute Resolution Method

- .1 Either Buyer or Seller may initiate the mediation of any Claim decided in writing by Consultant under Paragraph 10.7.2 or 10.7.3 before such decision becomes final and binding. The request for mediation shall be submitted in writing and to the other party to the Contract. Timely submission of the request shall stay the Consultant's decision from becoming final and binding.
- .2 Buyer and Seller shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- .3 If the mediation process does not result in resolution of the Claim, then Consultant's written decision under Paragraph 10.7.2 or a denial pursuant to Paragraph 10.7.3 shall become final and binding 30 days after termination of the mediation unless, within that time period, Buyer or Seller:
 - .1 elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
 - .2 agrees with the other party to submit the Claim to another dispute resolution process, or
 - .3 if no dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 14 GOVERNING LAW

- 14.1** The Contract has been entered into in the Province of British Columbia and shall be governed by and construed and enforced in accordance with the laws of the Province of British Columbia and of Canada as applicable therein. The parties irrevocably attorn to the jurisdiction of the courts of the Province of British Columbia with respect to any matters arising out of this Contract.

ARTICLE 15 FORCE MAJEURE

- 15.1** Either Party shall not be liable to the other Party for any loss, damage or other claim whatsoever, including direct or indirect losses, loss of profits, or compensation for any inconvenience, nuisance or discomfort, arising out of a force majeure as defined below, or if either Party is prevented from having access to and/or from the site arising out of a force majeure as defined below, provided that the Party claiming a force majeure hereunder shall promptly notify the other specifying the cause and probable duration of the delay.

- 15.2** "Force majeure" means any circumstances beyond the reasonable control of the affected Party and not caused by its default or act of commission or omission and not avoidable by the exercise of reasonable effort or foresight by such Party. Without restricting the generality of the foregoing, force majeure shall include any one or more of the following: any act of God; embargo, confiscation, acts or restraints of governments or public authorities; pandemics; wars, sabotage, act of public enemy or riot; strikes, slow-downs, lockouts or other labour or employee interruptions or disturbances, whether involving employees of that Party or of any other person over which that Party has no reasonable control; explosion, fire, radioactive contamination, flood or natural disaster. Lack of finances shall in no event be deemed to be a cause beyond a Party's reasonable control. Refer to 8.6 specifically for reference to the COVID-19 Pandemic.
- 15.3** The performance of any obligation suspended or delayed due to force majeure shall resume as soon as reasonably possible after the force majeure ends and any work schedule shall be adjusted by a period of time equal to the time lost due to such delays.
- 15.4** No extension for delay by the Seller shall be approved unless a notice of the claim is received by the Consultant from the Seller within seven (7) Calendar Days of the date on which the cause of delay arose.
- 15.5** Any notice or claim for extension must state the cause of delay and the length of extension requested.
- 15.6** In the case of a continuing cause of delay, only one claim for an extension shall be necessary.

ARTICLE 16 INDEMNITY

- 16.1** The Seller hereby agrees to indemnify and save harmless the Buyer, its officers, employees, elected officials and agents against all claims, demands, losses, costs, damages, actions, suits or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out, related to, occasioned by or attributable to the negligent acts, errors or omissions of, or breach of this Contract by, the Seller, its servants, agents or sub-contractors, in providing the services and performing the work of the Contract, excepting always liability arising solely out of the negligent act or omission of the Buyer.

END OF SECTION

05 SUPPLEMENTARY CONDITIONS

ARTICLE 1 GENERAL CONDITIONS

- 1.1 In addition to Section 1 04 - General Conditions, these Supplementary Conditions are applicable to the Work of the Contract.

ARTICLE 2 CONSULTANT

- 2.1 The Consultant is ISL Engineering and Land Services, represented by:

Graham Schulz, P.Eng, Manager, Squamish Office

ISL Engineering and Land Services

Phone: 604-815-4646

gschulz@islengineering.com

ARTICLE 3 INSURANCE

- 3.1 The Seller shall provide and maintain general liability insurance with limits of not less than two million dollars (\$5,000,000) per occurrence, an aggregate limit of not less than two million dollars (\$5,000,000) within any policy year with respect to completed operations, and a deductible not exceeding five thousand (\$5,000). To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the Seller, the Buyer may agree to increase the deductible amounts.
- 3.2 Automobile liability insurance for all automobiles used for or in connection with the Work in the amount of at least five million dollars (\$5,000,000.00), to remain in place at all times during the performance of the Work.
- 3.3 The Seller shall be responsible for deductibles.
- 3.4 The Seller shall provide the Consultant with a certificate(s) of insurance, in a form satisfactory to the Buyer, at least two (2) Business Days prior to the commencement of any Work on the Site.
- 3.5 The Seller shall not cancel, materially alter, or cause the policies to lapse without providing at least thirty (30) Calendar Days prior written notice to the Consultant and to the Buyer.

ARTICLE 4 SCHEDULE OF WORK

- 4.1 The Seller shall not commence any Work until the Seller is in receipt of a Notice of Award from the Buyer authorizing the commencement of the Work.

ARTICLE 5 SERVICES REQUIRED AT SITE

- 5.1 The Seller shall supply the services of a competent, factory-trained technical representative for the minimum period specified in the technical specification, at no additional cost to the Contract.
- 5.2 The technical representative shall provide the services stated in the relevant technical sections and shall operate and demonstrate the covers to the satisfaction of Buyer's operating staff.
- 5.3 The Seller shall provide to the Buyer, a letter or certificate stating that the technical representative has found the installation to be in accordance with the manufacturer's requirements.

END OF SECTION

2 GENERAL REQUIREMENTS

01 SUBMITTALS

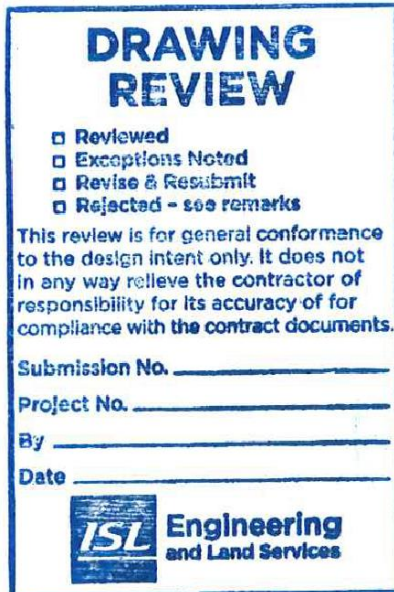
ARTICLE 1 GENERAL

- 1.1 This Section specifies the general methods and requirements of submissions applicable to Shop Drawings and Operations and Maintenance Manuals.
- 1.2 All submittals shall be submitted with transmittal forms, identifying contract title, equipment numbers, equipment descriptors, drawing numbers, and specification sections for each submittal and item in the submittal.

ARTICLE 2 SHOP DRAWINGS

- 2.1 Seller shall submit to the Consultant for review, detailed shop drawings and product information for the equipment to be supplied as noted in the technical specifications and as specified herein.
- 2.2 Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, Product, and other data which the Seller provides to illustrate details of a portion of the Work.
- 2.3 One (1) digital copy (PDF) of the material shall be submitted in their entirety for all items of equipment being supplied and shall be complete in every detail and show clear compliance with the specifications.
- 2.4 The Seller shall review all shop drawings prior to submission to the Consultant. The Seller represents by this review that: Seller has determined and verified all measurements from the concept drawings and field construction conditions with the Consultant; product requirements; catalogue numbers; and similar data and that the Seller has checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents. The Seller shall confirm this review of each shop drawing by stamp, data, and signature of the person responsible. At the time of submission, the Seller shall notify the Consultant in writing of any deviations in the shop drawings from the requirements of the Contract Documents.
- 2.5 The Seller shall submit shop drawings to the Consultant to review in orderly sequence and sufficiently in advance so as to cause no delay in the Work. Shop drawings which require approval of any legally constituted authority having jurisdiction shall be submitted to such authority by the Seller for approval.
- 2.6 The Seller shall submit shop drawings in the form specified or as the Consultant may direct. The Consultant will review and return shop drawings in accordance with the schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The Consultant's review is for conformity to the design concept and for general arrangement only. The Consultant's review shall not relieve the Seller of responsibility for errors or omissions in the shop drawings or for meeting all requirements of the Contract Documents unless the Consultant expressly notes
- 2.7 Upon the Consultant's request, the Seller shall revise and resubmit shop drawings which the Consultant rejects as inconsistent with the Contract Documents unless otherwise directed by the Consultant. The Seller shall notify the Consultant in writing of any revisions to the resubmission other than those requested by the Consultant. Seller shall note on any resubmissions of shop drawings, all changes from the original submission.
- 2.8 Buyer will not accept responsibility for the cost of changes necessary if any equipment is fabricated without prior review and approval of shop drawings as provided for above.
- 2.9 An example of the shop drawing stamp to be used by the Consultant for the project is shown below. This stamp may be affixed to only one page of each set of shop drawings submitted but shall be applicable to

each and every shop drawing submitted in the set, all of which shall be considered as stamped shop drawings.



DRAWING REVIEW

- Reviewed
- Exceptions Noted
- Revise & Resubmit
- Rejected - see remarks


This review is for general conformance to the design intent only. It does not in any way relieve the contractor of responsibility for its accuracy or for compliance with the contract documents.

Submission No. _____

Project No. _____

By _____

Date _____

 **ISL Engineering and Land Services**

- 2.10** The following shall be considered as part of the stamp and shall apply to each and every stamped shop drawing reviewed in connection with the project: "Review is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the contract documents. Seller is responsible for understanding the design intent and tolerances within the contract drawings, which shall be confirmed and correlated with the concept drawings or in discussion with the Consultant. The Seller is responsible for the fabrication processes and techniques of construction; coordination of his or her work with that of all other trades; and the satisfactory performance of his or her work and required quantities."
- 2.11** Only shop drawings which have been stamped by the Consultant will be permitted at the site.
- 2.12** Changes required for equipment ordered or manufactured prior to the Consultant's review and comment, if any, on the first submittal of Shop Drawings, will not be paid for over and above the Contract Price.
- 2.13** Any adjustments made on Shop Drawings by the Consultant are not intended to change the Contract price. If it is deemed that such adjustments affect the Contract Price, clearly state as such in writing prior to proceeding with fabrication and installation of Work.
- 2.14** Comply with all Contract Documents.
- 2.15** Shop Drawings:
- .1 Certified general arrangement drawings showing arrangement, construction and installation details, materials of construction, elevations, loadings, equipment weights, equipment forces on the structure, anchorage locations, list of supplementary items supplied by others that are necessary to complete the work, list of all furnished components and their materials of construction.
 - .2 Instructions for receiving, handling, storage.
 - .3 Instructions for installation, alignment checks.

- .4 Detailed instruction for the erection of equipment.
- .5 Certification that equipment meets requirements of this specification.
- .6 Warranties and Guarantees.

ARTICLE 3 OPERATIONS AND MAINTENANCE MANUALS

- 3.1** Supply for the installation and maintenance instructions in a PDF electronic copy with digital links in the table of contents that will bring the user to the relevant section.
- 3.2** Provide one (1) copy of manual(s) to the Consultant as soon as possible after delivery of the equipment to the Site.
- 3.3** Include in manuals, Shop Drawings, installation and maintenance instructions.
- 3.4** A bound reproduction of Reviewed Shop Drawings is not sufficient. Shop Drawings may be included where relevant but must be supplemented by specific information. Insert information described below in the manuals in a format similar to that listed:
 - .1 General Information
 - .1 Functional title of the system, equipment, material, or instrument.
 - .2 Insert specification sections for equipment supplied. Include addenda, revision notices, change orders and change directives that refer to that specific item of equipment.
 - .3 Mailing address, telephone number, and email address of the manufacturer, the nearest manufacturer's representative, and any subcontractors.
 - .2 Technical Information
 - .1 Technical Data:
 - .1 Insert Manufacturer's technical specification and data sheets.
 - .2 Maintenance Information & Instructions:
 - .1 Include the description and schedule for all Manufacturer's recommended routine preventative maintenance procedures. Indicate whether procedure is to be done daily, weekly, monthly, quarterly, semi-annually, annually, or fill in hours of operation.
 - .2 Provide step-by-step procedures and list special required tools and supplies for installation, removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings, and adjustments required.
 - .3 Assembly Drawings:
 - .1 Provide drawings which completely document the assembly, subassembly, or material for which the instruction is written. Provide the following drawings as applicable: fabrication details, Shop Drawings, installation drawings, layout and dimension drawings.
 - .4 Bills of Materials:

- .1 Provide a clear, legible copy of the Bill of Materials that was shipped with the equipment. The Bill of Materials should list all equipment, instruments, components, accessories, tools, and other items that were shipped with the equipment.
- .2 Provide a list of recommended spare parts and special tools requirements, complete with part numbers and unit prices.

3.5 Health and safety information.

3.6 Startup Data:

- .1 All completed startup and reports forms.
- .2 All completed equipment checklists and performance reports,
- .3 All system performance reports

3.7 Warranties:

- .1 Manufacturers' standard warrants and guarantees. Include the name and telephone number of the contact person. Indicate the time frame of each warrant or guarantee on the list.
- .2 The Seller shall modify and supplement the manual as required by the Consultant.

END OF SECTION

3 ELECTRICAL EQUIPMENT

01 DIESEL GENERATOR

ARTICLE 1 GENERAL

1.1 Section Overview

- .1 This Section presents specifications for materials, methods and performance requirements of stand-by duty, outdoor type, diesel fuelled generator set equipment

1.2 Special Conditions

- .1 The generator set installation and on-site testing shall conform to the requirements of the following codes and standards, as applicable. The generator set shall include necessary features to meet the requirements of these standards:
 - .1 IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
 - .2 NEMA MG1. Alternator shall comply with the requirements of the current version this standard as they apply to AC alternators.
 - .3 UL142 – Sub-base Tanks.
 - .4 UL1236 – Battery Chargers.
 - .5 CSA C22.2, No. 14 – M91 Industrial Control Equipment.
 - .6 UL508. The entire control system of the generator set shall be UL508 listed and labeled.

ARTICLE 2 PRODCUTS

2.1 Generator Set

.1 Ratings

- .1 The generator set shall operate at 1800 rpm and at a voltage of: 347/600 Volts AC, Three phase, 4 wire, 60 hertz.
- .2 The generator set shall be rated at 275kW at 0.8 PF, based on site conditions of: Altitude 210 meters, ambient temperatures up to 35 oC.
- .3 The generator set rating shall be based on emergency / standby service.

.2 Performance

- .1 Voltage regulation shall be +/- 0.25% for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed +/- 0.5%.
- .2 Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed +/- 0.5%.
- .3 The diesel engine generator set shall accept a single step load of 100% nameplate kW and power factor, less applicable de-rating factors, with the engine generator set at operating temperature.
- .4 Motor starting capability shall be a minimum of 900 kVA rating. The generator set shall be capable of recovering to a minimum of 90% of rated no load voltage following the application of the specified kVA load at near zero power factor applied to the generator set.

- .5 The alternator shall produce a clean AC voltage waveform, with not more than 5% total harmonic distortion at full linear load, when measured from line to neutral, and with not more than 3% in any single harmonic, and no 3rd order harmonics or their multiples.
- .6 Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically with PMG, without damage to generator system components.
- .7 The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating, and shall meet all applicable exhaust emission requirements at the time of commissioning.

.3 Construction

- .1 The engine generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.
- .2 All switches, lamps, and meters in the control system shall be oil tight and dust tight. All active control components shall be installed within a NEMA 3R enclosure. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts.

.4 Connections

- .1 The generator set load connections shall be composed of an integral mounted main fused disconnect, sized to carry the rated output current of the generator set. The fuses shall be low peak dual element type that operate to protect the alternator under all overcurrent conditions, or a thermal-magnetic trip with other overcurrent protection devices that positively protect the alternator under overcurrent conditions. Submit time overcurrent characteristic curves and thermal damage curve for the alternator, demonstrating the effectiveness of the protection provided. Use tin plated copper bus bars, as necessary, to provide sufficient lug space for cables of the number and size as shown on the drawings.
- .2 Generator set control interfaces to other system components shall be made on a permanently labeled terminal block assembly. Labels describing connection point functions shall be provided.

.5 Approved Manufacturer:

- .1 MTU; Cullen Diesel Power.
- .2 Cummins.
- .3 Kohler.
- .4 CAT

2.2 Engine and Engine Equipment

- .1 The engine shall be diesel, 4 cycle, radiator and fan cooled. The horsepower rating of the engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories. Two cycle engines are not acceptable. Engine accessories and features shall include:
 - .1 Tier II emission certified engine.
 - .2 An electronic governor system shall provide automatic isochronous frequency regulation. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate and excitation as appropriate to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed. The governing system shall include a programmable warm up at idle and cool-down at idle function. While operating in idle state, the control system shall disable the alternator excitation system.

- .3 Skid mounted radiator and cooling system rated for full load operation in 150 °C ambient as measured at the alternator air inlet. Radiator fan shall be suitable for use in a system with 0.5 inches H₂O restriction. Radiator shall be sized based on a core temperature that is 20 °C higher than the rated operation temperature. The equipment manufacturer shall fill the cooling system with a 50 / 50-ethylene glycol / water mixture prior to shipping. Rotating parts shall be guarded against accidental contact.
- .4 Electric starter(s) capable of three complete cranking cycles without overheating.
- .5 Positive displacement, mechanical, full pressure, lubrication oil pump.
- .6 Full flow lubrication oil filters with replaceable spin on canister elements and dipstick oil level indicator.
- .7 An engine driven, mechanical, positive displacement fuel pump. Fuel filter with replaceable spin on canister element. Fuel cooler, suitable for operation of the generator set at full rated load in the ambient temperature specified shall be provided if required for operation due to the design of the engine and the installation.
- .8 Replaceable dry element air cleaner with restriction indicator.
- .9 Flexible supply and return fuel lines.
- .10 Engine mounted battery charging alternator, 40 ampere minimum, and solid state voltage regulator.
- .11 Coolant heater:
 - .1 Engine mounted, thermostatically controlled, coolant heater(s) for each engine. Heater voltage shall be as shown on the project drawings. The coolant heater shall be UL499 listed and labeled.
 - .2 The coolant heater shall be installed on the engine with silicone hose connections. Stainless-steel tubing shall be used for connections into the engine coolant system wherever the length of pipe run exceeds 12 inches. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall have provisions to isolate the heater for replacement of the heater element without draining the coolant from the generator set. The quick disconnect / automatic sealing couplers shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
 - .3 The coolant heater shall be provided with a DC thermostat, installed at the engine thermostat housing. An AC power connection box shall be provided for a single AC power connection to the coolant heater system.
 - .4 The coolant heater(s) shall be sized as recommended by the engine manufacturer to warm the engine to a minimum temperature required for starting and load pickup requirements of this specification.
- .12 Oil Heater:
 - .1 Engine mounted, thermostatically controlled, oil heater, as sized by generator set manufacturer.
- .13 Provide vibration isolators, spring/pad type, quantity as recommended by the generator set manufacturer.
- .14 Starting and Control Batteries shall be lead acid type, 24 volt DC, sized as recommended by the engine manufacturer, complete with battery cables and connectors. The batteries shall be capable of a minimum of three complete 15-second cranking cycles at -10 °C ambient temperature when fully charged.
- .15 Battery Blanket:
 - .1 Battery shall come with a thermostatically controlled battery blanket. Battery blanket voltage shall be 120 VAC. Battery blanket shall be sized by generator set manufacturer.

- .16 Provide exhaust silencer(s) for each engine of size and type as recommended by the generator set manufacturer and approved by the engine manufacturer. The mufflers shall be critical grade. Exhaust system shall be installed according to the engine manufacturer's recommendations and applicable codes and standards.
- .17 Provide a minimum 12 amp battery charger for each generator set battery bank. Generator sets incorporating two battery banks shall be provided with two chargers connected together and operating in parallel, with alarm output(s) connected in parallel. The charger(s) shall include the following capabilities and features:
 - .1 Chargers shall be CSA or CUL certified for use in emergency applications.
 - .2 The charger shall be capable of charging a fully discharged battery without damage to the charger. It shall be capable of returning a fully discharged battery to fully charged condition within 24 hours.
 - .3 The charger shall incorporate a 4-state charging algorithm, to provide trickle charge rate to restore fully discharged batteries, a bulk charge rate to provide fastest possible recharge after normal discharge, an absorption state to return the battery to 100% of charge, and a float stage to maintain a fully charge battery and supply battery loads when the generator set is not operating. In addition, the charger shall include an equalization timer. Charge rates shall be temperature compensated based on the temperature directly sensed at the battery.
 - .4 The DC output voltage regulation shall be within +/- 1%.
 - .5 2-line alphanumeric display with programming keys to allow display of DC output ammeter and voltmeters, display alarm messages, and perform programming.
 - .6 LED indicating lamp(s) to indicating normal charging condition and fault condition.
 - .7 AC input overcurrent, over voltage, and under-voltage protection.
 - .8 DC output overcurrent protection.
 - .9 Alarm output relay.
 - .10 Corrosion resistant aluminum enclosure.

2.3 AC Alternator

- .1 The alternator shall be; synchronous, four pole, 2 / 3 pitch, revolving field, drip-proof construction, single pre-lubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc. All insulation system components shall meet NEMA MG1 temperature limits for Class H insulation system and shall be UL1446 listed. Actual temperature rise measured by resistance method at full load shall not exceed 125 degrees C.
- .2 The alternator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage not more than 5% above or below rated voltage.
- .3 A permanent magnet generator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of sustaining and regulating current supplied to a single phase or three phase fault at approximately 300% of rated current for not more than 10 seconds.
- .4 The sub-transient reactance of the alternator shall not exceed 15%, based on the standby rating of the generator set.

.5 Alternator anti-condensation heater:

- .1 Alternator shall come with a thermostatically controlled anti-condensation heater, as sized by generator set manufacturer

2.4 Generator Set Control

.1 The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification.

.2 The control shall be mounted on the generator set. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered.

.3 Control Switches:

- .1 Mode Select Switch – mode select switch shall initiate the following control modes. When in the RUN or MANUAL position the generator set shall start, and accelerate to rated speed and voltage as directed by the operator. In the OFF position, the generator set shall immediately stop, bypassing all time delays. In the AUTO position, the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.
- .2 EMERGENCY STOP switch – switch shall be Red "mushroom head" push button. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.
- .3 RESET switch – switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.
- .4 PANEL LAMP switch – depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.

.4 : Generator Set AC output metering

- .1 Digital metering set, 1% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW hours, and power factor. Generator output voltage shall be available in line to line and line to neutral voltages, and shall display all three-phase voltages (line to neutral or line to line) simultaneously.
- .2 Analog voltmeter, ammeter, frequency meter, power factor meter, and kilowatt (KW) meter. Voltmeter and ammeter shall display all three phases. Meter scales shall be color coded in the following fashion: green shall indicate normal operating condition, amber shall indicate operation in ranges that indicate potential failure, and red shall indicate failure impending. Metering accuracy shall be within 1% at rated output. Both analog and digital metering are required.
- .3 The control system shall monitor the total load on the generator set, and maintain data logs of total operating hours at specific load levels ranging from 0 to 110% of rated load, in 10% increments. The control shall display hours of operation at less than 30% load and total hours of operation at more than 90% of rated load.
- .4 The control system shall log total number of operating hours, total kWh, and total control on hours, as well as total values since reset.

.5 : Generator Set Alarm and Status Display

- .1 LED alarm and status indication lamps.
- .2 The control shall include five configurable alarm-indicating lamps. The lamps shall be field adjustable for any status, warning, or shutdown function monitored by the gen-set. They shall also be configurable for color, and control action (status, warning, or shutdown).
- .3 The control shall include green lamps to indicate that the generator set is running at rated frequency and voltage, and that a remote start signal has been received at the generator set. The running signal shall be based on actual sensed voltage and frequency on the output terminals of the generator set.
- .4 The control shall include a flashing red lamp to indicate that the control is not in automatic state, and red common shutdown lamp.
- .5 The control shall include an amber common warning indication lamp.

- .6 The generator set control shall indicate the existence of the warning and shutdown conditions on the control panel. All conditions indicated below for warning shall be field-configurable for shutdown. Conditions required to be annunciated shall include:
 - .1 low oil pressure (warning)
 - .2 low oil pressure (shutdown)
 - .3 oil pressure sender failure (warning)
 - .4 low coolant temperature (warning)
 - .5 high coolant temperature (warning)
 - .6 high coolant temperature (shutdown)
 - .7 high oil temperature (warning)
 - .8 engine temperature sender failure (warning)
 - .9 low coolant level (warning)
 - .10 fail to crank (shutdown)
 - .11 fail to start/over crank (shutdown)
 - .12 over speed (shutdown)
 - .13 low DC voltage (warning)
 - .14 high DC voltage (warning)
 - .15 weak battery (warning)
 - .16 low fuel daytank (warning)
 - .17 high AC voltage (shutdown)
 - .18 low AC voltage (shutdown)
 - .19 under frequency (shutdown)
 - .20 over current (warning)
 - .21 over current (shutdown)
 - .22 short circuit (shutdown)
 - .23 over load (warning)
 - .24 emergency stop (shutdown)
 - .25 Four (4) configurable conditions.

- .6 Engine status monitoring:

- .1 The following information shall be available from a digital status panel on the generator set control:
 - .1 engine oil pressure (psi or kPA)
 - .2 engine coolant temperature (degrees F or C)
 - .3 engine oil temperature (degrees F or C)
 - .4 engine speed (rpm)
 - .5 number of hours of operation (hours)
 - .6 number of start attempts
 - .7 battery voltage (DC volts)
 - .2 The control system shall also incorporate a data logging and display provision to allow logging of the last 10 warning or shutdown indications on the generator set, as well as total time of operation at various loads, as a percent of the standby rating of the generator set.
- .7 Engine control functions:
- .1 The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15-second rest period between cranking periods.
 - .2 The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled.
 - .3 The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting.
 - .4 The control system shall include time delay start (adjustable 0 300 seconds) and time delay stop (adjustable 0 600 seconds) functions.
 - .5 The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.
- .8 Alternator Control Functions:
- .1 The generator set shall include a full wave rectified automatic digital voltage regulation system that is matched and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from mis-operation due to load induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three phase line to neutral RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The system shall include a torque matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. Torque matching characteristic shall be adjustable for roll-off frequency and rate, and be capable of being curve-matched to the engine torque curve with adjustments in the field. The voltage regulator shall include adjustments for gain, damping, and frequency roll off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level.
 - .2 A microprocessor-based protection device shall be provided to individually monitor all phases of the output current of the generator set and initiate an alarm (over current warning) when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The device shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (over current shutdown).
 - .3 A microprocessor-based protection device shall be provided to monitor all phases of the output current for short circuit conditions. The control/protection system shall monitor the current level and voltage. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (short circuit shutdown).

- .4 Controls shall be provided to monitor the kW load on the generator set, and initiate an alarm condition (over load) when total load on the generator set exceeds the generator set rating for in excess of 5 seconds. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.
 - .5 A microprocessor-based AC over/under voltage monitoring system that responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds. The system shall monitor individual phases and be connected line to neutral on 3-phase 4-wire generator sets, and for systems that are solidly grounded.
 - .6 The generator set control shall include a control heater.
- .9 Other control functions:
- .1 A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32 VDC. During engine cranking (starter engaged), the low voltage limit shall be disabled, and DC voltage shall be monitored as load is applied to the battery, to detect impending battery failure or deteriorated battery condition.
- .10 Control interfaces for remote monitoring:
- .1 The control system shall provide four programmable output relays. These relay outputs shall be configurable for any alarm, shutdown, or status condition monitored by the control. The relays shall be configured to indicate: (1) generator low fuel (2) generator fuel leak (3) generator common alarm (4) generator running.
 - .2 A fused 10 amp switched 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.
 - .3 A fused 10 amp 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit at all times from the engine starting/control batteries.

2.5 Outdoor Weather Protective Enclosure

- .1 The generator set shall be provided with an outdoor enclosure, with the entire package listed under UL2200. The package shall comply with the requirements of the CEC for all wiring materials and component spacing. The total assembly of generator set, enclosure, and sub-base fuel tank shall be designed to be lifted into place using spreader bars. Housing shall provide ample airflow for generator set operation at rated load in an ambient temperature of 50 °C. The housing shall have hinged access doors as required to maintain easy access for all operating and service functions. All doors shall be lockable, and include retainers to hold the door open during service. Enclosure roof shall be cambered to prevent rainwater accumulation. Openings shall be screened to limit access of rodents into the enclosure. All electrical power and control interconnections shall be made within the perimeter of the enclosure.
- .2 All sheet metal shall be primed for corrosion protection and finish painted with the Owner's custom color specification using a 2-step electro-coating paint process. All surfaces of all metal parts shall be primed and painted. The painting process shall result in a coating that meets the following requirements:

- .1 Primer thickness - 0.5-2.0 mils. Top coat thickness - 0.8-1.2 mils.
 - .2 Gloss, per ASTM D523-89, 80% +/- 5%. Gloss retention after one year shall exceed 50%.
 - .3 Crosshatch adhesion, per ASTM D3359-93, 4B-5B.
 - .4 Impact resistance, per ASTM D2794-93, 120-160 inch-pounds.
 - .5 Salt Spray, per ASTM B117-90, 1000 + hours.
 - .6 Humidity, per ASTM D2247-92, 1000 + hours.
 - .7 Water Soak, per ASTM D2247-92, 1000+ hours.
- .3 Painting of hoses, clamps, wiring harnesses, and other non-metallic service parts shall not be acceptable. Fasteners used shall be corrosion resistant, and designed to minimize marring of the painted surface when removed for normal installation or service work.
 - .4 Enclosure shall be constructed of minimum 12 gauge steel for framework and 14 gauge steel for panels. All hardware and hinges shall be stainless steel.
 - .5 A factory-mounted exhaust silencer shall be installed inside the enclosure. The exhaust shall exit the enclosure through a rain collar and terminate with a rain cap. Exhaust connections to the generator set shall be through seamless flexible connections.
 - .6 The enclosure shall include the following maintenance provisions:
 - .1 Flexible coolant and lubricating oil drain lines that extend to the exterior of the enclosure, with internal drain valves.
 - .2 External radiator fill provision.
 - .7 Provide motorized louvers to minimize air flow through the enclosure when generator set is not operating. Louvers shall include provisions to prevent accumulation of ice or snow that might prevent operation.
 - .8 Inlet ducts shall include rain hoods.
 - .9 Discharge shall be horizontal to prevent accumulation of snow.
 - .10 Provide a factory mounted and wired electrical distribution panel to serve the generator set and enclosure. The provisions required include:
 - .1 40-amp distribution panel-board ready for a 120/208VAC, 3-Phase service connection.
 - .2 Two duplex GFI receptacles, one inside the enclosure, and a weatherproof receptacle on the outside of the enclosure.
 - .3 Factory-wired normal AC service from the panel-board to the engine coolant and alternator heaters, and battery charger.
 - .11 The generator set shall be provided with a Level 3 sound-attenuated housing which allows the generator set to operate at full rated load in an ambient temperature of up to 35 °C. The enclosure shall reduce the sound level of the generator set while operating at full rated load to an average of 70 dBA at 7 meters from the generator set in a free field environment.
 - .12 The enclosure shall be insulated with non-hygroscopic materials.
- 2.6 Sub-base Fuel Tank**
- .1 Provide a sub-base fuel tank for the generator set, sized to allow for full load operation of the generator set for 24 hours. The sub-base fuel tank shall be UL142 listed and labeled. The fuel tank shall be a double-walled, steel construction and include the following features:

- .1 Emergency tank and basin vents.
- .2 Mechanical level gauge.
- .3 Fuel supply and return lines, connected to generator set with flexible fuel lines as recommended by the engine manufacturer and in compliance to UL2200 requirements.
- .4 Leak detection provisions, wired to the generator set control for local and remote alarm indication.
- .5 High and low level float switches to indicate fuel level. Wire switches to generator control for local and remote indication of fuel level
- .6 Basin drain.
- .7 Integral lifting provisions.

ARTICLE 3 EXECUTION

3.1 Installation

- .1 Generator shall be installed by General Contractor under a separate contract, in accordance with final shop drawings submittals and manufacturer's instructions.

3.2 Sequence of Operation

- .1 Generator set shall start on receipt of a start signal from remote equipment. The start signal shall be via hardwired connection to the generator set control.
- .2 The generator set shall complete a time delay start period as programmed into the control.
- .3 The generator set control shall initiate the starting sequence for the generator set. The starting sequence shall include the following functions:
 - .1 The control system shall verify that the engine is rotating when the starter is signaled to operate. If the engine does not rotate after two attempts, the control system shall shut down and lock out the generator set, and indicate 'fail to crank' shutdown.
 - .2 The engine shall fire and accelerate as quickly as practical to start disconnect speed. If the engine does not start, it shall complete a cycle cranking process as described elsewhere in this specification. If the engine has not started by the completion of the cycle cranking sequence, it shall be shut down and locked out, and the control system shall indicate 'fail to start'.
- .4 The engine shall accelerate to rated speed and the alternator to rated voltage. Excitation shall be disabled until the engine has exceeded programmed idle speed, and regulated to prevent over voltage conditions and oscillation as the engine accelerates and the alternator builds to rated voltage.
- .5 On reaching rated speed and voltage, the generator set shall operate as dictated by the control system in isochronous state.
- .6 When all start signals have been removed from the generator set, it shall complete a time delay stop sequence. The duration of the time delay stop period shall be adjustable by the operator.
- .7 On completion of the time delay stop period, the generator set control shall switch off the excitation system and shall shut down.
- .8 Any start signal received after the time stop sequence has begun shall immediately terminate the stopping sequence and return the generator set to isochronous operation.

3.3 Field Quality Control and Testing

.1 Factory Testing:

- .1 The generator set manufacturer shall perform a complete operational test on the generator set prior to shipping from the factory. A certified test report shall be provided. Equipment supplied shall be fully tested at the factory for function and performance.
- .2 Factory testing may be witnessed by Consultant. Provide minimum 2-weeks of notice for testing.
- .3 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: run at full load, maximum power, voltage regulation, transient and steady state governing, single step load pickup, and function of safety shutdowns.

.2 On-site Acceptance Test:

- .1 Final installation shall be tested for compliance with the specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by General Contractor. Notify Consultant 2-weeks in advance for option to witness the tests.
- .2 Installation acceptance tests shall be conducted on site. Provide a resistive load bank and make temporary connections for full load test, if necessary.
- .3 Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system for at least 1 hour. Coordinate timing and obtain approval for start of test with site personnel.

END OF SECTION

02 AUTOMATIC TRANSFER SWITCH

ARTICLE 1 General

1.1 SECTION OVERVIEW

- .1 This Section presents specifications for materials, methods and performance requirements of factory assembled power transfer equipment.

1.2 SPECIAL CONDITIONS

- .1 The automatic transfer switch installation and application shall conform to requirements of the following codes and standards, as applicable:
- .1 IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
 - .2 UL1008 – Transfer Switches.

ARTICLE 2 Products

2.1 POWER TRANSFER SWITCH

- .1 Ratings
- .1 400 Amp, 3 switching poles, solid neutral.
 - .2 Main contacts shall be rated for 600 VAC.
 - .3 Transfer switches shall be rated to carry 100 percent of rated current continuously in the enclosure supplied, in ambient temperatures of -10 to +40 °C, relative humidity up to 95%, and altitudes up to 300 m.
 - .4 The transfer switch and its upstream protection shall be coordinated. The transfer switch shall be third party listed and labeled for use with the specific protective device(s) installed in the application.
- .2 Construction
- .1 Transfer switch shall be double throw, electrically and mechanically interlocked, and mechanically held in the source 1 and source 2 positions. The transfer switch shall be specifically designed to transfer to the best available source if it inadvertently stops in a neutral position.
 - .2 Main switch contacts shall be high pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.
 - .3 Transfer switch internal wiring shall be composed of pre-manufactured harnesses that are permanently marked for source and destination. Harnesses shall be connected to the control system by means of locking disconnect plug(s), to allow the control system to be easily disconnected and serviced without disconnecting power from the transfer switch mechanism.
 - .4 Transfer switch shall be provided with a neutral bus and lugs. The neutral bus shall be sized to carry 100% of the current designated on the switch rating.
- .3 Connections
- .1 Field control connections shall be made on a common terminal block that is clearly and permanently labeled.
 - .2 Transfer switch shall be provided with Copper mechanical lugs sized to accept the full output rating of the switch. Lugs shall be suitable for the number and size of conductors shown on the drawings.

.4 Approved Manufacturer:

- .1 Thomson Tech.
- .2 Cummins.

2.2 TRANSFER SWITCH CONTROLS

- .1 The transfer switch control system shall be configurable in the field for any operating voltage level up to 600VAC. Provide RMS voltage sensing and metering that is accurate to within +/- 1% of nominal voltage level. Frequency sensing shall be accurate to within +/- 0.5%. Voltage sensing shall be monitored based on the normal voltage at the site. Systems that utilize voltage monitoring based on standard voltage conditions that are not field configurable are not acceptable.
- .2 Transfer switch voltage sensors shall be close differential type, providing source availability information to the control system based on the following functions:
 - .1 Monitoring all phases of the normal and emergency power sources for under voltage conditions, adjustable for pickup in a range of 85 - 98% of the normal voltage level and dropout in a range of 75 - 98% of normal voltage level.
 - .2 Monitoring all phases of the normal and emergency power sources for voltage imbalance.
 - .3 Monitoring all phases of the normal and emergency power sources for loss of a single phase.
 - .4 Monitoring all phases of the normal and emergency power sources for phase rotation.
 - .5 Monitoring all phases of the normal and emergency power sources for over voltage conditions, adjustable for dropout over a range of 105 - 135% of normal voltage, and pickup at 95 - 99% of dropout voltage level.
 - .6 Monitoring all phases of the normal and emergency power sources for over or under frequency conditions.
- .3 All transfer switch sensing shall be configurable from local operator panel, to allow setting of levels, and enabling or disabling of features and functions. Designs utilizing DIP switches or other electromechanical devices are not acceptable.
- .4 The transfer switch shall be configurable to control the operation time from source to source (program transition operation). The control system shall be capable of enabling or disabling this feature, and adjusting the time period to a specific value. A phase band monitor or similar device is not an acceptable alternate for this feature.
- .5 The transfer switch shall incorporate adjustable time delays for generator set start (adjustable in a range from 0 - 15 seconds); transfer (adjustable in a range from 0 - 120 seconds); retransfer (adjustable in a range from 0 - 30 minutes); and generator stop (cool-down time adjustable in a range of 0 - 30 minutes).
- .6 The transfer switch shall provide a relay contact signal prior to transfer or retransfer. The time period before and after transfer shall be adjustable in a range of 0 - 50 seconds.
- .7 The control system shall be designed and prototype tested for operation in ambient temperatures from -10 to +40 °C.
- .8 The transfer switch network monitoring equipment, shall be provided with a battery based auxiliary power supply to allow monitoring of the transfer switch when both AC power sources are non-operational. The battery power supply shall be monitored for proper condition, and the transfer switch shall include an alarm condition to indicate low battery condition.

2.3 TRANSFER SWITCH OPERATOR PANEL

- .1 Confirm the mounting height of transfer switch on-site and fabricate operator panel at height suitable for each access from finished floor.
- .2 Indicate the source that the load is connected to (source 1 or source 2); and which source(s) are available.
- .3 Indicate that the transfer switch is 'Not in Auto', due to control being disabled and 'Test or Exercise in Progress' to indicate that the control system is testing or exercising the generator set.
- .4 'OVERRIDE' feature to cause the transfer switch to bypass any active time delays for start, transfer, and retransfer and immediately proceed with its next logical operation.
- .5 'TEST' feature to initiate a preprogrammed test sequence for the generator set and transfer switch. The transfer switch shall be programmable for test with load or test without load.
- .6 'RESET' feature that will clear any faults present in the controls.
- .7 The control system shall continuously log information on the number of hours each source has been connected to the load, the number of times transferred, and the total number of times each source has failed. This information shall be available at the operator display panel.
- .8 Display panel with user friendly navigation, capable of providing the following functions and capabilities:
 - .1 Display source condition information, including AC voltage for each phase of normal and emergency source, frequency of each source.
 - .2 Display source status, to indicate source is connected or not connected.
 - .3 Display load data, including 3-phase AC voltage, 3-phase AC current, frequency, kW, KVA, and power factor.
 - .4 Allow the operator to view and make set-point / function adjustments in the control system, after entering an access code.
 - .5 Display Real time Clock data, including date, and time in hours, minutes, and seconds. The real time clock shall incorporate provisions for automatic daylight savings time and leap year adjustments. The control shall also log total operating hours for the control system.
 - .6 Display service history for the transfer switch. Display source connected hours, to indicate the total number of hours connected to each source. Display number of times transferred, and total number of times each source has failed.
 - .7 Display fault history on the transfer switch, including condition, and date and time of fault. Faults to include low controller voltage, ATS fail to close on transfer, ATS fail to close on retransfer, battery charger malfunction, and network communications error.

2.4 PLANT CONTROL INTERFACE

- .1 The transfer switch shall provide an isolated relay contact for starting of a generator set. The relay shall be normally held open, and close to start the generator set. Output contacts shall be form C, for compatibility with any generator set.
- .2 Provide one set Form C auxiliary contacts on both sides, operated by transfer switch position, rated 10 amps 250 VAC.
- .3 The transfer switch shall provide relay contacts to indicate the following conditions: source 1 available, load connected to source 1, source 2 available, source 2 connected to load.
- .4 .

ARTICLE 3 Execution

3.1 INSTALLATION

- .1 Automatic transfer switch shall be installed by General Contractor under a separate contract, in accordance with final submittals and manufacturer's instructions.

3.2 SEQUENCE OF OPERATION

- .1 Transfer switch normally connects an energized utility power source (source 1) to loads and a generator set (source 2) to the loads when normal source fails. The normal position of the transfer switch is source 1 (connected to the utility), and no start signal is supplied to the gen-set.
- .2 Generator set exercise with load mode: control system shall be configurable to test the generator set under load. In this mode, the transfer switch shall control the generator set in the following sequence:
 - .1 Transfer switch shall initiate the exercise sequence at a time indicated in the exercise timer program, or when manually initiated by the operator.
 - .2 When the control systems senses the generator set at rated voltage and frequency, it shall operate to connect the loads to the generator set by opening the normal source contacts, and closing the alternate source contacts a predetermined time period later. The timing sequence for the contact operation shall be programmable in the controller.
 - .3 The generator set shall operate connected to the load for the duration of the exercise period. If the generator set fails during this period, the transfer switch shall automatically reconnect the loads to the normal service.
 - .4 On completion of the exercise period, the transfer switch shall operate to connect the loads to the normal source by opening the alternate source contacts, and closing the normal source contacts a predetermined time period later. The timing sequence for the contact operation shall be programmable in the controller.
 - .5 The transfer switch shall operate the generator set unloaded for a cool-down period, and then remove the start signal from the generator set. If the normal power fails at any time when the generator set is running, the transfer switch shall immediately connect the system loads to the generator set.
- .3 Generator set exercise without load mode: control system shall be configurable to test the generator set without transfer switch load connected. In this mode, the transfer switch shall control the generator set in the following sequence:
 - .1 Transfer switch shall initiate the exercise sequence at a time indicated in the exercise timer program, or when manually initiated by the operator.
 - .2 When the control systems senses the generator set at rated voltage and frequency, it shall operate the generator set unloaded for the duration of the exercise period.
 - .3 At the completion of the exercise period, the transfer switch shall remove the start signal from the generator set. If the normal power fails at any time when the generator set is running, the transfer switch shall immediately connect the system loads to the generator set.

3.3 FIELD QUALITY CONTROL AND TESTING

- .1 Factory Testing:
 - .1 The transfer switch manufacturer shall perform a complete operational test on the transfer switch prior to shipping from the factory. A certified test report shall be submitted to Consultant for review. Test process shall include calibration of voltage sensors.
- .2 On-site Acceptance Test:

- .1 Final installation shall be tested for compliance with the specification following completion of all site work.
- .2 Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system for at least 1 hour. Coordinate timing and obtain approval for start of test with site personnel.

END OF SECTION