

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**  
**Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada**  
**1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
B3J 1T3  
Bid Fax: (902) 496-5016**

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

<b>Title - Sujet</b> BATTERY POWER SOURCE		
<b>Solicitation No. - N° de l'invitation</b> W355B-131381/A	<b>Date</b> 2012-11-15	
<b>Client Reference No. - N° de référence du client</b> W355B-13-1381		
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$HAL-503-8824		
<b>File No. - N° de dossier</b> HAL-2-69242 (503)	<b>CCC No./N° CCC - FMS No./N° VME</b>	
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2013-01-02</b>		<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Standard Time AST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>		
<b>Address Enquiries to: - Adresser toutes questions à:</b> Forward (HAL), LeeAnne		<b>Buyer Id - Id de l'acheteur</b> hal503
<b>Telephone No. - N° de téléphone</b> (902) 496-5070 ( )		<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE FMF CAPE SCOTT 7HD WAREHOUSE BLDG D200 DR 1-13 HALIFAX NOVA SCOTIA B3K5X5 Canada		

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**  
**Raison sociale et adresse du**  
**fournisseur/de l'entrepreneur**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

**Issuing Office - Bureau de distribution**  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
B3J 3C9

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Solicitation No. - N° de l'invitation

W355B-131381/A

Client Ref. No. - N° de réf. du client

W355B-13-1381

Amd. No. - N° de la modif.

File No. - N° du dossier

HAL-2-69242

Buyer ID - Id de l'acheteur

hal503

CCC No./N° CCC - FMS No/ N° VME

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## 12. SACC Manual Clauses

### List of Annexes:

Annex A	Requirement
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## **PART 1 - GENERAL INFORMATION**

### **1. Security Requirement**

There is no security requirement associated with the requirement.

### **2. Requirement**

The Contractor must provide the items detailed under the "Requirement" at Annex A.

### **3. Debriefings**

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

## **PART 2 - BIDDER INSTRUCTIONS**

### **1. Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual*

(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2012-11-09) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: one hundred and twenty (120) days

## 1.1 SACC Manual Clauses

B1000T	Condition of Material	2007-11-30
B3000T	Equivalent Products	2006-06-16
B4057T	Technical Publications - Manuals	2008-05-12

### 1.1.2 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least ten (10) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

## 2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

## 3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

#### **4. Applicable Laws**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

### **PART 3 - BID PREPARATION INSTRUCTIONS**

#### **1. Bid Preparation Instructions**

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid ( 2 hard copies)

Section II: Financial Bid ( 1 hard copy)

Section III: Certifications ( 1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and

- 
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

## **Section I: Technical Bid**

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

## **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) must be shown separately, if applicable.

### **1.1 SACC Manual Clauses**

C3011T (2010-01-11) Exchange Rate Fluctuation

## **Section III: Certifications**

Bidders must submit the certifications required under Part 5.

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **1. Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

### **1.1 Technical Evaluation**

#### **1.1.1 Mandatory Technical Criteria**

Proposals which do not meet all of the Mandatory Technical Requirements at the bid closing will be considered to be non-compliant and will be given no further consideration. The evaluation will only be based on the information provided with the bid. References to Internet sites or information that is not included will not be evaluated.

## **The Mandatory Technical Criteria are:**

A) The Bidder must provide equipment literature to prove that the equipment complies with each and every one of the Mandatory Technical Specifications specified in Annex A, Requirement. Simply stating "yes" or "compliant" will not be sufficient for the purpose of this evaluation. Failure to meet the requirements of all of the Mandatory Technical Specifications will result in the bid being declared as non-compliant.

Proof can be provided in the form of equipment literature, brochure, engineering drawing, specification of the product or written narrative which clearly demonstrates how the proposed goods meet each and every one of the Mandatory Technical Specifications.

**The Bidder must reference the page number and section of the submitted literature which proves their proposal complies with each and every one of the Mandatory Technical Specifications in Annex A.**

### **1.2 Financial Evaluation**

A0220T                      Evaluation of Price      2007-05-25

The price of the bid will be evaluated in Canadian dollars, the Goods and services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian customs duties and excise taxes included

### **2. Basis of Selection**

A0069T                      Basis of Selection      2007-05-25

A bid must comply with all requirements of the bid solicitation to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

## **PART 5 - CERTIFICATIONS**

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or



unknowingly. Failure to comply with the certifications, to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

## **1. Mandatory Certifications Required Precedent to Contract Award**

### **1.1 Code of Conduct and Certifications - Related documentation**

1.1.1 By submitting a bid, the Bidder certifies, for himself and his affiliates, to be in compliance with the Code of Conduct and Certifications clause of the Standard instructions. The related documentation hereinafter mentioned will help Canada in confirming that the certifications are true. By submitting a bid, the Bidder certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Bidder, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties. Canada will declare non-responsive any bid in respect of which the information requested is missing or inaccurate, or in respect of which the information contained in the certifications is found to be untrue, in any respect, by Canada. The Bidder and any of the Bidder's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any contract arising from this bid solicitation.

Bidders who are incorporated, including those bidding as a joint venture, must provide with their bid or promptly thereafter a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide the name of the owner with their bid or promptly thereafter. Bidders bidding as societies, firms, partnerships or associations of persons do not need to provide lists of names. If the required names have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Canada may, at any time, request that a Bidder provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form- PWGSC-TPSGC 229)

(<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>) for any or all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the bid being declared non-responsive.

## **2. Additional Certifications Precedent to Contract Award**

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time

frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

## **2.1 Federal Contractors Program - Certification**

1. Suppliers who are subject to the Federal Contractors Program (FCP) and have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive federal government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- a. ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- b. ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
- c. ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, having not bid on requirements of \$200,000 or more;
- d. ( ) has not been declared an ineligible contractor by HRSDC, and has a valid certificate number as follows: \_\_\_\_\_. Further information on the FCP is available on the HRSDC Web site.

## PART 6 - RESULTING CONTRACT CLAUSES

### 1. Security Requirement

There is no security requirement associated with the requirement.

### 2. Requirement

The requirement is detailed under Annex A, Statement of Requirement.

### 3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions

(<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

#### 3.1 General Conditions

2010A (2012-07-16), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 4. Term of Contract

#### 4.1 Delivery Date

Delivery, installation and training is **MANDATORY** on or before March 29, 2013.

#### 4.2 Shipping

Goods must be consigned to the destination specified in the Contract and delivered:

Delivered Duty Paid (DDP) FMF Cape Scott, Maritime Forces Atlantic, Halifax, N.S. Incoterms 2000 for shipments from a commercial contractor.

## 5. Authorities

### 5.1 Contracting Authority

Name: Lee Anne Forward  
Title: Supply Specialist, Public Works and Government Services Canada  
Address: 1713 Bedford Row, Halifax, NS B3J 1T3  
Telephone: (902)496-5070  
Facsimile: (902)496-5016  
E-mail address: leeanne.forward@pwgsc-tpsgc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### 5.2 Project Authority *(To be completed at contract award)*

The Project Authority for the Contract is:

Name:  
Title:  
Address:  
Telephone:  
Facsimile:  
E-mail address:

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

**5.3 Contractor's Representative *(Please complete and submit with your bid)***

Name:

Title:

Address:

Telephone:

Facsimile:

E-mail address:

**6. Payment****6.1 Basis of Payment**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in the contract for a cost of \$ \_\_\_\_\_ (insert the amount at contract award). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

**6.2 Limitation of Price**

SACC Manual clause C6000C (2011-05-16) Limitation of Price

**6.3 Single Payment**

SACC Manual clause H1000C (2008-05-12) Single Payment

**6.4 Procedures for Design Change/Deviations**

The Contractor must follow these procedures for any proposed design change/deviation to contract specifications.

The Contractor must complete Part 1 of the Design Change/Deviation form DND 672 and forward two (2) copies to the Technical Authority and one (1) copy to the Contracting Authority.

The Contractor will be authorized to proceed upon receipt of the design change/deviation form signed by the Contracting Authority. A contract amendment will be issued to incorporate the design change/deviation in the Contract.

## **7. Invoicing Instructions**

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

2. Invoices must be distributed as follows:

(a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

(c) one (1) copy must be forwarded to the consignee.

## **8. Certifications**

### **8.1 Compliance**

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

## **9. Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

## **10. Priority of Documents**

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2012-07-16), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Requirement

- (d) Annex B, Basis of Payment;  
 (e) the Contractor's bid dated \_\_\_\_\_ (*insert date of bid at the time of contract award*).

# **11. Defence Contract**

A9006C	Defence Contract	2008-05-12
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# **12. SACC Manual Clauses**

B1501C	Electrical Equipment	2006-06-16
B4058C	Publications - Specifications and Standards	2008-05-12
G1005C	Insurance	2008-05-12
D2000C	Marking	2007-11-30

## ANNEX A - REQUIREMENT

### Mandatory Specifications:

**Please indicate where in your bid the following mandatory specifications can be found by filling in the corresponding page number to your bid document in spaces provided below.**

#### Purchase Description:

- |    |                                          |             |
|----|------------------------------------------|-------------|
| 1. | 750 Volt, 200A, Variable DC Power Supply | Quantity :1 |
| 2. | 750 Volt, 400A, Variable DC Power Supply | Quantity :1 |
| 3. | 600 Volt, 240A, Variable AC Power Supply | Quantity: 1 |
| 4. | 600 Volt, 760A, Variable AC Power Supply | Quantity :1 |

### Minimum Specifications:

#### 1) DC Power Supply - 150 kW System

- |                                                                                                                                                                                       |                   |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------|
| 1. Output Voltage                                                                                                                                                                     | 0 to 750 Volts DC | <b>Page No:</b> _____ |
| 2. Output Current                                                                                                                                                                     | 0 to 200 Amps DC  | <b>Page No:</b> _____ |
| 3. AC Input                                                                                                                                                                           | 480 V AC, 3 Ø     | <b>Page No:</b> _____ |
| 4. Parts Compatibility: System to be compatible and parts interchangeable with 300 kW system (item 2)                                                                                 |                   | <b>Page No:</b> _____ |
| 5. Parallel/Series Operation: Can be expanded in the future through parallel or series units.                                                                                         |                   | <b>Page No:</b> _____ |
| 6. Remote Control via virtual front panel                                                                                                                                             |                   | <b>Page No:</b> _____ |
| 7. Diagnostic functions phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line (externally applied analog set point signals) |                   | <b>Page No:</b> _____ |
| 8. Fault action Main power disconnected; diagnostic condition is latched into memory.                                                                                                 |                   | <b>Page No:</b> _____ |



9. Over voltage/current protection - Shutdown of controlling insulated gate bipolar transistors (IGBT's), disconnect of main power, and input fuses. **Page No:** \_\_\_\_\_

10. Cooling - Load Dependent Air Cooling - Equipped with variable speed, load dependent blowers **Page No:** \_\_\_\_\_

11. Current-fed design - Tolerant abusive loads. Operate under short-circuit conditions and open-circuit conditions **Page No:** \_\_\_\_\_

12. Front Panel Controls:

1. Power on/off	<b>Page No:</b> _____
2. Start/Stop	<b>Page No:</b> _____
3. Rotary Voltage/Current Entry	<b>Page No:</b> _____
4. Rotary OVT/OCT Entry	<b>Page No:</b> _____
5. Menu	<b>Page No:</b> _____
6. Display Settings	<b>Page No:</b> _____
7. Enter/Clear	<b>Page No:</b> _____
8. Keypad Voltage/Current Entry	<b>Page No:</b> _____
9. Keypad OVT/OCT Entry	<b>Page No:</b> _____
10. Indicators:	<b>Page No:</b> _____
10.1. Voltage/Current Set Point	<b>Page No:</b> _____
10.2. OVT/OCT Set Point	<b>Page No:</b> _____
10.3. Voltage/Current Output	<b>Page No:</b> _____
10.4. Internal/External Control	<b>Page No:</b> _____
10.5. Alarms	<b>Page No:</b> _____
10.6. Rotary/External/Remote Programming	<b>Page No:</b> _____
10.7. Remote Sense Enabled	<b>Page No:</b> _____
10.8. Keypad Programming	<b>Page No:</b> _____
10.9. Memory Setting	<b>Page No:</b> _____

13. Rear Panel Controls

1. Voltage/Current Set Point	<b>Page No:</b> _____
2. OVT/OCT Set Point	<b>Page No:</b> _____
3. Modulation Set Point	<b>Page No:</b> _____
4. Voltage/Current Output	<b>Page No:</b> _____
5. Internal/External Control	<b>Page No:</b> _____
6. Alarm Output	<b>Page No:</b> _____
7. Status Output	<b>Page No:</b> _____
8. Master/Slave Connections	<b>Page No:</b> _____
9. Remote Sense Inputs	<b>Page No:</b> _____
10. RS232 Inputs	<b>Page No:</b> _____
11. Interlock Enable	<b>Page No:</b> _____
12. Arm Enable	<b>Page No:</b> _____

- 
14. Ripple - 350 mVrms max. **Page No:** \_\_\_\_\_
15. Line Regulation Voltage Mode:  $\pm 0.005\%$  of full scale **Page No:** \_\_\_\_\_  
Current Mode:  $\pm 0.025\%$  of full scale **Page No:** \_\_\_\_\_
16. Load Regulation Voltage Mode:  $\pm 0.01\%$  of full scale **Page No:** \_\_\_\_\_  
Current Mode:  $\pm 0.05\%$  of full scale **Page No:** \_\_\_\_\_
17. Load Transient Response 2 ms to recover within  $\pm 1\%$  of regulated output with a 50% to 100% or 100% to 50% step load change **Page No:** \_\_\_\_\_
18. Efficiency 90% **Page No:** \_\_\_\_\_
19. Stability -  $\pm 0.10\%$  for 8 hrs. after 30 min. Warm-up **Page No:** \_\_\_\_\_
20. Step-start contactors maintain inrush current below full scale operating current **Page No:** \_\_\_\_\_
21. Power Factor  $>90\%$  **Page No:** \_\_\_\_\_
22. Dimensions / weight - Power cabinet (max. 2200 lbs.) **Page No:** \_\_\_\_\_  
Max. dimensions 70"H, X 50"W X 36" D **Page No:** \_\_\_\_\_

## 2) DC Power Supply - 300 kW System

1. Output Voltage 0 to 750 Volts DC **Page No:** \_\_\_\_\_
2. Output Current 0 to 400 Amps DC **Page No:** \_\_\_\_\_
3. AC Input 480 V AC, 3 Ø **Page No:** \_\_\_\_\_
4. Parts Compatibility: System to be compatible and parts interchangeable with 150 kW system (item 1) **Page No:** \_\_\_\_\_
5. Parallel/Series Operation: Can be expanded in the future through parallel or series units. **Page No:** \_\_\_\_\_
6. Remote Control via virtual front panel **Page No:** \_\_\_\_\_

7. Diagnostic functions phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line (externally applied analog set point signals)

**Page No:** \_\_\_\_\_

8. Fault action Main power disconnected; diagnostic condition is latched into memory.

**Page No:** \_\_\_\_\_

9. Over voltage/current protection - Shutdown of controlling insulated gate bipolar transistors (IGBT's), disconnect of main power, and input fuses.

**Page No:** \_\_\_\_\_

10. Cooling - Load Dependent Air Cooling - Equipped with variable speed, load dependent blowers

**Page No:** \_\_\_\_\_

11. Current-fed design - Tolerant abusive loads. Operate under short-circuit conditions and open-circuit conditions

**Page No:** \_\_\_\_\_

12. Front Panel Controls:

1. Power on/off

**Page No:** \_\_\_\_\_

2. Start/Stop

**Page No:** \_\_\_\_\_

3. Rotary Voltage/Current Entry

**Page No:** \_\_\_\_\_

4. Rotary OVT/OCT Entry

**Page No:** \_\_\_\_\_

5. Menu

**Page No:** \_\_\_\_\_

6. Display Settings

**Page No:** \_\_\_\_\_

7. Enter/Clear

**Page No:** \_\_\_\_\_

8. Keypad Voltage/Current Entry

**Page No:** \_\_\_\_\_

9. Keypad OVT/OCT Entry

**Page No:** \_\_\_\_\_

10. Indicators:

**Page No:** \_\_\_\_\_

10.1. Voltage/Current Set Point

**Page No:** \_\_\_\_\_

10.2. OVT/OCT Set Point

**Page No:** \_\_\_\_\_

10.3. Voltage/Current Output

**Page No:** \_\_\_\_\_

10.4. Internal/External Control

**Page No:** \_\_\_\_\_

10.5. Alarms

**Page No:** \_\_\_\_\_

10.6. Rotary/External/Remote Programming

**Page No:** \_\_\_\_\_

10.7. Remote Sense Enabled

**Page No:** \_\_\_\_\_

10.8. Keypad Programming

**Page No:** \_\_\_\_\_

10.9. Memory Setting

**Page No:** \_\_\_\_\_

- 
- |                                                                                      |                                                                                                         |                       |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------|
| 13. Rear Panel Controls                                                              | 1. Voltage/Current Set Point                                                                            | <b>Page No:</b> _____ |
|                                                                                      | 2. OVT/OCT Set Point                                                                                    | <b>Page No:</b> _____ |
|                                                                                      | 3. Modulation Set Point                                                                                 | <b>Page No:</b> _____ |
|                                                                                      | 4. Voltage/Current Output                                                                               | <b>Page No:</b> _____ |
|                                                                                      | 5. Internal/External Control                                                                            | <b>Page No:</b> _____ |
|                                                                                      | 6. Alarm Output                                                                                         | <b>Page No:</b> _____ |
|                                                                                      | 7. Status Output                                                                                        | <b>Page No:</b> _____ |
|                                                                                      | 8. Master/Slave Connections                                                                             | <b>Page No:</b> _____ |
|                                                                                      | 9. Remote Sense Inputs                                                                                  | <b>Page No:</b> _____ |
|                                                                                      | 10. RS232 Inputs                                                                                        | <b>Page No:</b> _____ |
|                                                                                      | 11. Interlock Enable                                                                                    | <b>Page No:</b> _____ |
|                                                                                      | 12. Arm Enable                                                                                          | <b>Page No:</b> _____ |
| 14. Ripple - 350 mVrms max.                                                          |                                                                                                         | <b>Page No:</b> _____ |
| 15. Line Regulation                                                                  | Voltage Mode: $\pm 0.005\%$ of full scale                                                               | <b>Page No:</b> _____ |
|                                                                                      | Current Mode: $\pm 0.025\%$ of full scale                                                               | <b>Page No:</b> _____ |
| 16. Load Regulation                                                                  | Voltage Mode: $\pm 0.01\%$ of full scale                                                                | <b>Page No:</b> _____ |
|                                                                                      | Current Mode: $\pm 0.05\%$ of full scale                                                                | <b>Page No:</b> _____ |
| 17. Load Transient Response                                                          | 2 ms to recover within $\pm 1\%$ of regulated output with a 50% to 100% or 100% to 50% step load change | <b>Page No:</b> _____ |
| 18. Efficiency                                                                       | 90%                                                                                                     | <b>Page No:</b> _____ |
| 19. Stability - $\pm 0.10\%$ for 8 hrs. after 30 min. Warm-up                        |                                                                                                         | <b>Page No:</b> _____ |
| 20. Step-start contactors maintain inrush current below full scale operating current |                                                                                                         | <b>Page No:</b> _____ |
| 21. Power Factor                                                                     | >90%                                                                                                    | <b>Page No:</b> _____ |
| 22. Dimensions / weight - Power cabinet (max. 2200 lbs.)                             |                                                                                                         | <b>Page No:</b> _____ |
|                                                                                      | Max. dimensions 70"H, X 50"W X 36" D                                                                    | <b>Page No:</b> _____ |



14. Resettable Output Overload **Page No:** \_\_\_\_\_
15. Vernier Control(resolve voltages down to 0.5 V)**Page No:** \_\_\_\_\_
11. Dimensions and Weight Power Cabinet:
- 50" W x 60" D x 85" H (including casters & warning light) max **Page No:** \_\_\_\_\_
- Weight: 3500 lbs max. **Page No:** \_\_\_\_\_
- Control Cabinet:
- 24" W x 24" D x 16" H max. **Page No:** \_\_\_\_\_
- Weight: 100 lbs. Max. **Page No:** \_\_\_\_\_

#### **4) AC Power Supply - 600 VAC, 760 A**

- 1.Main Power Supply Voltage 480 V  $\pm$  5% 3 Ø **Page No:** \_\_\_\_\_
2. Frequency 60 Hz **Page No:** \_\_\_\_\_
3. Input Current Max. 1000A **Page No:** \_\_\_\_\_
4. Output Voltage 0 - 600 V  $\pm$  5% 3 Ø **Page No:** \_\_\_\_\_
5. Output Current 0 -760 A **Page No:** \_\_\_\_\_
6. Output Frequency 60 Hz **Page No:** \_\_\_\_\_
7. System Duty Cycle Continuous @ Rated Power to 50° C Ambient **Page No:** \_\_\_\_\_
8. System components:
- 1. PVT Regulating Transformer **Page No:** \_\_\_\_\_
  - 2. System Enclosure **Page No:** \_\_\_\_\_
  - 3. Remote mounted controller (PLC) **Page No:** \_\_\_\_\_
9. Peschel Variable Transformer
- 1. Continuously variable **Page No:** \_\_\_\_\_
  - 2. Motorized sliding copper contacts; no carbon brushes **Page No:** \_\_\_\_\_
  - 3. Back to back diodes between sliding contacts to eliminate short circuited turns **Page No:** \_\_\_\_\_
  - 4. Output imbalance : less than 1% **Page No:** \_\_\_\_\_
10. PLC Controller
- 1. 6" Touch Screen Interface **Page No:** \_\_\_\_\_
  - 2. Virtual 3 Phase Output Voltage Monitoring **Page No:** \_\_\_\_\_
  - 3. Virtual 3 Phase Output Current Monitoring **Page No:** \_\_\_\_\_
  - 4. Virtual 3 Phase Wattmeter **Page No:** \_\_\_\_\_
  - 5. Voltmeters and current meters accuracy is 1% F.S**Page No:** \_\_\_\_\_

6. Emergency Off pushbutton	<b>Page No:</b> _____
7. Control Power Circuit breaker and Indicator	<b>Page No:</b> _____
8. High Power On / Off Switch / Circuit Breaker	<b>Page No:</b> _____
9. Raise / Lower Test Voltage Buttons	<b>Page No:</b> _____
10. Emergency Off Red Mushroom Switch	<b>Page No:</b> _____
11. Output Over current Protection	<b>Page No:</b> _____
12. Zero Start Interlock and Indicator	<b>Page</b>
<b>No:</b> _____	
13. External Interlock and Indicator	<b>Page No:</b> _____
14. Resettable Output Overload	<b>Page No:</b> _____
15. Vernier Control(resolve voltages down to 0.5 V)	<b>Page No:</b> _____
11. Dimensions and Weight Power Cabinet:	
120" W x 72" D x 85" H (including casters & warning light) max	<b>Page No:</b> _____
Weight: 10000 lbs max.	<b>Page No:</b> _____
Control Cabinet:	
24" W x 24" D x 16" H max.	<b>Page No:</b> _____
Weight: 100 lbs. Max.	<b>Page No:</b> _____

**For all items 1 to 4:**

- 1) Engineering Support: On-site Installation Assistance ( 3 days @ 8 hrs each)  
On-site Operator Training (3 days @ 8 hours each)
- 2) Warranty: 2 year on site all parts and labour included.
- 3) Documentation: 2 hard copies all manuals, 2 electronic copies all manuals
- 4) Certification: The equipment shall be certified by an acceptable Certification Organization. The following Certification Organizations are acceptable. The electrical control must bear a label from one of these organizations in order to be recognized as approved.

Identify which Organization shall be used:

- A. Canadian Standards Association (CSA)
- B. Entela
- C. Intertek Testing Services
- D. ETL Testing Laboratories

- 
- E. Warnock Hersey (WH)
  - F. Underwriters Laboratories of Canada (ULC)
  - G. Underwriters Laboratories Inc. (UL)
  - H. MET Laboratories Inc. (MET)
  - I. TUV Rheinland of North America
  - J. Quality Auditing Institute (QAI)
  - K. TUV America Inc.
  - L. Factory Mutual (FM) Approvals
  - M. Omni-Test Laboratories Inc.
  - N. Curtis-Straus LLC

**NOTE:** Labels from all Organizations above (with the exception of CSA and ULC), must be accompanied by a small "c" at the eight o'clock position or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

O. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labeled (complete with verification documentation) by the Canadian Standards Association (CSA), Cantest Ltd, Entela, Intertek Testing Services, MET Laboratories, TUV SUD America Inc, Underwriters Laboratories of Canada, Electrical Safety Authority (ESA), or QPS Evaluation Services Inc. under the Special Inspection Program. This inspection must take place before equipment delivery.



**Purchase Description:**

150 Volt, 60A, Variable DC Power Source

Quantity : 2

150 Volt, 150A, Variable DC Power Source

Quantity : 2

**Minimum Specifications:****5) DC Power Source - 9 kW System**1. Output Voltage 0 to 150 Volts DC **Page No:**\_\_\_\_\_2. Output Current 0 to 60 Amps DC **Page No:**\_\_\_\_\_3. AC Input 208 V AC, 1 Ø **Page No:**\_\_\_\_\_

4. Diagnostic functions - phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line (externally applied analog set point signals)

**Page No:**\_\_\_\_\_

5. Fault action Main power disconnected; diagnostic condition is latched into memory.

**Page No:**\_\_\_\_\_

6. Over voltage/current protection - Shutdown of controlling insulated gate bipolar transistors (IGBT's), disconnect of main power, and input fuses.

**Page No:**\_\_\_\_\_7. Display Digital (Separate voltage / current) **Page No:**\_\_\_\_\_

8.. Current-fed design - Tolerant abusive loads. Operate under short-circuit conditions and open-circuit conditions

**Page No:**\_\_\_\_\_

9. Front Panel Controls:

1. Power on/off

**Page No:**\_\_\_\_\_

2. Start/Stop

**Page No:**\_\_\_\_\_

3. Rotary Voltage/Current Entry

**Page No:**\_\_\_\_\_

4. Menu

**Page No:**\_\_\_\_\_

5. Display Settings

**Page No:**\_\_\_\_\_

6. Enter/Clear

**Page No:**\_\_\_\_\_

7. Keypad Voltage/Current Entry

**Page No:**\_\_\_\_\_

8. Keypad OVT/OCT Entry

**Page No:**\_\_\_\_\_

- 
10. Ripple 150 mVrms max. **Page No:** \_\_\_\_\_
11. Line Regulation Voltage Mode:  $\pm 0.005\%$  of full scale **Page No:** \_\_\_\_\_  
Current Mode:  $\pm 0.025\%$  of full scale **Page No:** \_\_\_\_\_
12. Load Regulation Voltage Mode:  $\pm 0.01\%$  of full scale **Page No:** \_\_\_\_\_  
Current Mode:  $\pm 0.05\%$  of full scale **Page No:** \_\_\_\_\_
13. Load Transient Response 2 ms to recover within  $\pm 1\%$  of regulated output with a 50% to 100% or 100% to 50% step load change **Page No:** \_\_\_\_\_
14. Efficiency 85% or greater **Page No:** \_\_\_\_\_
15. Stability  $\pm 0.10\%$  for 8 hrs. after 30 min. Warm-up **Page No:** \_\_\_\_\_
16. Step-start contactors - maintain inrush current below full scale operating current **Page No:** \_\_\_\_\_
17. Power Factor  $>70\%$  **Page No:** \_\_\_\_\_
18. Mounting - Each power supply shall be mounted in steel cabinet with 4 casters for mobility (2 locking). Installed and tested as a complete system. **Page No:** \_\_\_\_\_

#### **6) DC Power Source - 22.5 kW System**

1. Output Voltage 0 to 150 Volts DC **Page No:** \_\_\_\_\_
2. Output Current 0 to 150 Amps DC **Page No:** \_\_\_\_\_
3. AC Input 208 V AC, 3 Ø **Page No:** \_\_\_\_\_
4. Diagnostic functions - phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line (externally applied analog set point signals) **Page No:** \_\_\_\_\_
5. Fault action Main power disconnected; diagnostic condition is latched into memory. **Page No:** \_\_\_\_\_
6. Over voltage/current protection - Shutdown of controlling insulated gate bipolar transistors (IGBT's), disconnect of main power, and input fuses. **Page No:** \_\_\_\_\_

7. Display      Digital (Separate voltage / current) **Page No:** \_\_\_\_\_
8. Current-fed design - Tolerant abusive loads. Operate under short-circuit conditions and open-circuit conditions **Page No:** \_\_\_\_\_
9. Front Panel Controls:
- |                                 |                       |
|---------------------------------|-----------------------|
| 1. Power on/off                 | <b>Page No:</b> _____ |
| 2. Start/Stop                   | <b>Page No:</b> _____ |
| 3. Rotary Voltage/Current Entry | <b>Page No:</b> _____ |
| 4. Menu                         | <b>Page No:</b> _____ |
| 5. Display Settings             | <b>Page No:</b> _____ |
| 6. Enter/Clear                  | <b>Page No:</b> _____ |
| 7. Keypad Voltage/Current Entry | <b>Page No:</b> _____ |
| 8. Keypad OVT/OCT Entry         | <b>Page No:</b> _____ |
10. Ripple      150 mVrms max. **Page No:** \_\_\_\_\_
11. Line Regulation      Voltage Mode:  $\pm 0.005\%$  of full scale **Page No:** \_\_\_\_\_  
                                  Current Mode:  $\pm 0.025\%$  of full scale **Page No:** \_\_\_\_\_
12. Load Regulation      Voltage Mode:  $\pm 0.01\%$  of full scale **Page No:** \_\_\_\_\_  
                                  Current Mode:  $\pm 0.05\%$  of full scale **Page No:** \_\_\_\_\_
13. Load Transient Response 2 ms to recover within  $\pm 1\%$  of regulated output with a 50% to 100% or 100% to 50% step load change **Page No:** \_\_\_\_\_
14. Efficiency      85% or greater **Page No:** \_\_\_\_\_
15. Stability       $\pm 0.10\%$  for 8 hrs. after 30 min. Warm-up **Page No:** \_\_\_\_\_
16. Step-start contactors - maintain inrush current below full scale operating current **Page No:** \_\_\_\_\_
17. Power Factor       $>90\%$  **Page No:** \_\_\_\_\_
18. Mounting - Each power supply shall be mounted in steel cabinet with 4 casters for mobility (2 locking). Installed and tested as a complete system. **Page No:** \_\_\_\_\_

**For all items 5 and 6:**

- 1) Warranty: 1 year return to manufacturer all parts and labour included.
- 2) Documentation: 2 hard copies all manuals, 2 electronic copies all manuals
- 3) Certification: The equipment shall be certified by an acceptable Certification Organization. The following Certification Organizations are acceptable. The electrical control must bear a label from one of these organizations in order to be recognized as approved.

Identify which Organization shall be used:

- A. Canadian Standards Association (CSA)
- B. Entela
- C. Intertek Testing Services
- D. ETL Testing Laboratories
- E. Warnock Hersey (WH)
- F. Underwriters Laboratories of Canada (ULC)
- G. Underwriters Laboratories Inc. (UL)
- H. MET Laboratories Inc. (MET)
- I. TUV Rheinland of North America
- J. Quality Auditing Institute (QAI)
- K. TUV America Inc.
- L. Factory Mutual (FM) Approvals
- M. Omni-Test Laboratories Inc.
- N. Curtis-Straus LLC

NOTE: Labels from all Organizations above (with the exception of CSA and ULC), must be accompanied by a small "c" at the eight o'clock position or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

O. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labeled (complete with verification documentation) by the Canadian Standards Association (CSA), Cantest Ltd, Entela, Intertek Testing Services, MET Laboratories, TUV SUD America Inc, Underwriters Laboratories of Canada, Electrical Safety Authority (ESA), or QPS Evaluation Services Inc. under the Special Inspection Program. This inspection must take place before equipment delivery.

## ANNEX B BASIS OF PAYMENT

The contractor will be paid in accordance with the following basis of payment for work performed /deliverables received, pursuant to the contract.

**Pricing is all inclusive of goods, shipping, installation and training. HST Extra.**

**Delivery is MANDATORY prior to March 29, 2013.**

Item	Description	Quantity	Price	Extention
<b>1</b>	<b>DC Power Supply - 150 kW System</b>	1		
<b>2</b>	<b>DC Power Supply - 300 kW System</b>	1		
<b>3</b>	<b>AC Power Supply - 600 VAC, 240 A</b>	1		
<b>4</b>	<b>AC Power Supply - 600 VAC, 760 A</b>	1		
<b>5</b>	<b>DC Power Source - 9 kW System</b>	2		
<b>6</b>	<b>DC Power Source - 22.5 kW System</b>	2		
<b>Total</b>	Total of all line items 1-6			