Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government Services Canada/Réception des soumissions\Travaux publics et Services gouvernementaux Canada
Building S-111
CFB Petawawa
Petawawa
Ontario
K8H 2X3
Bid Fax: (613) 687-6656

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

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

Issuing Office - Bureau de distribution

Public Works and Government Services Canada Supply and Services Operation
Petawawa Procurement
Building S-111
CFB Petawawa
Petawawa
Ontario
K8H 2X3

Title - Sujet 1000 KW Load Bank	
Solicitation No. - N° de l'invitation W0107-12C422/A	**Amendment No. - N° modif.** 002
Client Reference No. - N° de référence du client W0107-12C422	**Date** 2013-01-17
GETS Reference No. - N° de référence de SEAG PW-$PET-903-1216	
File No. - N° de dossier PET-2-37116 (903)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-01-31	**Time Zone** **Fuseau horaire** Eastern Standard Time EST
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☑ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Harrington, Mary-Lou	**Buyer Id - Id de l'acheteur** pet903
Telephone No. - N° de téléphone (613) 687-0789 ( )	**FAX No. - N° de FAX** (613) 687-6656
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:**	

Instructions: See Herein

Instructions: Voir aux présentes

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

Canada

AMENDMENT NO. 2
1000 KW LOAD BANK

The Request for Proposal is hereby amended to answer questions received from a potential bidder as well as to make changes to the specification as follows:

1) Question #1 - Is there a base design or manufacturer for this unit?
Answer #1 - No, there is no base design or manufacturer.

Question #2 - Is this a new installation or a replacement?

Answer #2 - This is a new installation.

Question #3 - The request is for 1MW at all voltages below which is very uncommon

600v 3 phase

480v 3 phase

120/208v 3 phase

120/240v 1 phase

The amperages and conductor sizes needed for the 120/208 voltages make this an unusual case and very difficult to manufacture, if in fact all KW loading steps are required. However if the required 120/208 voltages are only required up to say 300KW then it becomes more feasible.

Answer #3 - Upon review of the specification to answer this question we have found that we need to amend the specification (see below). (Please delete and insert from Power Generation Diesel spec 2.1, 2.2, 2.3, 2.5 and delete in is entirety the clause found at 2.8.2.3. then insert clause 2.9 and 2.10.) and (Please delete and insert from General Requirements spec clause 1.2.4 , 1.11 and insert the new commissioning clause 1.17 including the annex A attachment.

2) DELETE Annex “A” Statement of Requirement in its entirety.

INSERT Annex “A” as follows:

ANNEX "A"

STATEMENT OF REQUIREMENT

1.1 GENERAL SCOPE

.1 The work under this Requirement comprises the furnishing of all labour, materials, tools and equipment required at CFB Petawawa, Ontario.

1.2 DESCRIPTION OF WORK

.1 Provide a Portable 25KWloading to 1000KWloading Load bank.
.2 Load bank must be installed in a totally weatherproof self contained enclosure.
.3 Must be trailer mounted and towable behind a ½ Ton truck
.4 Must be able to operate on 600V 3phase, 120/208 3phase.
.5 Must be adjustable for various KW loading: 25KW, 50KW, 100KW, 150KW, 200KW, 300KW, 500KW, 750KW, 1000KW.

1.3 DOCUMENTS REQUIRED

.1 Load bank drawings & specifications.
.2 Maintenance manuals
.3 Schematic diagram of electrical controls.
.3 Repair manual
.4 Manufacturer's installation manuals.
.5 Certified copy of factory test results

1.4 SITE ACCESS

.1 Access to the site is subject to the following restrictions:

.1 Troop movements.
.2 Other regulations as laid down by the Base Commander and/or the Technical Authority.
.3 All possible steps will be taken to provide the Supplier with access to the area at all times. However, DND activity may require some closure of the area. At least one (1) week's notice will be supplied to the Supplier if access to S-111 is to be closed due to DND activity.

1.5 TECHNICAL AUTHORITY

.1 Technical Authority is defined as the Base Construction Engineering Officer (BCEO) or their delegated representative.

1.6 ACCEPTABILITY OF MATERIALS

.1 Suppliers shall base their bids on materials specified and shall not allow in tenders for substitution of materials. All requests for substitution of materials shall be referred to the BCEO supported by such manufacturer's test data, samples and installation manuals as may be required to carry out an assessment of substitutes. In no event shall the substitute deviate substantially from the original specified.

.2 Where products are specified "no equal", there is a requirement to maintain conformity and/or compatibility. In this case no substitutes will be considered.

1.7 MATERIAL HANDLING

.1 The Supplier is responsible to ensure that all materials transported, supplied, stored, handled, used and disposed of, under this contract, shall conform to the appropriate requirements designated by the Provincial and Federal Departments of Environment wherever applicable.

1.8 MANUFACTURER'S DIRECTIONS

.1 All manufacturer's items shall be supplied and installed as directed by manufacturer.

1.9 WORKMANSHIP

.1 Must meet the latest Canadian Electrical Code Standard.
.2 Latest Ministry of Transportation MTO for trailer and mounted equipment.
.3 Canadian Motor Vehicle Safety Standards for trailer mounted equipment.

1.10 PROTECTION

.1 It is the Suppliers responsibility to take all required precautions to protect from damage all DND and occupants personal property and to make good damage caused by them during the performance of this requirement.

.2 Arrangements shall be made through the Technical Authority to provide adequate notice, if required, in advance of starting date to enable occupants to remove, relocate or to be advised as to protection for the contents of the building.

1.11 TRAINING

.1 The supplier shall provide a minimum of 2 hours of onsite training for up to 4 CE personnel on the complete load bank operation and safety operation procedures.

.2 The supplier shall include:

a. Load Bank drawings and specifications.

b. Maintenance manuals.

c. Schematic diagram of electrical controls.

d. Repair manual.

e. Manufacture's installation manual.

f. Certified copy of factory test results.

1.12 STANDARDS

.1 Throughout this specification, reference has been made to certain local and national standards. These standards shall be considered an integral part of the specification and shall read in conjunction with the drawings and specifications as if they were reproduced herein.

.2 When reference is made to certain detailed drawings, catalogues, or similar related data as published by manufacturers, the Supplier shall be responsible for obtaining sources.

.3 Where reference is made to standards, the latest edition shall always govern unless a specifically dated edition is mentioned.

.1 Canadian Electrical Code part 1, 21 edition

.2 National Electrical Manufacturers Association (NEMA)

.3 Canadian Motor Vehicle Safety Standards for trailer mounted equipment.

1.13 WARRANTY

.1 The Supplier shall warranty all newly installed equipment, materials and the labour involved in work carried out by the Supplier under this requirement for a period of one (1) year. Where the manufacturer's warranty exceeds the one (1) year period, the Supplier shall have the warranty(ies) made out in favour of the Department of National Defence and a copy delivered to CFB Petawawa S111 CE section. All warranties are to be in effect as of the date of delivery.

1.14 SMOKING REGULATIONS

.1 The Supplier and their personnel will be required to adhere to the no smoking regulations, as set out for the buildings/areas concerned, during the execution of the work on this requirement.

1.15 CLEAN-UP

.1 Cleaning will consist of daily policing and clean-up for the duration of the work period. On completion of the work requirement, all tools, equipment, surplus materials and debris will be removed from the work area and the site left in a clean and tidy condition.

1.16 ENVIRONMENTAL PROTECTION

.1 The Supplier is responsible to ensure that the methods of collection, transportation, storage, processing and disposal, as well as the equipment used therein, meets, and will continue to meet, all applicable municipal, regional, provincial and federal environmental legislation, and further will abide by all such legislation.

.2 The Unit will be delivered Ready to use all creating and packaging material will be removed and disposed of off Base.

.3 WHMIS regulations will be strictly complied with on all aspects of the Requirement.

1.17 <u>Commissioning</u>

1. Supplier shall test 2 on base unit on site for a minimum of 4 hours each load test will be at varying load conditions and varying locations.

2. Supplier shall be responsible to move Load Bank for testing.

3. DND will not take owner ship until the unit passes commissioning.

4. Supplier shall provide all of the material required to meet the New equipment checklist Annex B.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Electrical Code, Part 1, 21 Edition C22.1-09

.2 CSA/ULC standards

.3 Canadian Motor Vehicle Safety Standards

.4 National Electrical Manufacturers Association (NEMA)

.1 NEMA MG 1-2006(R2007), Motors and Generators.

1.2 ACTION AND INFORMATIONAL, SHOPDRAWINGS

.1 Submit the following documents:

.1 Trailer specifications

.2 25KW to 1000KW load bank unit specifications

.3 Weather Proof enclosure the load bank will be mounted in

.4 Type of resistive load bank devices being used

1.3 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for Load bank unit

.2 Include in Operation and Maintenance Manual instructions for particular unit supplied and not general description of units manufactured by supplier and:

- .1 Operation and maintenance instructions for load bank, control panel, ventilation system, and accessories, to permit effective operation, maintenance and repair.
- .2 Technical data:
  - .1 Illustrated parts lists with parts catalogue numbers.
  - .2 Schematic diagram of electrical controls.
  - .3 Trouble shooting chart.
  - .4 Repair manual (with diagrams and explanations on how to replace components).
  - .5 Certified copy of factory test results.
  - .6 Precise details for adjustment and setting load bank controls which require on site adjustment.
  - .7 Safety Operating Procedures.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Delivered to CFB Petawawa, S-111, CE tool crib, on or before 28 March 2013.

Part 2 Products

2.1 SYSTEM DESCRIPTION

.1 Portable Trailer Mounted Load bank for diesel generator, installed in a totally weatherproof self contained enclosure.

.2 Load Bank shall meets CSA certification.

.3 Multiple voltages, 600 volt 3 phase, 120/208 3 phase.

.4 Adjustable voltages from 25Kw to 50KW to 100KW to 150KW to 300KW to 500kw to 750kw to 1000kw at 600 volt. Adjustable voltages from 9KW to 18KW to 36KW to 54KW to 108KW to 300kw minimum at 120 / 208.

.5 Camlok connection points for all load connection points.

2.2 CONTROL PANEL

.1 Enclosed control panel and meter.

.2 Totally enclosed, mounted inside water proof enclosure, NEMA 3R

.3 Meter has to read Voltage total and per phase, Amperage total and per phase, Kilo watts and frequency.

.4 Selector switch for power on/off

.5 Load on/off switch

.6 The control panel shall include all toggle type switches to control each load step.

2.3 PROTECTION DEVICES

1. A powered fan to air cool the resistive elements.
2. The fan shall run continuously so there is no additional cool down required.
3. Pressure switch required that shall shut load down if cooling requirements are not met.
4. Over temperature shut down at the exhaust end of the load bank.
5. All load circuits fused

2.4 STEEL MOUNTING ENCLOSURE

.1 Totally enclosed weather proof

.2 Door opening for connection points Camlok

.3 Door opening for access to control panel

2.5 TRAILER MOUNTED

1. Steel Construction, flat deck trailer.
2. Rated for 150% of the weight of the load bank and the required cables and connections.
3. Trailer has to conform to all applicable standards prescribed under the Canadian Motor Vehicle Safety Regulations in effect on date trailer was manufactured.
4. Trailer must come fully prepared and fitted with all equipment required to be used on roadways.
5. Individual cable reels sized big enough to hold minimum 300 feet of cable for each phase, contained in a weather proof enclosure mounted to the trailer in a way not to interfere with the operation of the load bank.
6. Trailer shall have electronic breaks.

2.6 FABRICATION

.1 Shop assemble load bank unit including:

.1 25KW loading to 1000kw loading, load bank unit
.2 Weather proof self contained enclosure
.3 Control panel, connection points
.4 Trailer mounted

2.7 FINISHES

.1 Black Exterior Powder Coat Metal paint.

2.8 SOURCE QUALITY CONTROL

.1 Factory test Load bank and accessories and submit testing report to Technical Authority

.2 Test procedure:

.1 **Test at 600v 3-phase** and load unit to 25KW load, 50KWload, 100KWload, 150KWload, 300KWload, 500KW load, 750KWload, 1000KW loading, record all readings.

.2 **Test at 120/208 3-phase** and load unit to 25KW load, 50KWload, 100KWload, 150KWload, 300KWload, 500KW load, 750KWload, 1000KW loading, record all readings.

2.9 **<u>Cables and Connectors</u>**

1. Cables shall be of the type 4/0 2 kva non shielded copper portable power cable.

2. Cables shall be 6 lengths per phase, 50 feet per length equalling to 300 feet per phase totalling 900 feet of cable.

3. Cables shall have attached appropriate sized camloks male/female connecters for each length of cable.

2.10 **Cable Reels**

1. Individual cable reels sized to hold a minimum of 300 feet of 4/0 2 kva non shielded portable power cable per phase.

2. Cable reels shall have manual and mechanical means of winding and be capable of free spooling.

3. Cable reels shall be contained in a weather proof enclosure and be mounted to the trailer in such a way that it will not interfere with the operation of the load bank.

Part 3 Execution

3.1 SUPPLY AND DELIVER PORTABLE ADJUSTABLE FROM 25KW TO 1000KW LOAD BANK UNIT TO CFB PETAWAWA BUILDING S-111 ON OR BEFORE 28 MARCH 2013.

END OF SECTION

Annex "B"

New equipment checklist instruction

(Commissioning life safety and legislated equipment)

All critical components identified.

All critical components which affect the safe operation of the equipment / system must be listed and shall be inspected in accordance with the inspection criteria and procedures of the manufacturer. If list is not available a professional engineer can list whether a component is safety related and provide inspection criteria and procedures.

All critical components shall be labelled with durable properly sized labels. They should be cross-referenced to parts lists, schematics, operator manuals, inspection manuals and the log book.

All safety labels should be properly located / sized and durable. Some examples of these would be load capacity, personal protective equipment requirement or requirement for 100% energy disconnect for identified tasks.

The critical components themselves such as bolts, cables, hooks must be properly labelled to ensure they are compliant. Never should a critical component be accepted without proper labelling. This is required by operators, inspection authorities and service technicians.

Supply a log book and secure storage location

The log book must contain all the critical information such as initial measurements, operating tolerances, settings, deflections, etc. The log book should also contain the results of the commissioning inspection.

There should be an inspection form to be used throughout the life of the equipment. Ideally it could be formatted so that all of the initial data is captured in one box and then there is a box for current inspection results. This would allow for immediate recognition and consistency throughout lifecycle of equipment. The capacity of the log book should take into account the expected life expectancy of the equipment/system and the required inspection frequencies.

The secure storage location should be in an accessible and logical location. The storage area should protect the log book from the elements through the life expectancy of the equipment. The log book should be located so it is available to any person involved in the inspection, maintenance and or operation of the equipment / system.

Identification of service class and capacity labels.

The equipment / system should come with factory labels of service class and capacity. They should be located so they are clearly visible to an operator at the operator level and location. If not factory labelled, the labelling should be an item that is approved at the shop drawing stage by an approved engineer.

Operator inspection process

Throughout the life-cycle of the equipment / system it will have an unknown number of operators. Most operators will not have had training on the equipment / systems. It is critical that written documentation be

provided that identifies hazards (CLC requirement) and a procedure to follow to safely inspect the equipment / system prior to use. There may be hazards to the operators to complete the operator inspections.

There should be an inspection form provided that is to be used for the life cycle of the equipment. This ensures for liability that operators are provided a mandated process to follow that they should not deviate from.

Inspection Authority periodic inspection process

Throughout the life-cycle of the equipment / system it will have an unknown number of inspectors. BCE use BCE staff and contractors. There are also external inspection agencies such as TSSA. Most inspectors will have had training but they more than likely will not have had specific briefings on the equipment /system in Petawawa. This is why written documentation is a critical requirement throughout the lifecycle of the equipment /system. It is critical that written documentation be provided that identifies hazards (CLC requirement) and a procedure to follow to safely inspect the equipment / system prior to use. There may be hazards to the inspectors to complete the periodic inspections.

There should be an inspection form provided that is to be used for the life cycle of the equipment. This ensures for liability that inspectors are provided a mandated process to follow that they should not deviate from.

Maintenance Staff preventive maintenance process

Throughout the life cycle of the system / equipment it will have an unknown number of maintainers. There could be BCE staff or contractors. The process must identify specific tasks, procedures and frequencies. It must state the safety concerns and hazard identification.

Maintenance is not be confused with inspection processes listed above. The operator inspection is a DI completed every time before it is used. The periodic inspection is just that, an inspection. It validates whether the preventive maintenance has been done, identifies operator damages or expected wear and tear. This is done through verifying the log book and comparing the installation to the original install documents.

This information can also be used corporately to validate staffing / financial requirement of BCE.

A parts list / schematic for 100% components.

A systems and equipment require a list of 100% of each component. This includes factory and on site installed components. This is critical to maintainers and inspectors each of these components has been approved by an engineer. There are no substitutions allowed throughout the lifecycle of the equipment. The list must be cross-referenced to the schematics. This list must include the grade or standard of the component. (I.e. Grade 8 bolt, ANSI, CSA, ULC Listed, etc)

Complete set of as built drawings

This is a requirement on all BCE projects. It is critical that as builts for equipment / systems be verified against all of the other deliverables for consistency and accuracy.

Complete set of operating instructions

This is not to be confused with operator inspection process. This is the complete safe operating instructions for the system/equipment. It should include 100% of capabilities of the system/equipment. It should list the Do’s and Don’ts. It should diagrams and illustrations where appropriate.

Operating instructions for optional / ancillary equipment/system must be provided. An example of this would be jack stands that are optional to a vehicle hoist.

Complete set of electrical schematics.

This should include 100% of the electrical schematics for the equipment / system. All components must be listed and identified. All ancillary controls and operating components must be included.

Complete set of mechanical schematics.

This should include 100% of the mechanical schematics for the equipment / system. All components must be listed and identified. All ancillary controls and operating components must be included.

Certifications

There should be a checklist created as part of the file for commissioning that is mandatory for the BCE or DCC inspector to complete and the for the Section representative accepting responsibility for the inspections through the lifecycle of the system/equipment to accept. The list should include each line item so as not to be inadvertently missed.

Where required, inspections should be verified by a Professional Engineer.

Commissioning should not take place without the provision of 100% of the above listed documents. During commissioning 100% of the system/equipment should be visually inspected for compliance with the supplied documents. The system/equipment must be run through load through it full operating cycle. Deflection, alignments, safety features and loads should be documented as the baseline in the logbook.

Before the system/equipment is put into use 100% of the documentation must be checked for accuracy and provided for operator, maintainer and inspector. Under no circumstance should the system be allowed to be put into service without 100% documentation completed and accepted.

Documentation Checklist

Ser	Deliverables prior to adding to service contract	OPI	Date accepted	Comment
1	**Instruction Manual**			
a	Purpose of equipment/system explained			
b	Safety information about system / equipment explained			
c	Explanation of system / equipment			

d	Operator safety instructions including pre-use safety inspection provided			
e	Operating instructions provided for 100% of system/ equipment features			
f	Maintenance instructions provided for 100% of the components			
g	Trouble shooting checklist provided			
h	Critical component and operating features inspection procedures provided			
i	Serialized exploded view and serialized parts list for 100% components including accessories			
j	Schematics for all disciplines provided (electrical, control, safety, mechanical)			
2	**Log Book**			
a	Equipment/ system specific log book provided			
b	Critical component inspection checklist provided			

c	Logbook storage system provided			
d	Initial inspection completed and documented in log book			
3	**Labelling**			
a	All operational, safety and capacity labelling is provided			
4	**On-site acceptance**			
a	Contracting agency provided full training, and demonstrated full operational / functional tests including ancillary components			
b	Operator instruction provided			
c	Maintainer instruction provided			
d	BCE Inspection service contract Instruction provided			
e	Safety features verified and tested			
f	System/equipment operates as designed and intended			
g	Safety features confirmed			

5	**Certifications**			
a	All certifications are included with log book, BCE library and on project file			
b	External agency certifications are provided			
c	Licensing is in proper corporate BCE name / account			
d	As built drawings are provided			
e	All information required to include equipment / system in applicable service contract is provided.			

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.