



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Réception des soumissions - TPSGC / Bid Receiving -
PWGSC

1550, Avenue d'Estimauville

1550, D'Estimauville Avenue

Québec

Québec

G1J 0C7

FAX pour soumissions: (418) 648-2209

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

TPSGC/PWGSC

601-1550, Avenue d'Estimauville

Québec

Québec

G1J 0C7

Title - Sujet High Temperature Vacuum Furnace	
Solicitation No. - N° de l'invitation 31206-208816/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client 31206-208816	Date 2019-09-13
GETS Reference No. - N° de référence de SEAG PW-\$QCN-037-17736	
File No. - N° de dossier QCN-9-42088 (037)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-09-27	Time Zone Fuseau horaire Heure Avancée de l'Est HAE
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Roy, Alain	Buyer Id - Id de l'acheteur qcn037
Telephone No. - N° de téléphone (418) 649-2845 ()	FAX No. - N° de FAX (418) 648-2209
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

This is amendment 002 to our solicitation:

Enquiries – Bid solicitation – Clause #2.3

To ensure consistency and quality of information provided to bidders, significant enquiries received and the replies to such enquiries will be provided simultaneously to bidders to which the bid solicitation has been sent, without revealing the sources of enquiries.

Here is the questions we have received:

All the questions refer to Annex A: Statement of Requirements

Question 3: Point 3.3.1

The Carbolite Furnace model HTK 25 comes in just under 27 liters, would you accept a 25 or 26 liter system? This will allow up to quote a much less expensive system. Otherwise we will need to quote an 80 litre system model HTK 80 and come in with a much higher price.

Answer 3: The volume of 27 liters is based on the dimensions and number of the parts we intend to treat simultaneously. We accept a 25 liters system.

Question 4: Point 3.4

We need clarification if debinding under partial pressure is required

Answer 4: The system must be able to perform runs during which the debinding portion of the treatment (20 – 600°C) can be made below atmospheric pressure, the moment when the vacuum is produced by the mechanical dry pump. Gas flow must also be possible during this phase and decomposition / evaporation product coming from the parts must be adequately managed by the system.

Question 5: Point 3.4.4

We prefer to offer a turbomolecular pump instead of an oil diffusion. Is this something NRC would consider?

Answer 5: The important aspect is the pressure range and minimum pressure, not the type of pump. The time to reach the required pressure (pumping capability) will also be considered.

Question 6: Point 4.5.1

The backdoor is not able to be opened and is intended as a pressure relief system. No pneumatic latch or lock will be provided. Is this acceptable

Answer 6: The back door makes maintenance easier (ex.: temperature uniformity survey, cleaning). We could consider a single door system. Pneumatic latching is required.

Question 7: Point 4.6.3

Ti-Zr Molybdenum alloy is an unusual material. We would normally offer a pure molybdenum rack. Will this be considered?

Answer 7: The Ti-Zr Molybdenum alloy has better heat resistance than pure molybdenum and is required.

Question 8: Point 4.8

A meaningful stated and guaranteed temperature uniformity must be accompanied by a temperature or range of temperatures. What temperatures do you expect to achieve this uniformity?

Answer 8: As a R&D equipment, we must consider a wide range of temperatures. We expect to sinter between 900°C and the maximum service temperature of the furnace.

Question 9: Point 4.10.2

Are any gases being used deliberately humid? Does the humidity need to be controlled?

Answer 9: As of now, it is not foreseen to use deliberately humid gas. The dew point of the process gas need to be measured on line prior to entering the furnace.

Question 10: Point 4.11.1

Please specify if this should be a breakaway door or spring loaded compressive system.?

Answer 10: We are not familiar with the term "breakaway door". The main door of the furnace chamber must be equipped with a pneumatic latch. The safety explosion port (pressure relief) can be spring loaded.

Question 11: Point 4.16.4

Should a 9 channel data logger be provided, or is this the responsibility of NRC?

Answer 11: The system must have a complete data acquisition system for all recorded parameters and measurements (ex.: T-CTRL, P, T-survey, gas flows, safety elements, see RFQ documents for a complete listing)

Question 12: Point 4.17.2

Please clarify what is being asked for in this section? Shutters in the retort will have no effect on cooling.

Answer 12: In some systems, the chamber in which the MIM parts are treated, has a door that has a shutter allowing a high flow rate of gas recirculation during cooling. This is often part of a "fast cooling" option. A heat exchanger is normally also required for this "fast cooling" option.

Question 13: Point 4.18.1

Is a full chiller required or is there an adequate house closed loop water cooling system? Is there an onsite backup?

Answer 13: In the past, we have experienced some problems when using the closed loop water cooling system of the building. The water cooling flow requirement of the system will drive the necessity to have an independent chiller. City water or building cooling water are/will be available as a backup.

Question 14: Point 6.5

A response can be made within 72 normal business hours.

Answer 14: When we have an urgent need for support, we need to be able to reach the supplier during normal working hours. Replacement parts and maintenance assistance can wait 72 normal business hours.

Question 15: Point 7.1.3

The shelving material in this section differs from 4.6.3?

Answer 15: Item 4.6.3 The muffle or retort is the oven shell. We specify that it should be Ti-Zr molybdenum. It can also be made of lanthanized molybdenum. The mitt will support the tablets mentioned in 7.1.3
Item 7.1.3 Shelves must be made of lanthanized molybdenum.

Question 16: Point 7.1.4

Please specify the exact dimensions of requested ceramic setter plates?

Answer 16: Ceramic setters must fit within shelves. Shelves dimensions are to be provided by the supplier.

Question 17: Point 7.1.5

Section 4.16.4 called for 9 TCs, can you clarify please. Please also specify exactly what TC type should be used for the survey?

Answer 17: Typically, these TCs are not permanent. They are sheathed with a flexible metallic sheath having a diameter of 1/16 inch. Such TCs are normally required to maintain furnace tightness. The TCs are used to perform Temperature Uniformity Survey (or TUS). Often, type K thermocouples are used but type N is also a good choice. They have a maximum service temperature much lower than the one of the furnace (1400-1600°C) but ceramic rings can be used for surveys conducted above 1200°C. The acquisition system must be able to accommodate typical thermocouple types.

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME.