



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des soumissions  
- TPSGC**  
11 Laurier St. / 11, rue Laurier  
Place du Portage, Phase III  
Core 0B2 / Noyau 0B2  
Gatineau, Québec K1A 0S5  
Bid Fax: (819) 997-9776

**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**  
Vehicles & Industrial Products Division  
11 Laurier St./11, rue Laurier  
7A2, Place du Portage, Phase III  
Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> COMPRESSION SYSTEM FOR U66 TRI-SONI	
<b>Solicitation No. - N° de l'invitation</b> 31184-141845/A	<b>Amendment No. - N° modif.</b> 004
<b>Client Reference No. - N° de référence du client</b> 31184-141845	<b>Date</b> 2016-02-09
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$HP-912-68685	
<b>File No. - N° de dossier</b> hp912.31184-141845	<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 2016-02-16</b>	
<b>Time Zone</b> Fuseau horaire Eastern Standard Time EST	
<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> Pearson, Neil	<b>Buyer Id - Id de l'acheteur</b> hp912
<b>Telephone No. - N° de téléphone</b> (873) 469-3312 ( )	<b>FAX No. - N° de FAX</b> (819) 953-2953
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<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/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

This solicitation amendment 004 is raised to address bidders questions.

### Question 33

3.12.2.6 We are not able to provide phase angle probes and axial position probe for bull-gear please advise if this is acceptable

Answer:

The provision for mounting phase angle probes is on the pinions only. No phase angle or axial position probes are to be supplied under this solicitation - only the interface for mounting such probes is required.

---

### Question 34

3.12.4.5 Our current design applies API672 for the Vibration limit of pinion and bullgear. Please confirm this is acceptable.

Answer:

We will accept the limits of  $A \leq (12000/N)^{0.5}$  but not to exceed 1.5mils where A is the unfiltered true peak to peak vibration in mils. And N is the shaft speed in RPM.

Section 3.12.4.5 revised as follows:

During the shop and site test of the machine, assembled with the balanced rotors and operating at its rated speed, the peak-to-peak amplitude of unfiltered vibration in any plane, measured on the shaft adjacent and relative to each radial bearing, including runout, shall not exceed the value A as calculated below or 40  $\mu\text{m}$  (1.5 mils), whichever is less:

In SI units:

$$A = 25.4 \times (12\,000 / N)^{1/2}$$

In customary units,

$$A = (12\,000 / N)^{1/2}$$

Where:

A = amplitude of unfiltered vibration, in  $\mu\text{ms}$  (mil) true peak to peak.

N = rated speed, in revolutions per minute.

---

### Question 35

3.12.4.7/12 Our design uses a carbon seal to minimize the air leak and increase efficiency. Please confirm this is acceptable.

Answer:

This is not acceptable. NRC has had long term experience with the operation and maintenance of a compressor that uses a labyrinth seal.

---

### Question 36

3.12.4.11 Our units do not use Static balancing for Impellers only dynamic balancing for rotor(Pinion + impeller) per API please confirm this is acceptable

Answer:

This is acceptable

---

Question 37

3.12.4.15 Please advise if thrust bearings will be considered instead of thrust collars? This allows reduced clearances and improves aerodynamics

Answer:

Thrust bearings are acceptable as long as they meet the bearing requirements

---

Question 38

3.12.5.8 Please advise if 85 dBa is acceptable noise level for the blow off silencer

Answer:

The blow-off silencer shall be sized and oriented to limit the noise level inside and outside the plant to a 85 dBa, 3 meters from the outlet.

---

Question 39

3.12.5.11 Our standard tube material is C12200, but If the corrosion is the concern of NRC, we can provide C70600 (CU-NI) tube which is higher grade than inhibited admiralty for the corrosion and strength.

Answer:

The Supplier must provide materials which meet or exceed the quality of the material specified (inhibited admiralty).

---

Question 40

3.12.5.11 Please advise if tube size of 12mm OD and 21BWG is acceptable?

Answer:

This is not acceptable. This requirement is dictated in Process Industry Practice Document : PIP RESC001 -

"Specification for Integrally Geared Centrifugal Air Compressor Packages"

---

Question 41

3.12.5.11 Please advise if a cooling water temp rise of 10°C is acceptable

Answer:

The water temperature rise limit is not specified in this solicitation.

---

Question 42

3.12.5.11 Our water side Design pressure is 5 barg. Is it acceptable to install relief valve(5barg) for 10barg water pressure?

Answer:

The cooling water pressure will be less than 5 barg, the 10 barg requirement is primarily there to ensure that there would be no damage to the unit when compressed shop air or city water is used to blow out debris or to pressure check the tubes

---

Question 43

3.12.5.12 Please advise if our standard retention time of 2.5min, which is enough for emergency shutdown without the damage of machine, is acceptable.

Answer:

The reservoir retention time must be 3 minutes, minimum.

---

Question 44

3.12.5.12 Please advise if the following standard values are acceptable?

1. Thermal control valve case : Aluminum Alloy
2. Oil Filter Case : Aluminum Alloy
3. Oil Filter Efficiency is 99.5% at 10 micron per API 614

Oil Cooler

4. - tube size : 9.52mm OD
5. - Tube thickness : 22 BWG(0.7 mm)
6. - Material : Cu / Cu-Ni(option)
7. - Size for 105% of the design heat load
8. Per regulation, the filter is not a pressure vessel which has to be stamped

Answer:

1. - Not acceptable, this component must be steel
2. - Not acceptable, this component must be steel

3. - This is not acceptable. This requirement is dictated in Process Industry Practice Document : PIP RESC001 - "Specification for Integrally Geared Centrifugal Air Compressor Packages"  
Oil Cooler
  4. - This is not acceptable. This requirement is dictated in Process Industry Practice Document : PIP RESC001 - "Specification for Integrally Geared Centrifugal Air Compressor Packages"
  5. - This is not acceptable. This requirement is dictated in Process Industry Practice Document : PIP RESC001 - "Specification for Integrally Geared Centrifugal Air Compressor Packages"
  6. - The Supplier must provide materials which meet or exceed the quality of the material specified
  7. - This is not acceptable. This requirement is dictated in Process Industry Practice Document : PIP RESC001 - "Specification for Integrally Geared Centrifugal Air Compressor Packages"
  8. - The last bullet of section 3.12.5.12 that reads " Filters must be stamped in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 when ASME Code applies" is removed from this solicitation and the requirement defaults to section 3.4.12 bullet 10 : "CRN certificates for all process air vessels, valves and oil system pressurized components [must be supplied]".
- 

#### Question 45

Please verify if the NRC would like to witness the mechanical and aerodynamic compressor test for each compressor or just Qty 1 of the LOT of identical units?

Answer:

NRC must be invited to witness the testing of all the compressors.

---

#### Question 46

Please confirm if motor Voltage is to be 6600V or 6900V?

Answer:

The motor voltage is 6900V

---

#### Question 47

After our review, we do not believe a motorized high voltage load break isolating switch would be required. At this amperage, the standardized load break switch provided is a 7.2kV rated 400Amp load breaking switch that is interlocked with the contactors. So on attempt to throw the

switch, the contactors interrupt the power before the throwing of the switch is complete. Please confirm acceptance.

Answer:

This is acceptable if the isolating disconnect is interlocked with a contactor without load breaking capability. The disconnect must still be motorized.

---

#### Question 48

Payment terms for the resultant contract are given in 6.5.1a. These suggested payment terms would result in a negative cash flow for the supplier. Would PWGSC accept revised payment terms that allow for a neutral cash flow?

Split Milestone #2 into two separate milestones

2a) 50% upon proof of placement of order for long lead items (compressors) and performance guarantee. Performance guarantee will expire upon delivery of equipment.

2b) 30% upon final inspection and delivery at final destination

Answer:

The following changes will be made;

Milestone #1 – 15%

Milestone #2 – 75%

Milestone #3 – 10%

---

#### Question 9

6.5.1 Milestones accepted as follows: 1st issue of GA and P&ID: 10%, Receipt of major components (bullgear, pinions, gearbox) 40%, Final inspection and ready to ship at our facility; 45%, Completion of startup and commissioning: 5%

Answer:

The following changes will be made;

Milestone #1 – 15%

Milestone #2 – 75%

Milestone #3 – 10%

---

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME