



# CITY OF HOUSTON

Administration and Regulatory Affairs Department  
Strategic Purchasing Division

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Mayor

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April 16, 2012

**Subject:** Letter of Clarification No. 1 to Invitation to Bid No. S12-N24245 Pumps, Various Types and Sizes for the Public Works and Engineering Department

**To:** All Prospective Bidders:

This letter of Clarification is being issued for the following reasons:

- **To revise the above referenced solicitation as follows:**

1) **NOTICE TO BIDDERS**

The bid opening due date and time is **10:30 AM., April 19, 2012.**

2) **Revise the electronic bid form as follows:**

- **In the General Terms and Specifications, replace the originally advertised Section 5.0 - Group IV - ITT A-C in its entirety with the attached revised Section 5.0 - Group IV - ITT A-C, marked "Revised 04/12/2012".**

When issued, Letter(s) of Clarification shall automatically become a part of the solicitation documents and shall supersede any previous specification(s) and/or provision(s) in conflict with the Letter(s) of Clarification. All revisions and answers incorporated into the Letter(s) of Clarification are collaboratively from both the Strategic Purchasing Division and the applicable City Department(s). It is the responsibility of the bidder/respondent to ensure that it has obtained all such letter(s). By submitting a bid on this project, bidders/respondents shall be deemed to have received all Letter(s) of Clarification and to have incorporated them into this solicitation and resulting bid.

Furthermore, it is the responsibility of each Contractor to obtain any previous Letter of Clarification associated with this solicitation.

*Martin L. King*

Martin L. King  
Senior Staff Analyst  
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*Partnering to better serve Houston*

**Council Members:** Helena Brown Jerry Davis Ellen R. Cohen Wanda Adams Mike Sullivan Al Hoang Oliver Pennington  
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**5.0 GROUP IV - ITT A-C:**

This specification covers new rotating assemblies to for ITT A-C vertical, non-clog, centrifugal pumps. Assemblies shall match existing units and allow for mounting in existing casings without modification of casing, piping, or bases.

**5.01 Bid Line Item No. 9**

Pump, vertical, rotating assembly, 1180RPM, 850 GPM @ 50' TDH, Size: 8X6X12SC, Model No. NSWV, or City approved equal.

**5.0.2 Bid Line Item No. 10**

Pump, vertical, rotating assembly, 710RPM, 6,330 GPM @ 26' TDH Size: 24X16X20. Model No. NSYV, or City approved equal.

**5.0.3 Bid Line Item No. 11**

Pump, vertical, rotating assembly, 705RPM, 7,465 GPM @ 50' TDH Size: 16X16X20. Model No. NSYV, or City approved equal.

**5.1 CONSTRUCTION:** Rotating assembly shall be designed to perform satisfactorily with a reasonable service life when operated either continuously or intermittently in typical wastewater services. Assembly is to be mounted into existing casing.

5.1.1 Casing: Casing is existing and to be reused. Rotating assembly must fit into existing units without modifications.

**5.2 DISCHARGE FLANGE:** Existing and to be reused.

**5.3 DISCHARGE POSITION:** Existing.

**5.4 SUCTION COVER:** Existing and to be reused.

**5.5 IMPELLER:** Impeller shall be of the single-suction, enclosed type with two vanes, made of ductile Iron. Impellers shall be specially designed with smooth water passages to prevent clogging by stringy or fibrous materials, and shall be capable of passing solids having at least a sphere size of 3". Impeller shall be dynamically balanced. Impeller shall have a tapered bore and shall be keyed and secured to the shaft by an 18-8 Stainless Steel nut locked in place. It shall be readily removable without the use of special tools.

5.5.1 A replacement 11.5-14% chrome steel AL@ shaped wear ring shall be provided. Ring shall be mounted on impeller to provide a renewable surface opposite the suction cover wear plate. 5.5.2 Pump shall have provisions for adjustment of axial clearance. This adjustment shall be made through the use of shims placed between the frame and outboard bearing housing.

**5.6 SHAFT:** Pump shaft shall be high-strength carbon steel, AISI #1045 or 4140, accurately machined, tapered at the impeller end and of sufficient size to transmit full driver output. It shall be protected from the pumped liquid by a shaft sleeve. A seal shall be provided, by a synthetic rubber O'ring between the shaft and shaft sleeve to prevent leakage of pumped liquid out and/or air into the pump.

**5.7 SHAFT SLEEVE:** Renewable shaft sleeve shall be 316 SS with a Ni-CR-Boron coating to a hardness of 58-63RC(approximately 650 Brinell). The sleeve provided shall extend through the seal housing.

**5.8** Each pump shall be provided with a Dynamic Seal System.

**5.9 SEAL BOX:** The pumps shall be fitted with a single stage Dynamic Seal capable of balancing out positive suction heads. A throttle bushing and sleeve shall be placed in the stuff box cover. Both pieces shall be made of 316 SS with a Ni-CR-Boron coating to a hardness of 58-63RC(approximately 650 Brinell). The Dynamic Seal expeller shall be made of nodular iron, ASTM 536 or 304 Stainless Steel. A pressure relief connection with elbow, fittings, and tubing shall be provided in the seal cover to bleed liquid back to the suction cover of the pump.

**5.10 STATIC SEAL:** Dual static seals, provided with a grease cavity between them, shall be installed in the seal cover to provide leakage along the shaft, when the pump is not running. A positive means for adding grease shall be provided in the suction cover. Seals shall contact a 316 SS sleeve with a Ni-CR-Boron coating to a hardness of 58-63RC(approximately 650 Brinell).

**5.11 BEARING FRAME AND BEARINGS:**

5.11.1 Bearing Frame: Pump bearing frame shall be one-piece rigid cast iron construction. Frame shall be provided with a cast iron bearing housing at the outboard end, and a cast iron end over at the inboard end. Both ends of the frame shall be provided with lip type grease seals and labyrinth type deflectors to prevent the entrance of contaminants. Bearing Frame shall be designed so that complete rotation element, including motor, can be removed from casing without disconnecting piping or coupling.

5.11.2 Bearings shall be designed for 50,000 hours minimum life at 50% of B.E.P. Radial inboard bearings shall be roller type suitable for all loads encountered in the service conditions. Outboard bearing arrangement shall consist of one deep groove ball bearing to take the radial loads and one angular contact bearing to take axial loads.

5.11.3 Bearing lubrication: Bearings shall be grease lubricated with provisions for addition and relief of grease.

**5.12 SUCTION ELBOW:** Is existing and to be reused.

**5.13 COUPLING:** Existing coupling and/or drive shaft to be reused.

**5.14 DATA PLATE:** All data plates shall be stainless steel suitable attached to the pump. Data plates shall contain the manufacturer's name, pump size and type, serial number, speed, impeller diameter, rated capacity and head, and other pertinent data. A separate nameplate shall identify the frame and bearing numbers.

**5.15 PUMP DRIVE:** Drive is existing and to be reused.

**5.16 FACTORY TESTING:** Not required.

**5.17 NOTE:** Not required.

**5.18 WARRANTY:**

The supplier shall provide a full one-year warranty on the pump, which includes parts and labor. The warranty work shall begin within three working days after receipt of written notice from the City. Removal and reinstallation is by the City. All shipping charges for warranty work that is required outside of the Houston area will be borne by the supplier.

**5.19 LITERATURE:**

The supplier shall provide two sets of operation, maintenance and parts manuals for each unit at the time of delivery.

**5.20 DELIVERY:**

Unit(s) as specified above, with delivery ticket and other documents and manuals, if requested shall be delivered to the location (s) as stated on each individual purchase order as expeditiously as possible, but no later than 100 calendar days after receipt of a City of Houston Purchase Order.

**5.21 TRAINING:**

A minimum of four hours of training shall be conducted by the successful bidder. All training will be conducted at a City of Houston location to be determined at a later date.