

TOWNSHIP OF FREEHOLD

BOARD OF FIRE COMMISSIONERS

DISTRICT NO.2

SPECIFICATIONS FOR FURNISHING AND DELIVERY
OF
COMPLETE STATIONARY BREATHING AIR
SYSTEM FOR FILLING SELF- CONTAINED
BREATHING APPARATUS

Includes:

Notice to Bidders Bid
Conditions Vehicle
Specifications

Proposal Form
Non-Collusion Affidavit
Disclosure Statement

NAME OF BIDDER: _____

ADDRESS: _____

TELEPHONE: _____

DATE: _____

FREEHOLD TOWNSHIP BOARD OF
FIRE COMMISSIONERS DISTRICT
NO. 2
NOTICE TO BIDDERS

Sealed bids will be received by the Freehold Township Board of Fire Commissioners, District No. 2, at the East Freehold Fire Company Firehouse, 191 Dutch Lane Road, Freehold, New Jersey, at the intersection of East Freehold Road and Dutch Lane Road on Tuesday, March 21, 2017 at 7:00 PM prevailing time, and read aloud for the furnishing and delivery of a complete stationary breathing air system for filling self-contained breathing apparatus.

Specifications, bid forms and all required forms may be obtained by qualified Bidders by telephoning the attorney for the Board, Charles R. Parker, Esq., Sonnenblick, Parker & Selvers, P.C., 4400 Route 9 South, Suite 3000, Freehold, New Jersey (732-431-1234), between the hours of 9:00 AM and 4:00PM.

Any bids that are mailed must be received by the Board of Fire Commissioners at the above stated address prior to the time and date fixed for the receipt of the bids.

Bids must be on Bidder's letterhead in the manner designated in the specifications, enclosed in a sealed envelope bearing the name and address of the Bidder and addressed to the Freehold Township Board of Fire Commissioners District No. 2.. The Bid must include a certified check, cash or bid bond for not less than ten (10%) percent of the amount of the Bid, and a certificate from a responsible surety company that the surety company will provide a performance bond in the amount of the contract price if the Bidder is awarded the Contract.

No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the written consent of the Board of Fire Commissioners.

The Board of Fire Commissioners reserves the right to reject any and all bids, and also reserves the right to waive any formality in the bids and to accept the bid which, in its judgment, best serves the interests of the Board of Fire Commissioners.

Freehold Township
Board of Fire Commissioners
District No.2

February 23, 2017

GENERAL SPECIFICATIONS

1. Bids will only be considered from companies which in the opinion of the Board have an established reputation in the field. The Bidder must provide with its bid a listing by the Bidder of similar installations and their locations.
2. Bids and all related Bid documents must be signed by a corporate officer or the manufacturer and not by a dealer or representative.
3. Each Bidder shall furnish evidence satisfactory to the Board of its ability to install the system as specified.
4. Within ten (10) days of opening of the bids any Bidder, at the request of the Board, shall deliver the plans for the installation to the Board for its review and consideration. Failure of Bidder to do so shall be cause for the Board to reject the bid.
5. The successful Bidder shall maintain full insurance to the satisfaction of the Board and shall submit a certificate of insurance when requested by the Board.
6. The Bidder, if its bid is accepted, shall defend any and all suits and assume all liability for use and all claims made against the Board or any of its officials or agents for the use of any patents, process, device or article forming a part of the apparatus or any appliance furnished under Contract.
7. The Bidder shall specify in its bid the number of working days after execution of the Contract when the systems will be installed. In no event shall this date be more than 75 days from the date of full execution of the Contract by all parties.
8. After award the successful Bidder must meet with Board officials to personally discuss all facets of these Specifications.
9. The Bidder shall also demonstrate as part of its bid that it is in a position to render prompt service after installation.

comparisons, before the Contract is awarded.

10. The Board of Fire Commissioners reserves the right to make any test deemed necessary to determine the requirements of these Specifications and the needs of the Board of Fire Commissioners have been met.
11. All parts of any item to be purchased by the Board of Fire Commissioners must be manufactured in the United States.
12. If the successful Bidder fails to furnish the service or the item within the time specified, the Board of Fire Commissioners shall have the right to rescind the Contract, secure the service elsewhere and charge the extra cost thereof to the successful Bidder.
13. No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the written consent of the Board of Fire Commissioners.
14. Each bid must be accompanied by a certified check or cash in the amount of not less than ten (10%) percent of the bid payable without any conditional endorsement as a guarantee that in the event the Contract is awarded to the Bidder, he will within ten (10) days thereafter execute such Contract and furnish a satisfactory performance bond. Upon failure to do so, he shall forfeit the deposit as liquidated damages and the acceptance of the bid will be contingent upon the fulfillment of this requirement by the Bidder. No interest shall be allowed upon any such certified check or cash. A bid bond in the amount of ten (10%) percent of the bid may be substituted for the certified check or cash.
15. Each bid shall include a complete copy of all guarantees and warranties provided.
16. Each bid must also be accompanied by a certificate from a bonding company licensed to do business in the State of New Jersey, guaranteeing that if the proposal of the Bidder is accepted it will furnish the bond set forth in Paragraph 14 of the Bid Conditions of these Specifications. The Contract and the acceptance of the bid will be contingent upon the fulfillment of this requirement.

**Board of Fire Commissioners
Freehold Township Fire District No.2**

**Bid Specification
Modular Breathing Air System**

Module I
Breathing Air Module

The entire breathing air module shall be integrated into a single, free-standing unit third party certified to meet cTUVus standards. The outer frame shall be of heavy-duty construction consisting of welded two inch square tube. To minimize radiant sound level the enclosure shall contain sound absorbing material.

The unit shall be designed to allow installation flush against a wall without inhibiting cooling air flow or maintenance access. The complete system shall not exceed the following dimensions. 86" long x 45 1/2" Deep x 70" High

The breathing air module shall be factory assembled and tested to assure quality and reliability. The system scope of supply shall be housed within the confines of the sheet metal enclosure to include: UL listed electrical panel, purification system, muffler reservoir and pressure bearing components as follows:

Compressor: The compressor block shall be four stage, air cooled, pressure oil lubricated of "V" configuration and rated for continuous duty at 6000 psig with a charging rate of 14.0 cfm. Compressor systems requiring auxiliary cooling fans or cool down cycles shall not be acceptable. The crankcase shall be of all cast iron construction, fully enclosed and support an iron crankshaft with oversized ball bearings on each end. Only two connecting rods shall be utilized. Each connecting rod shall be equipped with needle bearings on each end for long life. All pistons shall be of the captive design, manufactured of aluminum or steel and incorporate rings on all stages. Cylinders shall be of aluminum or cast iron construction with deep cooling fins to provide maximum heat dissipation. The compressor flywheel shall incorporate a high velocity fan to remove heat from the compressor. Cooling air flow from the fan shall be a minimum of 3000 cfm. Individually mounted intercoolers shall be utilized after each stage of compression and the aftercooler shall be designed to deliver final air at a temperature not to exceed 18 degrees F above ambient. Suction and delivery valves shall be designed in such a manner that they can be replaced without replacing the entire assembly. Valve inspection covers are to be provided on the first and second stage cylinders. Relief valves shall be utilized after each stage of compression. The pressure lubrication system shall include an oil pump to supply metered quantities of lubricant directly to the fourth stage piston through a regulator and replaceable spin-off type, full flow filter. The oil pump shall be directly driven *off* of the crankshaft. Belt driven pumps shall not be acceptable.

An oil level sight glass shall be provided for checking the crankcase oil level. An automatic drain system shall be supplied to periodically discharge accumulated condensation during operation and whenever the unit shuts down. The compressor manufacturer shall have an ISO 9001 quality management system standard approval on the design and manufacture process.

Compressor enclosure: The breathing air module shall be fully enclosed with solid steel panels, minimum thickness 14 gauge. All sections of the compressor enclosure shall be lined with sound absorbing material.

An air ducting system that allows against-the-wall installation by drawing cooling air from below the unit and directing it upwards and away from the operator and control panel shall be provided.

Insulated and gasketed maintenance access doors equipped with quarter turn latches shall be located on both sides and in front of the compressor system. These latches shall be designed to draw the access doors into the frame opening. Male-female hinges on side doors shall be used to allow their fast and easy removal without requiring hand tools.

The underside of the cabinet shall be grated to prevent debris from entering the compressor compartment.

Auto drain muffler/reservoir: An automatic drain muffler/reservoir system, manufactured of 14 gauge steel, shall be incorporated into the package. The reservoir shall be designed to capture discharged condensation without the need for piping to the outside and to reduce the discharge noise level. A conveniently located valve shall be supplied on the outside of the cabinet to periodically drain the condensate accumulated in the muffler/reservoir at atmospheric pressure.

Electric motor: National Electrical Manufacturer Association designed B, 2-pole, 10 horsepower, open drip proof motor shall be furnished for 1 phase, 60 hertz, 208 volts. The motor shall be suspended underneath the compressor baseplate. This baseplate shall incorporate rubber shock mounts, which isolates vibration from the rest of the cabinet. The V-belt drive shall be guarded to meet OSHA requirements.

Purification system: NO EXCEPTIONS: The purification system and replacement filter cartridges shall be manufactured by the same company as the compressor package. The system shall be a multi-chamber arrangement each constructed of 7075T6 aluminum alloy with a tensile strength of 83,000 psi and designed for 6000 psi working pressure with a 4 to 1 safety factor. The first chamber shall be a mechanical separator to eliminate oil and water. Subsequent chambers shall utilize replaceable filter cartridges constructed of high strength, non-corrosive FDA grade polycarbonate plastic.

Non-corrosive stainless steel springs and spin welded end caps shall be incorporated within the cartridge boundary. The cartridges shall be designed to remove water vapor, hydrocarbons, noxious gases, taste and odors.

Systems requiring depressurization to check filter condition shall not be acceptable. Carbon monoxide shall also be eliminated by catalytic oxidation. The purification system shall process 34,200 cf (with a 70° F inlet temperature) before cartridge replacement. The air delivered shall meet CGA grade D & E and NFPA 1989 (2008 edition) air quality standards.

Control system: The unit shall include all necessary controls to assure efficient operation and monitor compressor performance. All necessary electric motor controls shall also be included and rated for NEMA class 12. As a minimum, the control system shall include the following:

Air pressure switch to automatically start and stop the unit in order to maintain system pressure.

High air temperature shutdown.

Direct online IEC starter package with a 24 volt control voltage.

PLC controller.

Illuminated power "on" switch.

Independent "start" and "stop" push button switches.

Emergency stop button.

Low oil pressure switch.

Instrumentation: The unit shall include all necessary gauges and lights necessary to indicate all normal and shutdown conditions. All gauges, lights and indicators shall be mounted on a steel control panel centrally located on the front of the unit and also within the cabinet.

As a minimum, the instrumentation panels shall include the following:

Compressor interstage and final air pressure gauges.

Hour meter.

High air pressure shutdown light.

High air temperature shutdown light.

Low oil pressure light

Carbon monoxide monitoring system:

The CO monitor shall be mounted on the compressor operations panel.

- Shall be piped into the air flow downstream of the purification system
- Shall be tamper-resistant requiring a keystroke sequence to access monitor controls.
- Must have a warning light, audible alarm & shutdown for high concentrations of CO.
- Shall reliably detect CO concentrations from 0 to 10 ppm. A digital readout shall continuously indicate the amount of CO in the compressed breathing air.
- Must be capable of adjustment at any point on the monitor between 5 to 10 ppm for shutdown.
- The unit shall automatically go through the calibration process every 90 days.
- Calibration kit with 20 ppm CO is to be provided. Additionally, a cylinder with 0 ppm of CO shall be provided to conveniently and accurately calibrate the monitor.
- The system shall come complete with solenoids to control system calibration.

There shall be no exceptions to the Carbon monoxide monitoring system requirement

Carbon Monoxide and Moisture Air Monitoring System:

The Carbon Monoxide and Moisture Monitor is a dual monitor for both CO & moisture. It will include our standard CO monitor (see above) and the Moisture monitor with cartridge detection below:

Moisture monitor (Cartridge monitoring system):

The cartridge monitoring system shall be mounted on the compressor operations panel. The system is designed to monitor the quality of air being discharged after the compressor's purification systems. The system continuously evaluates the moisture content of the purified air and also confirms the presence of the cartridge filter in the purification chamber. The complete system consists of the following:

- A. Moisture monitor probe
- B. photo cell cartridge detection sensor
- C. Microprocessor control unit
- D. Cartridge "ok" green light
- E. Cartridge life warning light
- F. Cartridge expired red warning and compressor shutdown
- G. Install filter text message

The cartridge monitoring system operating procedure is as follows:

- Cartridge detection: In the event that a cartridge filter is not installed in the purification chamber, a text message will be displayed and the compressor will not start. This same condition will also occur in the event that any electrical connections in the system are faulty or otherwise not made. Note that mechanical devices, which could be subjected to corrosion, are not utilized.
- Moisture monitor: Upon start-up of the compressor, the moisture monitor probe (a) will continuously monitor the moisture content of the air stream at pressure. A timing device within the microprocessor control unit (a) is activated upon start-up to allow the moisture sensor to stabilize. This time cycle is operative for 8 to 15 minutes. During this cycle, the cartridge "ok" green light (d) will be flashing. Once the stabilization period is complete, the applicable status light for the moisture level will illuminate.
- Status light conditions:
Cartridge "OK" green light (d): This light will remain illuminated as long as the moisture level in the air stream is within pre-set limits. This light flashes during the initial stabilization cycle.

Cartridge life warning yellow light (e): This light will illuminate when the moisture level in the air stream approaches the pre-set limit. During this time, approximately one hour duration, the air quality is within acceptable levels.

Cartridge expired red warning light (f): This light will illuminate when the moisture level in the air stream exceeds the pre-set limit. The compressor unit shuts down under this condition.

- Adjustable timed cycles and moisture limits: All timed cycles and moisture limits which are not specified will be factory pre-set as follows:
 - 15 minutes for initial moisture probe stabilization.
 - The air stream moisture limit will be preset at -65 degrees F atmospheric dewpoint (24 ppm water vapor content) in accordance with recommendations by NFPA 1500. Other dewpoint limits can be set provided that the following are known:
 - Operating pressure
 - Mean ambient temperature

Module II

Air Storage System

The breathing air storage system shall include the number and type of cylinders specified below mounted on a self-standing vertical inline rack. The system shall include all fittings, interconnecting piping, valves and hardware necessary to operate as a cascade system and meet all current ASME code requirements.

ASME system -The breathing air storage system shall consist of four (4) ASME storage cylinders each with a minimum capacity of 481 cubic feet of air at 6000 psig.

Module III

Enclosed Containment Fill Station

The fill station shall be designed for stationary applications. The unit shall be totally enclosed, constructed of 3/16 inch plate steel and designed to contain an SCBA cylinder and metal fragments in the event of rupture during the filling process. The fill station shall be designed to vent rapidly expanding air away from the operator.

The fill station shall be ergonomically designed to allow the filling of two (2) SCBA cylinders either separately or simultaneously. The maximum length of the SCBA cylinders with the valve and fill adapter shall be 29 inches. Access to the enclosure for loading the SCBA cylinder shall be via a manually operated, tilt out door. The fill station door shall be provided with assisting devices to assure smooth operation and reduce operator fatigue. The fill station door shall be constructed of 3/16 inch plate steel. The SCBA cradle shall contain two (2) fill positions. Each fill position shall be lined with material to protect each SCBA cylinder from abrasion. The carriage shall be mounted on a pivoting system that will lower the cylinders to a near horizontal position and allow full access to all SCBA bottles, fill hoses and valve assemblies with minimal operator fatigue.

To ensure operator protection, a fully automatic safety interlock that prevents SCBA cylinder filling until the door is completely closed shall be provided. Two (2) fill hoses with SCBA adapters shall be provided and located within the enclosure. The fill hoses shall be protected by a safety relief valve set at 4700 psi.

The fill station shall be designed to fill the SCBA cylinders within the fill station boundary. The control panel shall include a 0 to 6000 psi adjustable regulator, regulated outlet pressure gauge, one (1) SCBA fill valve and bottle pressure gauge.

A painted steel fill panel affixed with a silk screen overlay shall be mounted on the front of the unit. The overlay shall contain an embedded airflow schematic. The fill station shall be designed to cascade the air storage system. The control panel shall include pressure gauges and flow control valves for four (4) storage banks. Piping shall be arranged to permit each bank to be filled or drawn down independently of other banks. This allows the operator to draw air from one bank to fill SCBA's, while simultaneously refilling another bank from the compressor. A bypass valve shall be supplied to permit direct use of the compressor, bypassing the storage system. A regulated auxiliary fill outlet, complete with a valve and high pressure coupler with mate shall be standard.

The fill station shall be built and tested to conform to NFPA 1901 and the recommendations in NFPA 1500.

Integration kit: The breathing air system shall be shipped in three separate modules, designed to form one single-unit at the installation site. This design is required to minimize the chance for freight damage (smaller, more manageable separate crates), allow for installation in rooms that have restrictive door openings that will not allow the use of a forklift (separate modules can be moved into place with a pallet jack), allow for more convenient future updates via replacement bolt-on modules and ultimately supply the end user with a single-piece system that is aesthetically pleasing with no exposed interconnecting piping. The final installed product shall not exceed the following dimensions: 90"(W) x 45"(D) x 70"(H). A center console shall be included with the integration kit. The center console shall be mounted on casters making it removable when compressor maintenance is required. The center console shall include a compartment for storing the operations manual and spare parts. The center console also shall include a 100 ft hose reel (spring rewind) with rollers and ball stop used for filling fire department mobile cascade systems. The Bidder shall make sure the end of the air reel fitting is compatible and will connect to the departments rescue truck cascade system for re-filling.

Removal and disposal of old system: The bidder must remove and dispose of the old breathing air cascade system located at 191 Dutch Lane Road fire station, Freehold NJ. The successful bidder shall notify the district with-in (2) two weeks of installation of the new unit so electrical power can be disconnected to the old unit.

Warranty

At a minimum, the unit shall have a 24 month unlimited hour warranty with a (5) five year extended warranty.

There shall be a (5) five year / 1000 hour parts warranty on compressor block and purification system.

Warranty must be from manufacturer and not dealer. The bid package must include documentation from manufacturer detailing warranty coverage including any extended warranty. There shall be NO EXCEPTIONS to this requirement; failure to comply with this requirement can be cause for rejection of bid.

TRAINING

The successful bidder shall provide a factory-trained technician to provide the following training:

The successful bidder shall provide a minimum 4 hour structured training course for the personnel assigned to operate the breathing air system, covering nomenclature of components, proper operation of the breathing air system, daily operational maintenance checks, and other information necessary for personnel to properly operate and maintain the breathing air system.

It is intended that this training be organized in such a manner that the fire personnel receive full benefit of the aforementioned structured training. The operator training shall be conducted within one week after the breathing air system is fully accepted and readied for service by the "Purchaser" or at a time mutually agreed upon by the "Purchaser" and "Supplier".

PROPOSAL

TO THE BOARD OF FIRE COMMISSIONERS, DISTRICT NO. 2

TOWNSHIP OF FREEHOLD, NEW JERSEY

The undersigned hereby declares that he has carefully examined the advertisement and Bid documents and that he will contract to furnish and deliver such items as specified and delineated at the price per unit measure for each scheduled item stated.

It is understood that the price stated by the undersigned for the various items will control in the awarding of the Contract.

The undersigned is an individual/a partnership/a corporation under the Laws of the State of _____, having principal offices at _____

PRICE: _____

DELIVERY DATE: _____

SIGNED: _____

Print Name: _____

Address: _____

**DISCLOSURE STATEMENT
(P.L. 1977, CHAPTER 33)**

The following statement is a list of all stockholders in this corporation or partners in this partnership with 10% or greater interest therein, as the case may be.

BID ITEM: _____

NAME OF CORPORATION, LIMITED LIABILITY COMPANY
OR
PARTNERSHIP: _____

DATE OF BID: _____

Address	Shares of Stock or % of Interest

(Statement Supplement Permitted if Needed)