

# Inuvik Fire Department



## Tender Document

For: **Tender for Self-Contained Breathing Apparatus Equipment**  
**# FD-12/01**

Sealed Tenders will be received until 12:00 pm, Friday, March 9, 2012  
at the Town of Inuvik, NT Municipal Office, 2 Firth Street, Inuvik, NT

Tender opening at 1:30 pm, Friday, March 9, 2012 in Council Chambers

**TENDERS ARE TO BE MAILED TO**  
Director of Protective Services/Fire Chief  
Town of Inuvik  
2 Firth Street, PO Box 1160  
Inuvik, NT  
X0E 0T0

### **Notice to Bidders:**

- Late bids will not be accepted, but returned unopened to the respective bidder.
- Bids not signed are subject to rejection.
- Bids must be typed or in ink.
- Erasers or noticeable changes must be initialled by the bidder.
- Bidder must not include restrictive or conditional statements to alter the format or intent of the tender.
- The lowest or any tender not necessarily accepted.
- Tender opening meeting is scheduled for 1:30 pm, Monday, March 5, 2012 after the 12:00 pm closing time and date in the Council Chambers, Town of Inuvik, 2 Firth Street, Inuvik, NT X0E 0T0. All interested bidders are invited to attend.
- Tenders must be returned on the forms provided and be in a sealed envelope clearly marked as to the contents prior to the closing date and time.

## **Section 1 – General Conditions**

To supply and deliver Self Contained Breathing Apparatus and associated equipment to the Town of Inuvik Fire Department in accordance with all terms, conditions, and specifications of the tender.

All equipment must meet the requirements listed in NFPA 1981-2007 and NFPA 1982-2007.

All equipment shall be delivered F.O.B. Town of Inuvik, 2 Firth Street, PO Box 1160, Inuvik, Northwest Territories, X0E 0T0.

Delivery of goods must be indicated on the Tender request where specified.

### **Negotiations:**

The Town of Inuvik Fire Department reserves the right to enter into negotiations with the selected proponent. If the Town and the selected proponent cannot negotiate a successful contract the Town may terminate the negotiations and begin negotiations with the next selected proponent. The process will continue until a contract has been executed or all proponents have been rejected. No proponent shall have any rights against the Town of Inuvik arising from such negotiations.

Tender documents shall be submitted to the following individual, on or before 12:00 pm (local time) on Friday, March 9, 2012.

Director of Protective Services/Fire Chief  
Town of Inuvik  
2 Firth Street  
PO Box 1160  
Inuvik, NT  
X0E 0T0

All inquiries (with exception of site visits) and other communication with the Town of Inuvik about this tender throughout the bid period are to be directed ONLY to Jim Sawkins, Director of Protective Services/Fire Chief, using the fax cover sheet provided in Section 3 of this document. Bidders are requested to make all enquiries prior to the last Friday preceding the closing date.

Noncompliance with this condition during the bid period may (for that reason alone) result in disqualification of the bidder's offer.

Any inquiries with respect to this tender must be submitted, in writing, to the aforementioned individual; the Town of Inuvik will circulate to all bidders who knowingly received this Tender any information with respect to significant inquiries received and the replies to such inquiries to the extent that such inquiries are applicable to all bidders.

All prices are to include the current Federal Goods and Services Tax as a separate line item.

Tenders shall be open for acceptance for a period of ninety (90) days after the closing date. After this time elapses, the tender may only be accepted with the consent of the successful bidder.

**Facsimile or Electronic Bids will not be accepted.**

# Section 2 - Requirements

## List of Required Equipment

### Packs and Cylinders

- 23 (twenty-three) SCBA complete with Air Mask Pressure – 4500 psi (and 4500 psi, 45 minute Carbon Fibre cylinder and Integrated PASS alarm.
- 35 (thirty-five) spare 4500 psi 45 minute Carbon Fibre cylinders
- 22 (twenty-two) spare air masks pressure – 4500 psi complete with external HUD

### Accessories

- 50 (fifty) fleece mask bags
- 15 (fifteen) spectacle kits for face masks

### RIT Kit (to include the following)

- 1 (one) 4500 psi - sixty minute carbon fibre cylinder
- 1 (one) regulator compatible with the SCBA provided
- 1 (one) hose and Pouch – quick fill 3 foot
- 1 (one) medium air mask pressure – 4500 psi
- 1 (one) RIT bag

### Testing Equipment

- Fit Testing Equipment to include a Port-A-Count machine (or equivalent) with face pieces, adapters, and any other associated fittings/equipment.
- Bench Testing Equipment to include a Posi-Chek machine (or equivalent)

### Additional Requirements

- Training shall be provided for the Fit Testing and Bench Testing Equipment.
- A minimum of four (4) Inuvik Firefighters shall be trained to the SCBA technician level so that the SCBA units can be repaired in Inuvik without sending them to a maintenance facility. This requirement does not include maintenance that is beyond the scope and ability of a SCBA Technician.

## **Specifications**

The apparatus shall be approved by the National Institute for Occupational Safety and Health (NIOSH), under 42 CFR, Part 84 for chemical, biological, radiological, and nuclear protection (CBRN) with a 30, 45, or 60-minute-rated service life and compliant with all requirements of the National Fire Protection Association's 2007 Edition of NFPA-1981 Standard on Open-Circuit Self-Contained Breathing Apparatus. Units equipped with an integrated PASS must meet the requirements of NFPA 1982, 2007 edition. Units equipped with a Rescue Belt, shall also comply with the NFPA 1983 Standard on Fire Service Life Safety Rope and System Components, 2006 Edition; Type: Escape. Units equipped with the Accountability System must meet the minimum requirements for FCC parts 15 & part 90.

## **Specific Requirements:**

### **1. Facepiece designed as follows (or equivalent):**

- The facepiece shall be available in three sizes in Hycar rubber.
- The lens shall be field-replaceable and of a non-shatter type and shall fit all three sizes of the facepiece
- The facepiece shall have an inhalation check valve and exhalation valve to prevent exhaled air from entering and contaminating the mask-mounted regulator.
- The facepiece head harness shall be a flame and heat-resistant Kevlar assembly featuring a suspension with five-points of attachment and four points of adjustment.
- The facepiece shall have a speaking diaphragm with aluminum-coated membrane suitably protected, and located centrally on the facepiece for optimal voice projection.
- Two sizes of removable nose cups. The nose cup shall contain a voice collector system which enhances unamplified speech transmission.
- An optional flame and heat-resistant PBI neck strap shall be offered, to carry the facepiece in a ready position for quick donning.
- The facepiece shall be HUD ready, incorporating a mounting bracket for a HUD Receiver.

### **2. HUD System designed as follows (or equivalent)**

- The HUD System, Heads-Up-Display, shall be wireless to eliminate snag hazards and provide modularity for easy maintenance. It shall be comprised of two primary components 1) Control Module and 2) HUD Receiver.
- The HUD shall provide the user with the remaining volume of air in their cylinder in 25% increments through a series of 4 colored LEDs.
- The light logic used to convey remaining cylinder volume shall be as follows:

Four Green Lights	-	76 to 100% Cylinder Volume
Three Green Lights	-	51 to 75% Cylinder Volume
Two Flashing Amber Lights	-	26 to 50% Cylinder Volume
Flashing Red Light	-	0 to 25% Cylinder Volume

- The HUD System shall allow the user to select between two modes of operation, a 1) Continuous lights on mode or 2) an Intermittent lights on mode for power conservation.
- The HUD shall incorporate a photoelectric sensor that senses ambient light conditions automatically adjusting the display to one of 16 pre-programmed light intensities.
- The HUD shall provide the user and their partner (by means of a buddy light) with a visual alarm indication of a low air cylinder.
- The HUD shall indicate to the user of PASS pre-alarms with a blinking orange light seen inside the facepiece.
- The Control Module shall incorporate a refresh button that permits a user to update their display or change the receiver's mode of operation.
- The receiver shall use three AAA alkaline batteries. The batteries shall be contained in removable cartridge for easy replacement. The radial-sealed battery compartment shall incorporate an o-ring seal.
- The HUD System shall be immune to radio frequency interference (RFI), and must function properly in the close proximity of fire service hand-held radios.
- The HUD shall incorporate a sonically welded seal to provide the highest level of protection against water ingress.
- The HUD shall provide the user with a low-battery indicator.
- The HUD shall be field removable and replaceable without the use of tools.

### **3. Rapid Intervention Crew (RIC) System**

- The RIC connection shall use the Quick Fill® URC (universal rescue connection)
- The system shall be capable of:
  - Quickly refilling (less than one minute) an SCBA cylinder from a mobile compressor, cascade system or RIT Pack.
  - Transfilling between two SCBA wearers, providing an emergency breathing system (EBS), while maintaining NIOSH approvals.
  - Extend the wearer's air supply over longer duration when a remote cascade system or other compressed gas source is located in a remote area.
  - Transfill and refill in immediately dangerous to life or health (IDLH) atmospheres.

### **4. First-Stage Regulator:**

- Reduces the cylinder pressure to an outlet pressure not to exceed 100 psi. Regulator outlet pressure must be adjustable.
- There shall not be more than 14 replacement parts on the regulator.
- Regulator redundancy shall be achieved by two inter-nested long-life springs.
- The regulator body shall be constructed of a high strength heat treated aluminum alloy, and plated with a Teflon hard coat anodize to minimize corrosion and wear of internal components.
- The regulator must not require any special tools for disassembly.
- The pressure reducer shall incorporate a down stream flow to ensure fail-safe in an open position.

- The regulator shall be mounted on a slide bracket to facilitate easy cylinder attachment and top prevent binding of high-pressure hose.

## **5. Mask-Mounted Regulator:**

The mask-mounted pressure-demand regulator shall consist of the following:

- An over-the-shoulder air-supply hose routed through a shoulder strap tunnel to the first-stage regulator. For durability, the air-supply hose must be made of neoprene from the second stage regulator attachment to an inline swivel or quick-connect.
- As an option, the detachable regulator must have a push-to-connect attachment to the facepiece. This option of the regulator shall feature a non-indexing design, capable of mounting to the facepiece in any orientation. In this configuration, the regulator must rotate freely when connected to the facepiece, maximizing the user's freedom of head movement.
- As an option, the detachable regulator must have a slide-to-connect attachment to the facepiece, with an audible click. The regulator's forked upper attachment slides down a track that is moulded into the inhalation assembly cover of the facepiece. This provides an ambient air stand-by mode for the regulator, allowing the user to go on air quickly with a simple push of the regulator into the facepiece. In this configuration, the regulator must be restricted from rotation after attachment to maintain a consistent location of the regulator controls with respect to the user.
- The second stage regulator shall not obstruct or reduce the field of vision of the wearer when installed on the facepiece.
- When doffing the regulator, the disengagement of the regulator from the facepiece must simultaneously stop the flow of air.
- The second stage regulator must not require any tools for disassembly. Number of parts in the second stage regulator is not to exceed a count of 28 parts.
- The second stage regulator must be equipped with Positive Protection Tetraplex Shield membrane that covers the diaphragm, preventing against the permeation of CBRN agents.
- The second stage regulator must be labeled with a CBRN notation.
- The regulator must be equipped with a variable flow by-pass.

## **6. Primary Low Pressure Warning Device:**

- An audible alarm shall be an air-actuated, self-cocking, continuous ringing audible warning bell automatically operating when air pressure in the supply cylinder reaches approximately 25% of the rated service life.

## **7. Cylinders:**

- The cylinder shall be constructed of a deep-drawn, seamless aluminum liner that is fully wound over its entire surface (except for the thick neck area) with high-strength carbon fibre filaments impregnated with epoxy resin.

- The cylinder shall have a minimum 2-inch wide luminescent band to enhance visibility of the wearer.
- The cylinder shall contain a closing valve which shall incorporate a pressure gauge to indicate the pressure in the cylinder at all times. The pressure gauge face shall be luminescent. The handwheel shall be at a 90° angle from the longitudinal plane of the cylinder.
- The valve shall incorporate a flow control insert to limit the airflow over the first half-rotation of the handwheel, minimizing propulsion thrust in the event the cylinder is mishandled.
- Cylinders must be available in 4500 psi operating pressure.
- Cylinders with 4500 psi operating pressure must be available in 30, 45 and 60 minute durations.

## **8. Carrier & Harness:**

- An adjustable double-pull Kevlar waist belt.
- A metal push-button seat belt-type buckle.
- Two padded Nomex shoulder straps, each having a Kevlar strap reinforcement that provides retention if the Nomex fibers are weakened. The shoulder straps shall have retroreflective markings and shall have anti-rotation-style buckles for ease of adjustment.
- The friction buckles of the shoulder straps and waist strap shall be constructed of forged stainless steel for maximum strength and resistance to wear.
- An optional mid-connect Kevlar-blend chest strap with snap-type fastener that properly positions the shoulder straps allowing full arm movement.
- An optional lumbar pad shall also be available with a swivel feature to maximize the range of motion and comfort of the user.
- The backplate shall be constructed of a glass reinforced composite material that conforms to the user's back and provides spine relief for wearers with protruding vertebrae.
- The backplate shall be equipped with large side handles for pulling and dragging a firefighter to safety. Each handle shall be capable of holding a 400 lb load in the vertical and horizontal direction, with a combined load of 800 lbs.
- The backplate shall be equipped with a centrally located carabiner attachment point for the purpose of dragging a downed firefighter. The attachment point shall be capable of holding a 1000lb load.
- The backplate shall be equipped with a first stage regulator slide for ease of cylinder connection.
- An adjustable, stainless steel cylinder band having a quick-opening device at one end to properly retain various size cylinders. The cylinder band must retain its open shape for easy cylinder change-out.
- All harness components shall be affixed with tri-bar slides for easy field replacement.
- The left shoulder strap shall be equipped with a retaining clip to stow the facepiece while not in use.
- The belt assembly shall be equipped with a regulator retainer for safe storage of the Firehawk regulator while not in use.
- The shoulder straps shall incorporate high visibility reflective panels.

## 9. Weight

- The weight of a basic Air Mask (less cylinder) shall not exceed 13 lbs, 4 oz.
- The weight of the cylinder and valve assemblies (empty) shall not exceed:

Cylinder Type	Weight
Carbon-Wrapped L30	8 lbs, 0 oz.
Carbon-Wrapped H30	7 lbs, 4 oz.
Carbon-Wrapped H45	9 lbs, 7 oz.
Carbon-Wrapped H45LP	9 lbs, 10 oz.
Carbon-Wrapped H60	11 lbs, 12 oz.

## 10. Battery Life

- The expected service life of the batteries with frequent use on the Control and Power Modules shall be greater than one year.
- The expected service life of the batteries with frequent use on the M7 HUD shall be greater than one year.

**NOTE: Where and when the aforementioned descriptions appear to favour a particular brand and model of SCBA and/or associated equipment, descriptions are meant to be general in nature and all manufacturers may submit equivalent equipment based on the NFPA 1981-2007 and 1982-2007 standards.**



# Section 4 – Tender Form

## TENDER FD-12/01

In accordance with Section 2 (List of Required Equipment) of the Tender, the Bidder hereby offers to supply to the Town of Inuvik Fire Department:

### Packs and Cylinders

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### Accessories

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### Additional Requirements

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**Net Price:** \_\_\_\_\_

**5% GST:** \_\_\_\_\_

**TOTAL PRICE:** \_\_\_\_\_

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**Date**

**Company Name**

**Signature of Bidder**