

Addendum 1:

Q: The bid package for the FIRE GEAR & EQUIPMENT Bid, due 11/17/15, mentions that a "cover letter" (point #2 under MATERIALS TO INCLUDE) should be returned with the bid documents. Is this a document that should be in the bid package? Or this is a document that we as the bidder should create? Could you provide more details on what this "cover letter" needs to include?

A: The cover letter is created by the bidder. It simply needs to state an acknowledgment that you are bidding and the contact information. It helps create a quick glance of each company.



## City of Morrow Request for Bids

### Fire Gear and Equipment

**Bid Deadline November 17, 2015 at 2pm**

*Be advised that any conversations (in reference to this bid) between vendors and any City employee or City official outside of the contact identified in this bid during the entire competitive bidding process is strictly prohibited. Such actions will result in removal of the vendor from the bidder's list and rejection of the vendor's bid. The ONLY official position of the City is that position which is stated in writing in this document. No other means of communication, whether written or oral, shall be construed as a formal or official response statement.*

**Purpose:** The City of Morrow is seeking bids for various fire gear and equipment (outlined in Exhibit A and Exhibit B of this RFB).

The City of Morrow will hereinafter be referred to as the "City." Respondents to the RFB shall be referred to as "Vendors." The Vendor to whom the contract is awarded shall be referred to as the "Contractor."

**Contract:** This Solicitation or the response shall not constitute a contract with the City. No contract is binding or official until approved by Mayor and Council. The selected Vendor shall be required to sign a Contract which the City determines to be fair, competitive and reasonable.

#### **Minimum Qualifications:**

To be eligible to respond to this Solicitation, the Vendor must demonstrate that it can supply those items listed in Exhibits A and B in full or in part or can communicate viable alternatives to those pieces of gear specified in the Exhibits.

#### **Communication:**

It is the responsibility of the Vendor to inquire about any requirement of this RFB that is not understood. Responses to inquiries, if they change or clarify the RFB in a substantial manner, will be posted on the city's website. It is the responsibility of the vendor to check the website for addenda regularly and further communicate any additional questions needed for clarification. The City will not be bound by oral responses to inquiries or written responses other than addenda. Inquiries about the RFB must be made to:

**City of Morrow Request for Bids  
Fire Gear and Equipment  
Bid Deadline November 17, 2015 at 2pm**

Captain Jeff Moss  
jmoss@cityofmorrow.com

**The deadline for all inquiries is November 11, 2015 at noon.**

**Evaluation:** From the bids submitted, the City of Morrow will select a vendor based on the best responses that are fair, competitive, and reasonable.

All bid evaluations will be lead by the City of Morrow Fire Department and presented to the City Manager and Mayor and Council in a timely manner.

**Award:**

Vendors may submit bids that include all of the gear and equipment listed in Exhibits A and B or they may choose to submit for only part of the gear and equipment. Further, vendors may choose to approach the bids by submitting bids for Package A (Lump Sum) and or Package B (Individual Item). The Bid Price Sheet is Exhibit C. Morrow reserves the right to select one or multiple vendors for Package A and or Package B.

All vendors will be selected based on what is fair, competitive, and reasonable with no limit to the number of vendors selected.

**Submission:** A **SIGNED** original and two (2) copies must be received at Morrow City Hall, 1500 Morrow Road, Morrow, GA 30260. **Deadline for submittals is November 17, 2015 at 2pm (Sealed Bids will be opened publically at 2:30 November 17, 2015 at Morrow City Hall (address listed above)).** The bid must be date/time stamped by Morrow City Hall in order to be considered. Vendors are strongly encouraged to submit bids in advance of the due date/time to avoid the possibility of missing the deadline due to unforeseen circumstances. Vendors assume the risk of the methods of dispatch chosen. The City assumes no responsibility for delays caused by any package or mail delivery service or unforeseen condition. A postmark on or before the due date **WILL NOT** be a substitute for receipt of bid. Bid packages must come as a whole set of information, do not submit parts of the bid on different days through different methods. Bids received after the due date and time will be not be returned. Additional time will not be granted to any single bidder, however, additional time may be granted to all Vendors when the City determines that circumstances require it. **FAXED OR E-MAIL BIDS WILL NOT BE ACCEPTED.**

**Envelope:** The signed bid should be submitted in an envelope or package, sealed and identified **ON THE OUTSIDE OF THE ENVELOPE** with contact name, contact email, company name and due date.

**Materials to Include:**

1. Name of the Vendor
2. Contact Name and Information
3. Cover Letter
4. Completed Exhibits A, B, and C
5. E Verify Affidavit or Statement
6. Any other relevant information

**City of Morrow Request for Bids  
Fire Gear and Equipment  
Bid Deadline November 17, 2015 at 2pm**

<b>Timeline:</b>	<b>Bid Opening:</b>	<b>October 31, 2015</b>
	<b>Deadline for Questions:</b>	<b>November 11, 2015 noon</b>
	<b>Deadline for addenda:</b>	<b>November 13, 2015 close of business</b>
	<b>Bid Deadline:</b>	<b>November 17, 2015 2pm</b>

**Selection:** All of the bids are due on or before **November 17, 2015, 2pm**. We reserve the right to ask for clarification or additional information contained so that a fair and comprehensive evaluation of all bids can be conducted. If three (3) or fewer bids are received, the City reserves the right to terminate this process and begin again or to choose from the submissions.

The final vendor selection will be posted on the website.

**Debarment:** Submission of a signed bid in response to this solicitation is certification that your firm (or any subcontractor) is not currently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal department or agency. Submission is also agreement that the City will be notified of any change in this status.

**E-Verify:** All Vendors must submit an affidavit to certify that they participate in the Federal Employment Eligibility Verification. Participation in the E-Verify program must commence before the bid deadline, and E-Verify affidavit is included in the package.

## Exhibit A SCBA Specifications

### General Self-Contained Breathing Apparatus Requirements

The purpose of this bid specification is to establish the minimum requirements for an open-circuit self-contained breathing apparatus (SCBA). The SCBA shall consist of the following major sub-assemblies: (1) full facepiece assembly; (2) a removable, facepiece-mounted, positive pressure breathing regulator with air-saver switch; (3) an automatic dual path redundant pressure reducing regulator; (4) end-of-service time indicators; (5) a harness and backframe assembly for supporting the equipment on the body of the wearer; (6) a shoulder strap mounted, remote gauge indicating cylinder pressure; (7) a rapid intervention crew/universal air connection (RIC/UAC); and (8) cylinder and valve assembly for storing breathing air under pressure.

The successful bidder agrees to provide, at their own expense, a factory trained instructor for such time as the respirator user shall require complete instruction in the operation and maintenance of the respirator. Any exceptions to these specifications must be detailed in a separate attachment. Failure to do so will automatically disqualify the bidder.

The successful bidder must be a sales distributor, authorized by the manufacturer, to sell the equipment specified herein. A signed document from the manufacture confirming this must be included with the bid.

The SCBA shall maintain all NIOSH standards with any of the following types of cylinders listed as provided by the SCBA manufacturer.

	Product:		
<i>Approvals</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The SCBA shall be approved to NIOSH 42 CFR, Part 84 for chemical, biological, radiological and nuclear protection (CBRN).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall be compliant to the NFPA 1981, 2013 Edition, Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall be compliant to the NFPA 1982, 2013 Edition (if including optional PASS Device), Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>If the SCBA is to include an optional integrated self-rescue device, the device shall be compliant to the NFPA 1983, 2012 Edition, Standard on Life Safety Rope and Equipment for Emergency Services.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>All electronic components shall be approved for Intrinsic Safety under the 6<sup>th</sup> edition of UL 913 Class I, Groups C, D, E, F, and G, Hazardous locations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Required Components</i>	Product:		
<i>Facepiece</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The facepiece shall have a large diameter inlet serving as the female half of a quarter (1/4) turn coupling which mates with the positive pressure breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall be approved for use with multiple respiratory applications to enable the same user to switch from one application to another without the use of tools and without doffing the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The full facepiece assembly shall fit persons of varying facial shapes and sizes with minimal visual interference.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The full facepiece assembly shall be available in three sizes marked "S" for Small, "M" for medium, and "L" for Large.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece sizes shall be easily identifiable through a color-coding scheme.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece assembly, including head harness, shall be latex free.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece series shall have a face seal that is secured to the lens by a U-shaped channel frame that is retained to the lens using two fasteners.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The face seal shall be a reverse reflex design for enhanced fit and comfort.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall contain inhalation valves that are readily visible to enable quick visual inspection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall be a single, replaceable, modified cone configuration constructed of a non-shatter type polycarbonate material.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>In accordance with NIOSH 42 CFR part 84, the facepiece meets penetration and impact requirements, including compliance with ANSI Z87.1 – 2010.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall have a coating to resist abrasion and chemical attack and meet the requirements of NFPA-1981, for lens abrasion.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The lens shall have an internal anti-fog coating to reduce fogging of the lens.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Multi-directional voicemitters shall be mounted on both sides of the facepiece and ducted directly to an integral silicone nose cup to enhance voice transmission.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece assembly shall be able to incorporate multiple Scott electronic communications options (amplification, radio interface, wireless, etc) without affecting NIOSH approvals or NFPA/CBRN approvals where applicable.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The facepiece shall enable the installation of communications bracket on either the right or left side.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The head harness shall be a five-point suspension made in the fashion of a net hood to minimize interference between securing of the facepiece and the wearing of head protection, and be constructed of a para-aramid material for fire, first responder and CBRN applications.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Mask-Mounted Regulator</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The facepiece-mounted positive pressure-breathing regulator shall supply and maintain air to the facepiece to satisfy the needs of the user at a pressure greater than atmospheric by no more than 1.5 inches of water pressure static.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall maintain positive pressure during flows of up to 500 standard liters per minute.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The regulator shall also meet or exceed a dynamic flow requirement of remaining positive while supplying a minute volume of 160 liters.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The breathing regulator shall have attached a low pressure hose which shall be threaded through the left shoulder strap to couple to the pressure reducing regulator mounted on the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>As an option, the regulator shall be available with a quick connect coupling in line for use with the optional outlet manifold and accessory hose to allow the breathing regulator to be disconnected from the unit and reconnected to the auxiliary hose of a second unit in the event rescue is required.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The quick connect coupling shall be easily connected and disconnected by trained individuals with a gloved hand and/or in low light conditions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The quick connect coupling shall not allow the air hose to be connected without the HUD connection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The coupling shall also be guarded against inadvertent disconnect during use of the equipment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The low-pressure hose shall be equipped with a swivel attachment at the facepiece mounted regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The regulator shall connect to the facepiece by way of a quarter (1/4) turn coupling.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The user shall hear an audible sound when the regulator is attached correctly to the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The regulator shall be equipped with a doughnut-shaped gasket which provides a seal against the mating surface of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The regulator cover shall be fabricated of a flame resistant, high impact plastic.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall have a demand valve to deliver air to the user, activated by a diaphragm responsive to respiration.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The demand valve shall use an extended temperature range dynamic O-ring seal composed of a fluorosilicone elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The diaphragm shall include the system exhalation valve and shall be constructed from a high strength butyl elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A purge valve shall be situated at the inlet of the breathing regulator and shall be capable of delivering airflow of between 125 and 175 standard liters per minute.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The breathing regulator shall be arranged to direct the incoming air over the inner surface of the facepiece for defogging purposes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The components of the breathing regulator shall be constructed of materials that are not vulnerable to corrosion.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The flame resistant cover shall contain an air saver switch and pressure demand bias mechanism.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall reactivate and supply air only in the positive pressure mode when the wearer affects a face seal and inhales.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>This device shall not affect the breathing flow through the system while in operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Pressure Reducer</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall be mounted on the backframe and be coupled to the cylinder valve through a short length of internally armored high pressure hose with a hand coupling for engagement and sealing within the cylinder valve outlet.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>In lieu of a manual by-pass, the pressure-reducing regulator shall include a back-up pressure-reducing valve connected in parallel with the primary pressure reducing valve and an automatic transfer valve for redundant control.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The back-up pressure reducing valve shall also be the means of activating the low-pressure alarm devices in the facepiece-mounted breathing regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warning shall denote a switch from the primary reducing valve to the back-up reducing valve whether from a malfunction of the primary reducing valve or from low cylinder supply pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A press-to-test valve shall be included to allow bench testing of the back-up reducing valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure-reducing regulator shall have extended temperature range dynamic O-ring seals composed of fluorosilicone elastomer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pressure reducing regulator shall have incorporated a reseatable over-pressurization relief valve which shall prevent the attached low pressure hose and facepiece-mounted breathing regulator from being subjected to high pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>End-of-Service Time Indicator (EOSTI)</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The SCBA shall have two end-of-service time indicators (EOSTI). A tactile alarm and a Heads-Up Display (HUD).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The primary EOSTI shall be the integral low-pressure alarm device that shall combine an audible alarm with simultaneous vibration of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The primary EOSTI shall be located in the Facepiece-Mounted Positive Pressure Regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This alarm device shall indicate either low cylinder pressure (33% +5%, -0%) or primary first stage regulator failure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The HUD shall serve as the secondary EOSTI indicator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The HUD shall be powered by the SCBA's single power supply.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall be mounted in the user's field of vision on the Facepiece-Mounted Positive Pressure Regulator.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall display cylinder pressure in increments of 100%, 75%, 50% and 33%.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The display shall not have a numerical representation of bottle pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>At full bottle pressure, two green Light Emitting Diodes (LED) shall be illuminated.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At three-quarter bottle pressure, one green LED shall be illuminated.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At one-half bottle pressure, one "yellow" LED shall be illuminated and flash at a rate not to exceed one (1x) time per second.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>At one-third bottle pressure, one "red" LED shall be illuminated and flash at a rate not to exceed ten (10x) times per second.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The HUD shall have a low battery indication that is distinct and distinguishable from the bottle pressure indications.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Harness and Backframe Assembly</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>A lightweight, lumbar support style backframe and harness assembly shall be used to carry the cylinder and valve assembly and the pressure reducing regulator assembly.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall be a solid, one-piece black powder-coated aluminum frame that is contoured to follow the shape of the user's back.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include a mounting for the pressure reducer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This mounting shall contain a slide-type bracket permitting positioning of the pressure reducer to accommodate connection to either an angled or straight-type cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include an over-the-center, adjustable tri-slide fixture, a para-aramid strap and a double-locking latch assembly to secure 30, 45, 60, or 75 minute cylinders.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall consist of a one size black para-aramid strap with a yellow stripe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This harness shall include box-stitched construction with no screws or bolts.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness assembly shall incorporate parachute-type, quick-release buckles and shall include shoulder and hip pads.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The harness shall include a seat-belt type waist attachment.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The shoulder strap shall be fitted with a Drag Rescue Loop (DRL) capable of being deployed in an emergency situation to drag a downed firefighter to safety.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The one-piece aluminum backframe should include integrated donning/carry handles.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The handles shall allow the user to easily don the SCBA in the "over-head" style and also allow the user to carry the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The backframe shall include accommodation and mounting spaces suitable for installation of a distress alarm integrated with the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>These mounting spaces shall permit installation of an alarm sensor module in an area between the cylinder hanger locking mechanism and the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Product:		
<i>Shoulder-Mounted Pressure Gauge (replace this section if requiring a PASS device, see below)</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The pressure gauge shall be an integral part of the console assembly.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The control console shall come with a mechanical (analog) pressure gauge that is angled at 30°.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The control console shall contain an edge lit pressure gauge that requires no action by the user to turn on except opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The control console shall contain a photo sensing diode to dim and brighten the HUD as the environment changes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall power the HUD with two AA batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Rapid Intervention Connection</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The SCBA shall incorporate a RIC/UAC fitting to be compliant with the 2013 edition of the NFPA 1981 Self-Contained Breathing Apparatus standard.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall be an integral part of the high-pressure hose that attaches the cylinder valve to the first stage pressure reducer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC inlet connection shall be within 4" (4-inches) of the tip of the CGA threads of the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall consist of a connection for attaching a high-pressure air source and a self-resetting relief valve allowing a higher pressure than that of the SCBA to be attached to the SCBA.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The RIC/UAC shall have a check valve to prevent the loss of air when the high-pressure air source has been disconnected.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Cylinder - Each backframe shall include two cylinders</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The cylinder threads shall be straight with an O-ring or quad-ring gasket type seal.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder valve shall be a "fail open" type, constructed of forged aluminum and designed such that no stem packing or packing gland nuts are required.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>It shall contain an upper and lower seat such that the pressure will seal the stem on the upper seat, thus preventing leakage past the stem.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>No adjustment shall be necessary during the life of the valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder valve outlet shall be a modification of the Compressed Gas Association (CGA) standard threaded connection number 346 for breathing air for 2216 and CGA 347 for 4500 and 5500 systems with a tri-lobe ergonomically designed hand-wheel.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The valve shall be constructed such that damage will not occur if the coupling is over-torqued by hand.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Each cylinder valve shall consist of the following: 1) a hand activated valve mechanism with a spring-loaded, positive action, ratchet type safety lock and lock-out release for selecting "lock open service" or "non-lock open service"; 2) an upstream connected frangible disc safety relief device; 3) a dual reading pressure gauge indicating cylinder pressure at all times; 4) an elastomeric bumper; 5) an angled outlet.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>Each cylinder and valve assembly shall be equipped with a hanger bracket for positive locking attachment of the assembly to the backframe.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The SCBA shall maintain all NIOSH and NFPA standards with any of the following types of cylinders listed as provided by the SCBA manufacturer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Aluminum</i>			
<ul style="list-style-type: none"> <li>The cylinder shall be manufactured in accordance with DOT specifications and meet the Transport Canada requirements with a working pressure of 2216 psig.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be made of an aluminum alloy.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be available in a 30-minute duration based on the NIOSH breathing rate of 40 liters per minute (lpm).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Carbon-Wrapped</i>			
<ul style="list-style-type: none"> <li>The cylinder shall be manufactured in accordance with DOT specifications and meet the Transport Canada requirements with working pressures of 2216, 4500, or 5500 psig.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be lightweight, composite type cylinder consisting of an aluminum alloy inner shell, with a total overwrap of carbon fiber, fiberglass and an epoxy resin.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The cylinder shall be available in a 30-minute, 45-minute, 60-minute or 75 minute duration based on the NIOSH breathing rate of 40 liters per minute (lpm).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product:			
<i>Warranty</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The unit shall be covered by a warranty providing protection against defects in materials or workmanship.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>This warranty shall be for a period of 10 years on the SCBA, except for the pressure reducer, which shall be covered for 15 years.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Electronic components shall be warranted for five years.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product:			
<i>Optional Components</i>	Meets	Does Not Meet	Exception
<i>Personal Alert Safety System</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The PASS Device shall be compliant to the NFPA 1982, 2013 Edition Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Operation of this distress alarm shall be initiated with the opening of the valve of an SCBA charged cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall feature a "hands-free" re-set capability that may be activated by means of a slight movement of the SCBA when the system is in a pre-alert mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall operate from a single power source containing six "AA" batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The battery life of the SCBA with PASS only shall be no less than 200 hours.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have a battery check function that provides an LED indication of battery status while the SCBA is not pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS System shall be upgradeable to include a 2.4 GHz integrated locator system.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The PASS system shall be upgradeable to include a 2.4 GHz integrated SCBA air / PASS (telemetry) management system.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS device shall contain two components: a Console and a Sensor Module.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Console</i>			
<ul style="list-style-type: none"> <li>The console shall be located on the user's right shoulder strap.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integral edge lit mechanical pressure gauge that is automatically energized by opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall display to the user the following: Pre-Alarm: alternating red flashing LED's; Full Alarm: dual flashing red LED's and a flashing PASS icon; Low Battery: red flashing LED's; Normal System Operation: flashing green LED.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain a photo sensing diode to dim and brighten the HUD as the environment changes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain push buttons for user interface.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The push buttons shall be designed to minimize accidental activation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow color-coded push button shall permit system reset.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red color-coded push button shall permit manual activation of the full alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Sensor Module</i>			
<ul style="list-style-type: none"> <li>The system shall include a sensor module mounted to the SCBA backframe and located in an area between the cylinder and backframe in a manner designed to protect the assembly from damage.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain a motion sensor that is sensitive to user hip movement to reduce false activations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain redundant, dual sound emitters for the audible alarm and dual visual "buddy" indicators.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall be oriented in multi-directions for optimal sound projection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators on the backframe mounted sensor module shall flash green during normal operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash red 1) when the device is in pre-alert; 2) when the device is in full-alert; and 3) when the SCBA has reached one-third bottle pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product:			
<i>Personal Alert Safety System with Firefighter Locator</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The PASS Device shall be compliant to the NFPA 1982, 2013 Edition Standard on Personal Alert Safety Systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Operation of this distress alarm shall be initiated with the opening of the valve of an SCBA charged cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The system shall feature a "hands-free" re-set capability that may be activated by means of a slight movement of the SCBA when the system is in a pre-alert mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall operate from a single power source containing six "AA" batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The battery life of the SCBA with PASS only shall be no less than 200 hours.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have a battery check function that provides an LED indication of battery status while the SCBA is not pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is manually activated, the locator system shall immediately emit a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is activated due to lack of motion, the locator system shall have a ten second delay prior to emitting a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall utilize a 2.4 GHz signal to provide the best path to a "downed" firefighter.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The locating system shall be wirelessly programmable with eight alpha-numeric characters to provide identification information.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS device shall contain two components: a Console and a Sensor Module.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The PASS system shall be upgradeable to include a 2.4 GHz integrated SCBA air/PASS telemetry management system.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Console</i>			
<ul style="list-style-type: none"> <li>The console shall be located on the user's right shoulder strap.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integral edge lit mechanical pressure gauge that is automatically turned on by opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall display to the user the following: Pre-Alarm: alternating red flashing LED's; Full Alarm: dual flashing red LED's and a flashing PASS icon; Low Battery: red flashing LED's; Normal System Operation: flashing green LED.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain a photo sensing diode to dim and brighten the HUD as the environment changes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain push buttons for user interface.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The push buttons shall be designed to minimize accidental activation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow color-coded push button shall permit system reset.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red color-coded push button shall permit manual activation of the full alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Sensor Module</i>			
<ul style="list-style-type: none"> <li>The system shall include a sensor module mounted to the SCBA backframe and located in an area between the cylinder and backframe in a manner designed to protect the assembly from damage.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The sensor module shall contain a motion sensor that is sensitive to user hip movement to reduce false activations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain redundant, dual sound emitters for the audible alarm and dual visual "buddy" indicators.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module sound emitters shall be oriented in multi-directions for optimal sound projection.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators on the backframe mounted sensor module shall flash green during normal operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash red 1) when the device is in pre-alert; 2) when the device is in full-alert; and 3) when the SCBA has reached 1/3-bottle pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Personal Alert Safety System with Accountability</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The PASS Device shall be compliant to the NFPA 1982, 2013 Edition Standard on Personal Alert Safety Systems and Transmitting Pass.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Operation of this distress alarm shall be initiated with the opening of the valve of an SCBA charged cylinder.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall feature a "hands-free" re-set capability that may be activated by means of a slight movement of the SCBA when the system is in a pre-alert mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall operate from a single power source containing six "AA" batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The battery life of the SCBA with PASS only shall be no less than 70 hours.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall have a battery check function that provides an LED indication of battery status while the SCBA is not pressurized.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is manually activated, the locator system shall immediately emit a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>When the PASS is activated due to lack of motion, the locator system shall have a ten second delay prior to emitting a 2.4 GHz signal to be received by a separate hand-held receiver.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall utilize a 2.4 GHz signal to provide the best path to a "downed" firefighter.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The locating system shall be programmable with eight alphanumeric characters to provide identification information.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall transmit user status information at a frequency of 2.4 GHz on a self-healing mesh network system that when deployed allows each energized SCBA to function as a repeater ensuring system connectivity.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The system shall provide bi-directional communications between command and SCBA wearer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The communication shall contain: the user's name, cylinder pressure, PASS Alarms, PASS Acknowledgement, evacuation status, evacuation acknowledgement, Withdraw and Withdraw acknowledgement.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The PASS device shall contain two components: a Console and a Sensor Module.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Console</i>			
<ul style="list-style-type: none"> <li>The console shall be located on the user's right shoulder strap.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain an integral edge lit mechanical pressure gauge that is automatically turned on by opening the cylinder valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall display to the user the following: Pre-Alarm: alternating red flashing LED's; Full Alarm: dual flashing red LED's and a flashing PASS icon; Low Battery: red flashing LED's; Normal System Operation: flashing green LED.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall also include icons to indicate Range Status, Evacuation, Withdraw (self-evacuation) and when the system is ready to receive the user's ID through an RFID card.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain a photo sensing diode to dim and brighten the HUD as the environment changes.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The console shall contain push buttons for user interface.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The push buttons shall be designed to minimize accidental activation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A yellow color-coded push button shall permit system re-set.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A red color-coded push button shall permit manual activation of the full alarm mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>A gray color-coded push button shall permit the activation of the withdraw mode.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Sensor Module</i>			
<ul style="list-style-type: none"> <li>The system shall include a sensor module mounted to the SCBA backframe and located in an area between the cylinder and backframe in a manner designed to protect the assembly from damage.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain a motion sensor that is sensitive to user hip movement to reduce false activations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The sensor module shall contain redundant, dual sound emitters for the audible alarm and dual visual "buddy" indicators.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators on the backframe mounted sensor module shall flash green during normal operation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The visual indicators shall flash red 1) when the device is in pre-alert; 2) when the device is in full-alert; and 3) when the SCBA has reached 1/3-bottle pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product:			
<i>Emergency Breathing Support System "Buddy Breathing"</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The Optional Dual Emergency Breathing Support System (EBSS) shall be approved to NIOSH 42CFR, Part 84 and NFPA 1981, 2013 Edition.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The Dual EBSS shall have one of each of the following requirements; (1) a manifold with one each of a female socket and male plug, both of which have check valves, (2) 40" minimum low-pressure hose, (3) a pouch for storing the hose, and (4) a dust cap for the female socket and male plug.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The Dual EBSS system shall be on the wearer's left side and shall be capable of allowing for six feet of hose between like systems.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The manifold shall be made of aluminum and be anodized black.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket and male plug shall have spacing, no less than 15° off-center.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket shall have a double action to disengage, noted as a "push-in/pull-back".</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The female socket shall have an internal check valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The male plug shall have an external check valve.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The hose shall be made of high temperature rubber capable of sustaining a maximum 250 psig of pressure.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The containment system shall include a pouch and shall be made of para-aramid materials and shall be capable of storing 36" of hose.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The pouch shall be attached to the SCBA by pull-the-dot fasteners.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Extended Duration Airline System</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>An optional manifold shall also have provision for connection of an airline supply for extended duration use while reserving the cylinder supply for egress.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The air supply hose length shall be up to 300 feet and require an inlet pressure range of 60 to 115 psig, depending on the length of supply hose used.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The check valve within the outlet manifold shall prevent the external release of cylinder air in the event the air supply is either not used or disconnected.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Switching from airline supply to cylinder supply shall be accomplished manually by the user by opening the cylinder valve to prevent inadvertent use of the cylinder supply without the user's knowledge.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Product:		
<i>Electronic Voice Amplifier</i>	Meets	Does Not Meet	Exception
<ul style="list-style-type: none"> <li>The respirator shall have a facepiece-mounted voice amplification device to electronically project the user's voice.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The voice amplification device shall be mounted to the facepiece by means of a bracket that is secured around the voice emitter of the facepiece.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall contain a bayonet-style mounting fixture that enables the user to insert the voice amplifier into the bracket and secure it with a quarter-turn counter-clockwise when it shall lock into place.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>The device shall contain a thumb latch to permit removal when it is pressed and the device is rotated a quarter-turn clockwise.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The thumb latch shall contain a captive screw that enables the user to prevent removal.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall weigh no more than 7 ounces 225 (grams) and its size shall not exceed the following dimensions: Length: 3.50 inches; (8.89 cm); width: 2.0 inches (5.08 cm); depth (extension from voice emitter): 1.75 inches (4.44 cm).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall be able to be upgraded to a voice amplifier, radio interface, and stand alone radio communication system that all reside in a single housing with a single power source.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall contain a momentary on/off switch with a tactile indication and audible click when depressed.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The switch shall be covered with a sheath made of a silicone material.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall contain an LED which illuminates green when the device is activated and flashes once per second when a low battery condition (approximately 10% of battery life remaining) is present.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall provide audible tones to indicate that the system has been energized, de-energized and to provide a low battery indication.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall be powered by three AAA alkaline batteries, which shall provide no less than 50 hours of continuous operation with fully-charged batteries.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The batteries shall be contained in a gasketed compartment secured in place by means of a fastener.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The door of the battery compartment shall be user-replaceable.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall contain an automatic shut down function that de-energizes the voice amplifier approximately 20 minutes after the last time the user speaks.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Designed to conserve battery life when a user forgets to turn off the voice amplifier, the voice amplifier shall be reactivated after shut down by pressing the on/off switch.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The microphone shall be located on the surface of the bayonet mounting fixture and voice projection shall be facilitated by means of a circular gasket that seals the device to the communications mounting bracket.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The amplifier shall contain a custom speaker designed for pushing sound through background noises commonly found at emergency events.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall not feedback for longer than 1 second when worn on a level A haz-mat suit.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>The device shall be able to provide a minimum STI score of 0.65, even though NFPA minimum requirement is 0.60.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"><li>The voice amplifier, when attached to a facepiece, shall be able to withstand a 30 minute tumble test.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>A single voice amplifier shall be able to withstand eight, 6 foot drops, once on each side and on two edges.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>The voice amplifier shall be able to withstand a 30 minute tumble test not attached to the facepiece.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Exhibit B

# MORROW GA FIRE DEPT.

## FIREFIGHTER BUNKER GEAR SPECIFICATION

### FIREFIGHTER COAT:

All materials and construction will meet or exceed NFPA Standard #1971, current edition, and/or OSHA for structural fire fighters protective clothing. All components used in the construction of these garments shall be tested for compliance to NFPA 1971, current Edition by Underwriters Laboratories (UL). UL shall certify compliance to that standard. All garments shall carry the UL certification label. The outer shell and liner of each protective garment shall have a garment label permanently and conspicuously attached to each layer upon which the following statement shall be printed legibly on the product label. All letters shall be at least 2.5 mm (0.10”) high. The following label shall be sewn to the jacket outer shell: “THIS GARMENT MEETS THE GARMENT REQUIREMENTS OF NFPA 1971, STANDARD ON PROTECTION ENSEMBLE FOR STRUCTURAL FIRE FIGHTING, CURRENT EDITION.”  
COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Coat Length**

The coat shall be 32” in length.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Outer Shell Construction:**

The coat shall be designed to provide maximum mobility and relieve firefighter stress. An “arms forward” pattern designed to accommodate the firefighter in a working position shall incorporate underarm gussets and darts in the elbows for unrestricted movement in the working position. The placement of the armhole allows for minimal coat rise and full mobility when wearing an air pack. The thermal/moisture barrier liner shall be specially designed to work in conjunction with the shell with a fuller cut pattern. The coat sleeve shall be naturally tapered designed and manufactured to provide unrestricted movement while bending the arm.

The outer shell shall include four darts at the elbow area - two above and two below the natural bend of the elbow along the sleeve seams. The coat and liner shall be four panel constructions. The front two panels shall extend up to the top of the collar and be an integral part of the collar. The collar shall have pleats on the front panels around the base of the collar typical of a sewn-on

style collar.

All seams joining the main body panels shall be felled and double needle lock stitched. The stitch type shall be 401, double lock stitch, as defined by Federal Standard 751a and seam type LSC-2 as defined by Federal Standard 751a, ensuring that all stitches penetrate four layers of cloth at the joining. All seams shall be sewn with an average of nine stitches per inch. All thread shall be 100% Tex 80 Nomex® thread. No chain stitching shall be allowed due to the chance of unraveling if one stitch is broken.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Additional Liner Enhancement**

Shoulders and elbows shall be reinforced with a layer of thermal material. A layer of quilted NOMEX® batt shall be sewn to the thermal liner at the top of the shoulders and the elbow area. These two enhancements will be sewn to the thermal material on the inside of the liner system.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Sleeves and underarm gusset**

The set-in, two panel sleeves shall be incorporate a tapered design shaped to follow the natural contour of the arm. Each coat shall incorporate an underarm gusset in all three layers between the underside of the sleeve and the body of the coat. This rounded shaped gusset shall measure approximately 7" wide X 12" long (graded to coat size).

The attachment point of the sleeves to the coat body panels at the top of the shoulder must be 2" – 4" from the outside of the shoulder when standing with the arms at rest at the side of the fire fighter. This moves the coat sleeve interface to the natural bend point of the body providing optimal mobility when donning an SCBA and minimizing coat rise. The sleeve panels shall be sewn together using seam type 401, double needle lock stitch. The outseam of the shell shall be felled and double needle lock stitched. The under seam and underarm gusset seams of the shell shall be double needle serged, then folded and top stitched with double needle lock stitching to reduce thread abrasion.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Collar Construction:**

The collar design shall be constructed as an integral part of the body panels, inner shell facings and the liner to provide uninterrupted and continuous protection to the firefighter. The collar shall measure not less than 3" high measured from where the collar pleats are placed on the body panels at the base of the neck. The exterior of the collar shall be an extension of the front panels with a pleat placed for comfort and the upper rear collar panel shall be joined with a double needle serged seam that is double needle topstitched on the back of the wearer's neck. A panel of shell material shall join the two inner front facings creating the inside of the collar. The coat thermal/moisture barrier lining shall extend up to the top of the inside of the collar without seams and attach inside the collar via five pieces of ¾" hook and loop sewn with double needle lock stitching to the top of the thermal liner and inside the top of the collar. The storm flap shall extend to the mid-throat. This design shall meet the NFPA standard for overall liquid integrity

while more effectively interfacing with the s.c.b.a. face-piece when the collar is worn in the upright position. A shell material hang-up loop shall be lock stitched to the collar. The hang up loop shall be able to withstand a load of at least 80 pounds.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Inner sleeve**

The sleeves shall have a waterwell to prevent liquids and other hazardous materials from entering when the arms are raised. This water well shall be constructed of Glide moisture barrier and shall be double needle lock stitched to the outer shell approximately 5” from the sleeve cuff and continue down the inside of the outer shell to the cuff area. Two-layer NOMEX® wristlets shall be sewn to the end of the sleeve water well. Four 1” wide pieces of FR cotton tape will be sewn to the union of the sleeve water well and the knitwrist. These tabs will be spaced equally from each other and incorporate female snap fasteners to accommodate corresponding male snaps in the thermal liner. A 6” wide layer of thermal lining material shall be lock stitched to the underside of the shell, between shell and water well to provide continuous thermal protection in the circumstance of the sleeve and reduce the risk of steam burns under the cuff trim.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Collar**

The collar shall be constructed of four layers. It will incorporate two layers of outer shell material and two layers of moisture barrier. The moisture barrier shall be sandwiched between the two layers of outer shell material and face film side toward the shell. The edges shall be turned under and lock stitched together with the moisture barrier being secured at the perimeter only. The collar shall be contoured and measure not less than 3” at the front and 3” at the back when standing. A 1-1/2” strip of loop fastener shall be double needle lock stitched to the interior collar panel at the neckline. This shall accommodate the attachment of the liner system with a mated corresponding piece of hook fastener tape sewn to the collar area of the liner/moisture barrier. The collar shall close by means of an overlapping collar system that eliminates bulky collar throat straps. The left and right side of the collar front shall overlap each other by no less than 3”. The hook portion of the hook and loop fastener tape shall be sewn to the right front side of the collar. The corresponding loop portion shall be sewn to the underside of the left collar end to form an adjustable collar closure system. A four-layer, shell material hang-up loop shall be lock stitched to the top of the liner/collar assembly and shall be able to withstand a load of at least 80 pounds.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Moisture Barrier/Thermal Liner Construction**

The moisture barrier shall be bound to the thermal liner around the perimeter of the liner using a 1” FR Neoprene coated binding tape double needle lock stitched. Each liner shall have a 9” X 8” liner pocket, constructed from the thermal liner material and lined with moisture barrier material.

All edges of the pocket shall be serged to prevent unraveling and the pocket shall be sewn to the left inside of the liner system with a single needle lock stitch. All moisture barrier seams shall be sealed to prevent moisture penetration as per the moisture barrier manufacturers' specifications. To ensure minimum seam abrasion, the moisture barrier seams shall be oriented with the stitching toward the inside of the thermal barrier.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Outer Shell/Liner Assembly Attachment**

The liner shall be secured to the outer shell by means of five, nickel coated brass snap fasteners along the leading edges of the left and right facings. The position of the male snap portion on the liner shall be in exactly the same location of similar liner sizes and the female snap portion on the outer shell shall be positioned in exactly the same location of similar shell sizes. Four male snaps shall be positioned at each sleeve cuff to align with four female snaps located on the NOMEX® tabs at the outer shell inner sleeves. A ¾" strip of the hook portion of Hook and Loop fastener tape shall be sewn to the top of the liner facing the wearer's body and shall correspond with the loop portion as described in the collar section. Two snap tabs will be located at the bottom hem of the liner system to correspond with two snaps located on the outershell to hold the liner down during donning.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **THERMAL PROTECTIVE PERFORMANCE**

The assembled garment, consisting of an outer shell, moisture barrier, and thermal liner, shall exhibit a TPP (Thermal Protective Performance) rating of not less than 35.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

### **Drag Rescue Device**

A removable drag rescue device shall be located between the liner and outer shell of each coat. The drag rescue device shall be made of KEVLAR® webbing strap sized to the coat. The KEVLAR® webbing shall be affixed so as to create a loop from the mid-back exit over the top of the right shoulder, under the right arm, across the mid-back. The device shall then go under the left arm, in front of and over the left shoulder, and exit again at mid-back. Two 1" slits are to be cut horizontally into the upper rear panel of the coat shell approximately 3" from the collar, and approximately 1" apart. The area around the slits shall be reinforced with a layer of polymer coated Aramid. The KEVLAR® webbing is then to be threaded through the slits creating a large loop. A flap of outer shell material and reflective trim is to be sewn over the external part of the loop and slit openings. The outer shell and flap will have mated hook and loop closures to secure

the flap. The flap shall also feature a leather pull tab to easily access the drag rescue device with gloved hand.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Radio pocket**

A radio pocket constructed of outer shell material and measuring approximately 9"x3.5"x2" shall be sewn with lock stitching to left chest of each fire fighter's coat. The pocket shall have a flap measuring approximately 3" x 4" with two small notches removed to accommodate the radio antenna, and shall close by means of hook and loop fastener tape. Hook and lop shall be sewn with a double needle lock stitch around the perimeter. Each radio pocket and flap shall be lined with a layer of FR Neoprene coated polyester/cotton moisture barrier. Per NFPA requirements, all trim must be continuous; therefore, if the pocket placement interferes reflective trim must be sewn to the pocket. Left chest.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Trim Style**

The retro-reflective trim shall be three (3") inch 3M Scotchlite lime-yellow silver triple trim. Project Fire style. The coat trim configuration shall have one 3" strip around the hem of the coat, one 3" strip in the middle of the chest area and one 3" strip around each sleeve. On the back there shall be two vertical strips of trim. Each coat shall have an adequate amount of trim sewn to the outside of the outer shell to meet the requirements of NFPA 1971, current edition. All trim shall be secured to the shell with four rows of lock stitching – no exceptions.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Lettering**

The lettering shall be three inch (3") 3M Scotchlite lime-yellow silver. Letters shall be sewn directly to the coat in the upper back area.

**MORROW** shall be straight located below.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Detachable lower hanging name panel**

A snap and hook & loop removable lower hanging name patch shall be affixed to the bottom of the coat rear panel. A permanently attached strip of outer shell material approximately 21" long by 1.5" tall shall be sewn to the coat between the trim and shell. On this starter strip will be the snap and hook & loop system to accept the removable lettering patch. The patch will be approximately 21" wide across the top tapering to approximately 16" wide across the bottom. The height of the patch will be approximately 6". Firefighter last name in 2" Scotchlite lime/yellow letters shall be sewn directly to the name panel. Pricing for last name lettering of up to 8 characters should be included in coat price offering.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Outer Shell**

The outer shell shall be Armor AP, 6.5 oz

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Thermal Liner**

Traditional Liner, Glide face cloth quilted to 2.3 oz NOMEX/Kevlar spunlace

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Moisture Barrier**

**CROSSTECH® black moisture barrier** - Type 2F PTFE/Nomex Pajama check laminated membrane

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Cuff Reinforcement**

Each cuff end shall be reinforced with a 2” wide piece of black polymer coated Aramid. The cuff reinforcement material shall be folded in half, approximately one half inside and one half outside and sewn to the shell with two rows of lock stitching. Edging of polymer coated Aramid will be folder prior to securing to shell so as to prevent a raw edge exposure.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Hand Pockets**

A full bellows cargo pocket, measuring approximately 10” X 10” X 2”, shall be double stitched to each front panel. Two rust resistant brass drainage eyelet shall be installed in the bottom of each pocket to provide the drainage of water. The pocket flaps shall be constructed of outer shell material and measure approximately 4” tall X 8” wide. The pocket flaps shall be closed by means of hook and loop fastener tape that runs almost the entire length of both the pocket and pocket flap. Hook and loop shall be sewn with a double needle lock stitch around the perimeter. The upper corners of each pocket shall be bartacked for reinforcement. A hidden hand warmer compartment shall be located under each full bellows pocket with access from the rear of the pocket.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Sealed Moisture Barrier Seams**

All moisture barrier seams shall be sealed with a minimum 7/8-inch wide sealing tape. One side of the tape shall be coated with heat activated glue adhesive. The adhesive side of the tape shall be oriented toward the moisture barrier seam. The adhesive is to be activated by heat and the

sealing tape shall be applied to the moisture barrier seams by means of pressure exerted by rollers designed for that purpose.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Closure**

Inner zipper / outer woven hook & loop. The coat front closure shall consist of a 25” heavy-duty black oxide coated brass zipper on the coat fronts and hook & loop fastener tape on the storm flap. The teeth of the zipper shall be mounted on Nomex cloth and shall be sewn to the right front body panel and left jacket facings. The zipper parts shall be bartacked at the top and bottom for strength. The storm flap shall close over the left and right body panels and be secured by hook & loop fastener tape. A 1 ½” by 24” strip of pile fastener tape shall be sewn to the underside of the storm flap and correspond to a 1 ½” piece of hook fastener tape sewn to the right front body panel of the coat. Hook and loop shall be sewn with a double needle lock stitch around the perimeter

The coat shall have front facings that extend from the collar to the hem area. These facings shall be 2” wide and be comprised of outer shell material and corresponding moisture barrier. The outer shell material shall face the wearer’s body when the jacket is in the closed position. The moisture barrier shall be sewn to the back of the outer shell portion and face the inside of the coat body panel. A 4” piece of moisture barrier shall be sewn into the coat facing and extend the length of the coat opening. This additional moisture barrier shall ensure that there is no gap in coverage between the outer shell and the wearer’s body. The liner/moisture barrier assembly shall be attached to these facings by means of snap fasteners.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**NOMEX knitwrist**

A 6” long, two layer white Nomex/Spandex wristlets shall be sewn to the waterwell. Each wristlet shall have a black thumb loop with an approximate opening of 2” in diameter properly set as to align with the wearer’s thumb.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Universal fabric strap. Right Chest**

A 1” x 5” piece of leather encased by outer shell material shall be attached to the shell with double bartacks at each end on the left chest within one inch of storm flap.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Universal fabric strap. Left Chest**

A 1” x 5” piece of leather encased by outer shell material shall be attached to the shell with double bartacks at each end on the left chest within one inch of storm flap.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Flashlight Snap Hook**

1x2” 2 layer self fabric flashlight snap holder with 2 bartacks

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**FIREFIGHTER PANT:**

**PANT CONSTRUCTION:**

The pant outer shell and liner system shall be constructed of seven body panels consisting of two front panels, four back panels and a large seamless crotch panel. The pant rise shall be approximately 14” (graded according to size). The body panels shall be ergonomically designed to construct a pant with a noticeable natural bend at the knee. The outer shell and liner shall have four darts - two above and two below the natural bend of the knee along the side seams to permit an unrestricted range of motion when the knee is bent. All seams joining the body panels shall be felled and double needle lock stitched. The stitch type shall be 401, double lock stitch, as defined by Federal Standard 751a and seam type LSC-2 as defined by Federal Standard 751a, ensuring that all stitches penetrate four layers of cloth at the joining. All seams shall be sewn with an average of nine stitches per inch. All thread shall be 100% Nomex® Tex 80 thread. No chain stitching shall be allowed due to the chance of unraveling if one stitch is broken.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Waistband**

Each pant shall have a separate waistband of shell and moisture barrier material bound together by Neoprene coated poly-cotton binding tape. The waistband shall be lock stitched to the shell along the top of the waistline. The liner shall be secured under the waistband by means of eight nickel coated brass snap fasteners. The position of the male snap portion on the liner shall be in exactly the same location on similar liner sizes as the female snap portion on the waistband of similar shell sizes. The use of a waistband is necessary to deter the wearer from accidentally placing the foot between the shell and liner when donning the pants and does not allow foreign objects from entering the pants between shell and liner.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Standard Reinforcement**

Knees shall have a layer of thermal material and moisture liner within the liner system that shall be attached to the thermal liner.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Pant Closure:**

Each pant shall have an external fly flap constructed of one layer of quilted Nomex® batt and one layer of moisture barrier sandwiched between two layers of outer shell material. The fly flap shall be a continuous part of the left front body panel beginning at the waist and extending down

to a depth of approximately 10". The flap shall be approximately 3-1/2" wide at the top, tapering down to width of approximately 2" at the bottom where it shall be triple bartacked to the outer shell for strength and durability. The flap shall be a part of the pant closure system, which shall be: Inner Zipper, Outer Woven Hook & Loop / Outer Hook & Dee - A strip of pile fastener tape sewn to underside of the fly flap shall correspond to a strip of hook fastener tape sewn to the right front panel of the outer shell. Both pieces of hook and loop shall be sewn with double needle lock stitching. A D-ring shall be installed at the top of the fly flap to engage a leather-backed 3-point snap hook that is attached to the top of left front panel.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Exterior Knee Reinforcement:**

The knee area shall have an exterior reinforcement of one layer of black polymer coated aramid and be padded behind the reinforcement with two layers of FR, high temperature foam that are encased between layers of moisture barrier - providing a minimum CCHR rating of 200 seconds. The reinforced knee pad shall be sewn into the side seams of the pant thus graded in width according to pant waist size and be approximately 11" high. The bottom seam of the pad shall not have an exposed seam. The pad shall be pre-bent to the natural contour of the knee through incorporation of the padding into the darts in the pant design.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Outer Shell**

The outer shell shall be Arnrnor AP, 6.5 oz.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Thermal Liner**

Traditional Liner Glide facecloth quilted to 2.3 oz NOMEX/Kevlar spunlace

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Moisture Barrier**

**CROSSTECH® black moisture barrier** - Type 2F PTFE/Nomex Pajama check laminated membrane

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

Sealed Moisture Barrier Seams All moisture barrier seams shall be sealed with a minimum 7/8-inch wide sealing tape. One side of the tape shall be coated with heat activated glue adhesive. The adhesive side of the tape shall be oriented toward the moisture barrier seam. The adhesive is to be activated by heat and the sealing tape shall be applied to the moisture barrier seams by means of pressure exerted by rollers designed for that purpose.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Pant Pockets:**

Split bellows cargo pocket, 10” x 10” x 2” left thigh.

An expansion pocket measuring approximately 2” deep by 10” wide by 10” high shall be double stitched to the thigh to provide accessibility. The pocket shall be divided into two compartments by adding a double layer of outer shell material that is sewn vertically and at the bottom of the pocket. The divider will be placed to create an 80/20 split with the larger portion being towards the back of the pocket. The pocket (front, sides and bottom) shall be reinforced on the inside with Kevlar Twill material. Two rust resistant brass drainage eyelets shall be installed in the bottom of each pocket to provide the drainage of water. The pocket flaps shall be constructed of outer shell material and measure approximately 4” wide by 10” long. The pocket flaps shall be closed by means of Velcro fastener tape. Two 1.5” by 7.75” rectangular pieces shall be used on each pocket to provide a secure closure. The upper corners of each pocket shall be bartacked for reinforcement.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

Full bellows cargo pocket, each 10” x 10” x 2” right thigh

A bellows pocket, measuring approximately 10” X 10” X 2”, shall be double stitched to each front panel at the thigh. A continuous layer of Kevlar twill shall be sewn inside the pocket to provide optimal strength when carrying small tools. Two rust resistant brass drainage eyelets shall be installed in the bottom of each pocket to provide the drainage of water. The pocket flaps shall be constructed of outer shell material and measure approximately 4” wide X 10” long. The pockets flaps shall be closed by means of hook and loop fastener tape. Two 1.5” by 7.75” rectangular pieces shall be used on each pocket to provide a secure closure. The upper corners of each pocket shall be bartacked for reinforcement. On the leg side of the pocket there shall be sewn shell material to form 6 tool pockets. 3 tall and 3 short compartments, each approximately 2.5” wide.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Pant Pocket Exterior Reinforcement:**

Both cargo pockets shall be reinforced on the outside with Black Polymer Coated Aramid material.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Pant Comfort Features:**

Reverse Tapered Cuff - The pant leg cuffs shall be tapered approximately 2” shorter in the rear than in the front to reduce the chance of wear.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Pant Take-up Straps:**

Black Nomex webbing with thermoplastic buckle on each hip.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Glove Strap:**

There shall be a shell fabric glove strap with Velcro located on the right leg between the waist and pocket.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Cuff Reinforcement:**

Each cuff end shall be reinforced with a 2” wide piece of black polymer coated Aramid that shall be folded in half, approximately one half inside and one half outside the leg end for greater strength and abrasion resistance. This reinforcement shall be sewn to the leg end with double stitching.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Reverse Tapered Cuff:**

Each cuff end shall be elevated/raised in the back heel area approximately 2” shorter than the front of the cuff.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Trim Style**

The retro-reflective trim shall be three (3") 3M Scotchlite lime-yellow silver triple trim around the lower leg. Trim shall be attached using four rows of lock stitching - no exceptions.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Suspender**

Suspender shall be padded; black cotton webbing/H-back/ parachute pull D-ring take up straps. Suspender shall be removable via plastic coupler clips in front and a woven hook & loop system in the back.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Belt Tunnels**

Four belt tunnels will be located around the waist. Two in front and two in the back area. These tunnels shall be approximately 3” tall by 5” wide.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**ESCAPE BELT**

The pant shall have an integrated Escape Belt, which is independently certified as meeting the belt requirements of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services. The Escape belt shall be comprised of Kevlar® webbing with a hook and an adjustable D-ring closure, graded for the waist size of the pants.

COMPLY \_\_\_\_\_ EXCEPTION \_\_\_\_\_

**Boots**

Shall be certified to NFPA 1971 and 1992. Lightweight athletic footwear leather boot, stitched construction, heel lock system, built in shin guard, NFPA compliant moisture barrier.

COMPLY\_\_\_\_\_ EXCEPTION\_\_\_\_\_

**Helmet**

Certified to NFPA 1971, Traditional style, UV-resistant shell constructed of composite fiberglass, Impact liner is made of rugged and durable polyurethane, Black Nomex 2-layer FR cotton ear covers are securely attached yet easily removed for cleaning, 8 Reflexite Lime Trapezoids provide reflective trim, Face and Eye Protection with Safety Lock, Leather headband and ratchet cover with mesh crown, Traditional Eagle Front Holder, EZ Clip, Reversible Chinstrap with Quick-release Buckle and Postman Slide allow for easy adjustment and proper fit

COMPLY\_\_\_\_\_ EXCEPTION\_\_\_\_\_

**Gloves**

Certified structural firefighting gloves compliant to NFPA 1971. Shall be high quality three dimensional glove with sewn in fingertips – No exception. May be leather construction or other accepted outer shell material.

COMPLY\_\_\_\_\_ EXCEPTION\_\_\_\_\_

**Hood**

Certified to NFPA 1971. Material may be PBI, carbon fiber, or nomex.

COMPLY\_\_\_\_\_ EXCEPTION\_\_\_\_\_





