NOTICE TO ALL CONTRACTORS

You are hereby notified of the following changes, clarifications and/or modifications to the original Contract Documents, Project Manual, Drawings, Specifications and/or previous Addenda. This Addendum shall supersede the original Contract Documents and previous Addenda wherein it contradicts the same, and shall take precedence over anything to the contrary therein. All other conditions remain unchanged.

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated April, 21 2017. Acknowledge receipt of this Addendum in space provided on the Bid Proposal Form. Failure to acknowledge may subject Bidder to disqualification.

A. Deletions, Additions, Changes, Revisions

Item 1:
Revision:
   a. The SITE VISIT has been revised and will not be mandatory.
   b. The SITE VISIT date has been rescheduled for May, 3 2017 at 10:00 am.

Item 2:
Revision:
REQUEST FOR INFORMATION (RFI) DATE has been extended to May 8, 2017 PRIOR to 12 PM

Item 3:
Revision:
   c. BIDS / QUOTES DUE DATE has been extended to May 11, 2017 PRIOR to 12 PM
Item 4:

   Addition:
      a. Site photos are provided for reference only:

Triatek HMS-100 Fume Hood Controller
Supreme Air Fume Hood
Triatek HMS 1600 Hood Monitoring System
b. Please reference the following specifications:

Fume hood face velocity can be controlled or monitored with fast response using TRIATEK's HMS-1600 Series Hood Monitoring System. This precision instrument can modulate exhaust air flow to hold fume hood face velocity at a programmable setpoint. It also provides warning alarms for flow conditions which are not within user defined safe limits. TRIATEK's HMS-1600 constantly monitors air flow using patented, ultra-sensitive thermal anemometry.

Hood conditions can be quickly observed using the HMS-1600. Face velocity is displayed in Feet per Minute, FPM, or in Metric units on the LCD digital display which also includes a user programmable hood descriptor of up to eight characters.

High accuracy is assured by the use of 12 bit conversion of analog signals, providing resolution to one part in 4,096.

Alarm status for out of range face velocity can be annunciated locally using both audible and visual display. Status LED indicators reflect three conditions - NORMAL, CAUTION, and ALARM. This annunciator also features a blinking alarm descriptor on the LCD display. Dual alarm relays provide dry contacts for remote transmission of any alarm conditions to a central location. Alarm setpoints for local annunciation and for both relay outputs are fully adjustable in the field by the user.

Air flow dampers or variable speed drives can be modulated by the HMS-1600 to control face velocity. This is done by selecting PID floating point control from the setup menu and simply setting suitable PID constants shown in the menu. For monitoring only where control is not required, the analog signal from the HMS-1600 can be setup for linear proportional voltage to connect with almost any remote monitoring or automation system.

TRIATEK's HMS-1600 is factory tested and programmed. Final calibration is then done in the field using exact flow data obtained from traversing each hood's face opening in accordance with the user's established procedures. All set-up, scaling, zero and span adjustments, multiplexers, input and output configuration, and setpoint are field adjustable to match user requirements. All HMS-1600 set-up parameters are stored in non-volatile memory to avoid any loss of information during power outages.

In addition to the dedicated face velocity flow sensor input, there are additional inputs provided on the HMS-1600. It can be digitally monitored on the LCD display along with face velocity. Almost any hood parameter or process variable such as flow, pressure, humidity, sash position, temperature, etc., can be displayed. See Related Products for other TRIATEK transmitters which can be used.

FTT-10A LONTALK communications is used on all TRIATEK HMS-1600-LON monitors so that remote monitoring is possible. Complete facility information such as face velocity on each hood, pressurization on each lab, and alarm status can be displayed at a remote location at the facility. These monitors could be interfaced to many facility automation systems.

Features & Benefits
- Measure Hood Face Velocity
- Compact LCD Display
- Control or Monitor
- Linear or PID Output
- Precision Measurements
- Multiple Alarms
- Highly Sensitive
- Quick Response
- Communications Port

Applications
- Fume Hoods
- Laboratories
- Clean Rooms
- Air Flow
- HVAC Systems
- Pressurization
- Industrial Automation

Related Products
- TRIATEK's FMS-1600 Series
  Pressure Controller maintains proper pressurization in laboratories
- TRIATEK's Link BACnet or Modbus
- TRIATEK's CP-3000 Series I/P with pneumatic output
- HD Series Humidity Transmitters
- 100 TX Series Temperature Transmitters
- TRIATEK's Monitoring Software
- ACT-FA-8001 Electronic Actuator
**Specifications**

**HMS-1600 Controller**
- **Dimensions** .................................................. 4.125" H x 6.00" W x 1.875" D
- **4 Analog Inputs** .................................................. 4-20mA/DC, 0-5VDC or 0-10VDC
- **4 Analog Outputs** .................................................. 0-5VDC or 0-10VDC
- **4 Digital Inputs** .................................................. 0-5 V, 30VDC
- **4 Relay Outputs** .................................................. 2A@24VDC, 2A@120VAC
- **Input Impedance** .................................................. 10kΩ ± 0Ω
- **Output Impedance** .................................................. 0Ω ± 1kΩ
- **Control Signal Wire Size** ....................................... 18 AWG Minimum
- **Power Supply** ..................................................... Class 2 24 VAC/DC ± 10%, 10 VA
- ............................ 110 to 24 VAC, 60 Hz, Step-Down Isolation Transformer provided

**Communications**
- LON FTT-10A Free Topology ........................................ Two Wire Twisted Pair
- Recommended Cable Type ........................................... Belden 85102

**HMS Air Flow Sensor**
- **Type of Sensor** .................................................. Thru-the-hood ultra sensitive
- **Face Velocity Accuracy** .......................................... 0.2-200 FPM ± 2 FPM
- **Dimensions** ....................................................... 25/32"H x 45/64"W x 31/4"D
- NIST Traceable / Individual certification available as option
  *@972°F ± 5°F

**HMS Display & Alarm Annunciator**
- **LCD Display** ...................................................... 4 Line x 16 characters per line
- **LCD Character Height** ............................................ 0.19 inches
- **Programmable Alarms** ............................................ Audible and Visual
- **Programmable LEDs** ............................................. Normal, Caution, Alarm
- **Display/Keypad Dimensions** ................................... 47/8"H x 35/16"W x 1"D

**Venturi Valve (Order Separately)**
- **Diameter** ......................................................... 6", 8", 10", 12" & 16"OD
- **CFM Range** ....................................................... 30-2400
- **Materials** .......................................................... Aluminum, Stainless Steel, Hardline Coating
- **Sound Insulation** .................................................. Optional
- **Actuation** .......................................................... Electronic or Pneumatic

**Fast-Acting Electronic Actuator (Order Separately)**
- **Control Signal** .................................................... From HMS Controller
- **Stroke Time** ....................................................... ~33ms/degrees of rotation
- **Typical Stroke** .................................................... 10" to 20", 0.3 to 0.6 sec.
- **Torque** ............................................................. 50 in. lb.
- **Display/Keypad Dimensions** ................................... 3"H x 65/64"W x 31/4"D

**Safety Standards**
- Underwriters Laboratories ........................................ UL Listed & cUL Listed

**Ordering Instructions**

**HMS-1600QDL-P**

<table>
<thead>
<tr>
<th>Analog Output</th>
<th>Face Velocity</th>
<th>Number of Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = 0-5 VDC (&gt; 500 Ω)</td>
<td>1 = 0-120 FPM</td>
<td>(blank) = 1 sensor</td>
</tr>
<tr>
<td>2 = 0-10 VDC (&gt; 1K Ω)</td>
<td>2 = 0-200 FPM</td>
<td>D = 2 sensors</td>
</tr>
<tr>
<td>3 = 0-100 FPM</td>
<td>3 = 0-1000 FPM</td>
<td></td>
</tr>
<tr>
<td>5 = 0-500 FPM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Typical Fume Hood Equipped with TRIATEK Controls**

**ATRIATEK**

2976 Pacific Drive, Norcross GA 30071 • phone 770-242-1922 fax 770-242-1944 • http://www.triatek.com

Due to continuous product improvement, TRIATEK reserves the right to change product specifications without notice.
B. If you have any questions regarding this Addendum, please contact:

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All other terms and conditions of BID are to remain the same.

END OF ADDENDUM #1