UNIVERSITY OF ARKANSAS

Facilities Management
Design and Construction Services

ADDENDUM NO. 2
April 16, 2019

REQUEST FOR PROPOSALS
AUTOMATIC TEMPERATURE CONTROLS
Indefinite Delivery Indefinite Quantity (IDIQ)
UNIVERSITY OF ARKANSAS, FAYETTEVILLE

The following supplement is hereby made to the project referenced above:

SECTION 00600 – TECHNICAL SPECIFICATIONS

Revise section 1.02.10 to remove reference to owner furnished Variable Frequency Drives and Flow Meters, as noted in RFI Responses

Page 33, Item 10: Replace paragraph 10 in its entirety as noted below:

10. Variable frequency drives and flow meters shall be furnished by the Contractor as part of this contract. Variable frequency drives and flow meters shall be installed by others. Variable frequency drives and flow meters shall be furnished with ATC system interfaces. Equipment, software, labor, and programming required to connect the variable frequency drives and flow meters to the ATC system will be the responsibility of the ATC provider.

Revise section 2.02.R to omit Chilled Water Bypass Control Valve section and add section on Steam Valves as noted in RFI Responses.

Page 44, Item R: Replace section R in its entirety as noted below:

R. Control Valves:

1. Control valve Pressure drop shall be equal to twice the pressure drop through heat exchanger (load), 50% of the pressure difference between supply and return mains, or 4 psi, whichever is greater.

2. Air Handling Unit Chilled Water Control Valves:

a. Type: Valves shall be of the 2-way, proportional, segmented ball valve, modulating with electronic actuation.

b. Sizing: Valves shall be sized for maximum pressure drop or Cv as indicated on schedule. Valves have been selected to provide a maximum 3 psig pressure drop at the design coil flow rate with 39 deg. F chilled water supply temperature.

c. Valve Performance: Valve flow characteristic shall be modified equal percentage characteristic with rangeability (defined as the fully open valve flow at 1 psi water pressure drop divided the minimum controllable flow at 1 psi water pressure drop) of 200 to 1 or greater. Valve leakage rating shall be ANSI Class VI.

d. Submittal Requirements: Valve submittal shall include a chart for each valve that indicates Cv as a function of valve position.

e. Actuators: Valve actuators shall be electronic or pneumatic as required by the application. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. All valves shall have position feedback.

f. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 200 psig with water temperature of 400 deg. F.

g. Close-off Ratings: Valve close-off ratings shall be a minimum of 150 psig.

h. Connections: Valve connections shall be flanged, soldered, or threaded as required by the application.

i. Construction: Valve body shall be carbon steel or brass with a polished stainless steel segmented ball valve and shaft, low friction bearings, and Teflon coated ball seats. Control valves shall be ANSI class VI leakage rate, 0 to 450F temperature range, and maximum 250 psi allowable shut off pressure. Valves shall have an equal percentage flow characteristic.

3. Air Handling Unit Heating Water Control Valves:

a. Type: Valves shall be of the 2-way, proportional segmented ball valve, modulating, with electronic actuation.

b. Sizing: Valves shall be sized for maximum pressure drop or Cv as indicated on schedule. Valves have been selected to provide a maximum 3 psig pressure drop at the design coil flow rate with 180 deg. F heating water supply temperature.

c. Valve Performance: Valve flow characteristic shall be modified equal percentage characteristic with rangeability (defined as the fully open valve flow at 1 psi water pressure drop divided the minimum controllable flow at 1 psi water pressure drop) of 200 to 1 or greater. Valve leakage rating shall be ANSI Class VI.

d. Submittal Requirements: Valve submittal shall include a chart for each valve that indicates Cv as a function of valve position.

e. Actuators: Valve actuators shall be electronic or pneumatic as required by the application. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. All valves shall have position feedback.

f. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 200 psig with water temperature of 400 deg. F.

g. Close-off Ratings: Valve close-off ratings shall be a minimum of 150 psig.

h. Connections: Valve connections shall be flanged, soldered, or threaded as required by the application.

i. Construction: Valve body shall be carbon steel or brass with a polished stainless steel segmented ball valve and shaft, low friction bearings, and Teflon coated ball seats. Control valves shall be ANSI class VI leakage rate, 0 to 450F temperature range, and maximum 250 psi allowable shut off pressure. Valves shall have an equal percentage flow characteristic.

4. Air Terminal Heating Water Control Valves:

a. Type: Valves shall be of the two-way, proportional, segmented ball valve, modulating rotary ball type.

b. Sizing: Valves shall be sized for a maximum water pressure drop of 3 psi at the coil design heating water flow rate.

c. Actuators: Valve actuators shall be electronic. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. Floating point actuation is acceptable.

d. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 200 deg. F.

e. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

f. Connections: Valve connections shall be soldered or threaded as required by the application.

g. Construction: Valve stems shall be polished stainless steel. Valve trim shall be polished stainless steel or brass. Valve bodies shall be brass.

5. Building Chilled Water Control Valves:

a. Type: Valves shall be of the two-way, proportional, segmented ball valve, modulating, up to 4". Above 4", the valves shall be modulating butterfly type.

b. Sizing: Valves shall be sized for a 3 psi water pressure drop at the design

building flow rate with 39 deg. F chilled water supply temperature.

c. Valve Performance: Valve flow characteristic shall be modified equal percentage characteristic with rangeability (defined as the fully open valve flow at 1 psi water pressure drop divided the minimum controllable flow at 1 psi water pressure drop) of 15 to 1 or greater. Valve leakage rating shall be ANSI Class VI.

d. Submittal Requirements: Valve submittal shall include a chart for each valve that indicates Cv as a function of valve position.

e. Actuators: Valve actuators shall be electronic or pneumatic as required by the application. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated.

f. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 100 deg. F.

g. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

h. Connections: Valve connections shall be flanged.

i. Construction: Valve stems shall be polished stainless steel. Valve bodies shall be ductile iron or carbon steel.

6. Fan Coil Unit Chilled Water and Heating Water Control Valves:

a. Type: Valves shall be of the two-way, proportional, segmented ball valve, modulating rotary ball type.

b. Sizing: Valves shall be sized for a maximum water pressure drop of 3 psi at the coil design water flow rate.

c. Actuators: Valve actuators shall be electronic. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. Floating point control is allowed.

d. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 200 deg. F.

e. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

f. Connections: Valve connections shall be soldered or threaded as required by the application.

g. Construction: Valve stems shall be polished stainless steel. Valve trim shall be polished stainless steel or brass. Valve bodies shall be brass.

7. Fin Tube Heating Water Control Valves:

a. Type: Valves shall be of the two-way, proportional, segmented ball valve, modulating rotary ball type.

b. Sizing: Valves shall be sized for a maximum water pressure drop of 3 psi at the coil design water flow rate.

c. Actuators: Valve actuators shall be electronic. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. Floating point control as allowed.

d. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 200 deg. F.

e. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

f. Connections: Valve connections shall be soldered or threaded as required by the application.

g. Construction: Valve stems shall be polished stainless steel. Valve trim shall be polished stainless steel or brass. Valve bodies shall be brass.

8. Unit Heater Heating Water Control Valves:

a. Type: Valves shall be of the two-way, proportional, segmented ball valve, modulating rotary ball type.

b. Sizing: Valves shall be sized for a maximum water pressure drop of 3 psi at the coil design water flow rate.

c. Actuators: Valve actuators shall be electronic. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. Floating point control is allowed.

d. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 200 deg. F.

e. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

f. Connections: Valve connections shall be soldered or threaded as required by the application.

g. Construction: Valve stems shall be polished stainless steel. Valve trim shall be polished stainless steel or brass. Valve bodies shall be brass.

9. Building Heating Water Blending Valves (3-way):

a. Type: Valves shall be of the three-way, proportional, modulating blending type.

b. Sizing: Valves shall be line sized.

c. Actuators: Valve actuators shall be electronic or pneumatic as required by the application. Actuators shall have sufficient torque capacity to provide complete shut-off at the ratings indicated. All valves shall have position feedback.

d. Pressure and Temperature Ratings: Valve pressure ratings shall be a minimum of 150 psig with water temperature of 250 deg. F.

e. Close-off Ratings: Valve close-off ratings shall be a minimum of 100 psig.

f. Connections: Valve connections shall be flanged.

g. Construction: Valve stems shall be polished stainless steel. Valve bodies shall be ductile iron or carbon steel.

10. Globe Valves:

a. Material: bronze or stainless

b. 2-way

c. ANSI Leakage Class IV (0.01% of Cv)

d. Fail Open.

e. Cartridge type packing

f. Equal Percentage/linear flow characteristics

g. Stainless steel stem and trim.

h. Rated for 15psi steam service.

i. ½" to 2" Valves are to be Ansi 250 rated

j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated

k. Metal to metal seats

l. Provide 100:1 range ability.

m. Siemens 599 Series or an approved equal shall be provided.

RESPONSES TO QUESTIONS SUBMITTED BY PROPOSERS:

Refer to attached "Response to RFI" document for a list of questions received prior to April 16, 2019 with responses to each question.

FOR INFORMATION ONLY: PRE-PROPOSAL CONFERENCE MINUTES

A non-mandatory pre-proposal conference was conducted on April 11, 2019. The meeting minutes are attached for information purposes only. The attached minutes do not change or imply changes to the Request for Proposals. All comments and questions during the conference

were taken under advisement by the Owner. All original provisions of the RFP will remain in effect unless specific changes are incorporated by addendum.

This addendum consists of seven (7) pages of written documentation plus attachments. Except as modified by this addendum, the original proposal documents shall remain in effect.

This addendum must be acknowledged in the space provided on the Proposal Form.

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Response to RFI's

Date:	April 11, 2019
Project:	UAF Automatic Temperature Controls IDIQ RFP
Project #	04-18-0072
Ref:	ATC IDIQ RFP RFI Responses
Submitted By:	Various ATC IDIQ RFP Proposers

The following RFI questions have been submitted for the University of Arkansas Automatic Temperature Controls IDIQ RFP. Responses have been provided for each of the questions that have been submitted prior to April 10, 2019. The last day to ask RFI questions as noted in the RFP is Tuesday, April 16, 2019 at 5:00 p.m.

Comments

1. Plan Sheet ATC2.00: The Standard System Valve Schedule includes information for a "Building Chill Water Valve" and a "Chill Water De-Coupler Valve". These valve names do not match with the Chilled Water System Building Entry drawing on sheet ATC2.00. Please provide valve sizes for the "Line Size CHWS Control Valve" and the "2/3 Control Valve".

BERNHARD TME RESPONSE: Price with an analog 8" butterfly valve for the line size valve, and an analog 4" segmented ball valve for the 2/3 control valve.

2. Plan Sheet ATC2.00: The RFP specification for Control Valves in section 00600-2.02-R (beginning page 44) lists specifications for a "Building Chilled Water Control Valve" and a "Chilled Water Bypass Control Valve". Please clarify the names of these valves with the control drawings.

BERNHARD TME RESPONSE: The chilled water bypass control valve can be removed from the controls spec. This will be a manually operated valve between the supply and return lines as indicated on ATC2.00. The building chilled water control valves shall be the 1/3-2/3 valves indicated on ATC2.00. Price with an analog 8" butterfly valve for the line size valve, and an analog 4" segmented ball valve for the 2/3 control valve.

3. Plan Sheet ATC2.00: The sequence of operations and point schedule on ATC2.00 refer to a modulating control valve in the decoupler line. Please clarify if a control valve should be shown in the decoupler pipe.

BERNHARD TME RESPONSE: Decoupler valve shall be a manual operated valve. Do not price with an actuator.

4. Plan Sheet ATC3.00: The Standard System Valve Schedule includes information for a "Building Heating Water Blending Valve". This valve name does not match with the Heating Water System Building Entry drawing on sheet ATC3.00. Please clarify the valve name with the name of the valve in the drawing.

BERNHARD TME RESPONSE: The three way building pressure control valve shall be relabeled as the building heating water blending valve and shall be priced at the indicated 4".

5. Plan Sheet ATC3.00: There are no requirements in section 00600-2.02-R or sizes in the Standard System Valve Schedule for the "Pump Isolation Valves" or the "Building Bypass Valve" shown on ATC3.00. Please provide information for bidding purposes.

BERNHARD TME RESPONSE: Price the pump isolation valves as 4" butterfly valves, and the price the valve labeled as building bypass valve as a 4" segmented ball valve.

6. Plan Sheet ATC3.01: The RFP specification for Control Valves in section 00600-2.02-R (beginning page 44) does not list any requirements for the steam heat exchanger 1/3 and 2/3 control valves or the heat exchanger isolation control valves. Recommend using stainless steel globe style control valves for steam heat exchangers. Please provide specifications for these valves.

BERNHARD TME RESPONSE: Where required, provide steam valves that meet the following requirements:

Globe Valves:

a. Material: bronze or stainless
b. 2-way
c. ANSI Leakage Class IV (0.01% of Cv)
d. Fail Open.
e. Cartridge type packing
f. Equal Percentage/linear flow characteristics
g. Stainless steel stem and trim.
h. Rated for 15psi steam service.
i. ½" to 2" Valves are to be Ansi 250 rated
j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated
k. Metal to metal seats
l. Provide 100:1 range ability.
m. Siemens 599 Series or an approved equal shall be provided.

Segmented Ball Valves that meet or exceed the construction indicated above shall also be allowed for steam service.

7. Plan Sheet ATC3.01: The RFP specification for Control Valves in section 00600-2.02-R (beginning page 44) does not list any requirements for the steam heat exchanger 1/3 and 2/3 control valves or the heat exchanger isolation control valves. Recommend using stainless steel globe style control valves for steam heat exchangers. Please provide specifications for these valves.

BERNHARD TME RESPONSE: Where required, provide steam valves that meet the following requirements:

Globe Valves:

a. Material: bronze or stainless
b. 2-way
c. ANSI Leakage Class IV (0.01% of Cv)
d. Fail Open.
e. Cartridge type packing
f. Equal Percentage/linear flow characteristics
g. Stainless steel stem and trim.
h. Rated for 15psi steam service.
i. ½" to 2" Valves are to be Ansi 250 rated
j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated
k. Metal to metal seats
l. Provide 100:1 range ability.
m. Siemens 599 Series or an approved equal shall be provided.

Segmented Ball Valves that meet or exceed the construction indicated above shall also be allowed for steam service.

8. Plan Sheet ATC3.03: Is the pump status point assumed to be via a dry contact within the condensate return pump controls panel or should the ATC Contractor provide a current switch for status monitoring? Also, it is assumed that the two status points are for monitoring the status of each pump within the duplex pump. Please confirm.

BERNHARD TME RESPONSE: For the purposes of pricing, assume the contacts are provided with the condensate pumps and that there is a contact for each pump.

9. Plan Sheet ATC3.04: The plan calls for the alarm strobe to be located inside the mechanical room and the alarm horn to be located outside the mechanical room. The plan shows two sets of horns and strobes. Please confirm that two strobes are required inside the mechanical room or will one strobe inside the room suffice? Are these devices to be installed near the boiler room control panel or near the doors?

BERNHARD TME RESPONSE: For pricing purposes, assume there are two doors, and that the visual devices will be located inside the room above the door, the audible devices will be located outside of the room above the door, and the switches will be located inside the room next to the doors.

10. Plan Sheet ATC4.00: The sequence of operations refers to a discharge air temperature. However, there is not discharge air temperature sensor shown on the drawing. Please confirm the addition of a discharge air temperature sensor.

BERNHARD TME RESPONSE: The cooling coil discharge air temperature sensor shall be utilized. No additional sensor required.

11. Plan Sheet ATC4.01: The drawing calls for steam control valves on the humidifier. There are no specifications for steam valves in section 00600-2.02-R. Please provide specifications for steam control valves in AHU applications. Recommendation is stainless steel globe valve.

BERNHARD TME RESPONSE: Where required, provide steam valves that meet the following requirements:

Globe Valves:

a. Material: bronze or stainless
b. 2-way
c. ANSI Leakage Class IV (0.01% of Cv)
d. Fail Open.
e. Cartridge type packing
f. Equal Percentage/linear flow characteristics
g. Stainless steel stem and trim.
h. Rated for 15psi steam service.
i. ½" to 2" Valves are to be Ansi 250 rated
j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated
k. Metal to metal seats
l. Provide 100:1 range ability.
m. Siemens 599 Series or an approved equal shall be provided.

Segmented Ball Valves that meet or exceed the construction indicated above shall also be allowed for steam service.

12. Plan Sheet ATC4.02: The outside air duct shows an outside airflow measuring station. The symbol for this device is not shown in the plan legend. Please clarify if the ATC contractor is to include pricing for this airflow station. If so, please provide specifications, dimensions, and a basis of design product. It is believed that the current campus standard is the Ebtron Gold Series.

BERNHARD TME RESPONSE: Revise all airflow measuring stations to be provided and installed by ATC contractor. Revise drawings to have the "AFMS provided and installed by division 230900" symbol. Sensor shall be of the thermal anemometer grid type with an accuracy + 2% of the reading through the velocity range from 0 to 5,000 fpm. Ebtron Gold is an acceptable manufacturer.

13. Plan Sheet ATC4.02: The plan shows an airflow measuring station on the inlet of the supply fan. Please verify if the piezometer is assumed to be provided with a pressure transducer with the air handling unit, or if the ATC contractor is to provide a pressure transducer to monitor supply airflow.

BERNHARD TME RESPONSE: For this type of airflow measuring device, assume ATC contractor is providing and installing the sensor.

14. Plan Sheet ATC4.02: No actuator size requirement is listed in the Standard System Control Damper Torque Schedule for the Return and Exhaust dampers. Please provide size requirements for these damper actuators.

BERNHARD TME RESPONSE: Return Air: 54 in-lbs, Outside Air: 30 in-lbs, Exhaust/Relief Air: 30 in-lbs.

15. Plan Sheet ATC4.02: The plan shows two moisture switches. Please clarify if this is a duplication error, or if one switch is intended for the condensate drain pan while the other is intended to monitor potential flooding within the AHU cabinet.

BERNHARD TME RESPONSE: Price only the single switch associated with the cooling coil.

16. Plan Sheet ATC4.03: The outside air duct shows an outside airflow measuring station. The symbol for this device is not shown in the plan legend. Please clarify if the ATC contractor is to include pricing for this airflow station. If so, please provide specifications, dimensions, and a basis of design product. It is believed that the current campus standard is the Ebtron Gold Series.

BERNHARD TME RESPONSE: Revise all airflow measuring stations to be provided and installed by ATC contractor. Revise drawings to have the "AFMS provided and installed by division 230900" symbol. Sensor shall be of the thermal anemometer grid type with an accuracy + 2% of the reading through the velocity range from 0 to 5,000 fpm. Ebtron Gold is an acceptable manufacturer.

17. Plan Sheet ATC4.03: The plan shows an airflow measuring station on the inlet of the supply fan. Please verify if the piezometer is assumed to be provided with a pressure transducer with the air handling unit, or if the ATC contractor is to provide a pressure transducer to monitor supply airflow.

BERNHARD TME RESPONSE: For this type of airflow measuring device, assume ATC contractor is providing and installing the sensor.

18. Plan Sheet ATC4.03: No actuator size requirement is listed in the Standard System Control Damper Torque Schedule for the Return damper. Please provide size requirements for this damper actuator.

BERNHARD TME RESPONSE: Return Air: 54 in-lbs, Outside Air: 30 in-lbs.

19. Plan Sheet ATC4.03: The drawing shows two mixed air temperature sensors – one before and after the fan. Please confirm if this is a duplication error, or if both sensors are required.

BERNHARD TME RESPONSE: Price only a single sensor after the fan.

20. Plan Sheet ATC4.03: The drawing calls for steam control valves on the heating coil. There are no specifications for steam valves in section 00600-2.02-R. Please provide specifications for steam control valves in AHU applications. Recommendation is stainless steel globe valve.

BERNHARD TME RESPONSE: Where required, provide steam valves that meet the following requirements:

Globe Valves:

a. Material: bronze or stainless
b. 2-way
c. ANSI Leakage Class IV (0.01% of Cv)
d. Fail Open.
e. Cartridge type packing
f. Equal Percentage/linear flow characteristics
g. Stainless steel stem and trim.
h. Rated for 15psi steam service.
i. ½" to 2" Valves are to be Ansi 250 rated
j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated
k. Metal to metal seats
l. Provide 100:1 range ability.
m. Siemens 599 Series or an approved equal shall be provided.

Segmented Ball Valves that meet or exceed the construction indicated above shall also be allowed for steam service.

21. Plan Sheet ATC4.04: No actuator size requirement is listed in the Standard System Control Damper Torque Schedule for the Wheel Bypass damper. Please provide size requirements for this damper actuator.

BERNHARD TME RESPONSE: Wheel bypass damper actuator to be sized for 30 in-lbs.

22. Plan Sheet ATC4.04: The drawing shows two averaging temperature sensors – one before and after the fan. Please confirm if this is a duplication error, or if both sensors are required. Also, please confirm that probe type temperature sensors can be used in these applications as there should be no stratification in these sections of the AHU.

BERNHARD TME RESPONSE: Provide both sensors. For these two locations, probe type sensors shall be allowed.

23. Plan Sheet ATC4.04: The supply and return air paths show an outside airflow measuring station. Please clarify if the ATC contractor is to include pricing for this airflow station. If so, please provide specifications, dimensions, and a basis of design product. It is believed that the current campus standard is the Ebtron Gold Series.

BERNHARD TME RESPONSE: Revise supply and exhaust airflow measuring stations to be provided and installed by ATC contractor. Revise drawings to have the "AFMS provided and installed by division 230900" symbol. Sensor shall be of the thermal anemometer grid type with an accuracy + 2% of the reading through the velocity range from 0 to 5,000 fpm. Ebtron Gold is an acceptable manufacturer. The fan inlet ring airflow measuring sensor shall be omitted from the diagram.

24. Plan Sheet ATC4.04: The plan shows an airflow measuring station on the inlet of the supply fan. Please verify if the piezometer is assumed to be provided with a pressure transducer with the air handling unit, or if the ATC contractor is to provide a pressure transducer to monitor supply airflow. Alternatively, could this device be removed since the supply duct has a dedicated air flow station at the discharge of the AHU?

BERNHARD TME RESPONSE: The fan inlet ring airflow measuring sensor shall be omitted from the diagram.

25. Plan Sheet ATC4.05: The drawing shows an outside airflow measuring station. Please clarify if the ATC contractor is to include pricing for this airflow station. If so, please provide specifications, dimensions, and a basis of design product. It is believed that the current campus standard is the Ebtron Gold Series.

BERNHARD TME RESPONSE: Revise all airflow measuring stations to be provided and installed by ATC contractor. Revise drawings to have the "AFMS provided and installed by division 230900" symbol. Sensor shall be of the thermal anemometer grid type with an accuracy + 2% of the reading through the velocity range from 0 to 5,000 fpm. Ebtron Gold is an acceptable manufacturer.

26. Plan Sheet ATC4.05: The plan shows an airflow measuring station on the inlet of the supply fan. Please verify if the piezometer is assumed to be provided with a pressure transducer with the air handling unit, or if the ATC contractor is to provide a pressure transducer to monitor supply airflow.

BERNHARD TME RESPONSE: The fan inlet ring airflow measuring sensor shall be omitted from the diagram.

27. Plan Sheet ATC4.05: The drawing calls for steam control valves on the heating coil. There are no specifications for steam valves in section 00600-2.02-R. Please provide specifications for steam control valves in AHU applications. Recommendation is stainless steel globe valve.

BERNHARD TME RESPONSE: Where required, provide steam valves that meet the following requirements:

Globe Valves:

a. Material: bronze or stainless
b. 2-way
c. ANSI Leakage Class IV (0.01% of Cv)
d. Fail Open.
e. Cartridge type packing
f. Equal Percentage/linear flow characteristics
g. Stainless steel stem and trim.
h. Rated for 15psi steam service.
i. ½" to 2" Valves are to be Ansi 250 rated
j. 2-1/2" valves to 6" are to be ASTM A126 Class B or Ansi Class 125 rated
k. Metal to metal seats
l. Provide 100:1 range ability.
m. Siemens 599 Series or an approved equal shall be provided.

Segmented Ball Valves that meet or exceed the construction indicated above shall also be allowed for steam service.

28. Plan Sheet ATC5.00: Is the ATC contractor to provide the 24V transformer or are these provided with the fan coil units? (This question is typical for all Fan Coil Units)

BERNHARD TME RESPONSE: ATC contractor shall provide. Installation would be similar to that indicated on detail R sheet ATC0.02. Assume one transformer per unit for the purposes of this pricing exercise.

29. Plan Sheet ATC5.00: Is the ATC contractor to provide the moisture switch for the unit, or this provided with the fan coil unit? The moisture switch is not shown on the points list. Please confirm if this is a monitored point or if this is to be interlocked with the unit factory wiring. (This question is typical for all Fan Coil Units)

BERNHARD TME RESPONSE: ATC to provide the moisture switch. Include in the points list. Monitor the point. The unit should shut down upon detection via interlock.

30. Plan Sheet ATC5.02: The sequence of operations for the return air control fan coil unit indicates that a space temp sensor with set point may not be necessary for the operation of the unit. Should the zone sensor be removed in lieu of the return air temperature sensor and control scheme?

BERNHARD TME RESPONSE: Remove the room sensor. Only the return air temperature sensor shall be required.

31. Plan Sheet ATC5.02: Please confirm the correct location of the heating coil discharge air temperature sensor. This point is not shown on the point list. On many fan coil units, installation of this temperature sensor between the coils may not be possible.

BERNHARD TME RESPONSE: Concur. Sensor shall be removed from the diagram. Do not price.

32. Plan Sheet ATC5.05: The drawing shows a CO2 sensor and humidity sensor, but these points are not included in the point list. Should the ATC contractor price for this standard include CO2 and humidity sensors? Or, are these listed to be included only when shown on project plans? Bidder suggestion is to exclude these sensors from the standard drawing, as the vast majority of VAV units will not include CO2 or humidity sensing.

BERNHARD TME RESPONSE: Price the standard system without the humidity sensor and without the CO2 sensor, but provide an additive alternate for each. Do not include these two alternates in the prototypical building pricing.

33. Plan Sheet ATC5.06: The drawing shows a CO2 sensor, but this point is not included in the point list. Should the ATC contractor price for this standard include a CO2 sensor? Or, is this listed to be included only when shown on project plans? Bidder suggestion is to exclude this sensor from the standard drawing, as the vast majority of VAV units will not include CO2 sensing.

BERNHARD TME RESPONSE: Price the standard system without the CO2 sensor, but provide an additive alternate for it. Do not use this alternate in the prototypical building pricing.

34. Plan Sheet ATC5.09: The drawing shows a CO2 sensor and humidity sensor, but these points are not included in the point list. Should the ATC contractor price for this standard include CO2 and humidity sensors? Or, are these listed to be included only when shown on project plans? Bidder suggestion is to exclude these sensors from the standard drawing, as the vast majority of VAV units will not include CO2 or humidity sensing.

BERNHARD TME RESPONSE: Price the standard system without the humidity sensor and without the CO2 sensor, but provide an additive alternate for each. Do not include these two alternates in the prototypical building pricing.

35. Plan Sheet ATC5.11 requires a moisture sensor (sequence of operations) / switch (drawing label). This device is not listed in the point schedule. Please clarify the type of device that is required. Additionally, there is no specification for this device. Please provide device requirements and if possible, a basis of design product. Moisture sensing in this application can range all the way from a simple float switch to an actual pipe mounted moisture sensor which is a more expensive device. This moisture sensor is not shown on drawing ATC5.12. Was this perhaps intended for the chilled beam application on ATC5.10? The sequence shown mentions a chilled beam.

BERNHARD TME RESPONSE: Sensor shall be removed from the diagram. Do not include in pricing.

36. Pricing for the electrical installation (conduit and wire lengths) is very much a matter of guessing when pricing standards for these theoretical systems. Having a standard of reference for estimating purposes – such as an electrical installation schedule – would help provide fair grounds for comparison so that all bidders are estimating similar system installations. (i.e. it would prevent any one contractor from assuming 5 foot thermostat wiring when others may assume a 25 foot wire installation). One such table is referenced on page 26 of the RFP as a "Wire and Conduit Basis" table (just below Total Prototype Buildings…), but this table is not found anywhere in the RFP document. Electrical installation can be as much as 30% of an overall estimate, so variances in these electrical assumptions could have a major effect on pricing evaluations.

BERNHARD TME RESPONSE: Refer to Table below.

Indefinite Delivery Indefinite Quantity (IDIQ)

Automatic Temperature Control Systems

Fayetteville, Arkansas

Standard System Wire and Conduit Basis

Distances are indicated to establish a basis for installation costs

Standard System Drawing	Standard System Description	Distance in FT.
CHW	Chilled Water System	250
HWS	Hot Water System	200
HS	Heating Water and Steam System	200
AHU-CV-2	Constant Volume AHU 2 Coil	250
AHU-CV-3	Constant Volume AHU 3 Coil	250
AHU-VV	Variable Volume AHU	250
AHU-DD	Dual Duct AHU	250
ERU	Energy Recovery AHU	250
AHU-OSA	Constant Volume AHU 100% OSA	250
FCU-2-ZNT	Fan Coil Unit 2 Pipe	50
FCU-4-ZNT	Fan Coil Unit 4 Pipe	50
FCU-4-RA	Fan Coil Unit 4 Pipe Return Air Control	50
FCU-3-SPEED	Fan Coil Unit 3 Speed with Dehumidification	50
BCU-COOL	Blower Coil Unit Cooling Only	50
VAV-OFF/CORR	Air Terminal Unit with Hot Water Reheat Office/Corridor	50
VAV-COOL	Air Terminal Unit Cooling Only	50
VAV-DD	Air Terminal Unit Dual Duct	50
VAV-FPP	Air Terminal Unit Hot Water Parallel Fan Powered	50
VAV-FPS	Air Terminal Unit Hot Water Series Fan Powered	50
CB-COOL	Chilled Beam Cooling Only	50
FT-CONV	Finned Tube Convector	50
LAB	Lab Area Controls	200
EXH-D	Exhaust Fan	50

37. Could you please clarify am I to figure in Liquid Flow meters and VFD's in our pricing sir?
    ATC.00 states VFD drives to be provided by Div. 23 However, RFP page 32 item # 10 states, "Variable Frequency drives and flow meters shall be furnished by the Owner under a separate IDIQ."

BERNHARD TME RESPONSE: These components are to be included in bidder's standard system pricing. The references to Owner provided drives and flow meters will be removed from the RFP.

38. In the University of Arkansas RFP for Automatic Temperature Controls IDIQ, it request standard system pricing which is to include installation including cabling, raceways, etc. The installation cost for automatic temperature controls can vary greatly depending on many aspects of the project—new or retrofit construction, size of the equipment (5000 cfm unit or 50000 cfm unit), mechanical room space congestion, etc. How are the bidders to price the installation so that all respondents are pricing the same installation conditions? I know in the past the University provided a conduit/cable length summary for each system.

BERNHARD TME RESPONSE: Refer to response to item #36 of this RFI response.

39. Item #10 of the Coordination Items (1.02) found in the Technical Specifications states "Variable frequency drives and flow meters shall be furnished by the Owner under a separate IDIQ". This contradicts the General Notes from on the IDIQ control drawings. Please clarify if these components are to be included in the Standard Systems Pricing.

BERNHARD TME RESPONSE: These components are to be included in bidder's standard system pricing. The references to Owner provided drives and flow meters will be removed from the RFP.

40. Page 64 of the RFP is an Anti-Boycott of Israel Certification document. I did not see where this form was to be turned in. Please advise if this form is to be included in the proposal.

BERNHARD TME RESPONSE: This form is to be included in the proposal.

41. **Chilled Water System**
   a. IDIQ flow diagram shows the decouple valve to be manual with hand wheel gear operator However, decouple valve output is shown on the IO points matrix.
   b. IDIQ flow diagram shows all valves to have position feedback. However; the IO points matrix does not show these points.
   c. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.

   BERNHARD TME RESPONSE:
   a. Valve will be manual. Price as such. Do not include the associated control points.
   b. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
   c. Include feedback alarms on all VFD's. These will be included in the point matrix.

42. **Hot Water System**
   a. IDIQ flow diagram shows the minimum flow bypass valve to be manual (JCI drawings show to be automated valve). However, bypass valve output is shown on the IO points matrix.
   b. IDIQ flow diagram shows all valves to have position feedback. However; the IO points matrix does not show these points.
   c. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.

   BERNHARD TME RESPONSE:
   a. Provide an actuator on the bypass between the building supply and return right after the pump discharge. Price as a 2" segmented ball valve with actuator and feedback, fail in place.
   b. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
   c. Include feedback alarms on all VFD's. These will be included in the point matrix.

43. **Steam Heat Exchanger System**
   a. IDIQ flow diagram shows all valves to have position feedback. However; the IO points matrix does not show these points.
   b. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.

   BERNHARD TME RESPONSE:
   a. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
   b. Include feedback alarms on all VFD's. These will be included in the point matrix.

44. **Constant Volume AHU - 2 Coil**
    a. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    b. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.
    c. The building pressure and heating water return temperature points are not shown in the IO points matrix.

BERNHARD TME RESPONSE:

a. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
b. Include feedback alarms on all VFD's. These will be included in the point matrix.
c. Include the building pressure and the return temperature points in the matrix.

45. **Constant Volume AHU - 3 Coil**
    a. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    b. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.
    c. The heating water return temperature points are not shown in the IO points matrix.

BERNHARD TME RESPONSE:

a. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
b. Include feedback alarms on all VFD's. These will be included in the point matrix.
c. Include the return temperature points in the matrix.

46. **Variable Air Volume AHU**
    a. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    b. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.
    c. The heating water return temperature point is not shown in the IO points matrix.

BERNHARD TME RESPONSE:

a. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
b. Include feedback alarms on all VFD's. These will be included in the point matrix.
c. Include the return temperature points in the matrix.

47. **Dual Duct AHU**
    a. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    b. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.

BERNHARD TME RESPONSE:

a. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.

b. Include feedback alarms on all VFD's. These will be included in the point matrix.

48. **Energy Recovery Unit**
    a. IDIQ flow diagram shows a high static pressure sensor and air flow measuring station in the discharge of the unit that are unnecessary with the ones shown before the energy wheel. Only one set is needed.
    b. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    c. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.
    d. The heating water return temperature point is not shown in the IO points matrix.

BERNHARD TME RESPONSE:

a. Concur. Price with the units shown downstream of the wheel.
b. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
c. Include feedback alarms on all VFD's. These will be included in the point matrix.
d. Include the return temperature points in the matrix.

49. **Constant Volume AHU—100% OSA**
    a. IDIQ flow diagram shows an air flow measuring station in the outside air duct and supply fan inlet. Only one is needed.
    b. IDIQ flow diagram shows all valves and damper actuators to have position feedback. However; the IO points matrix does not show these points.
    c. IDIQ flow diagram shows speed feedback and alarms on all VFD's. However; the IO points matrix does not show these points.

BERNHARD TME RESPONSE:

a. Concur. Omit the fan inlet airflow measuring station.
b. Include position feedback on all actuators, excluding unitary equipment such as fan coils, supply terminals, unit heaters, induction units/radiant heaters, and chilled beams.
c. Include feedback alarms on all VFD's. These will be included in the point matrix.

END OF RFP RFI RESPONSE

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Meeting Notes

Date:	April 11, 2019
Participants:	Refer to attached Sign-In Sheet
Project:	University of Arkansas – Automatic Temperature Controls IDIQ RFP
Project #	04-18-0072
Ref:	Pre-Proposal Conference
Submitted By:	Grant Logan – Bernhard TME

A pre-proposal conference was held on Thursday, April 11th, 2019 for the University of Arkansas – Automatic Temperature Controls IDIQ Request for Proposals. This was a non-mandatory conference to allow interested proposers to the RFP ask questions about the proposal. The following items were discussed:

General Discussion:

1. There will be (8) committee members on the review committee who will evaluate the proposals to this RFP.

2. It is the University's goal to have this IDIQ contract awarded for by mid-May of this year.

3. Pricing breakdown is considered confidential, but high-level pricing typically has not been considered confidential and may be subject to Freedom of Information Act requests.

4. Detailed labor rates, OHP, etc. have been considered confidential in the past.

Contractor Questions:

1. Spec calls out segmented ball valves, are they required in all sizes?
    a. Segmented ball valves provide a better control range.
    The contractors are advised to provide pricing that complies with the specs of the RFP. Once the contract is awarded, the controls devices will be required to meet the requirements of a particular project's specifications.

2. How should pricing for VFD's and Flow Meters be handled?
    a. As mentioned above, contractors are advised to provide pricing that complies with the specs of the RFP.

    Note: This question was asked as an RFI, and further direction has been provided in Addendum 2.

3. Does the BAS network ride on the IT network?
    a. Yes. The controls contractor to provide patching information to UAF IT staff for any required network patches that may be required if awarded the contract.

4. Does fiber need to be run?
    a. The ATC contractors would take care of controls wiring to the ATC controllers. From that point, the project would supply a network drop for the controllers to access the IT network.

5. What are the electrical requirements for conduit and wire for bidders to consider?
    a. Typically the conduit and wire runs would be fairly short. The contractor was encouraged to raise an RFI if further direction was required.

       Note: This question was asked as an RFI, and further direction has been provided in Addendum 2.

End of Notes

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Sign In Sheet

Date: April 11, 2019
Project: University of Arkansas – Automatic Temperature Controls IDIQ RFP
Project # 04-18-0072
Ref: Pre-Proposal Conference

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