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October 27, 2017

Invitation to Bid No.	18-04-YH
Entitled:	Chilled and Hot Water Chemical Treatment
Opening Date:	November 14, 2017 at 3:00 p.m.

Addendum No. 4

Review the following changes/additions/clarifications to Invitation to Negotiate (ITN) No. 18-04-YH Chilled and Hot Water Chemical Treatment and Other Related Services to be addressed in submitted proposals:

1. Can we bring in bulk tanks at each feed station?
   Yes

2. I understand that USF will bring in Chlorine and Acid to the Central Plant and then it is the vendor's responsibility to move it to the different plants. Will the vendor have access to USF fork lift? How are we to move that product throughout the campus?
   USF will deliver the product to the feed stations.

3. The closed loops lose a lot of water and the ITN calls out the Closed Chilled Water Loops to be treated on an "As Needed, When Needed" basis. Are we to give you a price for a drum of our treatment? What are the parameters for treatment USF is looking to hold in these loops? Is this considered outside the scope of work? If so, what is the size of drum you want quoted and do you want it quoted in our bid?
   The closed loops are the chilled water loops at ISA and MDT. These loops have very little if any makeup and there is no flow data. "As needed" would be what's required to bring these systems up to standards and what is required to maintain that standard.

4. There was talk at the pre-bid of page 29 in the ITN regarding ASHRAE 188-2015 and OSHA. Should our bid number include doing tower cleanings, disinfections, legionella testing or setting up a water safety plan for USF?
   The bid should include a water safety plan that meets ASHRAE 188-2015 and OSHA, and the chemical treatment process associated with the plan. Disinfections would be included. Physical tower cleaning would be excluded.

5. Is USF requiring a secondary biocide for towers?
   No, however if a secondary biocide is needed to meet the performance standards in the specification then that should be included in your bid.

6. What is the combined water usage for the towers at Central, NW, and SE?
   See Attached Data Sheet

7. Can we get a list of how many chillers and the associated tonnage for each for all (3) plants
   See Attached Data Sheet

8. Can we get the total annual water makeup usage for the cooling systems at each plant? ***See Attached Data Sheet***

9. Does the plant know what the volume of the cooling towers and associated piping for each plant system and if so, what are those volumes.
   NA

10. At the Central Plant there were multiple individual cooling systems that required their own chemical feed station. Can you confirm how many chemical feed systems are required (currently in place) to meet the new RFP guidelines**?**
    1 Hot Water, 1 Chilled water feed at the header, feed stations on three active towers.

11. Section M under Controls states the supplier is to provide the control equipment. Based on our audit, the existing controllers do NOT meet the specification in Section O and P and will need to be replaced. Does the University want to own the equipment at the end of the Contract term or will the controller equipment always remain the property of the Supplier.
    No, the contractor would keep ownership

12. Does the facility know the volume of the closed loop chilled and hot water loops and how much makeup water is added per system per year.
    NW Chilled water loop 162,000 gallons, SE/CPT Loop 921,000 gallons, and the CPT HW loop is approximately 500,000 gallons.

13. At the Central Plant there were multiple individual cooling systems that required their own chemical feed station. Can you confirm how many chemical feed systems are required to meet
    the new RFP guidelines? It is our belief the existing controllers do not have the capabilities required by the RFP and therefore need to be replaced.
    Two chemical feed station for the chilled water loop at CPT. USF will upgrade the chemical feed system as necessary to interface with vendor controls.

14. At the Central Plant there were steam boilers. Are they going to be a part of the ITN process and if so, can we get the steam production per year production.
    Boiler Chemistry is removed from the ITN

15. The ASHRAE 188 standard mentioned would recommend you feed a non-oxidizing biocide. However, two of the three plants have discharge limits and you are currently no feeding a non-oxidizing biocide. Are we banned from feeding a non-oxidizing biocide due to permit regulations?
    No, USF may need to notify DEP

16. Section 36 Payment Bond – Is there a Payment Bond required for this ITN even if it goes over $ 100K and what are the requirements for the Bond.
    No

17. Can you provide the system tonnages and/or condenser recirculating rates along with load demand and operating schedule of each system?
    See Attached Data Sheet

18. -Is vendor to supply inhibitors for leaking closed loop systems?
    No

19. Need Water Meter Data for all Cooling Tower Systems.
    a. Ideally
    b. Make up water
       See Attached Data Sheet
    c. Bleed Water
       See Attached Data Sheet
    d. Need annual figures.
       See Attached Data Sheet
    e. Make sure that all digits are accounted for. Example, if your record meter reading to the nearest 100 gallons, make sure this is known or make sure you add the two zeros to the data provided.
       Ok

f. Clearly indicate if meter reading is in gallons or in Cu. Ft.
Ok

20. As a check on water meter data can you provide chiller rated tonnage?
a. For each facility.
See Attached Data Sheet

21. NPDES Permit.
a. Please clarify where you take the reading for this permit for each parameter reported. The exact permit would be ideal.
i. (pH, Total Residual Chlorine, Specific Conductance) are sampled where effluent enters the lake.
ii. (Dissolved Oxygen, Temperature and Total Alkalinity (as CaCO3)) are sampled where effluent enters the storm.
b. Are non-oxidizing biocides allowed?
Yes, USF may need to notify DEP
i. If so are there any restrictions?
No, USF may need to notify DEP
c. Will other chemicals used to treat the cooling towers have to be approved within the parameters of the NPDES permit?
No, USF may need to notify DEP

22. Central Plant Cooling Systems.
a. How many of the multiple towers are functional or could be run?
3, Towers #7, #8, and #5

23. Central Plant Steam Boiler.
Boiler Chemistry is removed from the ITN
a. Do you record amount of soft make up water used?
Boiler Chemistry is removed from the ITN
i. Can you provide annual data?
Boiler Chemistry is removed from the ITN
b. Do you record amount of gas fired to the Boilers?
Boiler Chemistry is removed from the ITN
i. Can you provide annual data?
Boiler Chemistry is removed from the ITN

24. Volumes of each cooling system for biocide dosage determination.

Data was attached to the first series of questions.

25. Chilled water loops information

- Estimated volume of each loop (gallons)
  Data was attached to the first series of questions.
- Make up meter data if available Data was attached to the first series of questions.
  Data was attached to the first series of questions.

26. Central Plant Steam Boiler – Is this still in the INT? – It looks like any references to boiler were removed per addendum #2**.**

No, boiler Chemistry has been removed.

27. Under Scope of Work (C), can you name the heating hot water system. More specifically, is this domestic water or a hot water loop?

Hot Water loop fed from CPT

28. Pricing states only a 6-10% markup on everything except labor. Is this only for additional work that isn't in this bid?

Yes

29. In the controls section R, can our chemical that has PTSA, which can be continuously monitored, be substituted for phosphate tested weekly?

No

- Same question for the chilled water loops but PTSA instead of nitrite testing weekly

  No

- Total hardness monitors don't go above 50 ppm at most so is this only required for softened makeup water?

  Yes SE Plant

- Alkalinity isn't something that is typically monitored by controllers either and would add additional cost to bid. Is it needed on all control systems?

  Yes

- Controls section (N) says controls for everything except the ISA Loop. Is controllers still wanted on every other chilled loops?

  Yes

Note: Total hardness, free chlorine, and alkalinity are typically not part of a treatment program in systems that are tested daily. Most condenser loop systems are tested 1-2x per month. The monitoring schedule for most closed loops typically runs from monthly to quarterly.

30. Controls p 29 of ITN. This gets confusing under Paragraph Q. You are asking for control systems that can input data for viewing in real-time, and trends for the following:
Yes

a. Conductivity.
b. pH
c. Alkalinity.
d. Free Chlorine.
e. Total Hardness.
f. Then Paragraph Q also states the following parameters can "input daily by manually sampling".
Any parameter may be input manually. Calcium Hardness, Phosphate, Nitrite are changed to weekly sampling
g.
   i. Calcium Hardness.
   ii. Phosphate.
   iii. Nitrite.
h. Who will be responsible for the "daily input by manually sampling"
The contractor
i. NOTE: These last 3 parameters are typically not part a treatment program in systems that are typically tested daily. Example, Phosphate and Nitrite are typically not tested parameters in cooling water applications, but are to be found in closed loop applications. However, closed loops are typically not monitored daily. The monitoring schedule for most closed loops typically runs from monthly to quarterly.

31. Could you please provide some additional data on the water consumption (makeup) and/or discharge (blowdown) from each of the three campus chiller/cooling tower plants? For example, the SE Plant makes up 1.2MM gallons of water annually to the cooling towers.
See Attached Data Sheet

32. Could you please provide some additional water numbers for the steam boiler systems in the Central Plant? For example, the steam boilers consume 2.1MM gallons of water per year.
Boiler Chemistry is removed from the ITN.

33. For the NW and Central Plant's cooling tower systems, where is the blowdown water conductivity sample taken for the purpose of meeting your discharge permit? At point of entry to the lake, or at the lake outfall?
(pH, Total Residual Chlorine, Specific Conductance) are sampled where effluent enters the lake. (Dissolved Oxygen, Temperature and Total Alkalinity (as CaCO3)) are sampled where effluent enters the storm.

34. You state that the University will be responsible for procuring and supplying commodity sulfuric acid and sodium hypochlorite (bleach). Bleach is an oxidizing biocide and one half of the recommended 'dual biocide program' recommended by the Cooling Tower Institute and other industry standards. Are you feeding a non-oxidizing biocide in your towers now? Would you like us to supply a quote to feed non-oxidizing biocides going forward? ***The bid should***

include a water safety plan that meets ASHRAE 188-2015 and OSHA, and the chemical treatment processes associated with the plan. non-oxidizing biocides would be included.

35. On page 16, #36, it appears as though there is a typo on the amount of the project that would cause us to obtain a performance bond. Can you please clarify this?
No performance bond is necessary, boilerplate item.

36. According to the Addendum #2 document, Section 7 Letter C now reads as such:

"C. Provide ongoing annual water treatment for the chilled water systems, and heating hot water system."

Does this mean that you are no longer interested in us providing a quote for the cooling tower/condenser water systems? As it reads now, chilled water and heating hot water would refer to only those closed loops on campus, not the open, condenser water (cooling tower) systems.
No, it removes boiler chemistry only.

37. If I understand Addendum #2 correctly, you do not want us to quote chemistry, equipment, service, etc for the steam boiler systems in the Central Plant. Is that correct? The steam boilers are now out of the ITN?
Yes

38. Who owns the Hach Hardness Analyzer in SE Plant?
USF

39. Who owns the water meters throughout the sites?
USF

40. Who owns the existing pumps?
USF

41. Who owns the existing chemical tanks?
USF

42. What are the NPDES #s?
FL0702820

43. Since there isn't a Legionella Risk Minimization Plan in place yet, can this be carved out for separate pricing based on needs uncovered in an Audit not yet conducted?
The bid should include a water safety plan that meets ASHRAE 188-2015 and OSHA, and the chemical treatment process associated with the plan. Disinfections would be included. Physical tower cleaning would be excluded.

44. What are the volumes of each system to be treated, the make-up and bleed-off rates, etc?
See Attached Data Sheet, NW Chilled water loop 162,000 gallons, SE/CPT Loop 921,000 gallons, and the CPT HW loop is approximately 500,000 gallons.

- We'll need this to estimate chemical usage rates.
- Can be combined for systems with common sumps or split out individually
- See matrix below as example:

Building	System #	Mfg	Tonnage	HP	Loop Volume	Make-up Source	Make-up rate (gals/yr)	Bleed-off rate (gals/yr)
SE Plant	Chiller 1A	Trane	2300			Softened Well		
	Chiller 2A	Trane	2300					
	Chiller 3A	Trane	2300					
	Chilled Water Loop							
	Tower Loop (6 Cells)							
CPT	Chiller 9	Trane	2100			Hard Well		
	Chiller 14	Trane	2100					
	Chiller 11	Trane	2100					
	Chiller 3	York	Inop ?					
	Chiller 10	Carrier	2100					
	Chiller 12	Trane	1250					
	Chilled Water Loop							
	Tower 7 (4 cells)							
	Tower 6 (2 cells)							
	Tower 5 (4 cells)							
	Tower 3 (2 cells)							
	Tower 4 (2 cells)							
	Tower 8 (a-d) (4 cells)							
	Hot Water Boiler 3					Softened Well		
	Hot Water Boiler 5							
	Hot Water Boiler 6							
NW Plant	Chiller 1	Trane	2000			Hard Well		
	Chiller 2	Trane	2000					
	Chiller 3	Trane	2000					
	Chiller 4	Trane	2000					
	North Tower (4 cell)							
	South Tower (3 cells)							
ISA	Closed Cooling Loop					Hard Well ?		
MDT	Closed Cooling Loop					Hard Well ?		

45. What are the total tonnages for the locations below as well as GPM on the pumps

- South East Chiller Plant- Total tonnage, GPM on pumps and system volume.(hours of operation)
- North West Chiller Plant- Tonnage for both sides. GPM on pumps and system volume in both tower systems. (hours of operation)
- Central Chiller Plant- Total system tonnage (for the whole plant) last year's water usage for this location. (hours of operation)
- ISA Closed Loop- system volume?

46. In the DAILY testing/monitoring it states that M-Alkalinity needs to be recorded. Are you open to discussing this in greater detail?

No

Moving it to weekly?

No

In locations where this is a critical point (locations where acid is being fed) there is a correlation between the M-Alkalinity/pH and an assumption can be made.

If the pH is within the control parameters, then the M-Alkalinity will be within the control parameters as well.

47. Are all controllers and pumps on site owned by USF?

Yes

48. What are the loads and tonnages (seasonal) for all of the plants.

CPT Season (2016)	Average (Tons)	Peak (Tons)
Spring (3/1 - 5/31)	4000	5452
Summer (6/1 - 8/31)	5403	6211
Fall (9/1 - 11/30)	4361	6452
Winter (12/1 - 2/28)	2907	4454
NWP Season (2017)	Average (Tons)	Peak (Tons)
Spring (3/1 - 5/31)	2384	3560
Summer (6/1 - 8/31)	2987	3558
Fall (9/1 - 11/30)	2485	4343
Winter (12/1 - 2/28)	2384	3560
SEC Season (2016)	Average (Tons)	Peak (Tons)
Spring (3/1 - 5/31)	2632	3697
Summer (6/1 - 8/31)	3707	4655
Fall (9/1 - 11/30)	3168	5155
Winter (12/1 - 2/28)	1962	3130

49. What are the averages per year for the water meters that are recorded by USF? Make up and blowdown meters.
Data was attached to the first series of questions. Not all blow down is recorded Cycles were given.

What is the average loss (yearly) for the (CEP) Main Chilled Loop and the Main Hot Loop?
Also, how many gallons are in each?
Data was attached to the first series of questions

50. What is the average loss (yearly) for the Northwest Plant/Southeast Plant Chilled Loops?
Also, how many gallons are in each?
Data was attached to the first series of questions

51. What are the discharge permit parameters for the blowdown?
They are listed within the performance specifications

52. Do the discharge permits allow for a non-oxidizing biocide or only the oxidizing biocide?
Either, however USF would have to inform the regulator.

Summary of Chillers on Tampa Campus					
Location	Equipment Label	Manufacturer	Chiller Type	Model Number	Equipment Capacity (Tons)
CPT	CH-3	York	WCC	YTL6M6F2-CW ES	883
CPT	CH-9	Trane	WCC	CVHE1550	1550
CPT	CH-10	Carrier	WCC	17FA561	2300
CPT	CH-11	Carrier	WCC	17FA6032561-M	2300
CPT	CH-14	Trane	WCC	CDF3000	2300
CPT	CH-12	York	WCC	OM2300	2300
NWP	CH-1	Trane	WCC	CDHF2000K1	1750
NWP	CH-2	Trane	WCC	CDHF2000K1	1750
NWP	CH-3	Trane	WCC	CDHF2000K1	1750
NWP	CH-5	Trane	WCC	CDHF2000K1	1750
SEC	CH-1	Trane	WCC	CDHF2550K1	2300
SEC	CH-2	Trane	WCC	CDHF2550K1	2300
SEC	CH-3	Trane	WCC	CDHF2550K1	2300
MDT (Outside)	CH-4	Trane	AC (Screw)	RTAC450	428
Total Tampa Campus Data					

	25,961

Water Data

Northwest Plant GPY

Date	**Makeup**	**Blow Down**	**Cycles**
South Cooling Tower	15,699,700.00	6,302,300.00	3-3.5
North Cooling Tower	3,835,700.00	2,737,000.00	3-3.5
Chillled Water Loop	37,700.00	na	na

Southeast Plant(Soft Water) GPY

Date	**Makeup**	**Blow Down**	**Cycles**
Cooling Towers	10,334,400.00	na	6.00
Chilled Make Up	3,800.00	na	na

Central Plant GPY

Date	**Makeup**	**Blow Down**	**Cycles**
Cooling Towers	12,086,300.00	na	3-3.5
Hot Water Loop	4,440,400.00	na	na
Chilled Water Loop	11,500.00	na	na

Note: **Please note receipt of this addendum by signing and returning with your proposal response.**

Authorized Signature & Date

Print Name

Company Name