AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES			
				1 16			
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. RE	QUISITION/PURCHASE REQ.NO.	5. PROJECT NO. (If applicable)			
0002	10/12/2018						
6. ISSUED BY CODE	AAQ530ANM-AFN	7. AD	MINISTERED BY (If other than Item 6) CO	DDE			
FEDERAL AVIATION ADMINISTRA AAQ-500 - REGIONAL ACQUISIT 2200 S. 216TH STREET DES MOINES WA 98198-6547	FION CONS	_					
8 NAME AND ADDRESS OF CONTRACTOR (No. stree	t county State and ZIP Code)	(9A	AMENDMENT OF SOLICITATION NO.				
		(X) 69	97DCK-18-R-00406				
		X 98	. DATED (SEE ITEM 11)				
		08	8/09/2018				
		10	A. MODIFICATION OF CONTRACT/ORDER NO.				
		10	B. DATED (SEE ITEM 13)				
CODE	FACILITY CODE	1					
	11. THIS ITEM ONLY APPLIES TO		IENTS OF SOLICITATIONS				
 The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and is received prior to the opening hour and date specified. ACCOUNTING AND APPROPRIATION DATA (<i>If required.</i>) 							
13. THIS ITEM APPLIES ONLY TO M	ODIFICATIONS OF CONTRACTS/ORDER	RS. IT N	NODIFIES THE CONTRACT/ORDER NO. AS DESCR	IBED IN ITEM 14.			
(x) A. THIS CHANGE ORDER IS ISSUED PURS ORDER NO. IN ITEM 10A.	SUANT TO: (Specify authority) THE CHA	NGES S	SET FORTH IN ITEM 14 ARE MADE IN THE CONTF	RACT			
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14.							
C. THIS SUPPLEMENTAL AGREEMENT IS	ENTERED INTO PURSUANT TO THE AI	JTHORI	TY OF:				
D. OTHER (Specify type of modification and	authority)						
E. IMPORTANT: Contractor 🛛 is not. 🗋 is required to sign this document and return 1 copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
Amendment 0002 posts the questions received and their applicable answers, including							
attachments.							

Offer	deadline	date	remains	the	same:	5:00pm	on	Tuesday,	November	6,	2018.
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Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect. 15A. NAME AND TITLE OF SIGNER (*Type or print*)
16A. NAME AND TITLE OF CONTRACTING OFFICER (*Type or print*)

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (<i>Type or p</i>	rint)		
		Cynthia A. Tjelde			
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. CONTRACT AUTHORITY	16C. DATE SIGNED		
(Signature of person authorized to sign)		(Signature of Contracting Officer)			

697DCK-18-R-00406 Denver Major Mechanical Project Questions & Answers

1) Question: Drawing S102 Detail A8 indicates the scale of $\frac{1}{2}$ " – 1'0" as does the scale on the drawing, but this does not coincide with the dimensions on the plans. Which is correct?

Answer: Drawing was incorrectly labeled and should read 1/4" = 1'-0"

2) Question: Will panels TPS-1 and TPS-2 be a part of the temporary chiller package or part of the electrical contractor's gear?

Answer: TPS-1 and TPS-2 are not part of the temporary chiller package. Contractor is to provide panels TPS-1 and TPS-2.

3) Deduct Option 1 per Specification Section 011000 Part 1.1.10.A calls for underground 12" pipe to be tested. If the deduct is not selected:

a) Question: What is the extent of the piping to be removed? If it is the piping under the existing pump room floor, this will also include floor removal in the pump house. Correct?

Answer: If the deduct is not selected, all the piping from the chillers to the cooling towers will be replaced.

b) Question: What about the 6" CTS and CTR that exits the building to the south? To what extent will this piping need to be replaced?

Answer: This piping will not be replaced.

c) Question: Electrical Drawing E104 sheet notes indicate underground circuit and wiring to remain. This conduit will be removed if the floor is removed to replace the underground 12" pipe. How should we figure this work?

Answer: Replacement of the 12" pipe will stop at the foundation. The floor will not be removed.

4) Question: Drawing M104 and M204 talk about the salvage and installation of new screens. The drawings appear to indicate grating over the sumps but there currently exists wood planks and there are no notes suggesting their replacement. Is it the intent of the project to re-use these planks over the existing sumps?

Answer: The screens noted on sheets M104 and M204 are the vertical trash/filter screens located within the sump. New screens are to be fabricated to match the existing ones. The cover panels are part of the system covering the flume (trough) and is noted on Architectural sheet A202. See also answer to Question 11 for additional detail.

5) Question: The replacement of the existing chilled water valves will require a system shut down to accomplish this work. What is the extent of the time that will be available for the system to be down to make these transitions?

Answer: System shutdowns are not an option. Plant must remain operational 24/7, with redundancy. All branches for each of the chiller and pumps need new isolation valves. During temporary chiller operation, the CWR header piping for the chiller and discharge header for the pumps will be dry, so the isolation valves can easily be replaced during that time. The chilled water supply header off the chiller and the chiller water header on the suction side of the CW pumps will always remain active. This line cannot be disabled. Due to not being able to isolate flow and the valves' close proximity to their respective headers (no room for hot tap/stopple), these eight (8) valves will need to be abandoned in place and new isolation valves installed downstream on each branch, with about 2' of space between old and new valves. This will include the four (4) valves (1 per chiller) on the CWS lines for each chiller and the four (4) valves (1 per CW pump) for each suction end of the pumps.

6) Question: Drawing M203 shows the installation of a 6" bypass installed in ESU SSC Office B113A. I do not believe we went into that room during the site visit. Is there an open ceiling in this area or is it similar to ESU SSC Break Room B113 with a dropped ceiling?

Answer: ESU SSC Office B113A has a dropped ceiling similar to ESU SSC Break Room B113. Room B113A is to have a dropped ceiling.

7) Question: Drawing A201 Notes 6 & 8 call out for the room to be painted. Note 7 indicates the floors should be painted in Rooms B115, B116, and B117. Do Notes 6 & 8 only apply to the Chiller Room B115?

Answer: Notes 6 and 8 only apply to the Chiller Room B115. Floors are repainted in chiller room, boiler room, and vestibule/ramp. Note 7 does <u>not</u> indicate floor painting in Boiler Room B116 and vestibule/ramp B118. Refer to Room Finish Schedule, Drawing A801 for floor finishes in chiller room, boiler room and vestibule/ramp.

8) Question: Where is the Heat Exchanger located and scheduled as described in Specification Section 011000 Part 1 (1.4)(A)(1)(d)(iv)? The description is to provide a heat exchanger in the pump house, but there is only one heat exchanger scheduled and it is in the chiller room. I'm not sure what this is referencing because I don't see one in the pump house.

Answer: Heat Exchanger is in the chiller room, not in pump house. Remove Section 011000 Part 1 (1.4)(A)(1)(d)(iv) verbiage "new flat plat heat exchanger (new free-cooling method)" from specifications.

9) Question: Specification Section 011000 Part 1 (1.5)(A)(2) indicates we should contact Johnson Controls for work on the legacy DDC Control System however when I contacted the Fort Collins office for Johnson Controls, who originally had a service agreement on the chillers, they indicated they had not performed work at the facility since 2014. Who is currently responsible for the DDC control system for the facility?

Answer: Schneider Electric is the DDC control provider. Refer to Section 23 09 00 – Instrumentation and Controls for HVAC Part 1, 1.1(D)(10) for contact information.

10) Question: What is meant by the reference in Spec Section 011000 Part 1 (1.4)(A)(1)(c)(vii) "Provide, install, and maintain temporary cooling tower units and other associated equipment as needed, in coordination with FAA facility personnel"? The temporary chillers provided are air-cooled. Is there a requirement to have temporary towers for the existing equipment?

Answer: No temporary cooling towers required, just chillers. Error in specification wording.

11) What is meant by the reference in Spec Section 011000 Part 1 (a)(1)(c)(iii) "Redoing the trough guard outside and inside the pump house" and Part 1 (1.4)(A)(a)(d)(ii) "New trough guard that will seal better than existing" regarding redoing the trough guards?

Answer: There is a concrete trough under the cooling towers that returns water from the towers to the sump for re-use. This trough and the sump have covers on them to keep debris out and to keep people from falling in. They are also used to control free evaporation. This is what we refer to as the "guard". They are currently made of wood and are subject to rot. The covers are to be replaced with a material that is more robust than wood. So far as we know, no commercial product specifically for this purpose exists. Fiberglass or polypropylene "planks" or sheet stock might be able to be custom cut to fit the openings. Or, the contractor is free to offer potential solution to this problem based on their (or their sub's) past experience.

12) Question: What is meant by the Spec Section 011000 Part 1 (1.4)(A)(1)(e)(xiv) "convert as-built shop drawings to FAA standard baseline drawings"?

Answer: Refer to Spec. Section 013100-1.8. Using FAA provided digital data files/drawings; the Contractor will incorporate/convert their approved as-built/redline drawing information to final digital as-built CAD drawings and submit to the FAA.

13) Question: Please provide contact information for the fire alarm vendor for this facility.

Answer: Contractor may use any qualified, certified fire detection and suppression subcontractor for this purpose.

14) Question: Please provide contact information for the access control subcontractor for this facility.

Answer: Refer to Section 23 09 00 – Instrumentation and Controls for HVAC Part 1, 1.1(D)(10) for contact information.

15) Question: Please provide contact information for Schneider Electric to get on their distribution list for the DDC pricing. The contact information in the spec book does not appear to be current.

Answer: Refer to Section 23 09 00 – Instrumentation and Controls for HVAC Part 1, 1.1(D)(10) for contact information.

16) Question: Is there an environmental report available that would show approximate quantities to help abatement vendors with their scope of work?

Answer: The whole EOF area will need to be abated, approximately 1,400 SF. See Note 5 on drawing A111.

17) Question: Can abatement work be done during normal hours?

Answer: Yes, the extent of which would depend upon methods, procedures, activity durations, etc., to be identified by the contractor in the required asbestos abatement plan that is subject to approval.

18) Question: Underground piping replacement from the towers is called out as a deductive alternate in the specifications. I do not see it listed on the drawings or shown on the drawings. Please provide plans for this scope.

Answer: See attachment "Question 18 and 19 - ZDV-1401893-M901".

19) Question: Please identify the location and limits of the pipe testing area.

Answer: See attachment "Question 18 and 19 - ZDV-1401893-M901".

20) Question: Will the pipe testing agency be hired by the FAA direct?

Answer: The Contractor will hire the testing agency.

21) Question: Please confirm whether any arc flash studies are required for this project.

Answer: Yes all new panelboards will require Arc-Flash labeling.

22) Question: Will the FAA remove all furniture, equipment, etc, from the EOF area?

Answer: No, contractor is required to move all furniture, equipment, etc., from the EOF area. See answer to Question 29 for additional details.

23) Question: Does the temporary cooling piping, conduits, etc., need to be seismically restrained?

Answer: Yes.

24) Question: Does all plastic covering electronic equipment need to be static resistant?

Answer: Yes, all plastic covering electronic equipment needs to be static resistant and breathable.

25) Question: Is there any specification or specific acoustical wall panel called out in the spec? We did not see any.

Answer: Spec. Section 098433-2.1.A identifies basis for design. Refer to Drawing A801 Room Finish Schedule and Interior Color Scheme Schedule for specific product listed.

26) Question: To what extent do all penetrations need fire proofing in the chiller room? Do all existing penetrations need to be done or redone? According to the note on sheet A001 we only need to do new penetrations, correct?

Answer: Only new penetrations and/or existing penetrations affected by and rendered non-compliant by activities performed under the scope of work are required, per Drawing A001, to be firestopped or reworked for compliance. Chiller Room is no exception.

27) Question: A022 – This note indicates there is mold behind the acoustical panels. How much mold is present so we can quantify how much work needs to be done? Also, will these acoustical panels need to be replaced if they are coated in mold? The note on sheet A112 only indicates to replace the red and orange acoustical panels. Are there any visual references reflecting how far the mold extends or which color of panels are at this location? Please provide or clarify.

Answer: Estimated square footage of mold is as follows: HOST Mechanical Room B119 approximately 200 SF behind existing light brown colored panels. Remove, clean of mold and reinstall light brown panels. HOST Computer Room B134 approximately 20 SF mold behind orange panels to be demolished. Refer to Drawings A701 and A801 as they apply to elevations and room finishes. If, during the project work, additional mold is discovered beyond these estimated SFs, a change order will be appropriate.

28) Question: A022 – Note D & E calls for the contractor to "Test and abate mold". I can not price this if I do not know how far it extends. Please advise.

Answer: See Question 27 answer.

29) Question: 1 – Note 5 & 7 indicates to remove all coating on the floors (vestibule chiller room and boiler room) to concrete. The general contractor is responsible to move all furniture and equipment within the room and then replace after the new floor coatings have been installed. How much furniture and equipment needs to be removed and reinstalled. Please provide photos.

Answer: See Attachment "Question 29 – List of furniture" for an estimate of items required to be moved by the contractor. The items will be moved to adjacent rooms and will not require going up or down stairs or significant distances.

30) Question: As per drawing A131 - Note 2 (as-built drawings of the NEOF area available upon request). Please provide the as-built drawings.

Answer: See as-built drawing Attachments "Question 30 – RMD-502-40449-A05, -A06, and -A07). FAA does not consider them to be essential for bidding purposes. Price your bid (offer) based on drawings provided in original solicitation.

31) Question: A132 – Does a HEPA vacuum need to be used to vacuum the acoustical ceiling before it is demolished?

Answer: Yes.

32) Question: A201 – Note 1 indicates to firestop existing and new penetrations in fire rated barriers. As we can not determine how many or how large any existing penetrations are, we request an allowance be determined for this work and indicated in the response to the questions. How much should this allowance be?

Answer: No allowance will be allowed. Only new penetrations and/or existing penetrations affected by and rendered noncompliant by activities performed under the scope of work are required to be firestopped or reworked for compliance. Chiller Room and vestibule are no exception.

33) Question: A201 – Note 6 Is this note for just the chiller room? Should the boiler room be done also?

Answer: Note 6 applies only to the chiller room. Chiller room B115 is the only room to have walls painted. Boiler room B116 and vestibule will not have wall patching.

34) Question: A211 – Note 3 Please confirm what the construction of the existing wall is? Metal stud & drywall, masonry?

Answer: Existing wall is metal stud and 5/8" fire rated drywall each side.

35) Question: A211 - Note 10 Please confirm what this cover plate is and what it will be. Steel?

Answer: Existing cover plate is steel. Coordinate replacement with floor finish requirements in accordance with Note 10.

36) Question: A201 – Note 4 Please provide a photo of the leak. What is the cause of the leak and how large is it so we can determine what needs to be done to correct it?

Answer: Photos below show exterior and interior view of leak in Boiler Room south wall. Water wicks under the curb for its full length. Since the pre-bid meeting on August 28 there has not been nor will there be a significant change in the conditions.



Exterior view looking down



Exterior view looking West



Exterior view looking East



Interior view

37) Question: A212 Note 4 indicates to inspect existing fire stopping and repair any that fail. We have no way to price this item as we do not know what will or will not fail. Please provide an allowance for this item.

Answer: No allowance. The FAA is unaware of any failing fire stoppings. Price your bid (offer) on new penetrations only. Any failed fire stopping(s) discovered during the project work will be negotiated in a change order.

38) Question: A212 Note 7 is this stair and handrail system part of the access floor system or a structural steel stair system?

Answer: The stair and handrail system is to be part of the raised floor system.

39) Question: A212 Note 12 please verify what work needs to be done. It is asking for an inspection of the columns and to be refinished if necessary. We can not quantify this until the inspection has been done.

Answer: With the exception of one (1) side of one column on which cable tray is present, resurfacing each side of all six (6) columns is required.

40) Question: A212 Note 14 What type of fire extinguisher?

Answer: Dry chemical Type A-B-C.

41) Question: A212 Note 17 This note indicates to block the ceiling louvers that are still working. Is this correct? How many are there? How large are they? Are these shown on the Mechanical drawings?

Answer: There is only one louver. It is verified that it was blocked off in January 2015. Remove from scope of work.

42) Question: Plans indicate to remove and replace acoustical wall panels that are red and orange. As the plans are not in color can you indicate which panels are red and orange so we can quantify how much gets removed and needs to be replaced?

Answer: Elevations on sheet A701 (note 1) show the extent of the red and orange panels. Refer to Drawing A801 "Door and Finish Schedules".

43) Question: On A301, where the new addition to the building is being added? There appears to be utilities running through that space. Are we required to relocate these utilities? Or are we to build on top of them? Or will this be handled by the government? Will the grounding counter pose be in the way?

Answer: Utilities, including existing counterpoise do run underground through the new building footprint. Yes, the Contractor is responsible to perform utility locates and to coordinate with the FAA. The FAA will provide as-built information to the Contractor to the best of our knowledge and available information prior to construction. However, the Contractor remains responsible for the location and protection of underground utilities.

44) Question: A301 Who is the pre engineer building Manufacturer of the existing building?

Answer: Unknown. No manufacturer's label is visible on or in the building.

45) Question: A701- requires to clean all acoustic panels. What will be the preferred method?

Answer: Dry extraction. Exact method is to be determined by the Contractor, subject to FAA approval.

46) Question: M211 and M212 - will new tiles, stringers, and pedestals need to be provided for the floor altering or will the FAA have attic stock that can be used? Is there an existing rating in the floor?

Answer: The Contractor is not required to provide new tiles; FAA has enough in stock. The Contractor will be required to fill in around affected area with existing tiles supplied by FAA. The Contractor will need to provide two (2) pedestals, two (2) pedestal heads, and one (1) stinger (manufacturer Tate and product name Concor).

47) Question: E214 - is there a requirement to paint conduits and ducts in this space?

Answer: If the reference is to the HOST Mechanical Room B119, there is no requirement to paint the duct and conduits in the space.

48) Question: Is there a requirement to be certified for fire caulking?

Answer: Yes.

49) Question: Will mechanical provide new VFDs for chillers, pumps, & cooling towers; we typically exclude them, as mechanical contractors typically get package deals with their vendors to ensure they are compatible with motor loads; I do have an RFI question on the rating of the VFD enclosures, one note says NEMA 3R and another says NEMA 4X stainless steel. Please clarify. There could be a big cost difference on these ratings.

Answer: Contractor will supply the VFDs for the cooling tower fans and pumps to meet specification requirements. Chiller manufacturer will supply the VFDs to meet the new chiller system requirements. The rating of the VFD enclosures shall be NEMA 12 stainless steel.

50) Question: Data/Comm, - We do not see any scope or devices shown on the drawings for new Data/Comm. Are there any new Data/Comm devices to be installed, and if so, how many and where are they located?

Answer: The scope of the Data and Communications will be provided by the Schneider Electric Program office as part of their design. Refer to Spec Section 23 09 00 – INSTRUMENTATION AND CONTROLS FOR HVAC, Part 1 (1.1)(D)(10) for current information.

51) Question: Access Control, don't really see any scope shown on the electrical drawings, but recall them showing us several doors that are to be replaced and have card readers installed. Do we need to cover boxes & raceways only? Will you be covering the cabling via the preferred FAA vendor? Do you know how many doors and the extent of conduit that will need to be installed?

Answer: See Door Schedule in the drawing set A801 for location of doors. Honeywell is the current provider of these services.

52) Question: Lightning Protection: Is the contractor responsible for this? Should we reach out to National Lightning Protection to cover this?

Answer: Contractor is responsible for providing lightning protection work. Contractor must follow the most current lightning protection standard NFPA 780 – *Standards for the Installation of Lightning Protection Systems* and FAA-STD-019f – *Lightning and Surge Protection, Grounding, Bonding, and Shielding Requirements for Facilities and Electronic Equipment.* See attachment "Question 52, 72 and 74 - FAA-STD-019f".

53) Question: Please confirm that the engineering team has verified new specified chillers will be able to be routed down into the existing location and the best route.

Answer: Best route for chiller passage has been confirmed as the exterior areaway on the south side of the boiler room B116. This is the same location that has been used at every other site and should provide ample clearance for equipment passage. Exterior stair assembly must be removed for clearance.

54) Question: Will the temporary fencing the contractor brings in be required to be grounded or have lighting protection?

Answer: Yes. The contractor will provide the temporary fencing around the temporary equipment space for security and hazard requirement. The contractor will provide grounding, bonding and lightning protection for the temporary electrical equipment and other mechanical pipes in the temporary equipment space.

55) Question: M-203 shows a new Chilled water bypass (notes 5 & 6). The current location is above desks in a drop ceiling. There is so little room that the ceiling tiles are cut out to allow for the roller hangers to still spin. Please advise how we are to install a 6" bypass line, complete with valves and where a hot tap machine will fit (zero clearances above too).



Answer: This location can be adjusted for constructability, but may cause the need to move DP and flow sensors.

56) Question: Page Z131, Note 1 requires a 3rd temporary air-cooled chiller with the same piping configuration and specs to be on standby locally with the ability to be hooked up and started on the Longmont campus within 24 hours' notice. The only possible way for this 3rd temporary chiller to be guaranteed to be that close to the project site, and guaranteed to be the same specs, size, and piping requirements is for the contractor to rent that additional chiller and already have it stored on site for the duration of the temporary chiller plants' existence. Two questions:

1. Is their space at the Longmont facility to accommodate the 3rd chiller?

Answer: Yes.

2. Is it the FAA's intent to pay for and include the rental cost of the additional 3rd chiller in the GC's pricing proposal?

Answer: Yes.

57) Question: What approximate percentage of the work on the contract will be required to be performed during the night hours, approximately 10:00 PM-6:00 AM?

Answer: It is the Contractor's responsibility to determine (and subsequently identify on their project schedule) the hours required outside of the specified normal working hours, using specified requirements and constraints such as explicit language pertaining to cutovers.

58) Question: Spec Section 014000-3 states the contractor's Project Quality Control manager shall not have other project responsibilities. Is the FAA's intent to have a <u>full time, on-site QCM</u> for the duration of the project that cannot be either the Superintendent, Safety Manager, or Project Manager?

Answer: No, that is not the FAA's intent. QCM and SSHO may be the same person. See also the answer to Question 59 below.

59) Question: Spec Section 013529-2 states the SSHO must be on-site during working hours to implement, administer, and enforce Contractor's safety and health program and APP.

- SSHO may not be the Contractor's superintendent.
- SSHO may be the Contractor's quality control manager and must report to a senior Project or corporate official.

This verbiage conflicts with spec section 014000-3 that states that the QCM shall not have other project responsibilities. Please clarify the number of full time employees is requiring onsite. My understanding is that the contract's intent would require a full time superintendent and a full time QC/Safety Manager on site at all times. Or, are you requiring 3 separate full time personnel (super, QC, Safety) on site at all times?

Answer: Spec Section 013529, Part 1 (1.7)(B) is correct. The SSHO must be onsite during working hours. The same person may serve in both the QCM and SSHO roles simultaneously, but neither can be the contractor's Superintendent or Project Manager simultaneously.

60) Question: Please detail the security requirements and timelines for bringing a new employee/worker on site at Longmont, including the timelines for approval of the different types of badging and how long a worker will be allowed to work onsite under a temporary badge.

Answer: Contractor submits names of personnel that will receive PIV badges to the Contracting Officer's Representative (COR) and also enters the information into the FAA "VAP" security system. Once information is entered into the system, it can take up to four (4) weeks for background and issuance of badges. Most workers will be provided temporary visitor badges on a daily basis. Personnel that are badged will have escort privileges and will be required to escort workers with a daily temporary badges at all times. It is the Contractor's responsibility to ensure that enough personnel are PIV badged so that escorting will not be an issue in the case of work being performed in different areas of the facility simultaneously.

61) Question: Pump schedule calls for 2-stage pump (turbines), but there isn't a spec section for this type of pump. Will one be provided? (Section 232123 – 2.4 does not apply).

Answer: See highlighted areas of revised specs section 23 21 23 attachment "Question 61 – 23 21 23 Hydronic Pumps Amendment".

62) Question: Cooling Tower Schedule basis of design is Tower Tech (we are the local Tower Tech rep), but the following items in the specifications do not apply to Tower Tech (please clarify):

a) Question: Page 721 of the specs list the tower as "induced draft". There is no provision for "forced draft" (Tower Tech is forced draft).

Answer: The FAA requires a forced draft cooling tower.

b) Page 723 reiterates "induced draft" (Tower Tech is forced draft).

Answer: Same as above question (a).

c) Page 724 Section H lists louvers as part of the supply of the cooling tower (Tower Tech does not have louvers).

Answer: Louvers are optional, depending on the cooling tower type.

d) Page 724 Section I says that the fan needs to be balanced after assembly and that fan screens have to be 304 SS wire mesh (Tower Tech utilizes individual direct drive motors, which do not require balancing).

Answer: Fans should be balanced by the manufacturer. Upon building, they don't need to be balanced onsite.

e) Page 725 Section J says that motors are TEFC (Tower Tech utilizes TEAO motors).

Answer: Both TEFC and TEAO are fine.

f) Page 725 Section K says to supply vibration switch (Tower Tech does not require).

Answer: FAA requires vibration switch. The switch is to be supplied by the controls' contractor to ensure proper fan operation.

g) Page 725 Section M says to provide access doors for entering cooling tower (Tower Tech does not require).

Answer: Whether access doors are needed will depend upon the manufacturer's design of the cooling tower. If the manufacturer is Tower Tech, whose cooling towers do not contain a gearbox, access doors will not be required. If an approved equal manufacturer's cooling tower is approved, the requirement of access doors will be dependent upon the design of the cooling tower.

63) Question: Tower Tech suggests rotating the towers 90 degrees in order to reduce piping requirements and reduce the risk of recirculation. See attached drawing notes.

Answer: To maintain seismic design, the proposed drawing will stand. Recirculation is not a primary concern.

64) Question: 230548 – 2.1 and 2.2 – can Vibro-Acoustics be added to the list of acceptable manufacturers?

Answer: List of manufactures is not limited to those vendors on the list. The list provided are known manufacturers to the FAA. Any manufacturer that meets the specs may be approved, even if not listed.

65) Question: Please clarify NEMA Enclosure requirements for the pumphouse electrical equipment. General Note B on Drawing ZDV-1401893-E204 says VFDS & disconnects inside and outside the pumphouse are to be NEMA 4X stainless steel and other equipment within the pumphouse should be NEMA 3R. Does that note apply to the new electrical room addition and is that room considered part of the pumphouse? Do all the new electrical panels, transformer, potential harmonic filters, etc., within the new addition need to be NEMA 3R or NEMA 12? The new wireway shown on Drawing ZDV-1401893-E302 is to be NEMA 1 per Key Note 4, and the two new electrical panels are to be NEMA 12; no rating is shown for the transformer.

Answer: All the VFDs, electrical panels and a step down transformer NEMA ratings are 12.

66) Question: Please clarify which trade is to provide all new Variable Frequency Drives. Typically, the mechanical contactor provides them as a package component with new pumps, cooling towers, chillers, etc. to ensure they are compatible with the motor loads they are controlling and the electrical contractor installs them. Is that correct?

Answer: Contractor will supply the VFDs for the cooling tower fans and pumps to meet specification requirement. Chiller manufacturer will supply the VFDs to meet the new chiller system requirement.

67) Question: Please clarify Key Note 12 on Drawings E204 & E714 regarding the potential harmonic filters for the (3) cooling towers and the (2) chillers. Where it says contractor should test circuit and only install the harmonic filters if the distortion exceeds FAA specifications: shouldn't these harmonic filters possibly be considered as an Add Alternate or Deduct Alternate to the project pricing as they may not be necessary until testing has determined they will be required?

Answer: For all cooling tower fans and pumps, use 6-pulse VFD drives. No need to install the harmonic filters. For the chiller, contractor shall provide chillers including VFDs and filters that meet the requirement for reducing THD.

68) Question: Please clarify scope of work for Panels HC3 & HC4; the drawings indicate that all loads and feeds are to be removed from the source. How many circuits are currently installed within these two panels? What are these circuits currently feeding and what other demo is associated to these circuits? Are we to demo outlets, equipment, etc. as well? Also, where are Panels CPC- A,B,C located that feed these panels? What are the conduit/wire sizes & lengths of the feeds between the panels?

Answer: Panels HC2 and HC3 are the reconditioned panels. HC1, HC2, HC3, and HC4 have 42 circuits each, but there are no active circuits on any of the panels. Demo all conduits, outlets, and branch circuits for panels HC1, HC2, HC3, and HC4. Remove all feeders back to the source for panels HC1 and HC4. Panels CPC-A, B, C are located in B13 in the Automation Wing Basement, critical power vault. Feeders for panels HC1 and HC4 will be removed to the source. Feeders for HC2 and HC3 will be retained for re-use. No feeder conduit removal is required.

69) Question: Please clarify scope & provide panel schedules for Panels HC1 & HC2 which are to be reconditioned. Are there existing loads within these panel boards that may need to be temporarily fed from another source while the panels are being reconditioned? How many loads are currently installed within these panels? Are there any new loads to be installed within these panels? How many new circuit breakers will be required and what are the sizes/ratings? Is all existing wire to remain and be reused/terminated to the reconditioned panel? What if existing wiring is too short? Will these panels possibly have to be reconditioned during a special outage timeframe, possibly at night, requiring overtime? Also, please clarify the scope to the Government Provided Paragon Transfer Switches associated with these two panels. Where are they to be installed? What is the size of these switches? Are they to be wall mounted, floor mounted, recessed next to these panels? What are the conduit & wire size requirements for these switches as the onelines do not indicate. Are the existing to remain? It appears that CPC-A & B may be new feeds.

Answer: Panels HC2 and HC3 are the panels that will be reconditioned. There are no existing loads for these panels, no new loads will need to be installed, and these panels do not need new circuit breakers. Only the feeders need to remain. There is no special outage timeframe for reconditioning panels HC2 and HC3. The Government Provided Paragon Transfer Switches are wall mounted and recessed above the panels. The conduit and wire size will be the same size as the feeders.

70) Question: Please provide more information & specification requirements for the new Signal Reference Grid (SRG) that is to be installed under the Host Computer Room raised floor. There does not appear to be any specifications or details for this scope. Please clarify materials, sizing, manufacturer, installation details, etc., for the SRG.

Answer: FAA-STD-019f, 4.7.3.2.a Signal Reference Ground Grid: SRGG shall consist of a grid of 2-in wide copper strips, 26 gauge or thicker, placed on a 2x2-ft square grid and welded at each grid intersection.

71) Question: Please clarify if 4/0 perimeter grounding loop is existing or new to be installed under this project. Note 1 on Drawing ZDV-1401893-E215 says it's existing, but Specification Summary Pg. 011000-5_3_e_ii says to install. Also, please clarify if there are to be (3) new 4/0 cross connects installed across the room running from North to South bonding to the perimeter ground ring as well, or if these are existing?

Answer: 4/0 perimeter grounding loop is existing. No, (3) new 4/0 cross connecting the perimeter ground on the North and South walls is not existing and is not required to be installed. The drawing and Specification summary will be updated to represent these changes.

72) Question: Please clarify if all Panels within the Host Computer Room are to be bonded to the new 4/0 perimeter ground ring, including Panels HC3 & HC4. There are no bold points identifying the existing panels located along the East Wall, except Note 5 on Drawing ZDV-1401893-E215; however, where Note 5 is shown, there are no electrical panels.

Answer: Panels HC2 and HC3 are the reconditioned panels. Panels B-B134-BS1, B-B134-BS2, HC2, and HC3 are currently not bonded to the existing 4/0 perimeter ground, so the contractor will be required to bond four (4) enclosures to perimeter grounding conductor by exothermic welding in accordance with FAA-STD-019f (see Attachment "Question 52, 72, and 74 – FAA-STD-019f").

73) Question: Please clarify if all the Multiground Plates referenced by Note 9 on Drawing ZDV-1401893-E215 are existing or if there are new ones installed per this project. How are the existing Multiground Plates currently bonded together? Are we to demo/remove any existing grounding system once the new system is installed?

Answer: All the multiground plates referenced by Note 9 are existing multiground plates. No need to install new multiground plates. The Existing multiground plates are verified properly bonded to perimeter grounding conductor by exothermic welding in accordance with FAA-STD-019f. No further action needed.

74) Question: Please clarify and/or provide details on how the existing cable tray is to be grounded and how often; is to be connected to the ground loop, SRG, or multiground plate?

Answer: Refer to attachment "Question 52, 72, and 74 - FAA-STD-019f".

75) Question: Please clarify if irreversible compression grounding connections can be utilized for the Host Computer Room new grounding system, in lieu of exothermic welding, as this will be inside and may cause issues with the Fire Alarm System and smoke detectors.

Answer: The new grounding system is requires exothermic welding.

76) Question: Please clarify if the Type RL & RL1 light fixtures, & Exit Signs in the Host Computer Room shown on Drawing ZDV-1401893-E212 are new light fixtures, or if they are existing to remain with new lenses installed as identified in Specification Summary Pg. 011000-6_3_e_iv.

Answer: RL and RL1 are to be replaced with new light fixtures. Exit signs are to be replaced with new wall mounted LED exit signs.

77) Question: Please clarify electrical demo scopes for the temporary offices per Note 6 on Drawing ZDV-1401893-E114. How many electrical & data/comm outlets are located with these offices that are to demo? Also, what is to be done with the light fixtures & light switches? Are they existing to remain? Will light fixtures have to be relocated and if so, how many fixtures are there, and how are they to be controlled?

Answer: All electrical and data/comm. outlets are to be demoed in the office locations. No light fixtures or light switches need to be demo'd; the existing are to remain. Light fixtures and switches do not need relocation and it is not necessary to control them as they are already controlled.

78) Question: Please clarify scopes of work associated with MCC A, 1A, B, 1B, C, 1C, & D Specification Summary Pg. 011000-5_3_D_i thru iv. The project summary makes reference to removing and replacing these MCC's and to provide harmonic testing on the feeder sides of these MCC's; however, at the job walk is was mentioned that replacement of these MCC's is covered under a separate project and not to be part of this contract. Also, please clarify if replacing circuit breakers within these MCC's are required. Sheet Note 4 on the various MCC one-line diagrams says to verify fuse/breaker size to ensure proper coordination. Are we to replace the circuit breakers if they are not of the correct size & rating for the new loads?

Answer: The MCCs (A,B,C, 1A, 1B, 1C & D) project that included the harmonic testing tasks on the MCCs' feeder sides are covered under a separate project. The MCCs project is not to be part of the Major Mechanical project. Note 4 from the one line diagram is for field checking. Whether the fuse/circuit breaker will need to be replaced is dependent upon the product submittal that the contractor submits for approval. If they are of a different size than what is on the drawings, they will need to be replaced.

79) Question: Please clarify if lightning protection is required for AHU-400 as identified in Specification Summary Pg. 011000-6_3_g_i. It appears that this AHU is located inside the building in Mech. Rm. B129 and the drawings do not show or note any lightning protection associated with this unit.

Answer: Lightning protection will not be required for AHU-400.

80) Question: Please clarify exterior outlets, unit heaters, & lighting requirements/scopes of work associated with the temporary chillers. Are we to provide light poles, mount lights upon the temporary chillers, or on the temporary fence? Where will electrical outlets be required and how many?

Answer: The contractor will provide exterior outlets, unit heaters and temporary lighting around the temporary equipment space. The contractor is to provide proper foot-candle levels, adequate power outlets, and heaters that are required for the service and maintenance work. The contractor will also provide temporary fencing around the temporary equipment space for security and hazard requirement.

81) Question: Please provide specifications and clarify water line heat tracing requirements/scopes of work associated with the temporary chillers and the new cooling towers. Is the heat trace to be controlled with individual thermostats or one common heat trace controller? Are any alarms or monitoring of heat trace by BAS required?

Answer: Heat trace for the piping on the permanent cooling towers may be any commercially available, industrial grade, self-regulating, heating cable product designed to provide freeze protection to metallic piping. In this type of product, the heat output of the cable varies in response to the surrounding conditions along the entire length of circuit. Whenever the heat loss of the insulated pipe increases (as ambient temperature drops), the heat output of the cable increases. Conversely, when the heat loss decreases (as the ambient temperature rises or product flows), the cable reacts by reducing its heat output. The manufacturer's recommended method of control is to be used. No monitoring by the Building Automation System (BAS) is required.

82) Question: Please clarify where and how the new electrical panels associated with the temporary chillers are to be installed. Will new concrete equipment pads be required? Are they to be installed on freestanding unit strut racks?

Answer: New concrete equipment pads are not required for the temporary chillers. A portable equipment pad is suitable. Freestanding unit strut racks to mount temporary panels and a step down transformer are a possible solution.

83) Question: Please provide more detail and clarification for branch circuit conductors from the I-Line Panel to the temporary chillers. Note 4 on Drawing ZDV-1401893-Z141 says these are to be by the temporary chiller provider. Are these conductors to be installed in conduit? Can they just be temporary cables bundled together? How are they to be routed to the I-Line Panels laying on the ground?

Answer: Conductors from the I-Line Panel to the temporary chillers are be installed in conduit (EMT for temporary is okay). The temporary conduits routed to the I-Line panel are to be elevated off the ground, not laying on the ground.

84) Question: Will a light fixture schedule be provided?

Answer: The light fixture schedule has been provided in Drawing E601. It provides a description and known acceptable manufacturer and model number, but contractor can provide equal product subject to approval.

85) Question: Will the VFDs be supplied from the respective equipment manufacturers or will they be part of the electrical contractor's gear?

Answer: Contractor will supply the VFDs for the cooling tower fans and pumps to meet specification requirement. Chiller manufacturer will supply the VFDs to meet new chiller system requirement.

86) Questions regarding chiller specifications (section 23 64 16). My assumption is that someone worked with Trane on the chiller selection and most of these questions will be easy to answer (if the specs were written based on Trane specs):

a) Question: Seismic – do you require OSHPD certification? I want to make sure that I do not provide a unit that is overkill in regards to seismic. In my experience, neoprene isolators will suffice but I don't want to assume that in case I am missing something within ASCE/SEI 7.

Answer: Neoprene mounts are sufficient.

b) Question: Coordinating witness test. Who would be the individual(s) that will witness the test? Can we coordinate with them?

Answer: Contracting Officer's Representative (COR), Project Engineer (PE), FAA site personnel, etc. Yes, you will coordinate through the COR.

c) Question: Would a refrigerant-cooled VFD be acceptable or is air-cooled the only allowable option?

Answer: The preferred method is air-cooled. The concern would be if refrigerant cooling is used, and the temperature is below DP, we could condense. If this is not the case it would be a valid method of cooling.

d) Question: Does this unit need to ship knockdown or would knockdown in the field be acceptable?

Answer: Either way is acceptable as long as it meets manufacturer recommendations.

87) I am reviewing the drawings and just noticed that the structural drawings do not show a new catwalk system with associated footings if required. There's a small set of stairs at the end of the cooling towers (sheet S104) but it doesn't appear to give access to all of the cooling towers. Should there be a new catwalk platform included in this project?

Answer: No catwalk at the top of the cooling towers. Just the platform below all the cooling towers.

88) Chiller rental questions:

a) Question: What is the length of electrical run for each unit? To be provided by Trane rental service?

Answer: Refer to Drawing Z101, estimated at approximately 100 ft. Yes, to be provided by rental service.

b) Question: What is the length of hose runs for each unit? To be provided by Trane rental service or is hard-piping required?

Answer: Hard-piping is required. Refer to Drawing Z101.

c) Question: Would Trane provide startup/training of rental equipment?

Answer: Yes, startup/training of rental equipment is required.

89) Question: Will any manufacturer be accepted other than those listed in the project specification document? For example, is there any other chiller manufacturer that would be accepted other than Trane?

Answer: The FAA's requirement is for TRANE chillers only. The facility has a total of four (4) chillers and only two (2) are being replaced. The FAA is requiring the same manufacturer for the new chillers for consistency and standardization.

90) Question: With regards to this project, would an alternate controls system be accepted? Specifically Siemens Talon Controls which is an open "Tridium" based system that would be an equal to the current specified system.

Answer: No alternate controls systems will be accepted/approved for this project. The FAA is utilizing Schneider Electric controls in all its ARTCC facilities for consistency and standardization.

92) Question: Where is FAA Order 6000.50E as per Section 011000 1.4.A.4.a.iv located? Please provide.

Answer: See attachment "Question 92 - FAA Order 6000.50E".

93) Question: Is this project one that mechanical contractors are permitted to bid as the prime contractor?

Answer: Any contractor may submit an offer as the prime contractor.

94) Question: At the site visit, it was mentioned that the sign in sheets would be made available to attendees. Can this be posted to the website?

Answer: The site visit attendee list will be provided to whomever requests a copy. Email requests to cindi.tjelde@faa.gov.

95) Question: Will the FAA provide any and all requested information or paperwork as needed to obtain sales tax exemption with the State of Colorado?

Answer: No. The FAA, as the federal government, is tax exempt. The awardee contractor is responsible for any and all local, state, and/or federal taxes, as stated in Section B of the RFO: "The offered price must encompass all costs related to.....(b) federal, state, and local taxes".

96) Question: Per the RFO, we are allowed 75 pages max for the technical proposal. Does that include cover page, table of contents, resumes, page breaks?

Answer: Yes, the entire technical proposal.