

Date: 5/28/2013

Project: Replace Existing Generators – Phase II

Owner: VAMC, Providence, RI

Project No.: 650-12-112

A. RFI Questions 5/13/13

1. Drawing E2.01 One Line Diagram, shows ATS-EQLB, ATS-EQLA, ATS-CRLA and ATS-LSL feeding four individual transformers. The transformers are located on the upper level as shown in detail 2 on E1.01. These transformers each have a disconnect switches on the secondary side of the transformer and are also located within the same room. Are we required to provide a service disconnect on the primary side of the transformer at this location too?

Answer: No.

2. The normal side of the ATS-EQLB has not been identified. Where do we get normal power for this unit?

Answer: The normal power for ATS-EQLB comes from a 400A circuit breaker in switchboard #1.

3. The normal side of the three automatic transfer switches ATS-EQLA, ATS-CRLA and ATS-LSL are powered from breakers in switchboard #1 as shown on drawing E2.01. Can you identify which section of switchboard #1 contains these breakers? Are the breakers existing to be reused or are we responsible for providing new breakers? Can the connections to these circuit breakers be made during normal work hours?

Answer: The normal power for ATS-EQLB comes from a 400A circuit breaker in switchboard #1. Refer to detail 3/E1.01 for CB feeder sections in swbd #1. Provide new circuit breakers for ATS- EQLB, EQLA, CRLA and LSL in swbd #1 to match existing switchboard ratings. Under add alternate #1, provide new circuit breakers for ATS- EQHB, EQHA, CRH and LSH in swbd #1 to match existing switchboard ratings. Under add alternate #2, provide new circuit breaker for CRLB in swbd #1 to match existing switchboard ratings. Switchboard #1 is a Eaton Pow-R-Line 2000A-3P,4W-480/277V- 65Kaic installed in 2011. All work shall be scheduled as described in the specification under the "Contractors Scope of Work" paragraph 7.0 Proposed Schedule and section 007200 General Conditions part 1.2.

4. After the 2000 amp 208 volt switchboard feeding the four ATS's is de-energized will we be responsible for removing the normal power (conduits and conductors) to these ATS's? For example, Delayed ATS Equip is fed from switchboard #3, Equip ATS is fed from Switchboard #3 and Critical

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ATS w/ Bypass as well as Life Safety ATS are both fed from switchboard #2.? Also is it possible to provide the switchboard layout so we can identify the corresponding breakers.

Answer: All inactive conduit and wire shall be removed back to its source. All wall penetrations shall be closed and made waterproof or fire-safe as appropriate. The existing circuits route down via the electrical room below to their respective switchboards.

5. Drawing E2.03 shows the work to be include as part of the add alternate #2. Where is the ATS-CRLB, 225 kva XFRM, 700 amp breaker enclosure, panel DP-CRB, DPCRA located?

Answer: Refer to detail 2/E1.01 for location of T-CRLB and related enclosed circuit breaker. Panels D-CRA and DP-CRB shall be located at the basement level in the electrical room directly under the ATS room where the duct bank and existing feeders to existing panel MDP-CR can be intercepted. Refer to the attached drawings E1.00 and E1.01.

6. Drawing E2.00 ATS Switch Room shows a 480 volt 3 phase 4 wire 600 amp switchboard feeding three existing ATS's. Two 400 amp and one 100 amp. Where is this switchboard located? The ATS room First Ground as shown in detail 2 on E1.00 appears to be the location for this equipment. However, the switchboard as field verified consists of three transfer sections and a terminal cabinet section. Is this same section of switchgear one in the same?

Answer: Three existing 480V ATS units are built into the existing 600A - 480V normal switchboard with the fourth unit adjacent and cable connected to the 600A buss. This is the right hand switchboard shown in detail 2/E1.00.

7. Drawing E1.01 detail #3 shows us reworking the Radiology feeder at switchboard #1. Are we spicing within the switchgear section or are removing the load and splicing outside the existing switchgear SWBD #1?

Answer: Per notes 9 and 10 on dwg E1.01, the only splice is between the new feeder from the new enclosed circuit breaker to the existing load conductors at switchboard #1. Provide a junction box above the switchboard section to intercept the existing load feeder and contain the splice.

8. Drawing E1.01 detail 1 & 3 show the feeders from the existing switchboard 1 to an isolation transformer. Detail one shows the equipment and feeders at one size and detail three show them at a different size. Which is correct. Also this work is to be part of an add alternate according to notes 9 & 10 of this drawing.

Answer: Detail 3/E1.01 is correct. This work is part of the base. Delete references to "Add Alternate #1" in notes 9 and 10. Refer to attached revised drawings E1.00 and E1.01.

9. the distance in the mechanical room between the exterior wall where pull 2 is located to the wall where the double doors enter the corridor and the total length was approximately 75'. Drawing E1.01 detail 1 indicates this scale is 1/8" = 1'. If I use this scale for this distance it is 46'.

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Answer: The details referenced are not at the correct scales. Refer to the attached drawings E1.00 and E1.01 for the correctly scaled details.

10. Is it the intent to furnish and install new 3-3" EMT conduits from the existing pull box 1 to the new panelboard MDP-EQ?
Answer: No. The existing feeder to the 750 kva transformer located in the ground floor ATS room(3 sets 4#500kcmil+1#3/0 GND each) shall be reused for the service to new panel MDP-EQ. Intercept this existing feeder at the basement level at the pull box below the 750 kva transformer (detail 1/E1.00 and 1/E1.01) or in the electrical room in the vicinity of switchboard #4. Provide junction box and butt splices and extend existing feeders with new conduit and wire as specified to new panel MDP-EQ.
11. Is it the intent to furnish and install 3 new sets of 4-500 & 1 3/0 copper feeders from the existing 1200 amp circuit breaker in the existing exterior generator switchboard through the existing 4" underground conduits (installed under phase I) into and thru the pull box 2 (installed under phase I) and thru the 4" nipples between pull box 1 & 2 (installed under phase I) to the new MDP-EQ without splicing into the existing conductors?
Answer: No. Refer to item 10 answer above.
12. Is it the intent to furnish and install new 2-3" EMT conduits from the existing pull box 1 to the new panelboard MDP-CR2?
Answer: No. Two of the existing 480V emergency feeders for existing ATS's (3 400A sets 4#500kcmil+1#3/0 GND – 4"C) located at the basement ceiling in the electrical room shall to be reused. Intercept these existing feeders at the basement level at the pull box below the 600A-480V Normal switchboard (details 1/E1.00; 1/E1.01) or in the electrical room in the vicinity of switchboard #4. Provide junction box and butt splices and extend existing feeders with new conduit and wire as specified to new panel MDP-CR2. Rework existing feeders in the generator switchboard to terminate at the appropriate circuit breaker.
13. Is it the intent to furnish and install 2 new sets of 4-500 & 1 1/0 copper feeders from the existing 800 amp circuit breaker in the existing exterior generator switchboard through the existing 4" underground conduits (installed under phase I) into and thru the pull box 2 (installed under phase I) and thru the 4" conduits between pull box 1 & 2 (installed under phase I) back to the MDP-CR2?
Answer: No. Refer to item 12 answer above.
14. Is it the intent to furnish and install new 2-3" EMT conduits from the existing pull box 1 to the new panelboard MDP-CR1?
Answer: No. One of the existing 480V emergency feeders for existing ATS's (3 400A sets 4#500kcmil+ 1#3/0 GND – 4"C) located at the basement ceiling in the electrical room shall be reused. Intercept this existing feeder at the basement level at the pull box below the 600A-

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480V Normal switchboard (details 1/E1.00; 1/E1.01) or in the electrical room in the vicinity of switchboard #4. Provide junction box and butt splices and extend existing feeder with new conduit and wire as specified to new panel MDP-CR1. Provide a second set of new conductors as specified into existing empty 4" raceway in these duct and conduit banks from the appropriate 800A circuit breaker in generator switchboard to the intercept point for this feeder. Provide new wire and conduit as specified from the junction box to new Panel MDP-CR1. Rework existing feeders in the generator switchboard to terminate at the appropriate circuit breaker.

15. Is it the intent to furnish and install 2 new sets of 4-500 & 1 1/0 copper feeders from the existing 800 amp circuit breaker in the existing exterior generator switchboard through the existing 4" underground conduits (installed under phase I) into and thru the pull box 2 (installed under phase I) and thru the 4" conduits between pull box 1 & 2 (installed under phase I) back to the MDP-CR1?

Answer: No. Refer to item 14 answer above

16. Is it the intent to furnish and install new 2-3" EMT conduits from the existing pull box 1 to the new panelboard MDP-LS?

Answer: No. The existing 480V emergency feeder for existing ATS's (4#1+1#3 GND – 4"C)) located at the basement ceiling in the electrical room shall be removed. Intercept this existing empty raceway and one other existing 4" empty raceway at the basement level at the pull box below the 600A-480V Normal switchboard (details 1/E1.00; 1/E1.01) or in the electrical room in the vicinity of switchboard #4. Provide junction box and extend two existing empty raceways with new conduit as specified to new panel MDP-LS. Provide new conductors as specified in existing empty 4" raceways in the existing duct/conduit banks and new conduits from the appropriate 600A circuit breaker in generator switchboard to new Panel MDP-CR1.

17. Is it the intent to furnish and install 2 new sets of 4-350 & 1 #1 copper feeders from the existing 600 amp circuit breaker in the existing exterior generator switchboard through the existing 4" underground conduits (installed under phase I) into and thru the pull box 2 (installed under phase I) and thru the 4" conduits between pull box 1 & 2 (installed under phase I) back to the MDP-LS?

Answer: Yes. Refer to item 16 answer above.

18. Is it permitted to utilize the existing 3-4" conduits with 4-500 1 3/0 from the existing pull box 1 to the existing 750 KVA transformer by intercepting these conduits in the basement electrical room and routing to the new panel MDP-EQ? Phase I provides for the new conductors from the 1200 amp breaker in the existing exterior switchboard through the new pull box 2 and into the existing pull box 1 where they are to be spliced.

Answer: Yes. Refer to item 10 answer above.

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19. Is it permitted to utilize the existing 3-4" conduits with 4-500 1 3/0 from the existing pull box 1 to the existing "Normal 480 V ATS Swbrd" located in the ATS room? Two of these will be intended to feed the new MDP-CR2 and the third will be allocated as one of the parallel feeder to MDP-CR1? Phase I provides for the new conductors from the 800 amp breaker in the existing exterior generator switchboard through the new pull box 2 and into the existing pull box 1 where they are spliced.
Answer: No. Refer to item 10 thru 18 answers above.
20. Is it permitted to remove the existing 4#1 & 1#3 from the existing conduit from pull box 1 to the 100 amp 480 volt life safety ATS in the ATS room and utilize this conduit to house the second feeder of 4-500 1 1/0 to panel MDP-CR1? These 4-500 & 1 1/0 conductors will be complete from the 800 amp circuit breaker in the existing outdoor generator switchgear to the panel MDP-CR1.
Answer: No. Refer to item 16 answer above.
21. Are start circuits required at the new ATS's under the base bid as well as the new ATS's under the alternate 1?
Answer: New control circuits are required for all ATS's under base bid and all alternates. Existing control raceways and duct banks may be reused.
22. Are any of the life safety feeders required to have a 2 hour fire rating? If so would MI cable be acceptable? *Answer: No.*
23. Is the contractor responsible for disposal of existing switchgear, switchboards, breakers, transformers and misc. electrical equipment or will it be turned over to the owner and stored on site as directed by the facilities?
Answer: The contractor is responsible for disposal of all removed equipment except that prior to the start of demolition, the owner may choose to maintain possession of certain pieces of equipment. In such a case, the contractor shall protect the identified piece of equipment, remove it from the area of work and turn the identified item over to the owner at an owner selected onsite location.
24. If the answer to questions 9 & 10 are no, would the contractor be responsible for removing the existing conductors and conduits after the project has been completed or are this to be capped and left in place?
25. *Answer: Refer to item #4 answer above.*
26. Will the owner provide all fuel for startup, testing and re-fill the underground fuel tank after all testing has been completed?
27. *Answer: The contractor is responsible for all fuel used by this project.*
28. Will phase I and phase II be under way simultaneously?
Answer: Phase 1 must be completed before phase 2.

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29. Will specification be provided as well as asbestos and lead paint reports
Answer: Yes, refer to the FBO site.
30. Are the ATS's specifications open to all manufactures? Are the ATS's pre purchased by the owner?
Answer: The ATS's are based on Russelectric to match the existing Russelectric ATS and generator switchboard system. Equipment by other manufacturers must be submitted with the manufacturers certification that their equipment will interface and operate correctly with the existing Russelectric equipment. The manufacturer shall be responsible for any changes or modifications required by his equipment to operate correctly with the existing Russelectric equipment. This includes operations such as load shed, remote control and monitoring of each ATS from the existing generator switchboard and its existing programming. Russelectric certification shall be required for the entire installation stating that the ATS are operating correctly and all warranties and guarantees remain in place.
31. Drawing EP5.0 one line riser diagram shows a new feeder from the existing panel DP-1 feeding new panel DP. Both the replacement breaker in panel DP-L and the panel DP are rated for 200 amps. However the feeder is sized for 400 amps. Should these feeder size be reduced?
Answer: Could not determine panels described. No such panels or drawing numbers on this project.

B. RFI Questions 5/20/13

32. Detail 1/E1.01 shows a 1200A panelboard for radiology feeders. Detail 3/E1.01 shows a 600A enclosed circuit breaker at the same location. Which is correct?
Answer: Detail 31/E1.01 is correct. Provide a 600A enclosed circuit breaker for secondary side over current protection. Refer to attached revised drawings E1.00 and E1.01.

C. RFI Questions 5/20/13

33. Now that all the ATS's are going to be provided with 480 volts and are now going to be feed out of switchboard 1 does this mean that the 2-400 amp, 1 -300 amp and 1-200 amp breakers for ATS-EQLB, EQLA, CRLA and LSL are existing to be reused?
Answer: No. These are new circuit breakers. Refer to item #3 answer above.
34. Also a similar question applies to the ATS work under the alternate 1. Are these 3-400 amp breakers and 1-100 amp breaker for ATS-EQHB, EQHA, CRH and LSH existing to be reused? Under alternate 2 it would be a 400 amp breaker for ATS-CRLB would this be existing as well?
Answer: No. These are new circuit breakers. Refer to item #3 answer above.

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35. If new breakers are required can you provide the name of the manufacture for the existing switchboard, AIC rating and model numbers for pricing.

Answer: Refer to item #3 answer above.

36. The specification general conditions section (see attached page) have 4 add alternates. Add alternate 1 references the ATS's and is clearly identified on the plans. However on drawing E1.01 notes 9 & 10 also reference add alternate 1 (see attached drawing) but have nothing to do with the other add alternate 1. My question is should this be included under the single add alternate 1 or should it be under a separate add alternate #5?

Answer: This work is part of the base bid. Refer to item #8 answer above.

D. RFI Questions 5/22/13

37. Since the four transfer switches (ATS-EQLB, ATS-EQLA, ATS-CRLA and ATS-LSL) are all feeding the primary side of a 3 phase 3 wire step down transformers can the feeders from the corresponding panels and switch board be changed to three phase three wire? This would eliminate the 4th conductor. This also happens with the ATS-CRLB under the alternate add # 2.

Answer: Yes. The neutral conductor can be deleted from the switchboard circuit breaker to the transformer primary for ATS-EQLB, EQLA, CRLA, LSL AND CRLB.

38. On drawing E2.03 under proposed sequence of work there are line numbers listed. Line 1 says to install new equipment in ATS Room and Repro Room. The plans do not show where the repro room is located. Lines 2-5 say to install certain parts but do not list where these parts are to be installed and they are not shown on the drawings. Please advise where these locations are.

Answer: Refer to item #5 answer above.

E. RFI Questions 5/28/13

39. Add alternate #2 as indicated on drawing E2.03. The riser diagram shows two panelboards being installed (DP-CRA & DP-CRB) feeding existing loads. Panel DP-CRA is feeding existing panel DP-CP-OR and the 400 amp Critical Busduct B Wing. Panel DP-CRB is feeding 600 amp Critical Busduct A Wing and Pharm Critical Enclosed CB. In the base bid both the 400 amp and 600 amp critical busduct A & B Wings were being fed from existing MDP-CR which was 600 amp panel. This was fed from the new 700 amp enclosed CB from the new ATS-CRLA. According to drawing E1.00 detail 1, MDP-CR, both busducts, DP-CB-OR and the Pharm Critical CB are all remote from the main ATS room. Are we required to install new conduits and feeders to each of the existing loads indicted above or is panel DP-CRA replacing the existing MDP-CR? If not where are these panels located.

Answer: Refer to item #5 answer above. The new conductors from panels DP-CRA and DP-CRB will be installed in the existing duct bank to the existing duct bank pullbox. New conductors and new conduit shall be installed from the existing ductbank pullbox to intercept

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the four existing feeders within the Repro room space as shown on the one line drawing E2.03. Existing panel MDP-CR will be used as a splice box to intercept the existing 400A and 600A critical busducts. The enclosed circuit breakers for the existing DP-CP-OR and Pharm, Critical feeders shall be replaced with junction boxes to splice the new conductors to the existing feeders. Refer to the attached drawings E1.00 and E1.01.

Attachments: Drawings E1.00 and E1.01, rev. 2 dated 5/28/13

