

Kaw Exciter Replacement Questions and Answers

1. There does not seem to be any indication of ceiling current or ceiling voltage requirements. Nowadays we specify ceiling voltage = 2 X rated field voltage and ceiling current = 1.6 X rated field current. Shall I go ahead and assume these values will be correct?

The ceiling voltage should be adequate for the exciter's PSS to function correctly. We recommend a minimum of 160% of the rated voltage with adequacy of the ceiling voltage confirmed by the supplier.

2. Generator's field resistance?

The field resistance 0.308 ohms at 125C per uprate calculations

Per the nameplate information it is $217V/867A = 0.25$ ohms

We estimate to be as low as 0.22 ohms cold (about 20C)

3. Maximum ambient temperature inside the Hydroplant?

Please use 45° C for design.

4. Will the bidder provide an HMI locally on the unit door?

Yes, we will require an HMI on the unit.

5. Is 125VDC and/or 120VAC control power available for the controller power supplies?

125 VDC power is available and preferred for controls. 120 V is also available for accessory.

6. It is understood that the 15KV cables from the switchgear to the excitation transformer are to be replaced. Are there any other power / control cables that need to be replaced?

All cables are expected to be replaced per 3-2 installation. Raceway can be used where feasible.

7. The specification described both a cast resin and vacuum impregnated transformer. Confirm whether a cast coil or vacuum pressure impregnated (VPI) transformer is required?

VPI/VPE is the intended transformer technology. Quoting cast resin is also acceptable.

8. Will the exciter need an air conditioner?

Yes, but on the controller cubicle only.

9. Please confirm that the exciter will have redundant controller and single bridge

Confirmed, the exciter will have redundant controller and single bridge.

10. What is the approximate length of OMPA safety training?

15 minutes

11. Is the preferred warranty period 3 years?

Yes, we have changed the warranty period to 3 years, and an addendum for the RFP stating a 3-year warranty will be posted on our website.

12. It is our understanding that OMPA will provide the crane and the crane operator during the installation, please confirm.

The powerhouse bridge crane may be used but only with an OMPA employee operating the crane. If a crane is needed outside the powerhouse the bidder must provide the crane and operator.

13. Availability of the photos of the existing exciter unit?

Photos will be uploaded to the OMPA website.

14. Availability of drawings of the existing unit?

Drawings will be uploaded to the OMPA website.

15. Please confirm the connection to the existing switchgear shall be by HV power cables. Please confirm vendor should supply and install these new HV power cables.

Confirmed, supply and install cable including stress cones.

16. Please confirm contractor must supply new HV power cables.

Confirmed, supply and install cable including stress cones.

17. As mentioned in the site walk, for this size transformer (310KVA), HV CTs tied to a protection relay (SEL-501) provide better protection than HV fuses. Shall we supply HV CTs and 50/51 relay instead of HV fuses?

Fuses should be the basis of the bid. You may quote the 50/51 as optional pricing.

18. Please confirm the AC breaker must be manually withdrawable type. If so, would OMPA also require an AC breaker that can be manually withdrawn with the door closed?

Breaker will not be racked live, generator clearance would proceed this step. Door can be open or closed.

19. Is the vendor to provide and install new control cables?

Yes

20. Is the vendor to provide and install new power cables from the static excitation system to the generator collector rings?

Yes

21. It is our understanding that a single bridge is required. Please confirm that this single bridge must have redundant fans.

If fans are required by the manufacturer's design redundant fans may be offered as standard or optional pricing.

22. It is our understanding that there must be integration with the station DCS. Please confirm more details in terms of the vendor responsibilities.

DCS programming will be by others. Exciter manufacturer is to coordinate excitation controller's communication with DCS/make points available to Delta V programmers.

23. In the spec it mentions to supply new brushes. Considering no engineering or integration is required, and in order to avoid unnecessary markups, please confirm if this is still part of the bid or not?

This will not be part of the bid. OMPA's routine maintenance will replace brushes as needed.

24. Regarding the field bus communication, does the plant work with Modbus TCP/IP?

Yes

24. It was stated at the site walk that the PSS must be available but that it will not be implemented. Please confirm. If that is true then please confirm if a PSS study is required now or if it can be completed separately at a later date.

It has been understood that the static excitation system must have a PSS2A or PSS2B built into the system and available, however, the PSS will not be commissioned nor will it be utilized at this stage. Please confirm.

PSS Study should not be included at this time
Provide line-item price for PSS

25. In response to a question regarding the form of performance and payment security?

This project requires performance, payment, and warranty security, in the total amount of the contract price. The security may be in the form of a surety bond or bonds, a letter of credit, or cash. The security for the warranty period shall run until the end of the warranty period, which is three (3) years from the date of the fully executed Certificate of Contract Completion.

26. For the power cables that run from the output of the excitation system to the generator collector ring, based on calculations, 3 X DLO 535 cables are required per pole, which takes into account the derating required for 50C and derating required for cables being in a conduit. With this data, a 3.5 inch conduit is required per pole. Is that the size of the existing conduit?

Size of conduit is not documented, but photos indicate there are three conduits with two cables per conduit. One-line indicates two 500kCMIL per/leg which is likely, but not certainly 3 Cannot verify your assumptions.

27. For the power cables that run from the output of the excitation system to the generator collector ring, there was a picture from the B&V consultant of the conduit run with the generator cover plates removed. Can we have this picture?

Pictures will be uploaded to the website soon.

28. For the power cables that run from the output of the excitation system to the generator collector ring, is there a drawing that shows this run of cables?

Drawings will be uploaded to the website soon.

29. If new conduit is required then should we also provide the fire retardant material for the wall of the generator?

The need for fire barrier is not anticipated.

30. Unfortunately, during the site walk, the cabinet doors were not allowed to be opened. Please provide pictures of the inside of the cabinets especially the incoming and outgoing power cables and control cables from the bottom.

Pictures will be uploaded to the website soon.

31. Please provide the breaker size at the MCB providing the 125VDC for the exciter field flashing. What is the current capacity for this breaker? Is the 125VDC field flashing the only load connected to this breaker?

50 Amps and it is the only load connected to the breaker.

32. Can existing control cables be re-used if possible?

Bid project based on replacing all cables. Control cables to the switchgear may be considered for a contract deduct at the discretion of OMPA & depending on condition.

33. When taking the excitation transformer and excitation system equipment off the truck via the crane and moving to the floor below, it is possible part of the equipment may sit on the grate that covers the opening to the floor below. Do you know how much weight those grates can support?

≈ 14,000 pounds

34. Are there any hazardous materials such as asbestos or lead paint?

No

35. There are several questions raised and information requested (Pictures, drawings, etc.) with some yet to be answered, which are necessary to provide an accurate bid. Some of the OMPA answers we will need to relay to our electrical contractors for the installation portion. With time to allow our electrical contractors to respond and provide their quotes plus time for the bidding vendors to complete their bids, we would request a three (3) week extension on the bid due date. Please advise. Thank you.

We are not considering an extension at this time.

36. A detailed wiring schedule is required for the control wires needing to be replaced? This schedule must include cable lengths and routing info. Can the assumption be made that the existing wireways / conduits can be reused for these new cables?

36.a. Cable schedule is part of the turnkey design provided by the bidder.

36.b. Most raceways can be reused, some may require modification/extension/addition based on vendor's design. This is to be determined during the bidder's design process.

37. Provide distance for power cables from the exciter to the collector rings.

Surveying the physical arrangement was the purpose of the site walk. Main field conduits are visible in the photos provided by OMPA. Drawings E011 -E014 & 26D118004 Pg. 1 & 2 will be provided.

(The drawings do not constitute as-built information and are for reference only in conjunction with site data collected during bid walk)

38. Who is responsible for updating the existing wire schedules and plant drawings to show the new cable details?

KAW doesn't have a comprehensive cable list at this time. Provide new cable list, it will be incorporated into the future comprehensive rehabilitation.

39. Would OMPA accept the modification of cable entry / exit by site contractor, where necessary?

Yes

40. What is the voltage supply for the air conditioning unit?

480V or 120V

41. Since part of the project is Federally funded, will this project be subject to Davis Bacon Wage Rates? If so, please post the wage determination that will be used on this project.

Yes. However, we will not post the rates, but the wages can be found at U.S. Department of Labor website.

42. The list of documents to be Submitted with the bid shows item I as Business Relationship Affidavit. This affidavit was not included with the RFP. Could you please provide this affidavit?

The affidavit will be posted soon.

43. Please define the difference between the BIDDER'S RATES FOR ADDITIONAL WORK and the RATE QUOTATION SHEET.

Additional work rates will be the rates for any change orders that may arise. If your additional work is the same as your rate quotation rates you may say "Additional Rates are same as Quotation Rates".

