

APPENDIX B TO RFP
FOR
SEAPA KETCHIKAN SUBSTATION TRANSFORMER PROCUREMENT PROJECT

SECTION 01 33 00 - SUBMITTALS

PART 1 -- GENERAL

1.1 REQUIREMENTS INCLUDED

A. At a minimum, the following submittals shall be provided:

1. Submittals schedule.
2. Production schedule (include shop inspections)
3. Bill of materials, with manufacturer, model/type, description, and catalog number for standard components and accessories, including:
 - a. Bushings.
 - b. Surge arresters.
 - c. Relays.
 - d. Indicators.
 - e. Current transformers.
 - f. Temperature, pressure, and level devices.
 - g. Pressure relief devices.
 - h. Control cabinet, including circuit breakers, motor starters and overloads, disconnect switches, lighting, receptacles, control relays, thermostats, and heaters.
 - i. Cooling equipment, including fans and radiators, and valves.
 - j. Insulating fluid system, including fluid used, inert gas tanks, equipment cabinet, and control relays.
4. Outline Drawings completely dimensioned, showing:
 - a. Plan and elevations, including material identification numbers and list of such major components.

- b. Primary-voltage bushing details.
 - c. Secondary-voltage bushing details.
 - d. Location and identification of gauges, control cabinets, system components, relay panels, and other accessories.
 - e. Anchor bolt hole location and hole diameter.
 - f. Ground pad locations.
 - g. Catalog cut sheets for all equipment
5. Detailed Schematic and Connection (Wiring) Diagrams:
- a. Interconnecting wiring of components of cooling equipment.
 - b. Wiring of devices with switches and relays, or electrical connections, including current transformers.
 - c. Identification of terminal blocks and connections.
6. Nameplate drawing per IEEE standards, including schematic and phasor diagram, electrical ratings, weights, oil volume and winding data in tabular format.
7. Factory Tests: Submit proposed test program prior to time transformer is ready for core and coil inspection; include method and description of each test and test sequence. Submit certified reports of production tests as soon as tests are completed.
8. Certified Copies of the Factory Test Reports: Provide test records on a duplicate or similar unit for temperature rise and short-circuit capability.
9. Record of impact data recorders from the transformer shipments.
10. Weight of transformer and center of gravity, with and without insulating liquid and shipping weights.
11. Total Quantity and Material Safety Data Sheets (MSDS) of Insulating Fluid.
12. Calculations:
- a. Transformer winding forces (both windings): Radial, axial and bending forces in psi.

- b. Transformer winding design limits (both windings): Radial, axial and bending forces in psi.
 - c. End forces (pounds).
- 13. Outline of on-site training program for OWNER personnel.
- 14. Bushing current transformer connection tables (for multi-ratio CTs), ratio correction factors with IEEE relay or meter accuracy class(es), and excitation curves with lead and turn resistance data for each size and type of current transformer.
- 15. Installation instructions.
- 16. Operation and Maintenance Data manuals.
- 17. Shop drawings and product data, including design foundation load information and equipment dimensional drawings.
- 18. Spare parts list.
- 19. Special Tools list
- 20. Commissioning plan, instructions and sign-off procedures.

1.2 GENERAL

- A. All written information on Shop Drawings, Product Data, and Samples shall be in the English language, and all numerical data shall use English units of measurement.
- B. Notify OWNER in writing, at time of submission, of any deviations in each submittal from requirements of the Contract Documents.
- C. Begin no fabrication or work which requires review of submittals until return of submittals with OWNER'S review comments. Any manufacturing work or fabrication performed before the OWNER 's review and acceptance shall be at SUPPLIER'S risk.
- D. Changes or revisions to submittals made by the SUPPLIER after OWNER's review which require redesign of the substation will be subject to back-charges to SUPPLIER.

1.3 FORM OF SHOP DRAWING, PRODUCT DATA, SAMPLE AND OTHER SUBMITTALS

- A. Make submittals promptly in accordance with Submittals Schedule, and in such sequence as to cause no delay in production or in the work of any other contractor.
- B. Provide with each submittal a transmittal letter which includes OWNER'S contract number and project title.

C. Submittal shall contain:

1. The project title.
2. The current date of the submitted item and an indication of previous versions by a numbered revision symbol and notation with dates.
3. Job file number and SUPPLIERS' identifying number, if different.
4. Identification of the product or category of work shown.
5. The names of manufacturers and suppliers.
6. Principal dimensions, with the controlling features and required clearances clearly identified. Give particular attention to the interface points with the general construction contract.
7. Applicable standards, such as ASTM or ANSI numbers.
8. Identification of revisions on re-submittals by cloud and numbered revision symbol.
9. A 5-inch by 3-inch blank space for OWNER's review stamp.
10. SUPPLIER'S stamp, initialed or signed, certifying they have completed review of the submittal as follows:

SUPPLIER'S NAME This certifies that this submittal has been reviewed and that the information presented has been coordinated with, and conforms to, all requirements of the Contract Documents. Comments: _____ By: _____ Date: _____

D. Preparation of submittals:

1. Clearly identify products by highlighting or outlining, including complete model numbers where applicable. Identify details by reference to drawing sheet number and detail, schedule, or location.
2. Show performance characteristics and capacities.
3. Show dimensions and clearances required, including:

- a. Materials in accordance with ASTM or other recognized United States standards.
 - b. Location of welded seams and welding details in accordance with AWS A2.4 welding symbols.
 - c. Machined surface finishes, dimensions, tolerances and clearances in accordance with values of ANSI B46.1.
 - d. Assembly drawings indicating each component by part number.
- 4. Provide wiring, piping and controls diagrams, including:
 - a. Electrical diagrams, including connection diagrams and terminal blocks.
 - b. Factory certification tests for electrical equipment in accordance with NEMA and IEEE.
 - c. Piping and fitting dimensions and materials.
- E. Present Shop Drawings in a clear and thorough manner. Identify details by reference to sheet number and detail, schedule, or location shown on the Drawings; sheet size: ANSI D.
 - 1. Outline and assembly drawings shall include overall dimensions, arrangement, assembly, piping, wiring and controls for equipment to be furnished under Contract.
 - 2. Include construction details and materials: loads and forces to be resisted by foundations or structure: locations and size of lifting connections or lugs, anchor bolts, base plates, equipment pads, or other anchoring methods of installation.
- F. Manufacturer's Standard Product Data, schematic drawings and diagrams:
 - 1. Modify drawings and diagrams to delete information not applicable to the equipment. Clearly identify product part number and all options selected for materials, trim, finishes, switch development, operating range, etc.
 - 2. Supplement standard information to provide information specifically applicable to the equipment.
 - 3. Provide specific data as required in technical sections of Specifications.
- G. All submittals shall be submitted to the OWNER electronically, except as noted. Submit electronic documents for review in unlocked .pdf format. Submit electronic documents for record copies in unlocked .pdf format as well as the native file format in which the documents were produced.

1. Record Drawings: Provide as specified, including one hard copy set of drawings complete with index of drawing numbers and titles, and one complete set of drawings in electronic format (.pdf and native CAD format).
2. Operation and maintenance manuals: Provide as specified, including one hard copy of the complete Operation and Maintenance Manual with table of contents, and one complete manual in electronic format (.pdf and native format).

1.4 RESUBMITTAL REQUIREMENTS

- A. Make all corrections or changes in the submittals required by the OWNER and resubmit until accepted.
- B. Shop Drawings, Product Data, and calculations:
 1. Revise initial drawings or data, and resubmit as specified for the initial submittal. Show revision number in the title of the document.
 2. Indicate all corrections and changes which have been made in addition to those requested by the OWNER.

1.5 OWNER'S REVIEW

- A. OWNER will review submittals with reasonable promptness and in accordance with accepted submittal schedule, but not to exceed 15 working days from date of receipt. OWNER will review first submittals and first re-submittals.

OWNER'S review, comments, approval, acceptance, or return of a submittal does not relieve the Supplier from responsibility for complying with the Contract Documents, verifying dimensions and interfaces, coordinating the Work, identifying deviations, or providing a complete and functional transformer system. OWNER'S review does not constitute approval of means, methods, manufacturing processes, safety procedures, or deviations not expressly identified by the Supplier

- B. OWNER will return submittals to SUPPLIER for action in accordance with the status defined as follows:
 1. Action Code A, Approved - Revision of the submittal is not required. SUPPLIER shall apply a stamp saying "Final" or wording of similar intent, shall transmit copies as specified, and is authorized to proceed with the work covered by the submittal.
 2. Action Code B, Approved, Except as Noted:
 - a. If SUPPLIER agrees with OWNER's comments, re-submittal for review is not required. SUPPLIER shall revise the submittal, incorporating OWNER's

comments, shall stamp the revised submittal and transmit copies as provided above under "No Exceptions Taken" and is authorized to proceed with the work covered by the submittal.

- b. If the SUPPLIER does not agree with the OWNER's comments, SUPPLIER shall not proceed and shall immediately inform the OWNER.
- 3. Action Code C, Approved Except as Noted, Resubmittal Required - SUPPLIER shall revise the submittal and resubmit for OWNER's review and shall not proceed with the work covered by the submittal.
- 4. Action Code E, Rejected - The submittal is inadequate. OWNER will not review but will comment, in general, to explain the reason for rejection. SUPPLIER shall correct the deficiency and submit as an original submittal. SUPPLIER is not authorized to proceed with the work covered by the submittal.

1.6 RECORD DRAWINGS

- A. Before acceptance of the Work under this Contract, provide complete set of all drawings:
 - 1. Drawings shall be sent electronically and as hard copy paper (ANSI D size) (1 copy to be kept on-site).
 - 2. Include all changes and revisions made during design, fabrication, and assembly as accepted by the OWNER up to delivery and acceptance of the Work. Record Drawings shall be numbered, titled, and indexed sets, complete in one submittal: partial submittals are not acceptable.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION