



City of Tacoma, WA

**TACOMA POWER**

**REQUEST FOR BIDS**

**THREE PHASE PAD MOUNTED DISTRIBUTION  
TRANSFORMERS**

**SPECIFICATION NO. PT24-0123F**



**City of Tacoma  
Tacoma Power/Transmission & Distribution**

**REQUEST FOR BIDS PT24-0123F  
Three Phase PadMounted Distribution Transformers**

**Submittal Deadline: 11:00 a.m., Pacific Time, Tuesday, June 11, 2024**

Submittals must be received by the City’s Procurement and Payables Division prior to 11:00 a.m. Pacific Time.

For electronic submittals, the City of Tacoma will designate the time of receipt recorded by our email, [sendbid@cityoftacoma.org](mailto:sendbid@cityoftacoma.org), as the official time of receipt. This clock will be used as the official time of receipt of all parts of electronic bid submittals. For in person submittals, the City of Tacoma will designate the time of receipt recorded by the timestamp located at the lobby security desk, as the official time of receipt. Late submittals will be returned unopened and rejected as non-responsive.

**Submittal Delivery:** Sealed submittals will be received as follows:

<p><b>By Email:</b>  <a href="mailto:sendbid@cityoftacoma.org">sendbid@cityoftacoma.org</a>  Maximum file size: 35 MB. Multiple emails may be sent for each submittal</p>	<p><b>In Person:</b>  Tacoma Public Utilities Administration Building North,  Main Floor, Lobby Security Desk  3628 South 35<sup>th</sup> Street  Tacoma, WA 98409  Monday – Friday 8:00 am to 4:30 pm</p>
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**Bid Opening:** Submittals must be received by the City’s Procurement and Payables Division prior to 11:00 a.m. Pacific Time. Sealed submittals in response to a RFB will be opened Tuesday’s at 11:15 a.m. by a purchasing representative and read aloud during a public bid opening held at the Tacoma Public Utilities Administrative Building North, 3628 S. 35<sup>th</sup> Street, Tacoma, WA 98409, conference room M-1, located on the main floor. They will also be held virtually Tuesday’s at 11:15 a.m. Attend [via this link](#) or call 1 (253) 215 8782. Submittals in response to an RFP, RFQ or RFI will be recorded as received. As soon as possible, after 1:00 PM, on the day of submittal deadline, preliminary results will be posted to [www.TacomaPurchasing.org](http://www.TacomaPurchasing.org).

**Solicitation Documents:** An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at [www.TacomaPurchasing.org](http://www.TacomaPurchasing.org).

- [Register for the Bid Holders List](#) to receive notices of addenda, questions and answers and related updates.
- Click here to see a [list of vendors registered for this solicitation](#).

**Pre-Proposal Meeting:** A pre-proposal meeting will not be held.

**Project Scope:** The Tacoma Public Utilities (TPU) is soliciting bids for a one-time purchase order with qualified vendors to fulfill the City’s needs for three phase pad mounted distribution transformers. Purchase order(s) will be awarded to the lowest responsive and responsible bidder(s) based on price, product quality and availability.

**Estimate:** \$1,500,000

**Paid Sick Leave:** The City of Tacoma requires all employers to provide paid sick leave in accordance with State of Washington law.

**Americans with Disabilities Act (ADA Information):** The City of Tacoma, in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Specification materials can be made available in an alternate format by emailing the contact listed below in the *Additional Information* section.

**Title VI Information:**

“The City of Tacoma” in accordance with provisions of Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 U.S.C. sections 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively

ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration of award.

**Additional Information:** Requests for information regarding the specifications may be obtained by contacting Aaron Bratton by email to [abratton@cityoftacoma.org](mailto:abratton@cityoftacoma.org)

**Protest Policy:** City of Tacoma protest policy, located at [www.tacomapurchasing.org](http://www.tacomapurchasing.org), specifies procedures for protests submitted prior to and after submittal deadline.




**Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.**

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## SUBMITTAL CHECK LIST

This checklist identifies items to be included with your submittal. Any submittal received without these required items may be deemed non-responsive and not be considered for award. Submittals must be received by the City of Tacoma Purchasing Division by the date and time specified in the Request for Bids page.

<b>The following items make up your complete electronic submittal package (include all the items below):</b>	
<b>Signature Page (Appendix B)</b> To be filled in and executed by a duly authorized officer or representative of the bidding entity. If the bidder is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.	
<b>Price Proposal Forms (Appendix B)</b> The unit prices bid must be shown in the space provided. Check your computations for omissions and errors.	
<b>Supplemental Information – Section 1.04 of Special Provisions in Appendix A</b> <ul style="list-style-type: none"><li>• Product Data Sheets</li><li>• Drawings</li><li>• DOE Certification</li></ul>	
<b>After award, the following documents will be executed:</b>	
City of Tacoma Purchase Order Read Standard Terms and Conditions in Section 2.	

### 1. MINIMUM REQUIREMENTS

Manufacturers experienced in the supply of materials as detailed within this specification and Section 1.01.3 of the Special Provisions in Appendix A.

### 2. STANDARD TERMS AND CONDITIONS

City of Tacoma [Standard Terms and Conditions](#) apply.

### 3. DESCRIPTION OF WORK

The Tacoma Public Utilities (TPU) is soliciting bids for a one-time purchase order with qualified vendors to fulfill the City's needs for three phase pad mounted distribution transformers. Purchase order(s) will be awarded to the lowest responsive and responsible bidder(s) based on price, product quality and availability.

#### 4. CALENDAR OF EVENTS

This is a tentative schedule only and may be altered at the sole discretion of the City.

Purchase Order may be issued after Public Utility Board and/or City Council approval.

The anticipated schedule of events concerning this RFB is as follows:

Question Deadline:	<b>5/24/2024</b>
City response to Questions:	<b>5/29/2024</b>
Submittal Due Date:	<b>6/11/2024</b>
Anticipated Award Date, on or about:	<b>6/14/2024</b>
Public Utility Board/City Council Approval, on or about:	<b>7/10/2024</b>

#### 5. INQUIRIES

- 5.1 Questions can be submitted to *Aaron Bratton*, Senior Buyer, via email to [abratt@cityoftacoma.org](mailto:abratt@cityoftacoma.org). Subject line to read:  
PT24-0123F – Three Phase Pad Mounted Distribution Transformers – *VENDOR NAME*
- 5.2 Questions are due by 3 pm on the date included in the Calendar of Events section.
- 5.3 Questions marked confidential will not be answered or included.
- 5.4 The City reserves the discretion to group similar questions to provide a single answer or not to respond when the requested information is confidential.
- 5.5 The answers are not typically considered an addendum.
- 5.6 The City will not be responsible for unsuccessful submittal of questions.
- 5.7 Written answers to questions will be posted alongside these specifications at [www.tacomapurchasing.org](http://www.tacomapurchasing.org).

#### 6. PRE-BID MEETING

No pre-proposal meeting will be held; however, questions and request for clarifications of the specifications may be submitted as stated in the [inquiries](#) section.

#### 7. DISCLAIMER

The City is not liable for any costs incurred by the Respondent for the preparation of materials or a proposal submitted in response to this RFB, for conducting any presentations to the City, or any other activities related to responding to this RFB, or to any subsequent requirements of the contract negotiation process.

## 8. RESPONSIVENESS

Bid submittals must provide ninety (90) days for acceptance by City from the due date for receipt of submittals. All submittals will be reviewed by the City to determine compliance with the requirements and instructions specified in this RFB. The Respondent is specifically notified that failure to comply with any part of this RFB may result in rejection of the submittal as non-responsive. The City reserves the right, in its sole discretion, to waive irregularities deemed immaterial. The City also reserves the right to not award a contract or to issue subsequent RFB's

## 9. AWARD

**Awardee shall be required to comply with 2 CFR part 25, and obtain a unique entity identifier and/or be registered in the federal System for Award Management as appropriate.**

Award will be made to the lowest responsive, responsible bidder. All bidders shall provide unit or lump sum pricing for each line item. Each line item will be added up for a subtotal price. The subtotal price will be compared amongst each bidder, including any payment discount terms offered twenty (20) days or more. The City may also take into consideration all other criteria for determining award, including evaluation factors set forth in Municipal Code Section 1.06.262.

All other elements or factors, whether or not specifically provided for in this specification, which would affect the final cost to and the benefits to be derived by the City will be considered in determining the award of the contract. The final award decision will be based on the best interests of the City.

The City reserves the right to let the contract to the lowest responsible bidder whose bid will be the most advantageous to the City, price and any other factors considered. In evaluating the proposals, the City may also consider any or all of the following:

1. Compliance with specification.
2. Proposal prices, listed separately if requested, as well as a lump sum total
3. Time of completion/delivery.
4. Warranty terms.
5. Bidder's responsibility based on, but not limited to:
  - a) Ability, capacity, organization, technical qualifications and skill to perform the contract or provide the services required.
  - b) References, judgment, experience, efficiency and stability.
  - c) Whether the contract can be performed within the time specified.
  - d) Quality of performance of previous contracts or services

## **10. COMPLIANCE WITH SPECIFICATIONS**

All products shall be new and unused. Any product that does not comply with any part of these technical specifications shall be rejected and the vendor shall, at its own expense, including shipping, replace the item.

## **11. MATERIALS AND WORKMANSHIP**

The successful bidder shall be required to furnish all materials necessary to perform contractual requirements. Materials and workmanship for this contract shall conform to all codes, regulations and requirements for such specifications contained herein and the normal uses for which intended. Material shall be manufactured in accordance with the best commercial practices and standards for this type of goods. All literature and products must be packaged and labeled to sell in the United States.

## **12. ENVIRONMENTALLY PREFERABLE PROCUREMENT**

In accordance with the [City's Sustainable Procurement Policy](#) and [Climate Action Plan](#), it is the policy of the City of Tacoma to encourage the use of products or services that help to minimize the environmental and human health impacts of City Operations. Respondents are encouraged to incorporate environmentally preferable products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, products, manufacturing, packaging, distribution reuse, operation, maintenance or disposal of the product or service.

The City of Tacoma encourages the use of sustainability practices and desires any awarded contractor(s) to assist in efforts to address such factors when feasible for:

- Durability, reusability, or refillable
- Pollutant releases, especially persistent bioaccumulative toxins (PBTs), low volatile organic compounds (VOCs), and air quality and stormwater impacts
- Toxicity of products used
- Greenhouse gas emissions, including transportation of products and services, and embodied carbon
- Recycled content
- Energy and water resource efficiency



**APPENDIX A**

Special Provisions

Technical Specifications

A-UG-1235 3Ph PadTx Fusing

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## Material Specification

### 15kV Three Phase Pad-Mounted Transformers

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## SECTION I – SPECIAL PROVISIONS

### 1.01 - SCOPE OF BID

#### 1.01.1 - PURPOSE

The purpose of these Specifications is to define the scope of supply for Three Phase Pad Mounted Distribution Transformers that meet the minimum requirements as to quality, function, and capacity as outlined in the Special and Technical Provisions that follow.

#### 1.01.2 - DEFINITIONS

For the purposes of this Specification, the following definitions shall apply:

Term	Definition
RESPONDENT	A potential Supplier offering a submittal to supply equipment in accordance with these Specifications.
SPECIFICATION	This document, detailing the scope of supply.
SUPPLIER/CONTRACTOR	The Respondent(s) awarded a contract pursuant to these Specifications.
SUB-VENDOR	Any Supplier providing parts, materials, and/or services to the Supplier under these Specifications.
EQUIPMENT/ MATERIAL	A fully functional piece of equipment/material supplied and tested in accordance with these Specifications.
MANUFACTURER	The original manufacturer of the equipment/material.
ENGINEER	The project engineer and/or contract administrator.
CITY	The City of Tacoma, Tacoma Power.
DELIVERY TIME	The length of time starting at the date of Supplier receipt of a purchase order or notice to proceed and ending at the time that the item(s) are received at Tacoma Power.

1.01.3 - QUALIFICATIONS

To further detail the requirements of Section 1.20.A.1 of the City Standard Terms and Conditions, only submittals which offer products from manufacturers experienced in the supply of materials as detailed within this Specification over a period of five (5) years or more will be considered responsive. A responsive submittal will demonstrate a record of successful completion of contracts similar in scope and size to that outlined in this Specification. The City shall be the sole judge of the Respondent's ability to meet the requirements of this paragraph.

1.02 - PRICING AND PURCHASE ORDERS

1.02.1 - PRICES QUOTED

The prices quoted on the Proposal Pricing Sheets shall remain open for acceptance by the City for a minimum of 30 days from the submittal deadline. Prices quoted should reflect pricing that will be firm through the delivery of the materials on the purchase order.

1.02.2 - FREIGHT ALLOWANCES

The Respondent shall provide prices including delivery F.O.B. Destination, Pre-Paid and Allowed (included in unit price), as noted on the Proposal Pricing Sheets.

1.02.3 - QUANTITIES AND PURCHASE ORDERS

The quantities listed on the Proposal Pricing Sheets are the City's desired quantities for a one-time purchase. The purchase order will be delivered to the Supplier by email. If supplier is unable to provide the full quantity requested, please indicate the quantity able to be provided by crossing out the requested quantity and entering the number of units available on the Pricing Proposal Sheet.

1.02.3A - WORKING DAYS

Working days are weekly Monday through Friday. City observed holidays as listed in City Standard Terms and Conditions Section 1.24 would not be included.

1.03 - RESPONDENT'S PROPOSAL

1.03.1 - RESPONDENT REQUIREMENTS

Submittals must be emailed with the Specification number, Specification title, and Respondent name in the subject line, and received by the City of Tacoma Purchasing Division by the date and time specified in the Request for Bids page or subsequent addenda.

The bid package submitted must be returned with the Respondent's proposal filled in as directed, including all data requested by the Provisions of these Specifications. All blank spaces on the Proposal forms will be properly filled in, printed in ink or typewritten.

1.03.1A - SIGNATURE PAGE

The “Signature Page” included with the original submittal shall be signed in INK by the responsible company official and include printed or typewritten designation of the office they hold in the company.

1.03.1B - PROPOSAL SHEET DATA REQUIREMENTS

The Proposal Pricing Sheets request the following information to be included with the Respondent’s submittal. Submittals that do not include the requested information shall be considered non-responsive.

Required Values	Specific Requirement
Height (in.)	The height of a typical unit in inches
Diameter (in.)	The diameter of a typical unit in inches
Weight Including Oil (lbs)	The weight of a typical unit in pounds.
Oil Capacity (gal.)	The quantity of oil in a typical unit in gallons.
No-Load Loss (watts)	The maximum guaranteed no-load losses in watts per IEEE C57.12.00 and C57.12.90 <sup>[1]</sup> .
Load Loss (watts)	The maximum guaranteed load losses in watts per IEEE C57.12.00 and C57.12.90 <sup>[1]</sup> .
Impedance	Measured at 85°C per IEEE C57.12.00.
Represented Efficiency	The represented transformer efficiency certified by the manufacturer per DOE 10 CFR Part 431

<sup>[1]</sup> Each individual unit shipped to the City shall be less than or equal to these quoted maximum guaranteed losses or may be returned to the factory for replacement at the manufacturer’s expense.

1.03.2 - ALTERNATE BIDS

All bids including alternates shall include an original Signature Page. Each bid package submitted must be returned with the Respondent’s proposal completed as directed, including all data requested.

1.03.2A - ALTERNATE BID PROPOSALS

Alternate bid proposals must be submitted as a separate bid package and identified as “ALTERNATE”.

1.03.2B - ALTERNATE MATERIALS

Complete data must be submitted with the bid, including the information as requested in Section 1.06.1A “Required Materials”. The data shall demonstrate

that the alternative item is of a quality equal to or better than that specified and has the required characteristics for the intended use. Failure to submit such data will render the bid non-responsive.

#### 1.03.2C – ALTERNATE EVALUATION

Upon request, the Respondent shall furnish to the City, within five (5) working days, additional information relating to such alternative items as the City may require. In the event that the equivalency is not readily ascertained from the information supplied by the Respondent, the City may test the material/equipment or have it tested. The Respondent shall bear all expenses of the City's determination of whether or not alternative equipment, materials, or processes are equal to those designated.

#### 1.03.3 - ENGLISH LANGUAGE REQUIREMENTS

All drawings, correspondence, catalogs, submittals, nameplates, etc., shall be in the English language as used in the U.S. Dimensions and tolerances shall conform to ANSI Y14.5M and shall be in the U.S. customary units. If units are fabricated utilizing SI units (metric system), both units shall be shown on the drawings, nameplate, etc. U.S. units shall be shown above the SI units. Conversion tolerances shall have a maximum tolerance of 1/32-inch (2.70 mm) and/or one ounce (28.4 grams).

#### 1.03.4 - COSTS TO PREPARE SUBMITTAL

The City is not liable for any costs incurred by the Respondent for the preparation of materials, or a proposal submitted in response to this RFB, conducting presentations to the City, or any other activities related to responding to this RFB.

### 1.04 - ITEMS TO BE INCLUDED WITH BID

#### 1.04.1 - PRODUCT DATA SHEET AND DRAWINGS

The Respondent shall include with their submittal manufacturer product data sheets (cut sheets) and drawings of the transformers to be supplied. Drawings shall include overall dimensions, bushings and ground connections. Drawings will be accepted for bid evaluation purposes that do not contain extensive details of construction.

#### 1.04.1A - CERTIFIED DRAWINGS

Following evaluation of the bid submittals and prior to final approval of a PO, the firm(s) identified for award will be required to provide certified manufacturer drawings reflecting materials consistent with the Technical Provisions of these Specifications. Information furnished shall be sufficient in detail and clarity to enable making a complete and positive check with the specification requirements. A detailed, one-page, drawing of each unit (MID#) shall be submitted. Drawings shall include the following:

- Tacoma Power MID#
- Primary and Secondary Voltages
- kVA
- Dimensions





## Material Specification

### 15kV Three Phase Pad-Mounted Transformers

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- Weights
- Insulating Fluid
- Standard features (especially Tacoma Power requirements not included in the IEEE standards, etc.)

Approval of a certified drawing by Tacoma Power does not relieve the manufacturer of any requirements of these Specifications, unless previously documented by written agreement. Regardless of the content of the drawings the manufacturer is required to supply transformers to Tacoma Power meeting the Technical Provisions of these Specifications or be subject to rejection per Section 1.13.1.

#### 1.04.2 - DOE COMPLIANCE CERTIFICATION

Respondents shall provide a copy of their latest on-line compliance certification done through the U.S. Department of Energy's on-line Compliance Certification Management System (CCMS).

#### 1.05 - SAFETY AND STANDARDS

The Items supplied shall meet appropriate ANSI, OSHA, WISHA, and all federal, state, and local standards for its intended use. Refer to Technical Provisions for specific industry standards that apply to the Specifications of this bid.

#### 1.06 - APPROVED EQUAL

The term "approved equal" shall mean that the quality and characteristics of equipment or materials intended for use must be equal to the listed items.

##### 1.06.1 - DETERMINATION OF EQUALITY

The City or its designee will determine the suitability, reliability, and serviceability of a proposed substitute. Refer to Section 1.36 of the City Terms and Conditions.

##### 1.06.1A - REQUIRED MATERIALS

To be considered by the City, the request for substitution shall be accompanied with the complete physical data, technical data, certified test results, manufacturer's catalog data, photographs, user's lists, failure data, samples, and the address of the nearest authorized service representative. Any other information, as required by the Engineer, shall be promptly provided upon request. The City shall be the sole arbiter in the determination of equality.

#### 1.07 - EVALUATION & AWARD

Respondents are to provide unit or lump sum pricing for each line item, which will be summed for a subtotal price. Subtotals will be compared amongst each Respondent, including any offered payment discount terms of 20 days or more.

#### 1.08 - DELIVERY DATE

Respondents must guarantee delivery times as stated on their Proposal Pricing Summary Sheet. The delivery time will be enforced for Purchase Order(s) resulting from this RFB.

1.08.1 - NOTIFICATION

Notification to deliver product will be by the issuance of a City of Tacoma purchase order (per Section 1.02) for the materials described in this Specification. Should delivery not be completed within the time specified in the Respondent's submittal, the Supplier may be subject to termination of Purchase Order(s) in Section 1.09.A.

1.08.1A - DELAYS BEYOND THE CONTROL OF THE SUPPLIER

Delays caused by problems beyond the control of the Supplier, if fully documented and submitted to the city, may be excused. This allowance shall in no way be construed to apply to or excuse delays caused by negligence on the part of the Supplier. (For additional information, refer to the Force Majeure portion, located in Section 1.09 of this document).

1.09 - FORCE MAJEURE

Unavoidable delays in the prosecution of the work shall include only delays from causes beyond the control of the Supplier and which he/she could not have avoided by the exercise of due care, prudence, foresight and diligence.

The Supplier shall not, be responsible for delays in delivery due to acts beyond his/her or manufacturer's reasonable control, or due to act of god, fire, strikes, epidemics, war, riot, unavoidable delay in transportation or rail car/transport shortages, or documented unavoidable material shortages, provided the City is notified in writing by the Supplier of such pending or actual delay and the reasons, therefore. If deemed excusable, the City shall authorize an extension of time. In the event of such an excusable delay, the date of delivery shall be extended for a period equal to the time lost due to the reason for delay. Any damage assessment or extensions of time are to be authorized by written purchase order changes issued by the City of Tacoma.

1.09.A - TERMINATION OF PURCHASE ORDER RELEASE(S)

If the delay will extend beyond 10 working days, the City may exercise the right to terminate any and all purchase order releases that are affected by the delay and obtain the items required materials from other sources.

1.09.B - DUE DILIGENCE

It shall be the responsibility of the Supplier to supply the City with adequate documentation to demonstrate that the Supplier exercised due diligence in endeavoring to avoid the delay.

1.10 - PACKING AND SHIPPING

The Supplier shall be responsible for industry standard packing that conforms to the requirements of the carrier's tariffs and the ICC regulations.

1.10.1 - PACKING REQUIREMENTS

The material/equipment must be clearly marked as to lot number, destination, address, and purchase order number.



## Material Specification

### 15kV Three Phase Pad-Mounted Transformers

#### 1.10.1A - PALLETS

All Three-Phase Pad Mounted transformers will be delivered using one (1) pallet per transformer. DO NOT STACK or Ship on Racks.

Pallets shall be designed for movement by pallet jack or forklift with a minimum of 3 rails @ 3 ½" inches of vertical clearance for forks.

##### 1.10.1A.1 - ATTACHMENT TO PALLETS

Each transformer shall be bolted to the pallet or banded to the pallet by the lifting lugs. If banding is used, nonmetallic banding material is preferred to protect the painted surfaces of the lifting lugs. If metal banding is used, non-metallic inserts shall be used to isolate the banding material from the painted surface.

#### 1.10.1B - BAR CODING

A bar code label shall be provided with each transformer that meets the requirements of IEEE Standard C57.12.35.

#### 1.10.1C - TRANSFORMER TRANSPORT & CONDITION

Transformers shall be shipped year-round within enclosed trailers in a condition that will guard against paint damage and prevent the necessity for make-ready work or cleaning prior to testing and acceptance. Transformers shipped on flatbed trucks, even if tarped or otherwise protected may be refused and returned to Supplier.

### 1.11 - DELIVERY

Notice of Shipment is required and shall be received by the City at least 10 working days prior to delivery.

#### 1.11.1 - TRANSFORMER DELIVERY LOCATION

The shipper shall notify the Tacoma Power Transformer Shop Supervisor, to obtain final delivery information, a maximum of 72 hours and a minimum of 12 hours, prior to delivery.

The completed transformers shall be delivered F.O.B. between 9:00 a.m. and 3:00 p.m., Monday through Friday excluding City observed holidays (refer to section 1.24 of the Standard Terms and Conditions)	Tacoma Power T&D Transformer Shop 3628 South 35th Street (rear) Tacoma, Washington 98409 Attention: Transformer Shop
Phone Number	253-502-8671

1.11.2 - SHIPPING NOTICES

Shipping notices shall be emailed to:  Shipping Notices shall include City of Tacoma Purchase Order Number.	TransformerDesk@cityoftacoma.org
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1.12 - DOCUMENTATION REQUIRED FOR DELIVERY OF EQUIPMENT

The successful Respondent will furnish a data report for each Tacoma Power transformer. The data shall be submitted to the Tacoma Power contract manager prior to or at the time of shipment from the factory.

1.12.1 - TEST PROCEDURES

All units supplied shall be tested at the manufacturer's factory per the routine production tests for liquid filled distribution transformers, including no-load and load losses, as defined in IEEE C57.12.00 and IEEE C57.12.90, latest revisions. Production test results are required for the data report.

1.12.2 - DATA REPORTS

The following steps will be followed concerning the delivery of data required.

The spreadsheet containing all populated information is then sent back to the Tacoma Power Contract Manager prior to shipment of the units. The information required is:

- Serial Number
- Year of Manufacture
- Month of Manufacture
- Weight Including Oil (lbs)
- Oil Capacity (gal)
- Oil Type
- PCB Content
- %Z at 85°C
- X/R Ratio
- Maximum L.V. Short Circuit Current (kA)
- Maximum L.V. Short Circuit Current is at: (Specify L-L or L-N)
- No-Load Losses at 20°C (watts)
- Load Losses at 85°C (watts)
- % Efficiency (per DOE 10 CFR Part 431, the represented efficiency determined by testing or AEDM)
- HV Bushing Mounting Hardware Installation Torque Value (if applicable)
- LV Bushing Mounting Hardware Installation Torque Value (if applicable)

1.12.3 - DELIVERY of DATA REPORTS

Step	Action
1	Upon issuance of a Purchase Order the Tacoma Power Contract Manager will email the appropriate representative of the vendor and/or manufacturer a Microsoft Excel spreadsheet which includes the number of transformers and their pre-assigned Tacoma SAP Equipment numbers.
2	The manufacturer will join individual transformer serial numbers with the Tacoma SAP Equipment numbers.

1.12.3A - DISTRIBUTION of DATA REPORTS

<p>Data reports shall be submitted via email to:</p>	<p>Erica Pierce: <a href="mailto:epierce@cityoftacoma.org">epierce@cityoftacoma.org</a></p> <p>Chelsea Braithwaite: <a href="mailto:cbraithw@cityoftacoma.org">cbraithw@cityoftacoma.org</a></p> <p>Matthew Johnson: <a href="mailto:mjohnso3@cityoftacoma.org">mjohnso3@cityoftacoma.org</a></p>
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1.12.4 - MATERIAL SAFETY DATA SHEETS (MSDS)

The successful Respondent must submit a manufacturer's Material Safety Data Sheet (MSDS) that complies with OSHA and WISHA guidelines for Hazard Communications Standard WAC 296-62-054 requirement for items identified as hazardous materials or items in whose normal use produces a hazardous material.

1.13 - INSPECTION & WARRANTY

All goods are subject to final inspection and acceptance by the Tacoma Power engineer and the appropriate shop foreman.

1.13.1 - FAILURE OF INSPECTION

Upon delivery, transformers will be inspected for defects and conformance to this Specification. The Supplier will be notified of all compliance issues and mutual arrangements shall be made for correcting the defects at no expense to the City. The City reserves the right to reject and return transformers failing to pass inspection. If so returned, the cost of transportation, unpacking, inspection, repacking, reshipping, or other like expenses are the responsibility of the Supplier.

Charges for dismantling and reinstallation of materials furnished pursuant to this purchase will be the responsibility of the Supplier only when a change out or replacement is required because of a suspected or known design defect or large-scale failure of manufacturer's quality control system.

#### 1.13.2 – WARRANTY

Unless a longer period is specified, the Supplier and/or manufacturer of the supplies, materials and/or equipment furnished pursuant to this purchase agrees to correct any defect or failure of the supplies, materials and/or equipment which occurs within six months from the date of commencement of use, however, said warranty period shall not extend beyond twelve months after date of receipt by the City.

When the Supplier is not the manufacturer of the item of equipment, Supplier agrees to be responsible for this warranty and Supplier is not relieved by a manufacturer's warranty.

#### 1.13.2A - WARRANTY PERIOD EXTENSION

The warranty period shall be suspended from the time a significant defect is first documented by the City until the work or equipment is repaired or replaced by Supplier and accepted by the City. In addition, in the event less than thirty (30) days remain on the warranty period (after recalculating), the warranty period shall be extended to allow for at least thirty (30) days from the date the work or equipment is repaired or replaced and accepted by the City.

#### 1.13.2B - WARRANTY WORK

The City has determined that the repair of material/equipment, under warranty, can best be done at the manufacturer's facility that makes this style or similar material/equipment, or at a mutually agreeable local repair facility. All material/equipment requiring warranty work will be returned to the Supplier at the Supplier's expense, or the manufacturer may replace the defective material/equipment(s) with new units.

#### 1.13.2B.1 - MINOR WARRANTY WORK

Minor warranty work may be done on Tacoma Power's property if, in the opinion of Tacoma Power and in agreement with the Supplier, the useful life of the transformer is not affected by doing this work on site.

#### 1.13.2B.2 - RETURN TIME FRAME

All warranty repair work on returned material/equipment shall be accomplished within the specified lead-time for delivery listed in the Supplier's bid submittal. Warranty repair time will be calculated from the time the material/equipment defect or failure is reported to the Supplier.

#### 1.14 - INVOICES & PAYMENT

All items called for in these Specifications, including, but not limited to, the necessary drawings and test results, must be supplied to the City before the final invoice can be processed.

##### 1.14.1 - INVOICES

Invoices shall be emailed, per Section 1.39 of the Standard Terms and Conditions, to [AccountsPayable@cityoftacoma.org](mailto:AccountsPayable@cityoftacoma.org)

##### 1.14.2 - PAYMENT

Upon certification by the Engineer and/or appropriate warehouse personnel that the items have been received in accordance with the Specifications and are in satisfactory condition, a 100 percent payment will be made. Payment methods include:

- Credit card. Tacoma's VISA procurement card program is supported by standard bank credit Suppliers and requires merchants abide by the VISA merchant operating rules.
- Vendors must be PCI-DSS compliant (secure credit card data management).
- Vendors must be set up by their card processing equipment provider (merchant acquirer) as a minimum of a Level II merchant with the ability to pass along tax, shipping and merchant references information.
- Electronic Funds Transfer (EFT) by Automated Clearing House (ACH).
- Check or other cash equivalent.

The City may consider cash discounts when evaluating submittals. See 1.20.2 of the Standard Terms and Conditions.

##### 1.14.2A - UNSATISFACTORY PERFORMANCE

In the case of unsatisfactory performance, the payment shall be made after the Supplier has made the necessary repairs and/or modifications and satisfactory performance is obtained, or the unit is replaced.

#### 1.15 – CONTRACT EXCEPTIONS

##### 1.15.1 - NON-RESPONSIVE

Bid proposals that claim exceptions to the terms and conditions stated within these Specifications may be declared non-responsive and the bid proposal may be rejected.

##### 1.15.2 - COST OF COMPLIANCE

The City prefers that the Respondents determine the cost of compliance, with the City's terms and conditions, and include such costs into the unit prices, of the items, in the Respondent's proposal.

##### 1.15.3 - MULTIPLE PROPOSALS

Respondents may submit multiple bid proposals to demonstrate the cost savings associated with acceptance of the Respondent's proposed terms and conditions. Refer to Section 1.08.3 for "Alternate Proposals".

## **Section 2 - TECHNICAL PROVISIONS**

### 2.01 – STANDARDS & TERMINOLOGY

Terminology used in this specification is consistent with IEEE C57.12.80 unless otherwise noted.

#### 2.01.1 - STANDARDS

All units shall meet the most recent editions of the following standards and all others that are applicable:

Standard Number	Standard Title
DOE 10 CFR Part 431	Energy Conservation Standards for Distribution Transformers
IEEE C57.12.00	General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
IEEE C57.12.28	Pad-Mounted Equipment - Enclosure Integrity
IEEE C57.12.35	Bar Coding for Distribution Transformers and Step-Voltage Regulators
IEEE C57.12.34	Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers, 5 MVA and Smaller; High Voltage, 34.5 kV Nominal System Voltage and Below; Low Voltage, 15 kV Nominal System Voltage and Below
IEEE C57.12.80	Terminology for Power and Distribution Transformers
IEEE C57.12.90	Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
IEEE C57.91	Guide for Loading Mineral-Oil-Immersed Transformers
IEEE C57.147	Guide for Acceptance and Maintenance of Natural Ester Fluids in Transformers
ANSI Z535	Safety Sign and Label Standards
ANSI/ISO/ASQ Q9001	Quality Management Systems - Requirements
ASTM D-3487	Mineral Insulating Oil Used in Electrical Apparatus
ASTM D-6871	Natural (Vegetable Oil) Ester Fluids Used in Electrical Apparatus
Western Underground Committee Guide 2.13	Security for Pad-mounted Equipment Enclosures



**2.02 - TRANSFORMER EFFICIENCY**

Only units that meet or exceed the U.S. Department of Energy efficiency standards for liquid filled distribution transformers 10 CFR Part 431 will be considered for this bid. All units shall have represented efficiencies that meet or exceed the efficiency values in the following table.

Transformer Efficiencies per DOE 10 CFR Part 431	
kVA	Efficiency (%)
75	99.03
150	99.16
300	99.27
500	99.35
1000	99.43
1500	99.48
2000	99.51
2500	99.53

**2.03 - ENCLOSURE SPECIFICATIONS**

**2.03.1 - DIMENSIONS**

The minimum and maximum dimensions of the pad-mount transformers shall be as shown below. These dimensions do not include cooling fins.

	75 to 300 kVA	500 kVA	1000 to 1500 kVA	2000 to 2500 kVA
Width	46" min	62" min	74" min	74" min
	64" max	82" max	82" max	94" max
Depth	54" max	88" max	88" max	92" max

**2.03.2 - DEPTH OF APPARATUS COMPARTMENT – FRONT CABINET**

The minimum depth of the apparatus compartment shall be 24 inches.

#### 2.03.3 - COOLING FINNS

Cooling fins shall not extend further than 12 inches beyond the dimensions shown above.

#### 2.03.4 - BOLTED ACCESS

Methods incorporating bolted covers shall be such that significant paint damage to the cover or tank should not occur upon removal. Bolts shall be AISI Type 304 stainless steel or better with bronze nuts.

#### 2.03.5 - HINGE AND FASTENING HARDWARE

All hinges and hinge pins shall be AISI Type 304 stainless steel or better.

#### 2.03.6 - ENCLOSURE COATING

The tank and cover shall have a uniform corrosion-resistant finish, a minimum of 3.0 mil thick, which shall be capable of meeting the functional specifications listed below and meet or exceed IEEE C57.12.28.

##### 2.03.6A – EXTERIOR PAINT COLOR

The exterior transformer tank, sills, and door lids shall be painted (Pad-mount Green) Munsell 7GY-3.29/1.5.

##### 2.03.6B – INTERIOR PAINT COLOR

Interior portions of sills, doors and terminal compartments may be either (Pad-mount Green) Munsell 7GY-3.29/1.5 or Light Gray No. 70, Munsell Notation 5BG 7.0/0.4.

##### 2.03.6C - UNDERSIDE CORROSION MITIGATION

To address corrosion and/or rust caused by material and activities adjacent to the transformer, such as fertilizer, landscaping maintenance amongst others, the underside of the transformer shall be treated in one of the following methods:

- The underside of the transformers shall be given a heavy coating of plastic, rubberized, or asphalt compound to prevent rusting. This coating shall extend 3 inches up the exterior sides and sill of the transformer.
- AISI Type 304 or better stainless-steel bottom and the bottom 2 inches of the transformer enclosure sides and sill.

#### 2.03.7 - CROWNING

The top of the tank and apparatus compartment shall be crowned or slanted at a minimum of 3 degrees.

#### 2.03.8 - LOCKING SYSTEM

The locking system shall incorporate a two-lock system using a Pentahead bolt and standard padlock as the locking devices. The Pentahead bolt shall be captive spring assisted within a recessed blind hole. The padlock cannot be applied until the

Pentahead bolt has been completely recessed. With the padlock installed, the Pentahead bolt cannot be removed. The locking system shall be shown to be simple to use and resistant to misalignment. Manufacturer does not provide padlock.

#### 2.03.9 - OIL FILL & DRAIN PLUGS

- All units shall include fill ports in accordance with IEEE Standard C57.12.34.
- All units shall include a 1 in. NPT oil drain valve without built-in sampling device installed in the LV compartment.

#### 2.03.10 - TEMPERATURE AND OIL LEVEL INDICATORS

- An individual dial-type thermometer, with re-settable drag-hand, and an indicating dial-type oil level indicator shall be provided on all transformers.
- The indicators shall be mounted within the secondary side of the tank.
- The thermometer bulb shall be located in such a way as to measure the maximum free oil temperature. It shall also be able to be removed without loss of oil from the tank.

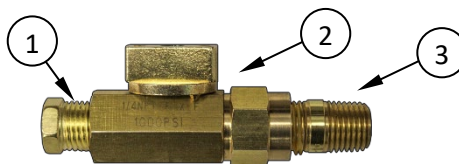
#### 2.03.11 - PRESSURE RELIEF

- Units with mineral insulating oil shall have a pressure-relief device (Qualitrol Model 202-032-1 or approved equal) that can be operated by a standard high-voltage switch stick or clamp-stick and shall be installed in accordance with IEEE C57.12.34.
- Units with natural ester-based insulating fluids shall have a green capped pressure-relief device (Viat Model 302-070-011, Heartland Model HPV-1230, or approved equal) that can be operated by a standard high-voltage switch stick or clamp-stick and shall be installed in accordance with IEEE C57.12.34, and shall be lubricated with Krytox prior to shipping.

#### 2.03.12 – FILL OR “NITROGEN” VALVE

All units shall have a “nitrogen” valve that will allow air pressure to be induced into the air space of the tank. This valve shall consist of the following:

- Item 1 – Grainger 20XN79 Low Lead Brass Hex Plug, 1/4" Pipe Size
- Item 2 – Grainger 1WMN6 Brass FNPT x FNPT Ball Valve, Round, 1/4" Pipe Size
- Item 3 – Grainger 1DFX5 1/4" x 1-1/8" Brass Male Close Nipple, Pipe Nipple



#### 2.03.13 - GASKETS

Gaskets for the conductor terminations and bayonet fuse holder shall be reusable Nitrile or Viton material.



## Material Specification

### 15kV Three Phase Pad-Mounted Transformers

#### 2.03.14 - NAMEPLATE INFORMATION

The nameplate shall meet the requirements of IEEE C57.12.34 with the following exceptions/additions:

- For mineral oil filled units, the nameplate shall state “Contains no detectable level of PCB (less than 1PPM) at the time of manufacture” or similar statement as approved by Tacoma Power.
- For natural-ester based fluid filled units, the nameplate shall state “Natural Ester Fluid – when manufactured contained less than 1PPM PCB” or similar statement as approved by Tacoma Power.
- The nameplate shall state “DOE 10 CFR Part 431 compliant”.
- The nameplate shall include the approximate volume of oil in gallons.
- The listed weights shall be in pounds (lbs).

#### 2.04 - INSULATION LEVEL

The insulation class and basic lightning impulse insulation levels (BIL) for the windings and terminals shall be as shown below:

Components		Insulation Class	BIL
HV winding and terminals		15.0 kV	95 kV
LV windings and terminals	4160/2400 Volts	5.0 kV	60 kV
	600 Volts or less	1.2 kV	30 kV
Secondary neutral terminal		1.2 kV	30 kV

#### 2.05 - APPARATUS SPECIFICATIONS

The following will be required for the transformers listed in this specification.

2.05.1 – BUSHING ARRANGEMENT

The physical arrangement of the HV and LV terminations shall be for radial feed construction with “specific” dimensions in accordance with the table below. The “K” dimension shall be 5.0” in the HV compartment. Parking stands shall also be included in accordance with the figures listed below.

Apparatus		Reference Figures of IEEE C57.12.34
HV Compartment		14
LV Compartment	600 Volts or Less	8(a)
	4160/2400 Volts	7

2.05.1A - ACCESS TO BUSHINGS

Both primary and secondary bushings shall be removable from the front/exterior to the tank. Enough conductor lead shall be provided so that the bolted assembly at the bushing can be separated from outside the tank wall.

2.05.2 - GROUNDING PROVISIONS

- Units shall have grounding provisions, one in the HV compartment and one in the LV compartment, in accordance with IEEE C57.12.34.
- Do not include ground connectors.

2.05.3 - BAYONET FUSE HOLDER

Units shall be protected with Bay-O-Net fuse holders on each phase that will accept a Cooper Power Dual Sensing or High Amp OL Bay-O-Net Fuse Link Style No. 358C and has a device that will prevent transformer oil from being expelled when the fuse is removed.

Transformer Sizes	Approved Fuse Holders
75 kVA – 1500 kVA Copper Terminals	Cooper Power Systems P/N 4000361C99FV ABB Inc., P/N 1C10775G02
2000 kVA – 2500 kVA Silver Plated Terminals	Cooper Power Systems P/N 4000361C89FV ABB Inc., P/N 1C10775G07

2.05.3A – FUSE LINKS

Fuse holders shall be fused according to Tacoma Power Standard A-UG-1235 “Transformers, Pad mount, 3Ø, Fusing” in Appendix A.

2.05.3B - DRIP SHIELD

The fuse holder shall also include a removable drip shield.

2.05.3C - ISOLATION LINK

Bay-O-Net Fuse holders shall include isolation links, matched to the transformer size and Dual Sensing or High Amp OL Bay-O-Net Fuse Link, attached to the load connector.

2.05.4 - PRIMARY HV TERMINATIONS

Units shall come equipped with HV bushing wells with loadbreak inserts for deadfront application as described below.

2.05.4A - BUSHING WELLS

The three bushing wells shall be Cooper BW150R 200A, 35KV class tri-clamp.

2.05.4B - LOADBREAK BUSHING INSERTS

The bushing inserts shall be 15 kV, 200A loadbreak bushing inserts, Cooper Power Systems p/n LBI215, or equivalent, that includes a molded-in, bright yellow "Latch Indicator Ring".

2.05.4B.1 - BLEED WIRE

A bleed wire shall be attached to the clamping ring bail and bushing inserts per manufacturer's recommendations.

2.05.4B.2 - DUST COVER

Bushing inserts shall be shipped with a red dust cover.

2.05.5 - SECONDARY AND NEUTRAL LV (0 TO 600 VOLT) TERMINATIONS

The following is required for the secondary terminations.

2.05.5A - SECONDARY AND NEUTRAL TERMINAL DIMENSIONS

The secondary and neutral terminals shall be blades in accordance with the table below.

Transformer Size (kVA)	Minimum Number of Holes on Secondary and Neutral Terminal Blades
75 to 300	8
500 to 2500	10

2.05.5B - TERMINAL INSULATING MATERIAL

The insulating material may be porcelain, epoxy, or High Temperature Nylon.

2.05.5C - GROUND STRAP

A ground strap shall be supplied with each transformer having a secondary rating of under 600 volts. The ground strap shall be attached to the neutral terminal and shall be removable.

2.05.5D - HANGER BRACKETS

All secondary paddles shall be provided with supporting brackets. The brackets must allow for terminal plates to be attached from either side.

2.05.6 - LBOR SWITCH

All units purchased under this specification shall include a loadbreak oil-immersed rotary disconnect (LBOR) switch operated from the HV compartment and used as an "ON-OFF" switch for the primary coil of the transformer.

Characteristic	Rating
Continuous current rating	200A
Momentary symmetrical short circuit rating	10,000A
Nominal voltage	15 kV
BIL	95 kV
Load-interrupting rating	200A @ 70% PF

2.05.7 - HV TAPS

HV taps will be included on each unit with tap ratings as shown in the table below.

75-500 kVA		HV rating (V)	750 – 2500 kVA
For LV rating 208Y/120, 240Δ 480Y/277, or 480Δ Volts 4160Y/2400 Volts			For LV rating 208Y/120, 240Δ 480Y/277, 480Δ 4160Y/2400, or 2400Δ Volts
Above HV rating	Below HV rating		
2 @ 2.5% each	2 @ 2.5% each	12470	13090 / 12780 / 12160 / 11850
14400 / 14100 / 13500 / 13200		13800	14400 / 14100 / 13500 / 13200

2.05.7A - LOCATION OF TAP CHANGER SELECTOR SWITCH

The tap changer selector switch shall be located in the HV compartment and be operable with hot sticks.

2.06 – CORE/COIL SPECIFICATIONS

The following are the transformer core requirements for the transformers listed in this specification.

2.06.1 - DESIGN TEMPERATURES

Pad-mount distribution transformers shall be designed for 65°C average winding rise in accordance with IEEE C57.12.00. Units rated and designed for 65/75°C or 75°C average winding rise that meet or exceed the IEEE/ANSI/ASTM/NEMA standards of this specification can also be considered.

2.06.2 – CORE/COIL ASSEMBLY

The transformers to be furnished under this specification shall have 5-legged-type core construction.

2.06.2A - COIL CONSTRUCTION

Transformer coils shall be wound with insulating paper coated on both sides with a thermosetting adhesive that when properly cured will form an effective bond, both turn-to-turn and layer-to-layer, prior to impregnating with oil.

2.06.3 - LIFTING ATTACHMENTS

Lifting eyes or suitable attachments shall be included to assist in the removal and installation of cores.

2.07 - INSULATING FLUIDS

2.07.1 - MINERAL OIL

- The mineral insulating oil shall meet the specifications of ASTM Standard D-3487 and contain no detectable Polychlorinated Biphenyl (PCB).
- The transformer oil shall be new, clear in appearance and have a dielectric strength of over 30 kV

2.07.2 - NATURAL ESTER-BASED INSULATING FLUID

The natural ester-based fluid must meet or exceed the acceptance values in accordance with IEEE C57.147 and shall be FM approved and UL classified as a “less-flammable fluid”. Furthermore, the fluid shall be fully miscible with other natural ester-based fluids.

2.08 - STENCILING AND LABELS (SEE FIGURES 1 - 4)

The following stenciling/labeling requirements are to be applied on units delivered to Tacoma Power.





## Material Specification

### 15kV Three Phase Pad-Mounted Transformers

#### 2.08.1 - KVA AND VOLTAGE DESIGNATIONS

The KVA and voltage designations are to be stenciled on the units as identified below.

Designation	Stencil	Size (in.)	Color
kVA	75	3	
	150		
	300		
	500		
	1000		
	1500		
	2000		
	2500		
Voltage Designation	12470GrdY/7200	1	White
	208Y/120		
	12470GrdY/7200		
	480Y/277		
	12470GrdY/7200		
	240Δ/120		
	12470GrdY/7200		
	4160Y/2400		
	12470GrdY/7200		
	2400Δ		
	13800		
	208Y/120		
13800			
480Y/277			
13800			
4160Y/2400			

#### 2.08.1A - LOCATION

- LV side (right side) of the tank exterior, not on the face of the door.
- Inside the LV compartment door (should be legible with the door open)

#### 2.08.2 - TRACKING NUMBERS (SAP #)

Tracking numbers unique to Tacoma Power (seven-digit SAP equipment number) will be supplied by Tacoma Power's data management section. The numbers shall be stenciled on the units as identified below.

#### 2.08.2A - SIZE, COLOR AND LOCATION

- White color and 2 in. size stenciling
- LV side (right side) of the tank exterior above kVA and voltage designation
- Inside the LV compartment door above the kVA and voltage designation (should be legible with the door open)
- On the face of the tank underneath the secondary terminals

#### 2.08.3 - NATURAL ESTER FLUID TRANSFORMERS

Units that are filled with natural ester insulating fluid shall have "NATURAL ESTER FLUID" stenciled with 3/4 in. letters, white in color, located:

- On the face of the tank above the oil drain plug.
- On the LV side (right side) of the tank exterior below the tracking (SAP) number

#### 2.08.4 - SAFETY LABELS

Current ANSI Z535 approved "DANGER" labels, free of wrinkles and air bubbles, shall be provided on each unit as follows:

#### 2.08.4A - APPROVED SYMBOL ON LABEL

The following symbols are approved for use on DANGER labels applied to Tacoma Power transformers. All other DANGER symbols are not allowed.



#### 2.08.4B - LOCATION

- HV compartment on the face of the tank and on the inside of the door
- LV compartment on the face of the tank and the inside of the door
- Do not apply any "DANGER" or "WARNING" labels on the exterior of the unit.

Figure 1



Figure 2



Figure 3



Figure 4



## Transformer, Padmount, 3Φ Fusing

**A-UG-1235**

### Application

This standard lists the fuse links used in the Bay-O-Net fuseholders in 3Φ padmount transformers.

**Table 1** 3Φ Padmount Transformer Fuse Link 12.47 kV and 13.8 kV

Transformer kVA	Eaton/Cooper Fuse #	Fuse Rating (Amp)	Fuse Type	MID
30	4000358C03	3	Dual Sensing	34712
45	4000358C03	3	Dual Sensing	34712
75	4000358C05	8	Dual Sensing	19813
112.5	4000358C08	15	Dual Sensing	19814
150	4000358C08	15	Dual Sensing	19814
225	4000358C10	25	Dual Sensing	19815
300	4000358C10	25	Dual Sensing	19815
500	4000358C12	50	Dual Sensing	19816
750	4000358C14	65	Dual Sensing	19817
1000	4000358C14	65	Dual Sensing	19817
1500	4038361C04CB	100	High Amp OL	43324
2000	4038361C05CB	125	High Amp OL	43325
2500	4038361C05CB	125	High Amp OL	43325

### Construction Notes

- See Cooper catalog S240-40-3 “Bay-O-Net Fuse Re-fusing Installation Instructions” for information on refusing transformer.

### References

- Cooper catalog CA132010EN “Dual sensing Bay-O-Net fuse link”
- Cooper catalog CA132007EN “High ampere overload Bay-O-Net fuse link”
- Cooper catalog S240-40-3 “Bay-O-Net Fuse Re-fusing Installation Instructions”

**APPENDIX B**

Signature Page

Price Proposal Forms

**SIGNATURE PAGE**

**CITY OF TACOMA  
Tacoma Power/Transmission & Distribution**

All submittals must be in ink or typewritten, executed by a duly authorized officer or representative of the bidding/proposing entity, and received and time stamped as directed in the **Request for Bids page near the beginning of the specification**. If the bidder/proposer is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

**REQUEST FOR BIDS SPECIFICATION NO. PT24-0123F  
Three Phase Pad Mounted Distribution Transformers**

The undersigned bidder/proposer hereby agrees to execute the proposed contract and furnish all materials, labor, tools, equipment and all other facilities and services in accordance with these specifications.

The bidder/proposer agrees, by submitting a bid/proposal under these specifications, that in the event any litigation should arise concerning the submission of bids/proposals or the award of contract under this specification, Request for Bids, Request for Proposals or Request for Qualifications, the venue of such action or litigation shall be in the Superior Court of the State of Washington, in and for the County of Pierce.

**Non-Collusion Declaration**

*The undersigned bidder/proposer hereby certifies under penalty of perjury that this bid/proposal is genuine and not a sham or collusive bid/proposal, or made in the interests or on behalf of any person or entity not herein named; and that said bidder/proposer has not directly or indirectly induced or solicited any contractor or supplier on the above work to put in a sham bid/proposal or any person or entity to refrain from submitting a bid/proposal; and that said bidder/proposer has not, in any manner, sought by collusion to secure to itself an advantage over any other contractor(s) or person(s).*

\_\_\_\_\_  
Bidder/Proposer's Registered Name

\_\_\_\_\_  
Signature of Person Authorized to Enter      Date  
into Contracts for Bidder/Proposer

\_\_\_\_\_  
Address

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
(Area Code) Telephone Number / Fax Number

\_\_\_\_\_  
Authorized Signatory E-Mail Address

\_\_\_\_\_  
State Business License Number  
in WA, also known as UBI (Unified Business Identifier) Number

\_\_\_\_\_  
E.I.No. / Federal Social Security Number Used on Quarterly  
Federal Tax Return, U.S. Treasury Dept. Form 941

\_\_\_\_\_  
State Contractor's License Number  
(See Ch. 18.27, R.C.W.)

\_\_\_\_\_  
E-Mail Address for Communications

Addendum acknowledgement #1 \_\_\_\_\_ #2 \_\_\_\_\_ #3 \_\_\_\_\_ #4 \_\_\_\_\_ #5 \_\_\_\_\_

***THIS PAGE MUST BE SIGNED AND RETURNED WITH SUBMITTAL.***



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

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## PROPOSAL SHEET

### NOTES:

1. All prices shall be submitted as F.O.B. Destination, freight prepaid and allowed (included in the unit price).
2. Respondents may bid on any combination of items. Partial bids will be accepted.
3. The City reserves the right to award to one or more Respondents, or make now award, in the best interest of the City.
4. Award may include a combination of items based on lead times, oil types, and optional item groups.
5. Determination as to acceptable equivalent items shall be at the City's sole discretion.

### VENDOR INQUIRY

1. Does your firm accept payment by EFT/ACH?  Y  N  
(Electronic Funds Transfer (EFT) by Automated Clearing House (ACH))
2. Prompt Payment discount offered \_\_\_\_\_%, \_\_\_\_\_ days.  
Only discounts offered of 20 days or more will be considered for bid evaluation purposes.





## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Mineral Oil Filled

**12470GrdY/7200 - 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH**

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price
					FOB Destination (Quantity x Unit Price)
1	35688	75	0	\$	\$
2	35690	150	10	\$	\$
3	35692	300	10	\$	\$
4	35693	500	6	\$	\$
5	35695	1000	4	\$	\$
Sub-Total					\$

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
1	75					%	
2	150					%	
3	300					%	
4	500					%	
5	1000					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Mineral Oil Filled

**12470GrdY/7200 - 480Y/277 VOLT - WITH TAPS AND LBOR SWITCH**

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
6	35699	75	0	\$	\$	
7	35701	150	2	\$	\$	
8	35703	300	5	\$	\$	
9	35704	500	6	\$	\$	
10	35706	1000	4	\$	\$	
11	35707	1500	4	\$	\$	
12	35708	2000	2	\$	\$	
13	35709	2500	0	\$	\$	
					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
6	75					%	
7	150					%	
8	300					%	
9	500					%	
10	1000					%	
11	1500					%	
12	2000					%	
13	2500					%	



**Material Specification**

**15kV Three Phase Pad Mounted Transformers**

**PROPOSAL PRICING SHEET – Mineral Oil Filled**

**12470GrdY/7200 – 240Δ/120 VOLT – WITH TAPS AND LBOR SWITCH**

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
14	35710	75	0	\$	\$	
15	35711	1000	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
14	75					%	
15	1000					%	

**12470GrdY/7200 – 4160Y/2400 VOLT – WITH TAPS AND LBOR SWITCH**

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
16	35712	300	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
16	300					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Mineral Oil Filled

### 12470GrdY/7200 - 2400Δ VOLT - WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
17	35713	1000	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
17	1000					%	

### 13800Δ - 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
18	35716	75	1	\$	\$	
19	35718	150	0	\$	\$	
20	35720	300	0	\$	\$	
21	35721	500	0	\$	\$	
22	35723	1000	0	\$	\$	
Sub-Total					\$	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
18	75					%	
19	150					%	
20	300					%	
21	500					%	
22	1000					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Mineral Oil Filled

### 13800Δ – 480Y/277 VOLT – WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
23	35727	75	0	\$	\$	
24	35729	150	0	\$	\$	
25	35731	300	0	\$	\$	
26	35732	500	1	\$	\$	
27	35734	1000	0	\$	\$	
28	35735	1500	2	\$	\$	
29	35736	2000	0	\$	\$	
30	35737	2500	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
23	75					%	
24	150					%	
25	300					%	
26	500					%	
27	1000					%	
28	1500					%	
29	2000					%	
30	2500					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SUMMARY SHEET – Mineral Oil Filled

Item No.	Description	Lead Time	Sub Totals
1 thru 5	12470GrdY/7200 – 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
6 thru 13	12470GrdY/7200 - 480Y/277 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
14 thru 15	12470GrdY/7200 – 240Δ/120 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
16	12470GrdY/7200 – 4160Y/2400 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
17	12470GrdY/7200 - 2400Δ VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
18 thru 22	13800Δ - 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
23 thru 30	13800Δ – 480Y/277 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
Sub Total for Mineral Oil Units			\$



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

# PROPOSAL PRICING SHEET – Natural Ester Fluid Filled

**12470GrdY/7200 – 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH**

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price
					FOB Destination (Quantity x Unit Price)
31	60414	75	0	\$	\$
32	60415	150	10	\$	\$
33	60416	300	10	\$	\$
34	60417	500	6	\$	\$
35	60418	1000	4	\$	\$
Sub-Total					\$

Item	kVA	Weight	Gallons of Oil	No-Load Loss (Watts)	Load Loss (Watts) @	%Z	Represented Efficiency per DOE 10 CFR Part 431
		Incl. Oil (lb.)		@ 20C	85C		
31	75					%	
32	150					%	
33	300					%	
34	500					%	
35	1000					%	





## Material Specification

### 15kV Three Phase Pad Mounted Transformers

# PROPOSAL PRICING SHEET – Natural Ester Fluid Filled

12470GrdY/7200 - 480Y/277 VOLT - WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
36	60419	75	0	\$	\$	
37	60420	150	2	\$	\$	
38	60421	300	5	\$	\$	
39	60422	500	6	\$	\$	
40	60423	1000	4	\$	\$	
41	60424	1500	4	\$	\$	
42	60425	2000	2	\$	\$	
43	60426	2500	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight		No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
		Incl. Oil (lb.)	Gallons of Oil				
36	75					%	
37	150					%	
38	300					%	
39	500					%	
40	1000					%	
41	1500					%	
42	2000					%	
43	2500					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Natural Ester Fluid Filled

### 12470GrdY/7200 – 240Δ/120 VOLT – WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price		
					FOB Destination	(Quantity x Unit Price)	
44	60427	75	0	\$		\$	
45	60428	1000	0	\$		\$	
Sub-Total							\$

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
44	75					%	
45	1000					%	

### 12470GrdY/7200 – 4160Y/2400 VOLT – WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price		
					FOB Destination	(Quantity x Unit Price)	
46	60429	300	0	\$		\$	
Sub-Total							\$

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
46	300					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Natural Ester Fluid Filled

### 12470GrdY/7200 - 2400Δ VOLT - WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
47	60430	1000	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
47	1000					%	

### 13800Δ - 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
48	60431	75	1	\$	\$	
49	60432	150	0	\$	\$	
50	60433	300	0	\$	\$	
51	60434	500	0	\$	\$	
52	60435	1000	0	\$	\$	
Sub-Total					\$	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
48	75					%	
49	150					%	
50	300					%	
51	500					%	
52	1000					%	



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

## PROPOSAL PRICING SHEET – Natural Ester Fluid Filled

13800Δ – 480Y/277 VOLT – WITH TAPS AND LBOR SWITCH

Item	MID #	kVA	One-Time Purchase Quantity	Unit Price	Total Price	
					FOB Destination	(Quantity x Unit Price)
53	60436	75	0	\$	\$	
54	60437	150	0	\$	\$	
55	60438	300	0	\$	\$	
56	60439	500	1	\$	\$	
57	60440	1000	0	\$	\$	
58	60441	1500	2	\$	\$	
59	60442	2000	0	\$	\$	
60	60443	2500	0	\$	\$	
Sub-Total					\$	

Item	kVA	Weight Incl. Oil (lb.)	Gallons of Oil	No-Load Loss (Watts) @ 20C	Load Loss (Watts) @ 85C	%Z	Represented Efficiency per DOE 10 CFR Part 431
53	75					%	
54	150					%	
55	300					%	
56	500					%	
57	1000					%	
58	1500					%	
59	2000					%	
60	2500					%	



**Material Specification**

**15kV Three Phase Pad Mounted Transformers**

**PROPOSAL PRICING SUMMARY SHEET – Natural Ester Fluid**

**Filed**

Item No.	Description	Lead Time	Sub Totals
31 thru 35	12470GrdY/7200 – 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
36 thru 43	12470GrdY/7200 - 480Y/277 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
44 thru 45	12470GrdY/7200 – 240Δ/120 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
46	12470GrdY/7200 – 4160Y/2400 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
47	12470GrdY/7200 - 2400Δ VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
48 thru 52	13800Δ - 208Y/120 VOLT - WITH TAPS AND LBOR SWITCH	Wks	\$
53 thru 60	13800Δ – 480Y/277 VOLT – WITH TAPS AND LBOR SWITCH	Wks	\$
Sub Total for Natural Ester Fluid Units			\$



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

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## PROPOSAL - PRICING TOTALS

BID TOTALS	
Sub Total for all Mineral Oil Units	\$
Sub Total for all Natural Ester Fluid Units	\$
Sub Total for Proposal	\$
Sales Tax @ 10.3%, Location Tax Collected: Tacoma, WA (Note Paragraph 1.41 of the Standard Terms and Conditions)	\$
<b>Total for All Items with Tax</b>	\$



## Material Specification

### 15kV Three Phase Pad Mounted Transformers

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## PROPOSAL - TECHNICAL INFORMATION

The City requires that Respondents determine the cost of compliance with the City's terms and conditions and include such costs into the unit prices of the items in the Respondent's submittal. Unless a bid responds to the specification in all material respects, it is not a responsive bid. Acknowledge each question with a checkmark  to indicate your response.

Indicate the Department of Energy methodology used to certify compliance with the efficiency standards for liquid-filled distribution transformers 10 CFR Part 431.

Testing	
AEDM	

Does the manufacturer have in place a quality assurance program that conforms to ISO 9001, ISO 9002, ANSI/ASQC Q91, ANSI/ASQC Q92 or equivalent?

YES	
NO	

List the standard used : \_\_\_\_\_

Do all items submitted per this Specification meet and/or exceed the requirements of the Technical Provisions?

YES	
NO	

Does your submittal make any restrictions or take any exceptions to the conditions or provisions outlined in this Specification?

YES	
NO	





## Material Specification

### 15kV Three Phase Pad Mounted Transformers

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## PROPOSAL - TECHNICAL INFORMATION (Continued)

Identify below the requested manufacturer information:

200A Bushing Insert Manufacturer and Catalog Number:	
Bayonet Fuse Holder Manufacturer and Catalog Number:	
Coil/Core Design for Short Circuit Withstand:	

## PROPOSAL - VENDOR QUALIFICATION

State the number of years your firm has been manufacturing products of a similar scope to those outlined in this Specification. See Section 1.01.3 for minimum qualifications allowed.

	Years
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