

Bid Specification

**Washington City
Grapevine Substation
69 kV and 15 kV GOAB Switches**

May 2024



**Intermountain Consumer
Professional Engineers, Inc.
1145 East South Union Avenue
Midvale, Utah 84047
(801) 255-1111**

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NOTICE TO BIDDERS

NOTICE TO BIDDERS:

Sealed bids will be received by Washington City for:

**WASHINGTON CITY
GRAPEVINE SUBSTATION
69 KV & 15 KV GROUP OPERATED AIRBREAK SWITCHES**

The Bids will be for the furnishing of four (4) 69 kV and two (2) 15 kV Center Side break V Type Switches (Manually Operated). The switches are to be installed in Washington City's Grapevine Substation. Bids will be in accordance with the Specification Documents prepared by Intermountain Consumer Professional Engineers, Inc. ("ICPE"), (hereinafter referred to as "Engineer").

Proposals are to be emailed to **Tara Pentz** (tpentz@washingtoncity.org) at Washington City (hereinafter referred to as "Purchaser"), before 3:00 pm on June 5, 2024. Bids will be privately evaluated. The Purchaser shall enter only one contract for the equipment to be provided under this specification.

The project schedule is as follows:

Bid due date: ***June 5, 2024***

The 69kV Group Operated Air-break Switches are to be delivered to the Purchaser on or before: May 15, 2025, or as agreed.

Washington City reserves the right to reject any or all bids or to waive any formality or technicality in any bid in the interest of the Washington City.

INSTRUCTIONS TO BIDDERS

1. Scope of Contract

Bidder shall be fully responsible for all labor, material, and equipment necessary for complete construction of the equipment as required in the Contract Documents.

2. Specifications, Other Contract Documents

Specifications and other bidding documents may be obtained at the time and place indicated on the Notice to Bidders. Bidders shall comply with all conditions stipulated in such bidding documents.

3. Proposals

Before submitting a Proposal, each bidder shall carefully examine the Contract Documents, shall fully inform themselves as to all existing conditions and limitations; and shall include in the Proposal the cost of all items required by the Contract Documents. If the bidder observes that portions of the Contract Documents are at variance with applicable laws, codes, rules, regulations or contain obvious erroneous or uncoordinated information, the bidder shall promptly notify the Engineer and the necessary changes shall be accomplished by Addendum.

- a. The Proposal shall be prepared on forms as found in this specification.
- b. Bids will bear no marks, erasures, or writing changes, other than those provided or required.
- c. No verbal or telephone bid modifications or cancellations will be considered.
- d. The bidder guarantees there shall be no revisions or withdrawal of bid amount for a period of 60 days after bid opening.
- e. Bids shall be signed by a Principal duly authorized to make contracts.
- f. Bidding proposals shall reflect the cost of all work required by the bidding documents, plus additions, deletions, or modifications required by addenda issued prior to bid opening.
- g. Bids shall be submitted by email addressed to:

Tara Pentz, Recorder
Washington City
111 North 100 East
Washington City, UT 84780
tpentz@washingtoncity.org

All emails shall be clearly marked "Bid Proposal – Washington City Grapevine Substation – 69 kV & 15 kV GOAB Switches".

- h. Bid opening is as per the Notice to Bidders.
- i. It is the bidder's sole responsibility to see that his bid is received at the proper time and place. Any bid received after scheduled bid opening will be considered non-responsive.
- j. Prior to the bid opening, bidders may withdraw a bid by written request or by reclaiming bid envelopes.

4. Interpretation of Specifications

- a. If any person or entity contemplating submitting a bid is in doubt as to the meaning of any part of the specifications or other Contract Documents, such person shall submit to the Engineer a request for an interpretation or correction thereof.
- b. Request for such clarifications must be in the office of the Engineer a minimum of three (3) days prior to bid opening.
- c. The person or entity submitting the request will be responsible for its prompt delivery.

- d. Any interpretation of the proposed documents will be made only by Addenda duly issued and a copy of such Addenda will be mailed or delivered to each person or entity receiving a set of documents.
- e. Verbal instructions or interpretations will have no validity, regardless of source. Neither the Owner nor the Engineer will be responsible for any other explanations or interpretations of the proposed documents.

5. Addenda

Any Addenda issued during the time of bidding shall become part of the documents provided to the bidders for the preparation of the bid, shall be covered in the bid, and shall be made a part of the Contract.

6. Award of Contract

- a. The Contract will be awarded as soon as possible to the bidder that meets the following criteria: (1) ability to meet specifications as stipulated in Bid Evaluation information as required in Section 1 – General Requirements 1.4, and Section 3 Proposal Data and Technical Data; (2) lowest, responsible bidder based on lowest combination of base bid and acceptable alternates; (3) ability to meet time frame required in bid documents; (4) provided the bid is reasonable and is in the interests of the Owner to accept. The Owner reserves the right to waive any technicalities or formalities in any bid or in the bidding.
- b. No Bidder shall consider himself under contract until a Contract is signed by the Purchaser and the Bidder.

7. Qualifications

The Bidder's past performance, organization, equipment, and ability to perform and complete their contracts in the manner and within the time limit specified will be elements along with the cash amount of the bid, which will be considered by the Owner in the letting of the contract.

8. Right to Reject Proposals

The Owner reserves the right to reject any or all Proposals and to waive any irregularities therein.

9. Time is of the Essence

Time is of the essence regarding all the requirements of the Contract Documents.

10. Withdrawal of Bids

Bids may be withdrawn on written request received from bidders prior to the time fixed for opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

11. Product Approvals

Where reference is made to one or more proprietary products in the Contract Documents, but restrictive descriptive materials of one or more manufacturer(s) is referred to in the Contract Documents, the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the drawings and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the Engineer. Requests for the information pertaining to said approval must be submitted to the Engineer no later than four (4) working days (not including Saturday, Sunday, or State holidays) prior to the bid opening. The Engineer's written approval will be in an issued Addendum. If the descriptive material is not restrictive, the products of other manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design as determined by the Engineer.

12. Financial Responsibility of Bidder

The Bidder shall respond promptly to any inquiry in writing by the Owner about any concern of financial responsibility of the Bidder.

SECTION 1 – GENERAL REQUIREMENTS

PART 1 - GENERAL REQUIREMENTS

1.1 GENERAL

- A. The purpose of this Specification is to provide specific data and requirements pertaining to the purchase, design, shipment, service engineering and testing of four (4) 69 kV and two (2) 15 kV group operated Center Side Break V-Type air-break switches (manually operated) as specified herein to be purchased by Washington City. These switches will be installed at the Purchaser's Grapevine Substation located in the vicinity of Washington City, Utah. The switches shall be designed, built, and delivered completely factory assembled, tested and ready for installation with minimal field assembly and adjustment required.

1.2 CORRESPONDENCE

- A. All proposals shall be addressed to:

Tara Pentz
Washington City
111 North 100 East
Washington City, UT 84780
Email: tpentz@washingtontcity.org

- B. Questions and/or clarifications shall be addressed to:

Matt Levorsen, P.E.
ICPE
1145 East South Union Avenue
Midvale, UT 84047
Email: Matt.Levorsen@icpeinc.com
Phone: (801) 255-1111

1.3 BID PROPOSAL

- A. Firm prices shall be quoted. The Bidder's proposal shall not include sales or use taxes. Prices shall be quoted on the Proposal form provided.
- B. Forms, as found in this specification (Section 4), shall be filled in by the Bidder and shall be a part of the bidder's proposal.
- C. Proposals shall include drawings and information clearly depicting air-break switches, dimensions, mounting, connection method, and Motor operator data.
- D. Bids shall be submitted in opaque envelopes that bear the Bidder's name. All bids shall be marked "Bid – 69 kV & 15 kV Group Operated Switches."
- E. The Purchaser reserves the right to accept or reject, without cause, any or all bids, or any portion thereof.
- F. The Purchaser reserves the right to waive minor irregularities or minor errors in any proposal if it appears to the Purchaser that such irregularities or errors were made inadvertently. Any such irregularities or errors so waived must be corrected in the Proposal in which they occur prior to the execution of any contract which may be awarded thereon.

- G. All Bidders will be notified of any changes in the specifications by addendum letters. Receipt of addendum letters must be acknowledged in the bid proposal.
- H. Bidders are encouraged to point out special or superior features that may make its equipment preferred.

1.4 BID EVALUATION

- A. The Purchaser will consider pricing and delivery date as two key factors making up the total value of the equipment to be purchased. To properly evaluate other factors, the Bidder is requested to provide answers to the following questions in their proposal:
 - 1. Where is the nearest factory authorized repair shop capable of repairing equipment of the size and type proposed?
 - 2. Where is the nearest factory trained Service Engineers located who can provide field service for the proposed equipment?
 - 3. How much (if any) of the Service Engineer's services are included in the quoted price for the equipment proposed? If not included in the quoted price, the Field Engineering Service cost should be given in the Proposal.
- B. Other items which will be considered in the bid evaluation are:
 - 1. The Bidder's past performance(s) in providing substation equipment and meeting quoted deliveries.
 - 2. The Bidder's past ability and willingness to solve problems that have arisen in a satisfactory and complete manner.
 - 3. The Bidder's deviations from the specifications.
 - 4. Warranties.
 - 5. Manufacturer's cancellation policy.

1.5 PURCHASE ORDER

- A. It is anticipated that a purchase order will be issued to the Successful Bidder within sixty (60) days after the due date for the receipt of proposals. All bids shall remain valid for this period.

1.6 DELIVERY AND SHIPPING

- A. A firm delivery date for the switches and related components will be a key factor in the bid evaluation and selection process. Date of shipment shall be as promised by the Bidder, based upon prompt receipt of all necessary information. The date of shipment shall be defined as the date the bill of lading is signed by the carrier. The Purchaser desires a delivery date of *May 15, 2024*.
- B. Shipping shall be FOB destination. The title to the material and apparatus furnished hereunder shall pass to the Purchaser at the destination point. The Project Site is:

Washington City Generation Plant
4250 East Telegraph Rd.
Washington City, UT 84780
- C. Any change in the delivery date shall be reported immediately by telephone, followed by a written confirmation and explanation thereof. The delivery date shall be extended for the period of any reasonable delay due exclusively to causes beyond the control and without the fault of the Bidder.
- D. The apparatus shall be shipped in assembled units insofar as is consistent with good shipping practice. The apparatus shall be carefully packed for shipment. If items must be disassembled for shipment they shall be "match-marked". All units and their containers shall be "piece-marked" and shall show the purchase order number.

- E. On the day that any shipment to the Purchaser is originated, a transmittal, including the following, shall be sent to the Purchaser:
 - 1. Packing List - two (2) copies
 - 2. Bill of Lading - Original and two (2) copies
 - 3. A packing list shall also accompany each shipment.
- F. The Purchaser shall be notified as to the whereabouts of the air-break switches 48 hours prior to the scheduled arrival at the destination point. The bidder shall pay any costs associated with unloading if the switches are not on site at the notified time.
- G. Failure to deliver prior to 1:00 p.m. on a Friday will not guarantee unloading until the following Monday. Layover costs will be paid by the Bidder.

1.7 INVOICING

- A. Invoices shall be submitted in triplicate form to:

Rick Hansen
Washington City
111 North 100 East
Washington City, UT 84780

1.8 TITLE

- A. The title to the material and apparatus furnished hereunder shall be listed as follows:

Washington City
111 North 100 East
Washington City, UT 84780

1.9 PAYMENT

- A. Upon the shipment of any equipment hereunder, the Seller shall submit to the Purchaser a detailed invoice in duplicate of the equipment shipped. After delivery of the equipment, with equipment delivered functional and in accordance with this specification, the Purchaser shall make payment therefore to the Seller.

1.10 CANCELLATION

- A. In the event the Purchaser shall be required, or deems it advisable, to suspend or terminate the work being performed pursuant to this Specification, the Purchaser may do so at any time by written notice to the Bidder. In such case, the Bidder would take whatever action with respect to work in progress as would minimize the Bidder's claim against the Purchaser. The Purchaser would pay the Bidder a reasonable suspension or termination charge for all disbursements or expenses which the Bidder had incurred or become obligated for prior to the date of a notice of cancellation, less the reasonable resale value of the materials, equipment, and apparatus which shall have been obtained or ordered to become an integral part of the work and excluding any allowance for anticipated profits on the unperformed portion of the work. Reimbursement portions of this section shall not apply to cancellations caused by design changes by the Manufacturer not authorized by the Purchaser or delivery of material after the quoted delivery date not authorized by the Purchaser.

1.11 DEVIATIONS AND EXCEPTIONS

- A. Any deviations from or exceptions to this specification shall be clearly stated in the Bidder's proposal. The fact that there are deviations or exceptions will not necessarily preclude the selection of a Bidder's proposal. Any items in deviation from those items called for in this Specification shall be itemized as to their plus or minus dollars effect on the equipment as specified. The statement of deviations will be utilized in the evaluation of the proposal. If no exceptions to this Specification are taken by the Bidder, this shall also be clearly stated.
- B. Alternative offerings will be considered, but they must clearly be indicated as alternatives.
- C. After acceptance by the Purchaser of the proposal of the Successful Bidder, no change, variation, or deviation from the drawings or specifications shall be made, except by the written order of the Purchaser. Should the Manufacturer find at any time during the progress of the work that in his opinion existing conditions demand, make desirable or beneficial a modification in requirements covering any items, he shall promptly report such matters to the Purchaser for decision and instruction.

1.12 WARRANTY

- A. Manufacturer shall warrant to the Purchaser that the apparatus or services to be furnished hereunder will be of the highest quality and free from defects in material, workmanship, and title and will be of the kind designated in the pertinent purchase order. The Manufacturer's warranty shall be effective for a period of five (5) years after the date of shipment to the Purchaser for air-break switches and motor operators. Terms of the Manufacturer's air-break switch, and motor operator warranty shall be included in the bid proposal and will be a criterion for evaluation of the proposal. Any extended warranties shall be indicated.

1.13 LAWS AND REGULATIONS

- A. Apparatus to be furnished hereunder shall comply with the applicable requirements of all statutes, ordinances, codes, and standards of all legally constituted authorities having jurisdiction. The Manufacturer shall obtain certification of compliance where required. All expenses incurred in complying with these requirements are understood to be included in the proposal.

1.14 STANDARDS

- A. Unless otherwise stated, the latest revisions of the applicable standards of ANSI, NEMA, ASTM, NEC, NESC, and UL shall be met in design, rating, testing, and manufacture of the equipment covered by this Specification. In the event a conflict occurs between these codes and the specifications included hereinafter, the more stringent requirements shall govern.

1.15 INSPECTION

- A. A representative of the Purchaser shall be allowed free access at all reasonable times to the Manufacturer's shops and those of his suppliers for inspection of the equipment, or any of its parts, and to obtain information on the progress of the work. Any work or material found to be defective, or which does not meet the requirements of this Specification may be rejected and shall be replaced by the Manufacturer at his own expense. Such an inspection, however, shall not relieve the Manufacturer of responsibility for the quality and correctness of the work.

1.16 TESTING AND FIELD ENGINEERING

- A. The switch(s) shall be assembled and tested at the factory for satisfactory alignment, operation, and electrical integrity. Testing shall be C37.34. The tests listed below shall be conducted by the Manufacturer on one disconnecting switch of each type furnished under this Specification. Tests on identical switches will be acceptable.

1. Temperature rise test, in accordance with ANSI C37.34-4, shall be performed on the main blade and components of a single pole. The test report shall include a diagram indicating the points tested on the switch, composition of switch material, and type of contact plating on these points.
 2. Ice testing shall be in accordance with ANSI C37.34-10, test to be performed on an assembled switch including main blades and grounding blades when furnished. The test shall be a three-pole test on a horizontally mounted, group-operated three pole switch.
- B. If required to satisfy conditions of the warranty, the Manufacturer shall provide a field service engineer to conduct a pre-energization checkout of the switch installation, ascertain the extent of in- transit damages (if any), make necessary minor repairs, and advise the Purchaser's representative and contractor of proper installation, operation, adjustment, and alignment procedures. Costs for warranty required field engineering services shall be included in the bidder's base proposal.
- C. Costs, if any, for Purchaser requested field engineering services shall be included in the Bidder's proposal as a per diem adder to the firm price. Field engineering services shall be offered at a firm, flat rate with all costs and expenses included in this figure.
- D. Field tests at the time of installation shall be made at the expense of the Purchaser. If for any reason whatsoever the equipment furnished and installed hereunder does not meet in any respect the warranties hereof and/or the performances specified by the Bidder in the proposal, and it becomes necessary for the Manufacturer to make alterations for the purpose of meeting those warranties and/or performances, additional tests required to show the effects of such alterations shall be performed at the expense of the Manufacturer.

1.17 DRAWINGS AND DESCRIPTIONS

- A. The following drawings and descriptions shall accompany the Bidder's proposal:
1. General arrangement drawings showing the overall dimensions and relative location of all principal parts.
 2. General description of type of materials used for the principal parts.
 3. General description of the construction including drawings, photographs, or catalog information which show the general construction, including operating mechanism.
 4. General description and diagrams showing the equipment mounting and handling facilities and clearance requirements and weight of the complete switch.
 5. Typical operating and maintenance booklet.
 6. Base drawings in sufficient detail to assist the Engineer in making preliminary mounting layout plans.
- B. Drawings and data supplied with the bid proposal shall contain sufficient information for a thorough engineering evaluation.
- C. Following the award of the Bid, an electronic set of approval drawings shall be submitted to the Purchaser's Engineer. The date of the submittal shall be specified in the Manufacturer's proposal.
- D. Within thirty (30) days of the date of the purchase order, the Manufacturer shall supply to the Engineer accurate dimensional data to allow for design of mounting and connecting bus. The supplier shall be required to coordinate and work with the substation steel supplier in developing an optimal switch and operating handle/linkage mounting configuration.
- E. Within two weeks prior to the shipment of the equipment, the Manufacturer shall furnish to Engineer and Purchaser:

Engineer:

Intermountain Consumer Professional Engineers, Inc.

Matt Levorsen, P.E.
1145 East South Union Avenue
Midvale, UT 84047
Email: Matt.Levorsen@icpeinc.com

Purchaser:

Rick Hansen
Washington City
111 North 100 East
Washington City, UT 84780
Email: rhansen@washingtontcity.org

1. One (1) electronic set of certified, reproducible drawings via email in PDF and AutoCAD format.
 2. One (1) electronic set of Installation, Operations and Maintenance Manuals.
 3. One (1) electronic set of Equipment Specification Sheets and Parts List.
- F. In addition, Manufacturer shall ship one (1) complete set of equipment drawings; Installation, Operations and Maintenance Manuals; and specifications Sheets and Parts Lists with each switch. This material shall be enclosed in a weatherproof package securely attached to the unit(s) and protected from loss or damage.

SECTION 2 – DETAILED SPECIFICATIONS

PART 2 - SPECIFIC GOAB SWITCH REQUIREMENTS

2.1 DETAILED REQUIREMENTS - 69 kV AIRBREAK SWITCH

A. Description of Service

1. This section covers requirements for 72.5 kV maximum, 69 kV nominal, three pole, single-throw, outdoor, manually group-operated, disconnecting air switches. The switch shall be capable of being horizontally (Qty 3) and vertically (Qty 1) mounted and be of the center-side-break "V" type. The total number of 69 kV three phase group operated switches to be purchased under this specification is four (4).
2. Except as modified by the Specification, the disconnecting switch shall be in accordance with NEMA SG6 and ANSI C37 standards. In the event of conflicting requirements, this specification shall take precedence.
3. The 69 kV air-break switch shall be capable of interrupting limited charging or magnetizing current for one 12 MVA (based rated) power transformer at full voltage and no load, using arcing horns or quick break arcing whips. The manufacturer shall provide data indicating air-break switch interrupting capabilities and governing conditions. The manufacturer shall provide descriptive data showing the arcing horns or other similar high velocity interrupting system proposed for extended switching duty.

B. Electrical Specifications

1. All electrical specifications shall be met for disconnecting switches at 3,300 feet above sea level and - 20°F – 125°F ambient temperature range.
2. Ratings:
 - (a) Nominal voltage at 60 Hz 69 kV
 - (b) Rated maximum voltage at 60 Hz..... 72.5 kV
 - (c) BIL (at 3,300 ft ASL)..... 350 kV
 - (d) Continuous current rating..... 1,200 Amp
 - (e) Momentary current rating 70,000 Amp
 - (f) Phase spacing..... 72 Inches

2.2 DETAILED REQUIREMENTS – 15 kV AIRBREAK SWITCH

A. Description of Service

1. This section covers requirements for 15.5 kV maximum, 15 kV nominal, three pole, single-throw, outdoor, manually group-operated, disconnecting air switches. The switches shall be capable of being horizontally (Qty 2) mounted and be of the center-side-break "V" type. The total number of 15 kV three phase group operated switches to be purchased under this specification is two (2).
2. Except as modified herein, the disconnecting switches shall be in accordance with NEMA SG6 and ANSI C37 standards. In the event of conflicting requirements, this specification shall take precedence.
3. Each 15 kV air-break switch shall be capable of interrupting limited charging or magnetizing current using quick break arcing whips. The manufacturer shall provide data indicating the air-break switches interrupting capabilities and governing conditions. The manufacturer shall provide description data showing the arcing horns or other similar high velocity interrupting system proposed for extended switching duty.

B. Electrical Specifications

1. All electrical specifications shall be met for disconnecting switches at 3,300 feet above sea level and -20°F – 125°F ambient temperature range.
2. Ratings - 15.5 kV Switches
 - a. Nominal voltage at 60 Hz 15 kV
 - b. Rated maximum voltage at 60 Hz..... 15.5 kV
 - c. BIL (at 3,300 ft ASL) 110 kV
 - d. Continuous current rating 1,200 Amp
 - e. Momentary current rating 61,000 Amp
 - f. Phase spacing 42 Inches

2.3 OPERATING MECHANISM AND ACCESSORIES

- A. 69 kV and 15 kV switches shall be equipped with a swing handle operator.
- B. The switch operating mechanism shall affect a smooth, thoroughly controlled movement throughout the entire opening and closing cycles and all rods, shafts, pipe linkages, connectors, operating levers, supports, and fittings shall show no noticeable deflection. Cable connections in lieu of rigid interphase rods are not acceptable. Means shall be provided on each switch for taking up loose motion in each part of the mechanism and for adjusting the travel of each blade independently. The design of the mechanism shall be such that the main blades are positively toggled when in the fully open or fully closed position.
- C. Each switch shall be equipped with adjustable stops for the open and closed positions. The closing stops shall position each blade such that maximum contact pressure will be achieved between the moving and the fixed contacts. When the switch is in the fully closed position, the main blades shall be horizontal within $\pm 5^\circ$. If stops are required to meet this limitation, individual, adjustable stops shall be furnished on each pole. With all closing stops adjusted properly and with the blades fully open the three blades of each switch shall conform in position to within 5° of the manufacturer's specified open location.
- D. The operating handle shall be mounted on a base-supporting structure at a height of approximately 42 inches above the foundations. The actual dimensions will be furnished to the successful Bidder at a later date. Switches and operating mechanisms will be assembled by others.
- E. Embossed or stamped metal indicators shall be provided on the vertical operating rod showing when the switch is open or closed. The indicators shall be approximate 7-1/2" inches high by 1-1/2 inches wide, the "closed" indicator painted red and the "open" indicator painted green. The indicators shall be mounted at normal eye level and positioned so that the appropriate indicator directly faces the operator when he is in a normal position for operating the switch. If an auxiliary ice-breaking handle is furnished, the open-close indicator shall be located above the disconnecting coupling in the vertical coupling rod.
- F. Provisions shall be included for padlocking the switch in either the open or closed position.
- G. The outboard or offset bearing of each mechanism shall include: a cast metal housing and crank arm, a steel shaft, and either ball or roller bearing.
- H. The force required to operate any manual mechanism shall not exceed 50 pounds.
- I. The switch shall be capable of being opened and closed under icing conditions, and this capability shall be demonstrated by the ice tests specified in Section 1.16. If auxiliary swing handles are necessary for the switch to perform as required under the ice tests, one such handle shall be furnished with each switch. The auxiliary handle shall be readily attachable and detachable. The gearbox shall be disengaged by a

method other than removal of driven pins or set screws when the switch is operated by the icebreaking handle.

- J. All exposed steel material required for the operating mechanisms and all supplemental steel members required to secure the mechanisms to the supporting structures shall be galvanized. A NEMA 2-hole pad and copper braid shall be provided to bond the operating mechanism to the switch-operators' handle.

2.4 INSULATORS

- A. All insulators shall be gray in color and in accordance with ANSI C29 and/or NEMA Publication No. HV1 for high-voltage insulators.
- B. Insulators shall be porcelain station post type and will be standard strength.

2.5 CONTACTS

- A. The blade contacts shall be adjustable pressure, self-aligning, self-wiping, high-pressure contacts. All fixed contacts shall be backed by stainless steel spring, or beryllium copper leaf springs or be of the reverse current loop shape which eliminates contact burning under fault conditions. The current-carrying path shall not be through any spring. If the current path is through a moving pin, means shall be provided to maintain continuous positive contact pressure on the pin. The shape of and material used for the contact shall be such that there will be no galling of the contact metals when the switch is subjected to 500 open plus 500 close operations.

2.6 BLADES

- A. The blades shall be hard-drawn copper or aluminum alloy for carrying the specified continuous and momentary currents. If the blades are attached to a casting at the hinges end, the blades and castings shall be jointed by welding or by a bolted clamp. A press fit between blade and casting is not acceptable.

2.7 CASTINGS

- A. Pole unit castings may be of bronze or aluminum alloy. Bearings in the hinge-end operating levers may be of the ball, roller, or ball-and-socket type. All such bearings shall be firmly fixed in place and shall not require replacement or maintenance before performing at least 500 close-open operations.

2.8 BEARINGS

- A. The bearings for the rotating insulator stacks shall be of the tapered-roller or double-ball type. If of the latter type, the bearings shall be of the combination radial and thrust type. All insulator bearings shall be provided with a readily adjustable take-up adjustment.
- B. Ball or roller bearings shall be of the sealed, permanently lubricated type, with stainless steel balls or rollers and races.

2.9 BASES

- A. The bases of all switches shall be of metal members of sufficient stiffness to prevent excessive deflection when mounted and operated on supporting structures. Lattice-girder-type bases will not be acceptable. Metal members shall be hot-dipped galvanized.

SECTION 3 – PROPOSAL AND DATA

PART 3 - PROPOSAL AND DATA

3.1 PROPOSAL

Name of Bidder: _____ Date: _____

TO:

Tara Pentz, Recorder
Washington City
111 North 100 East
Washington City, UT 84780
tpentz@washingtoncity.org

The undersigned, in compliance with you invitation for bids for 69 kV air-break switch for Washington City Grapevine Substation having examined the specifications and related documents and being familiar with all of the conditions affecting the work, do hereby propose to furnish all materials and supplies as required in accordance with the contract documents as prepared by Intermountain Consumer Professional Engineers, Inc., within the time set forth and at the price stated below. This price is to cover all expenses incurred in providing the equipment required under the contract documents of which this proposal is a part.

I/We acknowledge receipt of the following addenda:

Addenda No.	Date Received
_____	_____
_____	_____

I/We agree to perform and complete all work shown on the drawings and/or described in the specifications for the sum of:

_____ Dollars (\$)
per 69 kV Group operated Air-break Switch (In case of discrepancy, written amount shall govern.)

_____ Dollars (\$)
per 15 kV Group operated Air-break Switch (In case of discrepancy, written amount shall govern.)

These bids shall be good for (60) days after bid opening. Upon receipt of a contract from the Owner, the undersigned agrees to sign and return the contract within three (3) days.

NO.	ITEM	UNIT	UNIT PRICE	QTY	EXTENDED PRICE
1	69 kV Group Operated Air-break Switch	Ea.	_____	(4)	_____
1	15 kV Group Operated Air-break Switch	Ea.	_____	(2)	_____
TOTAL OF BID					\$ _____

Group Operated Air-break Switch Delivery (from Placement of Order) _____ wks

Substitutions:

The following substitutions of materials and/or equipment are proposed:
Item:

<u>Manufacturer and Description</u>	<u>Add/Deduct</u>
	\$
	\$
	\$
	\$
	\$

1. Field Engineering Services

Flat Rate Per Day including per diem: \$ _____

Is field engineering required for warranty purposes? Yes ☐ No ☐

2. Exceptions

All exceptions taken to items in this specification are to be listed below. The paragraph number and title should be stated, followed by an explanation of the exception to be taken. (Attach additional sheets if necessary.)

3.2 TECHNICAL DATA – 69 kV SWITCH

The following technical information and data shall be submitted for the 69 kV Air-break Switch with the bid:

A. Estimated Weight in Pounds

1. Shipping weight: _____
2. Total assembled weight: _____

B. Shipping Information

1. How will switch shipped - rail, truck? _____

C. Physical Dimensions and Material

1. Height overall: _____
2. Projected dimensions (including accessories) L x W, feet: _____
3. Switch metallic components are made of _____

D. Electrical Characteristics

1. Rated Voltage at 60 Hz: _____
2. Maximum Design Voltage at 60 Hz: _____
3. BIL (at 3,300 feet): _____
4. Continuous Current Rating: _____
5. Momentary Current Rating: _____
6. Phase Spacing: _____
7. Current Interrupting at 72.5 kV RMS: _____

E. Information on Insulator

1. Manufacturer: _____
2. Type and Technical Reference No.: _____
3. Voltage: _____

F. Submittal Drawing

1. Provide submittal drawings in accordance with this specification (yes/no) _____
2. Approval drawing submittal date _____

3.3 TECHNICAL DATA – 15 kV SWITCH

The following technical information and data shall be submitted for the 15 kV Air-break Switch with the bid:

G. Estimated Weight in Pounds

1. Shipping weight: _____
2. Total assembled weight: _____

H. Shipping Information

1. How will switch shipped - rail, truck? _____

I. Physical Dimensions and Material

1. Height overall: _____
2. Projected dimensions (including accessories) L x W, feet: _____
3. Switch metallic components are made of _____

J. Electrical Characteristics

1. Rated Voltage at 60 Hz: _____
2. Maximum Design Voltage at 60 Hz: _____
3. BIL (at 3,300 feet): _____
4. Continuous Current Rating: _____
5. Momentary Current Rating: _____
6. Phase Spacing: _____
7. Current Interrupting at 72.5 kV RMS: _____

K. Information on Insulator

1. Manufacturer: _____
2. Type and Technical Reference No.: _____
3. Voltage: _____

L. Submittal Drawing

1. Provide submittal drawings in accordance with this specification (yes/no) _____
2. Approval drawing submittal date _____