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**REQUEST FOR BID**  
***Electrical Distribution Rehabilitation Vertical – Phase 1***  
**South Dakota Science and Technology Authority**  
**SDSTA Contract # 2024-26**  
***September 23, 2024***

The South Dakota Science and Technology Authority (SDSTA) is seeking bids for procurement of **Vertical Rated Mineshaft/Borehole Cable** at the Sanford Underground Research Facility (SURF). Documents included in this Request for Bid include:

- A. This Request for Bid
- B. Specifications 26 05 13.10, 26 05 13.30, 26 05 19, 26 08 13
- C. Draft Purchase Order

## **1.0 Background**

SDSTA is a quasi-governmental agency established by the State of South Dakota to operate and manage SURF at the former Homestake Gold mine in Lead, SD. This facility has been rehabilitated and developed to support a variety of scientific experiments, including physics, biology, geology, and others.

SDSTA is undergoing a project to rehabilitate an electrical substation located 4850 feet underground. The project involves replacement and relocation of existing medium voltage equipment and cabling. Power is distributed at SURF at 12,470 volts and 4,160 volts on multi-conductor armored cables with overall outer jackets.

## **2.0 Scope**

This RFB includes the following:

- 2.1 **1350 feet, 15 kV, Type MV-105, Three Conductor Armored Cable**
  - 2.1.1 250 kcmil Class B Soft-drawn Compressed Stranded Bare Copper phase conductors
  - 2.1.2 Strippable Semi-conducting Cross-linked Copolymer conductor shield
  - 2.1.3 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) insulation, 133% Insulation Level
  - 2.1.4 Strippable Semi-conducting Cross-linked Copolymer insulation shield
  - 2.1.5 5 Mils Copper Tape Shield with 25% Overlap
  - 2.1.6 #2 AWG Class B Soft-drawn Compressed Stranded Bare Copper ground conductor
  - 2.1.7 Extruded encapsulating inner jacket.
  - 2.1.8 Armor: outer layer providing mechanical strength, impact, and crush resistance, covered with a sunlight and moisture resistant outer jacket, Jacket Color: RED.
  - 2.1.9 Phase conductors shall be identified by insulation coloring or color-coded polyester ribbon phase identifiers; Colors: RED, ORANGE, BLACK.
  - 2.1.10 Cable must be self-supporting for a minimum vertical distance of 800 feet during installation.
  - 2.1.11 Specification 26 05 13.10 – MEDIUM VOLTAGE CABLE (15kV – Distribution Feeder – Vertical Shaft)

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- 2.2 **1250 feet, 5 kV, Type MV-105, Three Conductor Armored Cable**
- 2.2.1 #4/0 AWG Class B Soft-drawn Compressed Stranded Bare Copper phase conductors
  - 2.2.2 Strippable Semi-conducting Cross-linked Copolymer conductor shield
  - 2.2.3 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) insulation, 133% Insulation Level
  - 2.2.4 Strippable Semi-conducting Cross-linked Copolymer insulation shield
  - 2.2.5 5 Mils Copper Tape Shield with 25% Overlap
  - 2.2.6 #2 AWG Class B Soft-drawn Compressed Stranded Bare Copper ground conductor
  - 2.2.7 Extruded encapsulating inner jacket.
  - 2.2.8 Armor: outer layer providing mechanical strength, impact, and crush resistance, covered with a sunlight and moisture resistant outer jacket, Jacket Color: YELLOW.
  - 2.2.9 Phase conductors shall be identified by insulation coloring or color-coded polyester ribbon phase identifiers; Colors: RED, BLACK, BLUE.
  - 2.2.10 Cable must be self-supporting for a minimum vertical distance of 250 feet during installation.
  - 2.2.11 Specification 26 05 13.30 – MEDIUM VOLTAGE CABLE (5kV Distribution Feeder)
- 2.3 **1250 feet, 600 VOLT, Type MC, Three Conductor Armored Cable**
- 2.3.1 250 kcmil Class B Soft-drawn Compressed Stranded Bare Copper phase conductors
  - 2.3.2 XHHW or XHHW-2 or XHWN or XHWN-2 Thermoset insulation
  - 2.3.3 #2 AWG Class B Soft-drawn Compressed Stranded Bare Copper ground conductor
  - 2.3.4 Extruded encapsulating inner jacket.
  - 2.3.5 Armor: outer layer providing mechanical strength, impact, and crush resistance, covered with a sunlight and moisture resistant outer jacket, Jacket Color: BLACK.
  - 2.3.6 Phase conductors shall be identified by insulation coloring or color-coded polyester ribbon phase identifiers; Colors: BROWN, ORANGE, YELLOW.
  - 2.3.7 Cable must be self-supporting for a minimum vertical distance of 250 feet during installation.
  - 2.3.8 Specification 26 05 19 – WIRE AND CABLE – 600 VOLT AND BELOW

### **3.0 SDSTA Additional Requirements**

- 3.1 The manufacturer shall meet materials, construction, marking, testing, and certification requirements identified in specifications 26 05 13.10, 26 05 13.30, 26 05 19, and 26 08 13.
- 3.2 Date of manufacture must be not more than one year prior to date of receipt.
- 3.3 Cable will be supported vertically using Kellem Grips and/or banding to steel support members. Cable must be suitable for installation horizontally in cable tray, supported on Unistrut using cable cleats, or suspended on cable hooks.
- 3.4 Each cable shall be spooled in one continuous segment. Do not cut without Engineer's approval.
- 3.5 Cable spools must be transported on a vertical shaft conveyance. The nominal dimensions that fit inside the Ross Cage conveyance are 54" wide by 145" deep by 142" high. The maximum payload capacity of the Ross Cage is 13,000 pounds. Equipment, including containers, transport spools, devices, and attachments, must fit within the nominal cage dimensions and capacity limits. A height

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allowance of 18 inches should be included for a standard rail car used to load and unload equipment onto the cage and for transportation in the underground drifts.

**3.6** All proposed cable and equipment must meet the BUY AMERICAN REQUIREMENTS FOR INFRASTRUCTURE PROJECTS.

The manufacturer or products noted in the Scope section above should commence following the award of the contract. The schedule for delivery of the products is negotiable and flexible to accommodate the contractor's capability. The proposed schedule for the project is:

RFB Posted..... 09/23/2024  
RFB Responses Due..... 10/10/2024  
Contract Awarded By (Target)..... 10/14/2024  
Preferred Delivery Date..... ASAP

**4.0 Progress Reporting and Communication**

The SDSTA project manager identified in the contract will be the contact person for this procurement. At a minimum, report any delays due to materials, production, or delivery immediately to the project manager.

**5.0 Bid Elements**

The bid in response to this RFB must contain the following:

- 5.1 Evidence of experience with federal subcontracts.
- 5.2 Product data sheets for the exact proposed products.
- 5.3 Written exceptions to RFB and/or product specifications.
- 5.4 Separate line item showing unit cost and total cost for each product.
- 5.5 Shipping costs.
- 5.6 Total bid cost.
- 5.7 Estimated delivery schedule.
- 5.8 Warranty information.
- 5.9 Proof that each product meets the BUY AMERICAN REQUIREMENT FOR INFRASTRUCTURE PROJECTS.

**6.0 Bid Requirements**

- 6.1 Proposers should submit an electronic copy (.pdf format) of the bid to:

Shelly Nisly  
SD Science and Technology Authority  
630 East Summit Street  
Lead, SD 57754  
[mnisly@sanfordlab.org](mailto:mnisly@sanfordlab.org)

- 6.2 Questions must be sent in writing by email to Shelly Nisly ([mnisly@sanfordlab.org](mailto:mnisly@sanfordlab.org)). Answers will be emailed to all prospective proposers and posted to the sanfordlab.org website.
- 6.3 The bid period may be extended at the discretion of the SDSTA based on the quantity and/or complexity of questions. Any notices of extension of time to respond will be distributed to all prospective proposers.
- 6.4 All communications regarding this procurement between RFB release and contract award shall be directed to Shelly Nisly. Communications with other SDSTA staff regarding this procurement in advance of the contract award are not allowed.

## 7.0 Selection Process

The SDSTA will review all submitted bids for adherence to this request’s requirements and capabilities and select the firm providing the Lowest Cost – Technically Acceptable bid.

### Revision History

Rev	Date	Section	Paragraph	Summary of Change	Authorized by
01	5/17/2022	NA	NA	Initial issue	CCR 573
02	12/1/2022	NA	NA	Chang document number from OC to COM	CCR 655