

Request for Bids (RFB) 11174
West Virginia Education, Research and Technology Park (WVEPRT)
Electrical Distribution System Maintenance

Scope of Requested Services:

Contractor will plan and perform maintenance, provide troubleshooting, perform switching (emergency and non-emergency), and manage system records and drawings for the site's electrical distribution system. This will be done in a manner that causes electrical power to any area of the site to be off as little as possible.

All of these activities need to be done in cooperation with WVERTP operations representatives.

System Summary:

The system begins at the incoming substation 50, and includes switches, transformers and other associated equipment in subs. 50, 51, 52, 53, 54, 55, 56, 57. It also includes aerial and underground lines from substation to substation, the cables up to sub. 59 (which Dow Chemical Company owns), and the various voltage feeders from the substations to the buildings.

Substations:

Sub. 50	Incoming substation on the hill behind BL-773
Sub. 51	North end of Bulk Gas Storage Area
Sub. 52	BL-704 , also includes (2) 2400 volt switchgear for compressors in BL-704*
Sub. 53	BL-770 , also includes (2) 2400 volt switchgear for chillers in BL-770*
Sub. 54	BL-2000, also includes (2) 2400 volt switchgear for chillers in BL-2000*
Sub. 55	PRD Area
Sub. 56	BL-740 (outside), also includes (2) 2400 volt switchgear for chillers in BL-740*
Sub. 57	BL-740 (basement)
Sub. 59	BL-6000 (Dow owned) WVERTP is responsible for the feeder to the substation

Services to be provided by contractor include:

Preventive Maintenance includes, but is not limited to the following:

- Breakers
- Protective Relays/Trips
- Meters
- Substation Batteries and chargers
- Substation alarms
- Transformers (including oil tests)
- Underground and aerial cables
- Scheduling and planning needed shutdowns

Emergency and Non-emergency Services:

- Troubleshooting
- Repair Maintenance
- Switching activities -- ***NOTE:** WVERTP operating personnel may perform switching of 2400 volt switchgear for chillers and compressors if necessary, and if properly trained.
- Provide and install temporary equipment as needed (i.e. transformers, cables, etc.), in a timely manner, in order to maintain power supplies

Other:

- Maintain system records
- Maintain drawings
- Regular Inspections/walk-throughs

WVERTP Electrical Distribution System Detailed Description

System Description: The WVERTP is supplied electricity from the American Electric Power, Ward Hollow Station. Ward Hollow Station is fed from four 46kV sources which are normally connected together for reliability. The voltage is then stepped-down to create two high-reliability 13.8 kV feeders to supply the WVERTP's Sub 50.

Sub 50 supplies Subs 51 and 52 via two shielded aerial circuits, routed on wooden poles. From these two substations, six satellite substations are fed with 13,800 volt electric power. At each of these satellite substations, the electric power is stepped down to lower voltages (i.e. 2400, 480, 208) for utilization.

The WVERTP is responsible for all electrical distribution systems at the site except for inside sub. 59.

Alarms: Sub 50 Loss of Trip Circuit Continuity
Sub 51 Substation Battery Low Voltage
Sub 52 Substation Battery Low Voltage

Alarm Activation: Activation of 95 Device, Trip Circuit Monitor
Sub. 51 Low DC voltage
Sub. 52 Low DC voltage
Loss of AC power to battery charger
Inadvertent DC system ground

All alarms report to the Utility Alarm system.

DC System Function: The substation batteries' function is to trip the 13.8kV and 2.4kV breakers if a fault condition in the circuit occurs.

RM needs to be performed on the batteries once each month.

Normal Operating Ranges:	Incoming voltage from AEP	13,600 to 13,900
	Maximum total Site load	17.5 Mega-watts

Personnel Safety Information:

Some substation transformers and circuit breakers are oil filled. All oil is Non-PCB mineral oil. The H-F-S rating for mineral oil is 2-1-1.

All substations have a high available fault current. Arc-flash distances vary from inches to approximately nine feet. Equipment is labeled to indicate the category of risk, and PPE requirements during operation.

Sub 50's 13.8 kV switchgear is of arc-resistant design. PPE is not required while operating devices in this switchgear.

Synchronization of systems:

An out-of-sync potential does not exist in the distribution system. An out of sync potential does exist with the generators in Building 6000 (which is Dow owned). It is mitigated by a sync-check relay and auto-synchronizer.

**WVERTP Electrical Distribution System
Detailed Description**

Relay flags: All 13.8kv breakers and most 2.4kV breakers are equipped with draw-out protective relays. A 'flag' indicates a breaker has tripped, and what type of trip action has taken place (overload or fault).

Breaker 'open/closed' indicator lights:

- Green light indicates the breaker is 'open'.
- Red light indicates the breaker is 'closed'.

If both indicator lights are out, the problem should be corrected promptly. Either the red or green light should be on at all times. Both lights off when the breaker is in service could be caused by a burned-out bulb, but may indicate a more serious condition.

Ground Fault indicator lights:

Four WVERTP electrical systems are "ungrounded". This means the system will continue to operate if an unwanted ground develops on a conductor, anywhere in the system, e.g. cable insulation failure. Whenever a ground is detected, steps should be taken immediately to locate and correct the problem. If the condition is allowed to persist, serious damage and interruption of service may result. Each of the four ungrounded systems are described below:

Sub. 52, 480 volts

- Powell switchgear; three (3) white lights which are normally all the same brightness. A difference in the brightness of any of these, or a flickering light, or a light which is not lit, indicates a fault on that 480 volt system.
- Westinghouse switchgear; three (3) white lights which are normally turned off. When these are turned on, they should all be the same brightness. A difference in the brightness of any of these, or a flickering light, or a light which is not lit, indicates a fault on that 480 volt system.

Sub 52, 2400 volts

The 2400 volt switchgear is equipped with three voltmeters. The voltages indicated should be very similar on each meter. A ground is indicated if one meter reads significantly lower than the other two, or if the readings are fluctuating.

Sub 51, 2400 volts

The 13.8/2.4 kV transformer that supplies the West air compressor in Building 704 is high resistance grounded. If an unintentional ground is detected, an alarm is reported to the Utility Alarm system.

Sub 55, 480 volts

The 13.8/.48 kV transformer that supplies Semi-Works is high resistance grounded. If an unintentional ground is detected, the rotating amber beacon located on top of the switchgear, is turned on.

Unique Features: Sub 54, Building 2000

This substation is equipped with a 15 KW propane-powered emergency generator. In the event of a loss of power, the generator automatically starts and supplies power to the stairwell lights. Because loads are switched through a transfer switch, no potential exists for backfeeding the distribution system.

QUESTIONS

Questions and requests for clarification must be submitted in writing and delivered by US Postal Service, courier service, facsimile transmission or by email. Questions and requests for clarification will be received until 5:00 PM, Eastern Time, May 3, 2011, and must be directed to:

Chief Procurement Officer
West Virginia Higher Education Policy Commission
1018 Kanawha Boulevard, East, Suite 700
Charleston, WV 25301
Phone: (304) 558-0277 Ext. 212
Fax: (304) 558-0259
Email: CPO@hepc.wvnet.edu

This RFB, answers to questions, requests for clarification and any additional information regarding the RFP will be posted on the following URL. It is the vendor's responsibility to check the webpage for addenda and additional information regarding this RFP. Please acknowledge receipt of addenda in the proposal. <https://wvhepc.org/purchasing/>

BIDDING INFORMATION

The Chief Procurement Officer will receive bids until 3:00 PM, Eastern Time, May 10, 2011. Please deliver an original bid on Form of Proposal provided in a sealed opaque envelope by the specified date and time to:

Chief Procurement Officer
RFB 11174
West Virginia Higher Education Policy Commission
1018 Kanawha Boulevard, East, Suite 700
Charleston, WV 25301

Faxed or electronically transmitted proposals will not be accepted. All documents and information submitted in response to this request for proposals will be considered public information, pursuant to the West Virginia Freedom of Information Act.

The successful bidder must be a licensed contractor to perform the required work and have a valid WV Contractor's License and must also be a registered vendor with the WV Department of Administration, Purchasing Division.

Please submit bid on the Form of Proposal on the following pages.

EXHIBITS

The following are incorporated into this RFB and made a part hereof:

- Exhibit A, Instructions to Bidders
- Exhibit B, Purchase Order Terms and Conditions
- Exhibit C, Agreement Addendum (WV-96)
- Exhibit D, Prompt Payment Act of 1990 (W. Va. Code §5A-3-54)
- Exhibit E, No-Debt Affidavit
- Exhibit F, Vendor Registration and Disclosure Statement
- Exhibit G, Drug Free Workplace Conformance Affidavit

FORM OF PROPOSAL

TO THE OWNER: Chief Procurement Officer
WV Higher Education Policy Commission
1018 Kanawha Boulevard, East, Suite 700
Charleston, WV 25301

PROJECT: RFB No.: 11174

West Virginia Education, Research and Technology Park (WVEPT)
Electrical Distribution System Maintenance

The undersigned, hereinafter called the Bidder, being familiar with and understanding the Bidding Documents and also having examined the site and being familiar with all local conditions affecting the Project hereby proposes to furnish all labor, material, equipment, supplies and transportation, and to perform all Work in accordance with the Bidding Documents within the time set forth below for the sum of:

BASE

BID: _____ \$ _____

(Amount to be shown in both words and numbers. In the event of a difference between the written amount and the number amount, the written amount shall prevail.)

(INSERT ALTERNATES AND UNIT PRICES IF APPLICABLE)

RESPECTFULLY SUBMITTED:

SIGNATURE: _____
Signature In Ink

DATE: _____

NAME: _____
Please Type or Print

Corporate Seal if Applicable

TITLE: _____

FIRM NAME: _____

FIRM ADDRESS: _____

TELEPHONE: _____

CONTRACTOR'S
LICENSE NO.: _____

CONTRACTOR'S LICENSE

West Virginia Code 21-11-2 requires that all persons desiring to perform contractual work in West Virginia must be duly licensed. The West Virginia Contractor's Licensing Board is empowered to issue the contractor's license. Application for a contractor's license may be made by contacting the West Virginia Department of Labor, Building 6, Room B749, Charleston, West Virginia 25305. Telephone: (304) 348-7890. West Virginia Code 21-11 requires any prospective Bidder to include the contractor's license number on their Bid. The successful Bidder will be required to furnish a copy of their contractor's license prior to issuance of a Purchase Order/Contract. Please complete and attach EXHIBIT A to bid.

ADDENDA ACKNOWLEDGEMENT

The undersigned hereby acknowledges receipt of the following Addenda and has taken the information contained therein into full consideration in the formulation of this Bid.

Addenda No. 1 _____
 No. 2 _____
 No. 3 _____
 No. 4 _____
 No. 5 _____

Failure to acknowledge receipt of each Addendum may be cause for rejection of the Bid.

SIGNATURE: _____ DATE: _____
Signature In Ink

END OF FORM OF PROPOSAL