



**REQUEST FOR PROPOSAL (RFP)**

**FOR**

**Tennessee Valley Authority (TVA)**

**Conservation Voltage Regulation (CVR) Program**

**A Voltage Optimization Project**

**December 12, 2014**

# Table of Contents

Definitions:	4
1 Background	5
1.1 Purpose	5
1.2 CVR Objective	6
2 RFP Objective and Schedule	6
2.1 Summary of CVR Program	6
2.2 Request for Existing CVR System Compensation (January 22, 2013 start date)	7
2.3 Construction	8
2.4 RFP Schedule	8
3 Proposal Summary	9
3.1 Intent to Bid Form	9
3.2 Proposal Response Template	9
3.2.1 Title Page	9
3.2.2 Project Summary Sheet	9
3.2.3 Cover Letter	9
3.2.4 Project Narrative	9
3.2.5 Qualifications and Experience	10
3.2.6 Technical Information	11
4 Evaluation Criteria	15
4.1 Evaluation Factors	15
4.2 Financial Capability	16
4.3 Acceptable Proposals	16
4.4 Evaluation Process	16
5 TVA Contact Information	16

## Appendices

### Response Forms

APPENDIX I – Intent to Bid .....	Attached
APPENDIX II – Proposal Response Template.....	Attached

### Key Resources

APPENDIX III – CVR Guidebook.....	Attached
APPENDIX IV – FFCA Reference Lanuage.....	Attached
APPENDIX V – CVR Program Settlement Protocol .....	Attached
APPENDIX VI – User Guide for Control Zone Evaluation Tool (CZET).....	Attached
APPENDIX VII – Control Zone Evaluation Tool (CZET) .....	Attached
APPENDIX VIII – CVR Data Guidelines.....	Attached

### Additional Information

APPENDIX IX – CVR Arrangement Examples.....	Attached
APPENDIX X – Measurement and Verification and Modeling Analysis For the CVR “Pilot at Ripley Substation” .....	Attached
APPENDIX XI – Conservation Performance Analysis for Murray State University.....	Attached
APPENDIX XII – ICCP Data Communication Link Guidelines .....	Attached
APPENDIX XIII – Report on Simulations of CVR Impact on Test Distribution Systems .....	Attached

## **Definitions:**

**Control Zone:** Control Zone consists of a group of feeders, a single feeder, or a feeder single-phase and the corresponding load that is fed from a head end, three-phase Load Tap Changer (LTC), three-phase voltage regulator, or bank of single-phase voltage regulators. A control zone is considered to be a system in which the head end voltage is continually controlled in response to the lowest end-of-line voltage observed below the head end voltage controller on that same system. The head end voltage control strategy of a control zone must be independent of all other control zones. Any systems in which the voltage controllers are in any way linked to one another (i.e., not independent) are not considered separate control zones. A control zone may include midline voltage regulators, but the feeder and load below that point will not be considered a separate control zone since increased savings facilitated by the midline regulators will be reflected in measurements taken at the head end. If there are systems that use single-phase voltage regulators such that each phase is regulated independently from one another, then each single-phase from this type of system will be considered a separate control zone.

**Conservation Voltage Regulation (CVR):** Conservation Voltage Regulation refers to the practice of reducing operating distribution system voltages to the lower end of the American National Standards Institute (ANSI) Standard C84.1 voltage standard for the purpose of reducing power demand and energy consumption.

**Demand Side Management (DSM):** The term for all activities or programs undertaken by a load-serving entity or its customers to influence the amount or timing of electricity they use. The planning, implementation, and monitoring of utility activities designed to influence customer use of electricity in ways that will produce desired changes in a utility's load shape (i.e., changes in the time pattern and magnitude of a utility's load). Utility programs falling under the umbrella of DSM include energy efficiency, demand response, load management, customer generation, and innovative rates and overlays. DSM includes only those activities that involve a deliberate intervention by the utility to alter the load shape. The load shape changes should be designed to produce benefits to both the utility and its customers.

**Inter-Control Center Protocol (ICCP):** An internationally recognized standard for point-to-point communications between electrical utility control centers, utilities, power pools, regional control centers, and non-utility generators. ICCP uses the Manufacturing Messaging Specification (MMS) for the messaging services needed in data exchange. ICCP is an international standard: IEC 60870-6/TASE.2. ICCP is one of the accepted protocols used over wide area networks (WAN) for data exchange between TVA and other control centers.

**Load Tap Changer (LTC):** A mechanism (including possibly a mechanical device), that can be used to adjust a transformer tap, to cause a change in voltage.

**Supervisory Control and Data Acquisition (SCADA):** A computer system for gathering and analyzing real time data. Industry has used Distribution SCADA (DSCADA) as a distinction between Distribution and Transmission SCADA systems. TVA's SCADA system is a central computing system that monitors and controls the TVA transmission system and balances load and supply in real time. Site control is performed automatically through hundreds of dispersed Remote Terminal Units (RTU).

**Useful Life (estimated):** Useful life of equipment is defined by the length of the contract.

**Voltage Regulator:** A mechanism designed to automatically maintain a constant voltage level. Voltage regulators in control zones will be at the head end of the feeder(s) and may additionally be at midline positions.

# 1 Background

The Tennessee Valley Authority (TVA) is a corporate agency of the United States that provides electricity for industrial customers and local power companies, thereby serving nine million people in parts of seven southeastern states. TVA's vision is to help lead the Tennessee Valley region and the nation towards a cleaner and more secure energy future with increased reliance upon low-cost cleaner energy sources.

In April 2011, the TVA Board approved the Federal Facilities Compliance Agreement (FFCA; Docket No. CAA-04-2010-1760) with the United States Environmental Protection Agency (EPA) and the Consent Decree (CD; Civil Action No. 3:11-CV-00170) with four states and three environmental advocacy groups. These agreements can be found at the following link: <http://www2.epa.gov/enforcement/tennessee-valley-authority-clean-air-act-settlement>. As part of these agreements, several environmental projects were identified that support cleaner air across the region and align with TVA's vision for a cleaner energy future. The Voltage Optimization (VO) Project is one of the clean energy projects under the Agreement.

Under a voltage regulation program, the voltage is optimized either continuously or as needed to reduce energy needs. In 2010, in accordance with the TVA Board's direction to undertake efforts to obtain a demand reduction of 1,400 megawatts (MW) by 2012, TVA took the initial action to issue the SmartGrid RFP that solicited event driven voltage optimization proposals from local power companies in TVA's service territory. This RFP seeks to solicit proposals for a voltage regulation program in which the voltage is optimized continuously.

## **1.1 Purpose**

Voltage Optimization (VO) projects encourage TVA local power companies and directly served industrial customers to regulate the voltage along distribution feeders so that each service point operates at the lower end of the ANSI C84.1, Range A Service Voltages.

TVA is seeking proposals to implement a voltage optimization project called Conservation Voltage Regulation (CVR). This program will be implemented on a continuous basis, i.e. 24 hours per day, seven days a week, and is to be performed by using end-of-line voltage feedback from the farthest points, electrically, on the distribution feeders. Fundamentally, the feedback will be used to control the magnetically coupled voltage regulator or load tap changing transformer located at the head end of the distribution feeder. Mid-line capacitor banks within a control zone may also be used to maintain the end-of-line voltage within limits, but the feeder and load below that point will not be considered a separate control zone. CVR is intended to be used on feeders that have loads consisting primarily of residential and light commercial customers, and for industrial customers, non-voltage sensitive loads. This voltage reduction is expected to deliver an overall energy and capacity savings to TVA typically on the order of 0.5% – 4% of the energy delivered. In addition, voltage optimization provides the capability to improve the overall power quality on the feeders, and will likely deliver significant reactive power savings to selected program participants.

Two CVR demonstration pilots were conducted to obtain measured data and evaluate seasonal results at Ripley Power System, and in a campus environment, at Murray State University, in 2010 and 2011 respectively. At Ripley Power System, TVA worked with the local power company to install an AdaptiVolt CVR system at three of its substations. The winter evaluation period ran from August 2009 to March 2010. The results are attached to this RFP as Appendix X. At Murray State University, TVA incentivized the University for the installation of an AdaptiVolt CVR system. The summer evaluation period ran from April 2011 to September 2011. The results are attached to this RFP as Appendix XI.

## **1.2 CVR Objective**

The objective of the CVR program is to deliver capacity and energy savings that help TVA reduce or avoid building additional generation resources, starting additional units during peak periods of power demand, or buying high priced power in the marketplace. Demand Side Management (DSM) techniques ultimately provide benefit at the transmission level in support of these objectives.

CVR provides a benefit to the participants in reducing losses within the distribution system and provides a significant benefit to the end-use customer in the form of lower demand and energy payments. At the same time, the participants' demand and energy payments to TVA may be lower due to the CVR application.

With the reactive savings component of CVR, participants will gain some relief from having to provide the level of reactive support they would otherwise be providing without CVR. In addition, they may obtain some reactive demand relief when using CVR. Another benefit of CVR deployment includes greater visibility of a participant's distribution system by installing newer technologies and observation points needed to verify results.

A CVR Guidebook to help potential participants determine which feeders and technology may be optimal for CVR on their systems is attached as Appendix III.

## **2 RFP Objective and Schedule**

TVA is requesting proposals that provide kilowatt hour (kWh) reductions utilizing CVR voltage feedback techniques.

### **2.1 Summary of CVR Program**

- A. This product will be priced at \$0.03/kWh for each kWh of reduction that selected participants deliver to TVA in each control zone. The EPA spend requirement for this project is \$45,000,000 with a project term of 10 years.
- B. The program objective is to encourage participants to operate the CVR equipment to reduce their kWh energy requirements. Participants will submit requested measurement and verification information to TVA. TVA will calculate the actual reductions that were made and pay participants at the above rate on a periodic basis for the duration of the contract. Appendix V attached to this RFP is the CVR Program Settlement Protocol methodology TVA will utilize to provide performance payments to selected RFP participants. Each control zone data submission will have a common file extension, be stamped for date and time, and be identified by program participant, substation and feeder location (longitude and latitude), observation point, units of measure, and value recorded during specified time interval and be submitted in the format as specified in Section 3.2.6.1.
- C. After the CVR equipment is installed and commissioned by TVA, a one year On/Off testing period begins. The purpose of the On/Off testing period is to establish:
  - a) Energy savings factor due to CVR, for each season, for each control zone, for each participant, in settlement calculations. These energy savings factors will be used to determined performance incentive payments
  - b) Seasonal baseline head end voltages (converted to 120V scale) for each control zone corresponding to the head end voltage measured during CVR-on and CVR-off settings, or 126V, whichever is less.

The On/Off testing period will consist of alternating CVR-on and CVR-off days for one year to provide coverage of the expected variation in temperature and load on registered control zones. Transition from CVR-on to CVR-off or vice versa will occur each midnight during the testing period. During the one-year period of testing, the CVR equipment must be operated “on” for a 24 hour period and then switched “off” for a 24 hour period. The transition from “off” to “on” or vice versa must occur at hour ending 24:00 hours +/- 15 minutes each day. TVA will take the data from the one year On/Off testing and calculate the energy savings factors that indicate how the feeder responds to voltage reduction. If unusable data is obtained, then additional testing may be required.

During these periods of On/Off testing, and the interstitial months, deemed values for energy savings and voltage reduction will be used in settlement calculations of energy savings. Deemed values will be used starting the first month of implementation following control zone registration and continue to be used until the seasonal energy savings factor and seasonal baseline (On/Off) voltages, specific to the control zone, are determined from the analysis of data collected from the one year On/Off testing period. The applicable energy savings factor and voltage reduction factor for use in settlement during the initial On/Off testing period will be 0.005 and 1, respectively. A true-up will follow, accounting for the seasonal energy savings factor and seasonal baseline (On/Off) voltages estimated from the analysis of the On/Off testing period data. This will be an upward-only true-up, meaning that participants may receive additional payment but will not be required to repay TVA if savings are below the level corresponding with the deemed values during the initial testing period.

TVA will pay selected participants for a deemed energy reduction during the one year On/Off testing period. Applying the deemed values referenced above to Settlement Equation 1 (see Appendix V, Section 6) the energy reduction calculation becomes:

$$\Delta Energy_{m,j} = Energy\ Observed_{m,j} \times 0.00503$$

Where,

$$\Delta Energy_{m,j} = Energy\ savings\ for\ month\ m\ for\ registered\ Control\ Zone\ j, \text{ and}$$

$$Energy\ Observed_{m,j} =$$

$$Energy\ metered\ during\ month\ m\ at\ the\ point\ of\ regulation\ for\ Control\ Zone\ j.$$

- D. Any contract resulting from this RFP is anticipated to be a pay for performance contract.
- E. The CVR program will be implemented by the selected participants in a manner that ensures TVA’s compliance with the provisions of the FFCA/CD concerning the Voltage Optimization project. Pertinent provisions of the FFCA are identified in Appendix IV. Links to the FFCA and CD are provided in Appendix IV, and organizations considering submitting a proposal must familiarize themselves with these agreements.
- F. Feeders enrolled for CVR cannot also be used for purposes of Dispatchable Voltage Regulation (DVR).

## 2.2 Request for Existing CVR System Compensation (January 22, 2013 start date)

Proposer may request as part of its proposal compensation for full, continuous operation of its proposed CVR system during the time period between January 22, 2013, and the execution of a contract as the result of this RFP. The request must demonstrate the proposer’s continuous operation of its system to

maintain the appropriate feeders in the lower half of the ANSI band. Compensation will be made according to the terms of the test period on a control zone-by-control zone, length-of-operation basis if eligibility is verified. Requestors should complete Section 2 “Historical Status”, the compensation request portion of Appendix II Response Template and also must include the following information:

- A. The three front-end engineering design criteria listed below, in section 3.2.6.3.
- B. Verifiable documentation of in-service date of each feeder’s control system.
- C. Documentation of continuous operation of each feeder’s control system from in-service date.
- D. An engineering determination of load makeup of each feeder for which compensation is requested.

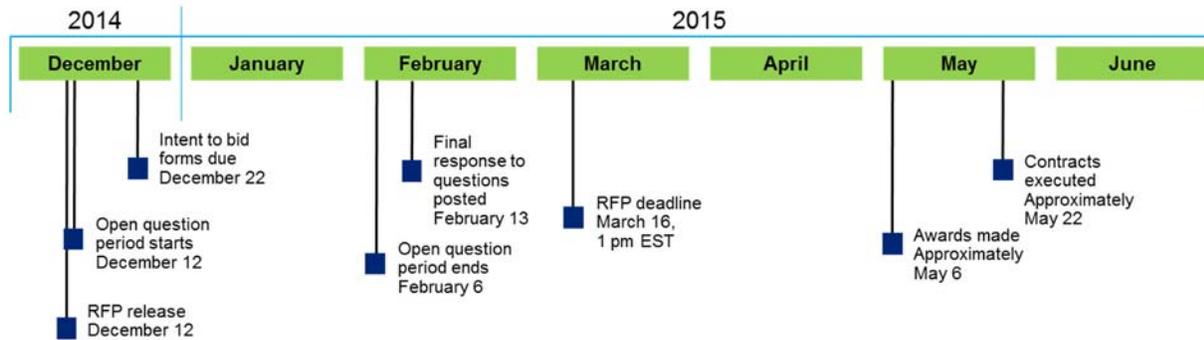
Note: A 12 month On/Off Test period will still be required to verify results.

### 2.3 Construction

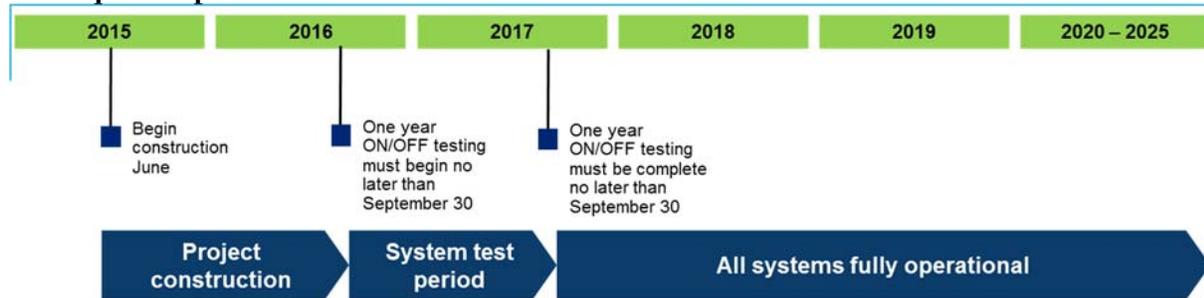
The proposer will be responsible for all construction activities necessary to properly and safely build and install a CVR system and the associated power distribution system.

### 2.4 RFP Schedule

#### RFP Timeline



#### Participant Implementation Timeline



#### Detailed Timeline

Milestone	Date
RFP issued	December 12, 2014
Intent to bid forms due	December 22, 2014
Open question period	December 12, 2014 – February 6, 2015
Final response to questions posted	February 13, 2015
RFP responses due	1:00pm, March 16, 2015 EST
Awards made	Approximately May 6, 2015
Contracts executed	Approximately May 22, 2015
Construction begins	June 2015 (example)

Construction continues and System Testing	Through September 30, 2016
CVR On/Off test period begin	On or before September 30, 2016
CVR On/CVR Off evaluation	Must be completed by September 30, 2017
Verification of CVR factors	October 2017
CVR program continues 10 years	October 1, 2026 (est)

Please send all clarifying questions in writing to Brad Wagner at [brwagner0@tva.gov](mailto:brwagner0@tva.gov) no later than **5:00PM Eastern time on February 6, 2015.**

### **3 Proposal Summary**

TVA is requesting that the proposal intent to bid be provided in the template included in Appendix I and RFP responses be provided in the template format included in Appendix II. The Response Template is designed to provide a clear template of the information TVA is requesting and to provide a clear linkage between the detail provided in the RFP and the response.

#### **3.1 Intent to Bid Form**

Complete the intent to bid form (found in Appendix I) and return to Brad Wagner via email at [brwagner0@tva.gov](mailto:brwagner0@tva.gov) by December 22, 2014. Forms are due no later than 5:00PM Eastern time on December 22, 2014.

#### **3.2 Proposal Response Template**

Proposals should be organized into the following sections and provide the requested information using the attached Response Template (Appendix II).

##### 3.2.1 Title Page

Proposal cover sheet, should reference “TVA – Conservation Voltage Regulation Program” and include the proposer’s name and the proposal submission date.

##### 3.2.2 Project Summary Sheet

Summarize the results of the proposed project contained in the Response Template (Appendix II)

##### 3.2.3 Cover Letter

The proposal cover letter will include:

- A. Proposer name
- B. Organization
- C. Mailing address
- D. Email address
- E. Phone number
- F. Total estimated cost of project
- G. Project name
- H. Brief project executive summary

##### 3.2.4 Project Narrative

Responses will provide a brief summary of the estimated energy savings that will be achieved.

##### 3.2.4.1 Estimated energy reduction

The proposer will provide an estimate of the average percent energy reduction that will be achieved by the proposed CVR system.

### 3.2.5 Qualifications and Experience

The proposal should contain a summary of the proposer's experience with CVR and provide a summary of the qualifications of key team members.

#### 3.2.5.1 General Qualifications

The proposal will include general information on the proposer's legal standing, willingness to submit to the EPA mandated data audited requirements, and plan for obtaining any necessary permits.

##### *Legal authority*

Please identify the proposing entity's (1) legal authority for accepting the funds TVA would provide for this project, and (2) legal authority to conduct the project.

##### *Control zones operational date*

Please identify the projected date that the final control zone will become operational.

##### *Audit requirement*

Proposer will agree to provide all data within 14 calendar days of a request for a TVA audit and to retain all financial and operational data and records for a period of six years beyond the 10-year end of the program.

##### *Licensing and permits*

The proposer will obtain all environmental permits, site permits/licenses and other required approvals for the project as necessary.

- A. All interested parties are urged to consult TVA's National Environmental Policy Act (NEPA) Compliance procedures prior to submitting a proposal to determine the likelihood that, and the timeline in which, their project can be reviewed for environmental acceptability. This process typically involves preliminary determinations by TVA of:
  - a) whether provisions of the NEPA and related laws apply to the decision; and,
  - b) if so, which of the three levels of review would be initiated;
  - c) TVA's implementing procedures for NEPA are available at [www.tva.com/environment/reports/pdf/tvanepa\\_procedures.pdf](http://www.tva.com/environment/reports/pdf/tvanepa_procedures.pdf).
  
- B. Proposers are responsible for all costs associated with the conduct of, and preparation of documentation for, the appropriate level of environmental review. If the provisions of NEPA apply, proposers may:
  - a) Use TVA as the preparer;
  - b) Use a TVA pre-qualified contractor; or,
  - c) Propose a contractor for the project by submitting the contractor's qualifications for evaluation and determination of acceptability by TVA.

##### *Financial Strength*

The proposer will certify that their organization has the requisite financial strength to successfully implement the CVR program and meet any financial obligations.

### 3.2.5.2 Expertise and Experience

The proposal shall demonstrate the strength of any collaborative partnerships by providing a brief biography for each key person and/or subcontractor, detailing titles, and experience on relevant projects.

Proposer will determine which project tasks will be subcontracted and be responsible for reviewing the capabilities of individual subcontractors based on previous project experience and track records. Proposals shall include resumes of key personnel. The individual who has lead responsibility for applying this measurement for settlement protocol to an automated CVR system must have a full understanding of the following:

- A. Appropriate and demonstrated knowledge of the application of CVR to distribution systems and the underlying physics of the relationship between operating voltage levels and energy consumption.
- B. Appropriate and demonstrated knowledge of the use of engineering time series analysis.
- C. Appropriate and demonstrated knowledge of the use of robust statistical procedures used to analyze non-Gaussian data.
- D. Appropriate knowledge of distribution feeder and substation operations.
- E. Understand and articulate the requirements and procedures of the measurement for settlement protocol and the system capabilities to provide such data.
- F. The individual must also be able to successfully:
  - i. Operate and program in a MatLab<sup>®</sup> M-Code environment or demonstrated proficiency in a similar data analysis tool.
  - ii. Inspect and interpret raw feeder energy and voltage data and summarize findings for presentment.

### 3.2.5.3 CVR Experience

Proposers will describe their experience with CVR and describe any systems already in place.

## 3.2.6 Technical Information

Proposers will provide technical information as described below, detailing how their proposed system will maintain and provide data to TVA for settlement.

### 3.2.6.1 Data Information

#### *Sample data feed*

Data will be submitted in a daily transfer of a comma separated value (csv) file according to the specification detailed below and described in more detail in Appendix VIII. Proposer will describe any modifications that will need to be made to their system in order to provide the data in the specified format.

## Data Feed Specification

Column Order number	Column Header	Data Type	Example data	Description	Comments
1	Year	Numeric	2014	Year associated with the hour interval	Separated date and time values are preferred to avoid issues with datetime formats or parsing from strings.
2	Month	Numeric	11	Month associated with the hour interval	Separated date and time values are preferred to avoid issues with datetime formats or parsing from strings.
3	Day	Numeric	14	Day associated with the hour interval	Separated date and time values are preferred to avoid issues with datetime formats or parsing from strings.
4	Hour_Ending	Numeric	10	Hour ending time associated with the interval	Separated date and time values are preferred to avoid issues with datetime formats or parsing from strings.
5	Time_Zone	Character	CST		Times will be converted to a common zone in the analysis
6	PARTICIPANT_ID	Numeric	1234		Will use the 4-digit code unique to each LPC. This is the same number as the customer account/billing number.
7	Control_Zone_ID	Numeric	12345	Five digit code unique to each control zone	Unique numeric identifier provided by TVA upon registration of control zone as required per Settlement Protocol
8	CVR_On_Off_Status	Character	CVR-on	Either CVR-on or CVR-off	
9	kWh	Numeric	12.401	Hourly kWh measured at the head end voltage regulating transformer for the control zone	Kilowatt-hour value must be given at the precision level of 3 decimal points
10	HE_VOLT	Numeric	123.4	Hourly voltage measured at the head-end voltage regulating transformer, converted to a 120 volt basis.	Voltage value must be at a precision level of at least one tenth of a volt.

11	EOL_VOLT	Numeric	117.6	Hourly voltage measured at the end-of-line, i.e. point of lowest voltage, converted to a 120 volt basis.	Voltage value must be at a precision level of at least one tenth of a volt.
12	Max_Buck	Character	No	Hourly indicator of voltage regulator end of travel	
13	Dry_Bulb_F	Numeric	84.5	Dry bulb temperature, in degrees Fahrenheit.	
14	Dew_Point	Numeric	62.4	Dew point temperature, in degrees Fahrenheit.	
15	Version_Num	Numeric	1	Version number for data submission for the associated interval	Versioning control requires this data element

*Data Error Resolution*

The detail methodology for data error resolution and the flow of data mechanism and format (unique ID, data structure, transfer protocol, etc.) should be included in the proposer's response.

*Data Integrity*

The detailed methodology for data backup needs to be described. Information on availability, reliability, and disaster recovery related to CVR related data should be included in the proposer's response.

*Weather and Humidity Data*

Proposers will describe any weather and humidity data systems associated with their proposed control zones. Data collected at these locations is subject to audit by TVA. If the proposer does not have weather data available, NOAA data will be used instead.

3.2.6.2 Project plan

*CVR implementation plan*

The proposal shall include a narrative description of their CVR implementation plan. This description will be supported by the timeline, budget and maintenance information in the following sections.

*Project Timeline*

The proposal shall include a proposed project timeline for the successful operation of the voltage optimization equipment that details when the participant will install the required equipment and begin the one-year On/Off Test period.

### Sample Project Timeline

Milestone	Date
Begin equipment installation	July 1, 2015
Equipment installation complete	January 1, 2016
CVR system operational and begin one year system ON/OFF testing	January 15, 2016

#### *Project Budget*

The proposal will include the estimated price to perform the work. This will include: equipment costs, installation costs, engineering costs (including in house costs), maintenance costs, and the like

### Sample Project Budget

Budget category	Cost
Equipment costs	\$40,000
Installation costs	\$20,000
Engineering costs	\$4,000
Consulting costs	\$50,000
Maintenance	\$5,000
<b>Total</b>	<b>\$119,000</b>

#### *Maintenance plan*

The proposal shall include a proposed maintenance plan for the successful operation of the voltage optimization equipment that details how the participant will meet and/or exceed the Estimated Useful Life of the equipment.

#### 3.2.6.3 CVR system information

##### *Detailed Front End Engineering Design (FEED)*

Proposer must include results of an engineering evaluation tool as part of the proposal. See Appendix VI for the User Guide for Control Zone Evaluation Tool (CZET) and Appendix VII for the Control Zone Evaluation Tool (CZET) as one such example. The CZET is accessible on TVA's secure customer portal, Online Connection.

Front end engineering design submissions shall be composed of the following elements:

- A. An associated Engineering Study for control zones with identified constraints.
- B. A Geospatial Information System (GIS) view of their system accompanied by a Load Flow analysis to locate each respective control zone.
- C. Data source format provided should have a common file extension from industry equipment such as data loggers, DSCADA systems, or revenue-grade meters.

##### *Equipment details and descriptions*

- A. Data recording periods should be no greater than one hour and can be as short as individual systems allow. Weather data should be collected on the same time period as the load data. Data collected is subject to audit by TVA.

- B. Voltage monitors should have linearity of better than 0.5% within the expected ranges of voltage and the temperature drift should be less than 0.5% from -40 degrees C to 65 degrees C. Power monitors should be of revenue-grade accuracy but need not be revenue-class.
- C. Instruments and meters should be shop calibrated. Field verification and inspections will be required to verify correct installation and readings.
- D. One or more years of historical regulator or LTC setting information should be made part of the verification data records submitted.
- E. Eligible projects include all installations or implementations of automatic CVR systems on utility substations or feeders where these automated systems can:
  - a) be turned on and off on a daily basis;
  - b) have the voltage set-points changed on a daily basis;
  - c) have the ability to measure and record, on a per control zone basis:
    - i. period average bus voltage,
    - ii. period average end-of-line voltage,
    - iii. period kWh,
    - iv. period kVARh,
    - v. period average temperature.
- F. The ideal application would be where the automatic CVR control components could also monitor and store the period data.

Proposals are due by **1:00PM Eastern time on March 16, 2015**.

The proposal must be signed by an official authorized to bind the proposer. The individual who is authorized to conduct negotiations on behalf of the proposer must be identified in the proposal.

TVA assumes no liability to pay any offeror direct or indirect costs incurred in the development, submission, evaluation, or negotiation of its proposal.

## **4 Evaluation Criteria**

TVA may contact proposers for clarification as necessary. Any award resulting from this solicitation will be made to the offeror(s) whose proposal is determined to be most advantageous to TVA. TVA may make an award based on initial offers, and without discussion, or after limited discussions or negotiations. It is therefore emphasized that all proposals should be submitted with the most favorable terms to TVA that the Offeror can provide. TVA reserves the right to make multiple or no awards and to award all or a portion of the work scope set forth in this solicitation. This RFP does not commit TVA to make an award.

TVA reserves the right to reject any or all proposals received as a result of this solicitation and to cancel this solicitation at any time.

### **4.1 Evaluation Factors**

TVA may consider various factors such as relative quality and adaptability of supplies or services, financial responsibility, safety history, skill, experience, past performance, record of integrity in dealing, technical capability, and time of delivery. Evaluation criteria to be considered by TVA in determining which proposal is most advantageous to TVA may also include:

- A. Ability to meet TVA technical requirements and specifications;
- B. Quality of products or services offered;

## C. Acceptance of TVA's Standard Terms and Conditions.

### 4.2 Financial Capability

As part of its evaluation, TVA may investigate the qualifications, references, and facilities of a proposer, including an inspection of a proposer's offices, distribution, and manufacturing facilities. By submitting a proposal, the proposer hereby agrees to cooperate with TVA in conducting any such investigation. Further, proposer agrees that TVA may perform survey or visit the proposer's facilities, and perform a pre-award cost audit.

### 4.3 Acceptable Proposals

Proposals must contain the information requested and shall be in sufficient form and detail to enable a comprehensive understanding and analysis. Prior to evaluation, TVA's authorized representative may review proposals to determine compliance with preparation instructions, terms and conditions, and other administrative conditions. Failure to comply with the requirements of this solicitation may cause a proposal to be rejected without further consideration.

In addition to any other evaluation criteria, proposers may be evaluated on their financial condition and strength to support TVA's requirements. This evaluation may be done on a pass/fail basis. Proposals which, in TVA's sole judgment, do not have the financial capabilities to support TVA's requirements will not be considered for award.

### 4.4 Evaluation Process

TVA may evaluate the proposals using numeric scoring and compute a total score for each proposal. If using this method, TVA will establish a competitive range. TVA may, in its discretion, request clarifications or conduct discussions with any or all proposers, or only those proposers in the competitive range, if any.

## 5 TVA Contact Information

The designated RFP Contact Person is:

Brad Wagner  
Contracts Manager, TVA  
1101 Market Street, LP 4T  
Chattanooga, TN 37402  
[brwagner0@tva.gov](mailto:brwagner0@tva.gov)  
(423) 751-2315

**Proposals must be submitted to Brad Wagner at the mailing or email address listed in this RFP.**

Any discussion or questions about this RFP during the Open Window for Submitting Questions should be sent to [brwagner0@tva.gov](mailto:brwagner0@tva.gov) and [CVR@tva.com](mailto:CVR@tva.com), or by letter. Any information given to a prospective offeror concerning this RFP will be furnished promptly to all other prospective offerors as an amendment of the RFP if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors. Additionally, answers to questions that are material to potential proposers will be posted to the TVA Online Connection page at <https://onlineconnection.tva.gov/Pages/CVR.aspx> and/or provided electronically to potential proposers.

**Brad Wagner** is the only TVA representative authorized to provide an explanation or interpretation of this solicitation. Upon receipt of this solicitation, you are to immediately cease contact with the technical organizations either on site or in a corporate office with regard to this solicitation. Any violation of this direction will be basis for disqualification.