COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF CUMBERLAND VALLEY ELECTRIC, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT FACILITIES ACCORDING TO THE APPLICANT'S 01/01/2012 ~ 12/31/2015 CONSTRUCTION WORK PLAN	**)**	**CASE NO. 2011-00442**

APPLICATION

Cumberland Valley Electric, Inc. ("CVE"), hereinafter called the Applicant, respectfully advises the Commission that:

1. The applicant is a nonprofit membership cooperative corporation without capital stock, duly organized and existing under K.R.S. Chapter 279, engaged in the sale of electric energy at retail rates to its member-consumers in the Kentucky counties of Bell, Clay, Harlan, Knox, Laurel, Leslie, Letcher, McCreary and Whitley.

2. The name of the Applicant is Cumberland Valley Electric, Inc., with a business address of P.O. Box 440, Gray, Kentucky 40734. {807 KAR 5:001, Section 8(1)}

3. Applicants Articles of Incorporation and all amendments thereto are as identified in Case No. 7772, Application to Increase Basic Retail Electric Rates, are on file with the Commission except those amendments for a corporate name change. Said

amendments are provided in Case No. 2005-00187, Application to Adjust Rates of Applicant. {807 KAR 5:001, Section 8(3)}

4. This application is for a Certificate of Public Convenience and Necessity ("CPCN") to construct electric distribution facilities as set out in the attached 01/01/2012 ~ 12/31/2015 Construction Work Plan, hereinafter referred to as the CWP.

5. The CPCN for the CWP will permit the Applicant to construct certain improvements and additions to existing distribution plant necessary to provide adequate and dependable electric service to existing and anticipated new members. System improvements recommended within the CWP will not duplicate existing facilities and are needed to correct voltage problems, improve phase balance, reduce system energy losses and provide for improved service reliability.

6. The CWP covers the period of four years between January 1, 2012 and December 31, 2015, and was prepared by the firm of Patterson & Dewar Engineers, Inc., PO Box 2808, Norcross, GA and the Applicant's staff. A copy of the CWP is filed herein as the basis of this CPCN. The CWP was submitted to the Rural Utility Service ("RUS"), for approval, which was granted Nov 17, 2011; said approval is filed herein and made a part hereof as Appendix IV.

7. The CWP was approved by the Applicant's Board of Directors on Oct 13, 2011. Said approval is filed herein and made a part hereof as Appendix III.

8. No CWP construction or extensions will require franchises or permits to be filed with the Commission.

9. The CWP and maps filed with this Application provide a description and location of new construction, improvements and extensions. All construction and

extensions will provide service to retail consuming facilities located in the territory certified to the Applicant for retail electric service under K.R.S. 278.016 ~.018.

10. Total projected expenditures for the four-year CWP are estimated to be $17,826,442 and summarized as follows {Refer to CWP Exhibit D, attached}:

a) $4,673,781 ~ New member construction {740c REF **101** & **102**}

b) $1,182,710 ~ System improvement projects {740c REF **300**}

c) $3,801,963 ~ Transformers and meters {740c REF **601**}

d) $413,954 ~ Service changes and upgrades {740c REF **602**}

e) $1,800,000 ~ Sectionalizing equipment and activities {740c REF **603**}

f) $3,500 ~ Capacitor banks and controls {740c REF **605**}

g) $2,792,592 ~ Pole replacements {740c REF **606**}

h) $150,000 ~ Conductor Replacement {740c REF **608**}

i) $400,000 ~ New Radio Communication System {740c REF **615**}[1]

j) $1,677,942 ~ Security light installations {740c REF **701**}

k) $930,000 ~ New Mapping (GIS) System {740c REF **1501**}[1]

11. The expenditures covered by this CPCN (2011-00442) are those listed in Part 10 above less item “i” and “k”; said two items will be covered by a subsequently filed CPCN. Thus, the expenditures for this CPCN is $17,826,442 less $1,330,000 = $ 16,496,442.

12. The anticipated annual cost of operations, excluding the cost of power, of the proposed facilities is $2,371,979. Said anticipated cost of operation is filed herein and made a part hereof as Appendix V.

[1] A separate CPCN will be filed for item “I” and “k”

13. CVE will be filing an application with RUS to arrange for $17,608,000 in financing, using the RUS Guaranteed Federal Financing Bank[2] ("FFB") loan program, for CWP projects included within this CPCN. Contract and force accounts financed with internally generated funds will be used until all loan approvals are granted. Said RUS financing will reimburse the general funds expended for the initial portion of the CWP and finance the balance of the CWP

14. The current revenues are sufficient to cover any additional operating expenses that may be incurred in relation to the CWP. The addition of new consumers-members should assist in offsetting any additional expenses. The upgraded lines will also reduce system energy losses and assist in offsetting additional expenses.

WHEREFORE, the Applicant now moves the Public Service Commission of the Commonwealth of Kentucky to grant the said Certificate of Public Convenience and Necessity for Applicant's CWP which the Applicant has herein requested and which the Commission has discretion to grant pursuant to KRS 278.020 (1).

[2] http://www.rurdev.usda.gov/UEP_FFB_Guaranteed_Loans.html

STATE OF KENTUCKY

COUNTY OF Knox

Subscribed, sworn to and acknowledged before me by Ted Hampton, as General Manager of CUMBERLAND VALLEY ELECTRIC, INC. this 28th day of December, 2011.

Sonia J. Willis Haviland
NOTARY PUBLIC, STATE AT LARGE, KY

MY COMMISSION EXPIRES: Jan 23, 2013

STATE OF KENTUCKY

COUNTY OF Knox

Subscribed, sworn to and acknowledged before me by W. Patrick Hauser, as Attorney for CUMBERLAND VALLEY ELECTRIC, INC. this 28th day of December, 2011.

Sonia J. Willis Haviland
NOTARY PUBLIC, STATE AT LARGE, KY

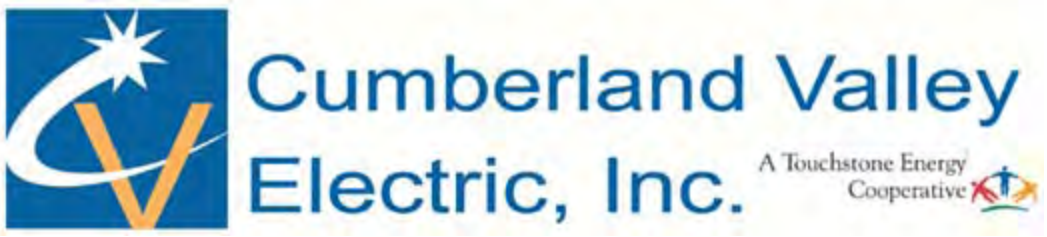
MY COMMISSION EXPIRES: Jan. 23, 2013

WITNESS the hand of the Applicant on this the 28 day of December, 2011, by its authorized representative.

CUMBERLAND VALLEY ELECTRIC, INC.

BY: Ted Hampton
Ted Hampton
General Manager

BY: W. Patrick Hauser
W. Patrick Hauser
Attorney for Applicant



CUMBERLAND VALLEY ELECTRIC

KENTUCKY 57 BELL
GRAY, KENTUCKY

CONSTRUCTION WORK PLAN

January 1, 2012 – December 31, 2015

October 2011

Patterson & Dewar Engineers, Inc.
P.O. Box 2808, Norcross, Georgia 30091
850 Center Way, Norcross, Georgia 30071
Phone: 770-453-1410 Fax: 770-453-1411

CUMBERLAND VALLEY ELECTRIC (CVE)

KENTUCKY 57 BELL
GRAY, KENTUCKY

CONSTRUCTION WORK PLAN (CWP)
January 1, 2012 – December 31, 2015

ENGINEERING CERTIFICATION

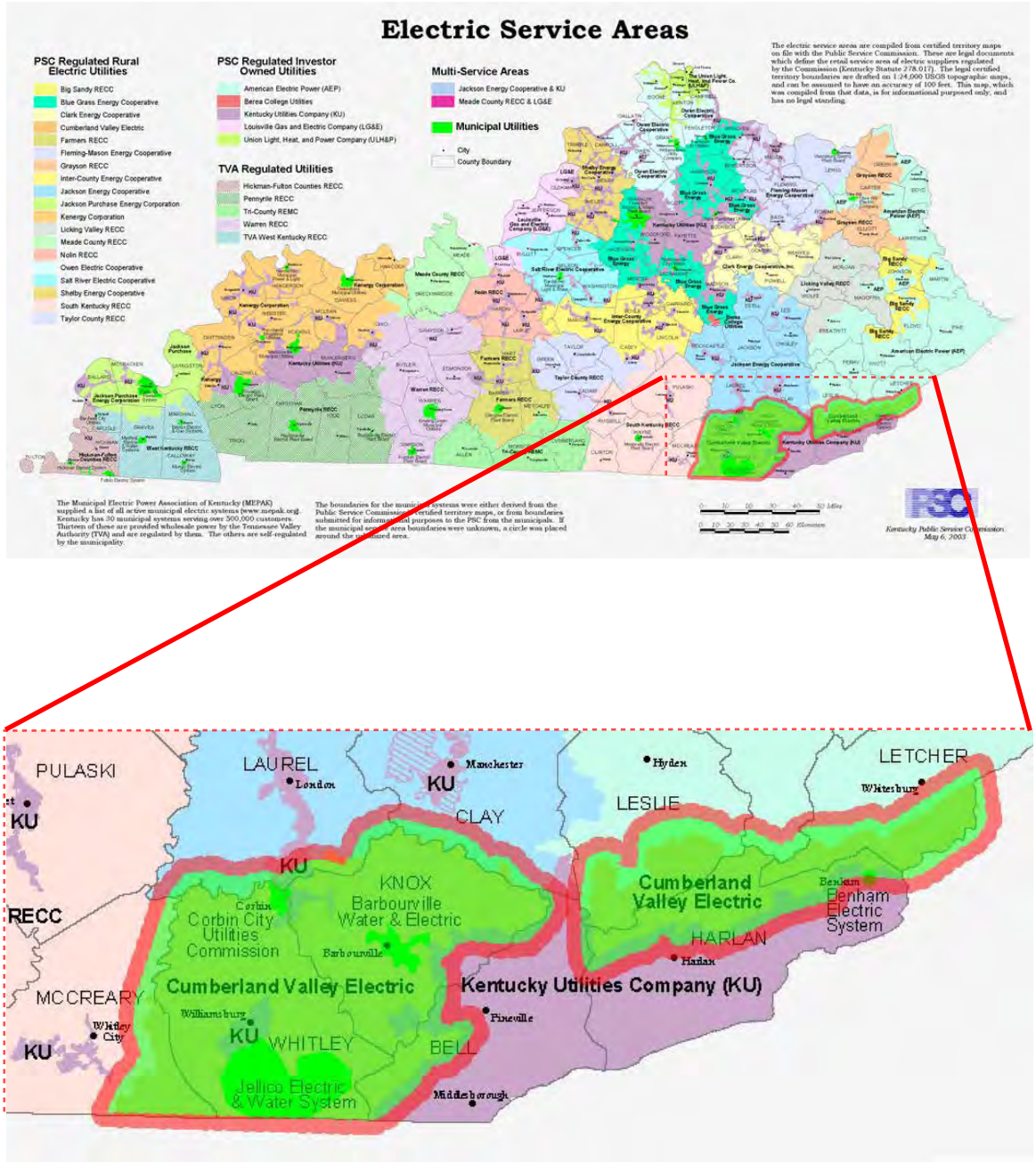
Upon completion of the construction proposed herein, the above indicated electric distribution system can provide adequate and dependable service to approximately 25,108 customers with residential using a monthly average of 1,174 kilowatt-hours per consumer. The peak demand is estimated to be approximately 172,000 kW for the winter of 2015/16.

I certify that this 2012-2015 Construction Work Plan was prepared by me or under my direct supervision, and that I am a duly registered professional engineer under the laws of the State of Kentucky.

Patterson & Dewar Engineers, Inc.

Gary E. Grubbs
Kentucky P.E. No. 13,008

KENTUCKY MAP WITH THE CVE SERVICE AREA DENOTED



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CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN (CWP)

October 2011

I. EXECUTIVE SUMMARY

A. Purpose, Results and General Basis of Study

This report documents the December 2010 system engineering analysis and summarizes the proposed construction for Cumberland Valley Electric's (CVE's) electric distribution system for the four-year period of January 1, 2012 through December 31, 2015.

The proposed construction is to be financed by the Rural Utilities Service (RUS). This report provides engineering support in the form of descriptions, costs, and the justification of required new facilities, as required for an RUS loan application.

Upon construction completion of the proposed facilities, the CVE distribution system can provide adequate and dependable service to approximately 25,108 consumers with the residential consumers using an average of 1,174 kWh per month.

The 2015 projected number of consumers and total peak system load were taken directly from the Cooperative's 2010 Load Forecast Report (LF) as approved by RUS. A design load of 172 MW was used for the next four years for the loading conditions, which falls between the 20% and 50% probabilities from the latest approved Load Forecast. This loading level was agreed to by CVE management and the RUS General Field Representative (GFR).

A review of CVE's 2006 Long Range System Study (LRSS), finds the load projections and recommendations to be adequate for the four-year planning period. This LRSS was completed in November of 2006 by Patterson & Dewar Engineers.

Load projections indicate that no new substations or delivery points are required for the CWP period unless a possible new 3 MW coal mining load becomes a reality. (See Item D on page 9 of this report for further discussion on this subject.)

The cooperative's Operations and Maintenance Survey (Review Rating Summary - RUS Form 300), was completed on May 4, 2010. One item was identified for improvements but no recommendations requiring capital funds were listed.

An analysis of thermal loading, voltage drops, physical conditions and reliability, has been performed on all substations, distribution lines, and major equipment of the existing and base system subjected to the peak December 2010 conditions with consideration given to the system's highest peak which occurred in January 2009. The existing base system model has also been grown to the projected winter 2015/16 loading to develop a future system model. The projected future loading is in agreement with the currently approved 2010 LF. The basis of the system analysis is the RUS guidelines and CVE's system design and operational criteria.

The analyses indicated above utilized the WindMil software package by Milsoft Utility Solutions, and the results were used as the basis for determining the capital needs for CVE's electric distribution system.

B. Service Area, Distribution System and Power Supply

The corporate office of Cumberland Valley Electric is in Gray, KY. The cooperative provides electric service to a portion of the southeastern part of Kentucky. The service area encompasses generally the rural areas around the small towns of that area. CVE provides electric service to rural homes, farms, villages, and small

commercial and industrial consumers in Bell, Clay, Harlan, Knox, Laurel, Leslie, Letcher, McCreary and Whitley counties in Kentucky, as well as a small portion of Claybourne County in Tennessee.

CVE provides service to portions of unincorporated areas as well as portions of the incorporated areas of Corbin, Cumberland, Barbourville and Williamsburg. Corbin and Williamsburg are primarily served by their municipal utility. The system receives significant growth near the cities of Corbin and Williamsburg and near Interstate 75, which connects Lexington to Knoxville, TN.

The area terrain varies from rolling hills and grazing lands to rugged mountainous forest in the eastern portion of the service area. The chief sources of income are from light manufacturing, general farming, education, and coal mining. Steady growth is being experienced around the small cities and towns with more modest growth in the remaining rural areas.

The following data was taken, or derived, from CVE's December 2010 RUS Form 7:

Number of Consumers (Avg)	=	23,796
KWh Purchased	=	568,837,293
KWh Sold	=	545,156,016
KWh Used by Company	=	420,620
KWh Unaccounted for	=	23,260,657
KWh losses (%)	=	4.09%
Max. NCP kW Demand	=	148,012
Total Utility Plant	=	$84,725,706
Miles of Distribution	=	2,616
Consumers per Mile	=	9.08
Annual Load Factor	=	43.90%

Service is provided to CVE members through 18 delivery points.

CVE's power supplier is East Kentucky Power Cooperative (EKPC), an RUS financed generation and transmission cooperative. EKPC's office headquarters is located in Winchester, Kentucky. As power supplier, EKPC accommodates all the generation, transmission, and substation requirements of CVE and other cooperatives located in the central and eastern half of Kentucky.

CVE takes delivery from EKPC at the distribution voltages of 7.2/12.5 kV and 14.4/25 kV, and EKPC owns all of the substations.

C. System Organization and Operation

CVE's headquarters as mentioned earlier, is located in Gray, Kentucky, near the geographic center of the system. All engineering and management decisions come through this office, and a District Office is maintained in Cumberland. The system is operated and maintained under the leadership of a manager of engineering and a manager of operations. Additional support staff of technicians, administrators, and aides compliment the system operations.

CVE utilizes contractor construction crews as well as in-house crews. CVE has effective programs in place for system inspection, right-of-way maintenance and equipment manintenance.

CVE's service territory is firmly established by Kentucky statues. Consumers locating within CVE's territorial boundaries are set to be served by CVE.

D. Status of Previous Work Plan Projects

This CWP summarizes the current status of the previous work plan site-specific projects. The status of each project is identified as follows: COM – Complete; IP – In Progress; NP – No Progress; or DEL – Deleted. A high percentage of the projects were completed.

CVE currently has approximately 20 miles of old copper conductor (mostly single phase primary lines) on their system. This CWP recommends replacing approximately 20% (5 miles) of the copper lines over the CWP period.

E. Summary of Construction Program and Costs

The CWP costs over the next four years have been projected as follows:

2012	$4,057,825
2013	$4,287,049
2014	$5,099,721
2015	$4,381,847
Total	$17,826,442

By comparison, the annual totals for distribution plant additions and replacements during the four previous years are as follows:

2007	$4,319,926
2008	$4,616,255
2009	$4,558,723
2010	$4,285,677

This data mentioned above was taken from CVE's five previous year-end RUS Form 7, Part E 1(b). Capital expenditures projected for this CWP have increased over past plant expenditures due to material price increases and system improvement increases; however, they remain reasonable.

Each capital item recommended herein was reviewed with CVE engineering and management staff and the RUS GFR prior to inclusion in this CWP. Approximately 44% of the cost of the new CWP is associated directly with the addition of new members (transformers, meters, new services, lights, etc.) and the remaining 56% is associated with additional system improvements.

II. BASIS OF STUDY AND PROPOSED CONSTRUCTION

A. Design and Operational Criteria

Exhibit L presents CVE's System Design Guidelines (SDG). In October 2011, the Kentucky RUS General Field Representative (GFR) reviewed and concurred with CVE's criteria. The proposed construction as outlined in this 2012-2015 CWP is necessary for meeting the minimum standards set forth in the SDG.

The criteria presented are design and operational guidelines only. System conditions may result in a breach of a specific criterion. Such occurrences are considered only temporary and not for long term operations.

B. Historical Line and Equipment Costs

Exhibit B presents the historical and projected unit cost averages for new services and new construction. The cost calculations utilize data encompassing a 24 month period ending July 31, 2011.

Line construction projects are grouped by project type, and the averages are expressed on a cost per mile basis. Some of the projected conversion projects do not have a historical cost to reference; however, the estimates are based on industry knowledge of Patterson & Dewar Engineers and costs typical of other distribution providers.

C. Analysis of Current System Studies

1. 2010 Load Forecast

The 2010 Load Forecast (LF) report was approved by CVE's Board in 2010. The report was prepared by EKPC in cooperation with CVE's management and staff. The report utilized statistical models to forecast future energy and demand requirements. EKPC provided the economic, demographic, and weather information. CVE personnel provided historical information, system specific assumptions, and large commercial and industrial projections. The EKPC staff developed the LF database and forecasting models, and produced the final report.

The LF projected kilowatt-hour sales as well as non-coincident peak kW demands for the period 2010-2030. A 1.2% per year growth in energy sales was projected for the period. Winter and summer peak kW demands were projected to grow approximately 1.15% per year. The system annual load factor was expected to remain around the 40% level. The LF offers various projection scenarios for planning purposes and they are as follows:

Winter Peaks	Summer Peaks
Mild	Normal
Normal	Extreme*
Extreme*	

*With projections of 20%, 10% and 3% probability of occurrence.

Generally, the normal and mild weather LF scenarios mentioned above are used in the preparation of rate studies and financial forecasts to determine realistic revenue projections. The severe or extreme weather scenarios are typically used for system capacity planning. This is to assure that adequate capital expenditures are identified for system capacity in order to provide reliable and quality service to the customer. For this CWP, a design load of 172 MW was used for the next four years for the loading conditions, which falls between the 20% (Extreme) and 50% (Normal) probabilities. This loading level was agreed to by CVE management and the RUS GFR.

2. 2006 Long Range System Study (LRSS)

P&D completed a LRSS for CVE's distribution system in November 2006. The system configuration and the loads for the CVE 2005 system were the basis for the LRSS.

The LRSS projected the 2005 load to grow by a factor of 2.1 by the year 2027 in order to sufficiently stress the system. The LRSS projected a normal weather scenario load of 284.84 MW by the year 2027. The LRSS

recommended four additional substations (delivery points) based upon the projected loads. However, any new substations must be justified by a power supply study that will be performed as the actual load dictates the necessity. These studies are performed in conjunction with EKPC based on a one ownership cost methodology.

The preferred plan in the LRSS called for a combination of new delivery points as needed and to continue converting portions of the system to 25 KV operation whenever operationally reasonable and economically justifiable. P&D believes that this strategy is still sound for CVE and has applied these concepts in decisions concerning the 2012-2015 CWP.

As part of the CWP process P&D takes into account areas that have grown differently than projected in the LRSS and makes engineering judgements relative to what, if any, changes should be considered. In summary, P&D feels that the LRSS is valid for the next 4 years including system improvements necessary to satisfy current and projected system needs through the year 2015. Recommendations incorporated in this CWP are in compliance with the current LRSS.

3. 2010 Operations and Maintenance Survey (RUS Form 300)

On May 4, 2010, CVE personnel met with the RUS GFR and conducted a review of CVE's facilities and records. This review included substation monthly reports, monthly outage records, and other equipment maintenance records.

This review was used as a basis for completing the RUS Form 300, Review Rating Summary, and is included herein as Exhibit M. This survey is used for identifying maintenance, operational and capital needs necessary for proper operation of the electrical distribution system.

In general, the overhead and underground distribution facilities were found to be in satisfactory condition. Likewise, nearly all of the operations and maintenance, and engineering programs were found to be satisfactory with no major capital items identified or recommended.

One item, Item 3b, was noted on the O&M Survey which requires corrective action. The following comments were noted:

- Telephone poles left standing close to the electric pole should be removed.
- Cable TV attachments require constant monitoring and follow-up to ensure code requirements are met.

D. Historical and Projected System Data

1. Annual Consumer, Load, and Losses Data

Exhibit A tabulates the annual system data for consumers, system peak demand, losses, and annual load factor. The exhibit provides both data and graphs for the actual conditions for 2000 through 2010 and for the projected years of 2011 through 2030. The projected and historical customer count and kW demand comes from the most recent EKPC Load Forecast for CVE. The projected net distribution plant is derived from the most recent Long Range System Study.

The distribution system exhibited a growth in peak demand from 119.0 MW in the winter of 1999/2000 to 141.3 MW in the winter 2009/2010. This represents approximately a 1.73 percent per year growth rate in terms of peak demand.

The system has been experiencing an annual 0.80 percent growth in consumers. The total average annual customers in 2000 equaled 22,011. In 2010 this number had grown to 23,796. The LF projection for 2015/16 is 25,108 total consumers, which represents a growth rate from 2010 of approximately 0.90 percent.

The annual total non-coincident peak (NCP) load factor was 43.9 percent for 2010. CVE's load factor has ranged from a low of 39.5 percent to a high of 46.6 percent over the past ten years depending on the severity of the summer and winter peaks. A load factor of approximately 40% was used in the load forecast to approximate the future probable loads.

The annual system losses were 4.1 percent for 2010 and 4.8 percent in 2009. EKPC projects losses of 4.8 percent for the CVE system in the current LF. The highest losses in the last ten year has been 5.0% (in 2000). CVE's loss figure are well within the guidelines for losses established by REA Bulletin 45-4.

2. Special Loads

The footnotes shown in Exhibit O summarize the addition of significant new large power loads expected by CVE during the CWP period. No other special loads were considered in this Work Plan.

3. Substation Load Data

Exhibit O summarizes the substation loading and capacities for both existing and projected system peak conditions; with and without CWP recommended improvements. The exhibit identifies each substation, its voltage levels, winding capacity, percent of full load, percent power factor, and total peak demand. The loading is given in percent of full load rating of the substation transformer as provided by EKPC. All substations are owned and operated by EKPC.

The CVE System Design Guidelines, Exhibit L, establishes that a substation's current loading condition is not to exceed 95 percent of its full nameplate kVA capacity without planning its uprating. This criterion also matches EKPC's policy. Currently none of CVE's substations are loaded over this level.

Adequate and reasonable power factor levels are currently being maintained at all substations on CVE's system. Capacitor recommendations are included as Exhibit I of this Work Plan.

4. Circuit Loading and Voltage Conditions

The January 2009 non-coincident winter distribution peak for CVE of 153.1 MW is the highest peak experienced by the cooperative to date. The most recent high peak of 148.0 MW occurred in December of 2010. The corresponding peak kWh consumer billing data was used to develop the base system model for the existing winter 2010/11 conditions. During December 2010 the system served approximately 23,796 consumers. Appendix 1 presents the primary analysis for the existing December 2010 system.

The primary analysis provides the following system parameters:

- Circuit loading by substation and by line section
- Unregulated voltage drops on 120-volt base (by section and accumulated total)
- Annual primary losses in dollars per section

- Number consumers served through each section, circuit, and substation
- Circuit primary conductor size and miles from sub
- Fault current levels by fault types; maximum three-phase, maximum phase-to- ground, and minimum phase-to-ground

Appendix 2 is a primary analysis of the existing system configuration with the projected 2015/16 peak winter loading conditions. This analysis provides a picture of the system of the future if no system improvements were accomplished. This analysis was the primary basis for most of the system improvements called for in this work plan.

Appendix 3 is a primary analysis of the future 2015/16 winter system after completion of the recommended system improvements. The enclosed Map is a circuit diagram picture of what the system will be after completion of this CWP.

Through the use of line voltage regulators and capacitors, adequate system voltages are being maintained for current system conditions. In anticipation of future system loading conditions, some line voltage regulator and capacitor changes will be necessary to maintain adequate voltage. See Exhibits H and I for a full listing of voltage regulator and capacitor recommendations.

5. System Outages and Reliability

CVE maintains daily outage reports and prepares monthly and annual summaries. A periodic review of those summaries reveals areas requiring system changes or right-of-way maintenance. Exhibit S presents a summary of the consumer outage hours for the five previous years.

From the 2010 Form 7, the five year consumer outage average is 119.4 minutes (1.99 hours) per consumer per year, which is well above RUS's guideline of 5.0 hours per consumer per year. This number includes major storm outages experience by CVE during this time period.

III. REQUIRED CONSTRUCTION ITEMS

A. Service to New Consumers

During the 24 month period ending July 31, 2011, CVE added 153 underground services and 714 overhead services for new consumers. The average line extension cost for each new service was approximately $4,083 for underground and $2,037 for overhead services. It is estimated that 300 new underground and 1,488 new overhead services will be built over the next four years. In projecting the future costs for underground and overhead services, it is estimated that over the next four years $4,673,781 in capital will be required to construct the new lines. This calculates to be an average of $1,168,445 per year.

Exhibit B summarizes the historical data used in projecting the required capital for the new services. Transformer, meter, and security light quantities and costs are also given in this exhibit. Exhibit D summarizes the costs on an annual basis. Approximately 44 percent of the capital required for this work plan is estimated to be for items associated directly with new consumer services, and the remaining 56% is associated with other system improvements.

B. Service Changes to Existing Customers

For the 24 month period ending July 31, 2011, CVE increased the service wire capacity of 96 consumers. On this basis CVE is expected to upgrade 184 services during the next four years. The average cost for each service upgrade is approximately $2,250. The capital requirement for the CWP period is $413,954.

C. Distribution Lines - Additions and Changes

The recommended CWP line changes and improvements are generally for the following reasons:

- Excessive Voltage Drops
- Excessive Load Currents (or Overloaded Lines)
- Poor Service Reliability

Increasing primary line voltage, increasing conductor size, increasing the number of phases, reducing distances of feed, and installing voltage regulators and capacitors are the methods of correction for excessive voltage drops. Excessive load current is an undesirable situation normally corrected by the same methods used for excessive voltage drops; however, the improvement is recommended in most cases to assure proper coordination of line reclosers or sectionalizing devices.

Right-of-way clearing often results in improved service reliability. However, if specific line components are causing outages, then priority is given to rebuilding the line to replace old and worn-out equipment. Rebuilding a line may include conductor, pole or crossarm replacement, replacing defective insulators, etc. Also the construction of tie lines may improve service reliability. Tie lines shorten the circuit feed distance thereby reducing line exposure and also providing loop feed capability. The loop feed capability is very beneficial during outages and line maintenance.

The four year CWP distribution line construction estimate for Code 300 projects is $1,182,710 including line conversions and changes. No new tie-lines are recommended or required.

Each recommendation of the CWP has been carefully reviewed with the CVE engineering staff prior to inclusion in this report. Exhibit F presents a summary of the distribution line construction recommendations. Please note the following explanation for the construction RUS reference numbers:

XYY.ZZ	=	Construction Item Number
X	=	RUS Reference Prefix (2 for tie lines; 3 for line conversions)
YY	=	CVE Substation Number
ZZ	=	Consecutive Number Under Each Substation

Exhibit F also presents construction justification codes for each recommendation. For the sake of brevity, quantitative information regarding the system benefits of each construction item is not presented. The

computer model output in the appendices provides this information, (e.g., voltage drop improvements, elimination of overloaded conductor, etc.). Exhibit Q also summarizes the justification for each project.

D. Substations and Meter Points - Additions and Changes

The System Design Guidelines establish that a substation's projected future loading condition is not to exceed 95 percent of its full nameplate KVA capacity without planning its uprating. This criterion also is in agreement with EKPC's loading policy.

A review of the future substation loading conditions in Exhibit O without improvements reveals that there is a possibility that Oven Fork Substation could become overloaded during the CWP period if a customer moves forward with requesting service to a new mining load of 3 MW. However, if the mining load does not materialize, the substation will not be overloaded. If a request for the service is made, CVE will move forward with a load center (substation) study which will be performed with input from their power supplier, EKPC.

Transformer cooling fans should be placed on Oven Fork Substation sometime during the first year of the CWP period in order to increase the substation transformer capacity. Fans will be needed due to normal system growth that is not associated with the 3 MW load mentioned above. EKPC owns the substation and will be responsible for placing the fans in the substation.

Arkland Substation was 94% loaded during the summer peak that occurred during August of 2010; however, CVE has been in communication with the large coal producer served from this substation, and load is expected to decline rather than grow during the CWP period.

Several other load transfers and additions are expected to be performed on substations during the CWP period, and these are noted in Exhibit O.

E. Capacitor Equipment - Additions and Changes

Exhibit I presents the capacitor recommendations for this CWP. They are also shown on the Map. Recommendations are included to comply with EKPC's power factor policy of no less than 90 percent at peak for each cooperative delivery point. Recommendations have been included to maintain approximately 95% PF during the summer peak conditions if switched banks are not required. If switched banks are required to maintain this level, the power factor is allowed to be slightly lower.

CVE is encouraged to enforce their power factor penalty clause in their Commercial and Industrial (C&I) service contract, in hopes of encouraging their commercial and industrial customers to install both fixed and switched capacitor banks if needed. If however, this effort is unsuccessful, CVE should install the capacitors on their system to eliminate the penalty charges from EKPC. The monies received from penalizing the C&I customers should be adequate to cover the cost for the capacitor installations.

The cost of the auxiliary equipment (crossarms, cutouts, etc.) and installation costs of the capacitor stations are incurred by CVE. One capacitor bank at a cost of $3,500 is included in this CWP.

All capacitor recommendations are based on the WindMil software and input from the engineering staff at CVE. Capacitor locations and kVAR bank size recommendations were based on circuit loading and minimizing line loss.

The capacitor recommendations included herein conform to the design criteria of Exhibit L.

F. Sectionalizing Equipment - Additions and Changes

A complete line sectionalizing review evaluating device coordination and fault current duty will be performed after the completion of this CWP. EKPC provided CVE low-side source impedance data so that available fault currents at each substation and delivery point can be determined. Also, any device overloaded conditions and line configuration changes resulting from the system improvements and revisions included in this Work Plan are to be included in the study.

The estimate for RUS Code 603, sectionalizing equipment, is $1,800,000 for the CWP period. This total includes $1,400,000 for the replacement of old deteriorated gapped-type lightning arrestors. CVE has been actively involved in making these replacements and plans to complete the entire system during the CWP period.

This type of arrestor is known to contribute to power quality issues due to arcing between the gaps. They are also known to break down internally due to the infiltration of moisture. The CWP calls for eliminating the remainder of the gapped arrestors on the system at a total estimated cost of $1,400,000 over the four year CWP period.

G. Line Regulators - Additions and Changes

Exhibit H and the Map present the line voltage regulator changes. The cost of line regulator changes is categorized by RUS reference Code 604.

Exhibit H itemizes the location of new regulators. The analysis of the system revealed that only one new regulator bank will be needed during the CWP period. CVE already has the regulators and associated equipment in stock; therefore, no costs for voltage regulators is included in this CWP.

H. Pole Replacements

The physical condition of CVE's electric plant is satisfactory according to work order inspections by Patterson & Dewar Engineers, Inc. Many system improvements have been made in recent years, and CVE has done a good job with pole replacements during this period.

CVE's distribution system consists of approximately 49,800 wood poles system wide (2,800 miles of overhead line at approximately 18 poles per mile average). RUS recommends an annual inspection of at least 10 percent of a system's total poles. CVE should therefore have a pole inspection program that includes approximately 4,980 poles annually.

Current estimates for pole replacements can be found in Exhibit B. The present projected cost for pole replacements based on historical data is 1,032 pole change-outs for a total cost of $2,792,592 for the CWP period. The average cost per pole is approximately $2,706.

I. Other Distribution Items

CVE estimates that it has less than 20 miles of old copper lines remaining. CVE plans to change out 5.0 miles of this conductor in this CWP period at a total estimated cost of $150,000. Exhibit K summarizes the details of the CVE plan and the cost is included in this CWP as Code 608.

During this CWP period, CVE plans to replace its existing outdated radio system with a new modern radio system, and the cost estimated for this project is included in the CWP. The cost is shown in Exhibit B and includes $200,000 for each of the first two years of the CWP for a total of $400,000. CVE has performed a study which was completed by a reputable engineering firm with experience in radio communications, and the proposed system is a result of that study. This system includes equipment at repeater tower sites that will be required to give sufficient coverage across the CVE system and provides CVE with a state-of-the-art radio system which should meet its needs for many years into the future.

CVE has recognized the need for obtaining a new AM/FM/GIS system to replace its existing mapping system which is insufficient to accurately and capably meet the needs of the cooperative. The many benefits of an accurate and modern AM/FM/GIS system are well documented in the industry, and such is needed at CVE to meet the needs of the cooperative's members in order to provide excellent service in the future.

Based upon estimates provided by multiple vendors and research performed by CVE, the cooperative plans to add the new mapping system during the CWP period. The total cost of the system is estimated at $930,000 and is shown in Exhibit B. The work is slated to start in the second year of the CWP and be completed by the end of the CWP period.

IV. CONCLUSION

The recommendations set forth in this Construction Work Plan will enable CVE to serve the projected 2015-2016 peak winter conditions. The construction recommendations are in accordance with RUS prescribed guidelines and other economic criteria established by CVE's Long Range System Study, and related power supply studies. Any questions or comments regarding this report should be directed to the engineering staff of CVE or Patterson & Dewar Engineers, Inc.

CUMBERLAND VALLEY ELECTRIC

Kentucky 57 Bell

Gray, Kentucky

SYSTEM STATISTICAL DATA

Exhibit A

Year	Total Consumers (Annual Average)* Actual	Total Consumers (Annual Average)* Projected	kWh per Consumer Residential (Monthly Average)* Actual	kWh per Consumer Residential (Monthly Average)* Projected	Distribution Plant Investment (millions of dollars) Actual	Distribution Plant Investment (millions of dollars) Projected**	Annual System Losses Total System Actual	Annual System Losses Total System Projected	Annual Load Factor Total System Actual	Annual Load Factor Total System Projected	Total Non-Coincident Peak Demand Historical Peak Demand	Total Non-Coincident Peak Demand Summer Extreme 20%	Total Non-Coincident Peak Demand Winter Normal Weather	Total Non-Coincident Peak Demand Winter Extreme 10%
2000	22,011		1,144		47.30		4.97%		46.5%		119,000			
2001	22,950		1,098		49.13		4.11%		42.9%		127,664			
2002	23,776		1,139		51.97		4.12%		46.6%		118,680			
2003	24,500		1,101		54.54		4.73%		43.7%		124,600			
2004	25,224		1,067		57.29		4.24%		45.0%		124,100			
2005	23,029		1,241		60.24		4.76%		44.8%		133,770			
2006	23,303		1,180		63.90		4.77%		44.4%		133,500			
2007	23,487		1,225		67.25		4.76%		44.1%		138,819			
2008	23,695		1,237		70.78		4.00%		42.0%		146,540			
2009	23,737		1,203		74.44		4.76%		39.5%		153,065			
2010	23,796		1,325		77.81		4.09%		43.9%		148,000			
2011		23,991		1,196		74.71		4.80%		41.4%		114,719	150,030	164,121
2012		24,178		1,188		76.84		4.80%		41.3%		114,930	150,840	165,080
2013		24,387		1,173		78.86		4.80%		40.9%		115,487	152,550	166,942
2014		24,626		1,173		80.85		4.80%		40.9%		116,602	154,140	168,687
2015		24,864		1,173		82.67		4.80%		40.9%		117,726	155,470	170,176
2016		25,108		1,174		84.66		4.80%		41.6%		120,363	156,650	171,518
2017		25,344		1,174		86.57		4.80%		41.5%		121,797	158,730	173,762
2018		25,582		1,182		88.54		4.80%		41.5%		123,321	160,720	175,919
2019		25,819		1,190		90.43		4.80%		41.5%		124,825	162,860	178,226
2020		26,057		1,195		92.37		4.80%		41.2%		125,850	166,020	181,555
2021		26,296		1,202		94.37		4.80%		41.0%		127,695	168,620	184,324
2022		26,534		1,209		96.43		4.80%		41.1%		129,189	170,330	186,203
2023		26,773		1,217		98.55		4.80%		41.1%		130,724	172,490	188,532
2024		27,012		1,224		100.71		4.80%		41.3%		131,919	174,130	190,339
2025		27,250		1,228		102.92		4.80%		41.1%		133,614	176,730	193,108
2026		27,490		1,234		105.19		4.80%		41.6%		136,828	178,980	195,524
2027		27,729		1,239		107.52		4.80%		41.6%		138,273	181,110	197,820
2028		27,968		1,244				4.80%		41.7%		139,328	182,350	199,226
2029		28,206		1,245				4.80%		41.5%		140,943	184,760	201,798
2030		28,445		1,252				4.80%		41.5%		142,497	187,090	204,286

* Projections are taken from the 2010 Load Forecast

** Projections are taken from 2006 Long Range System Study that went through year 2027.

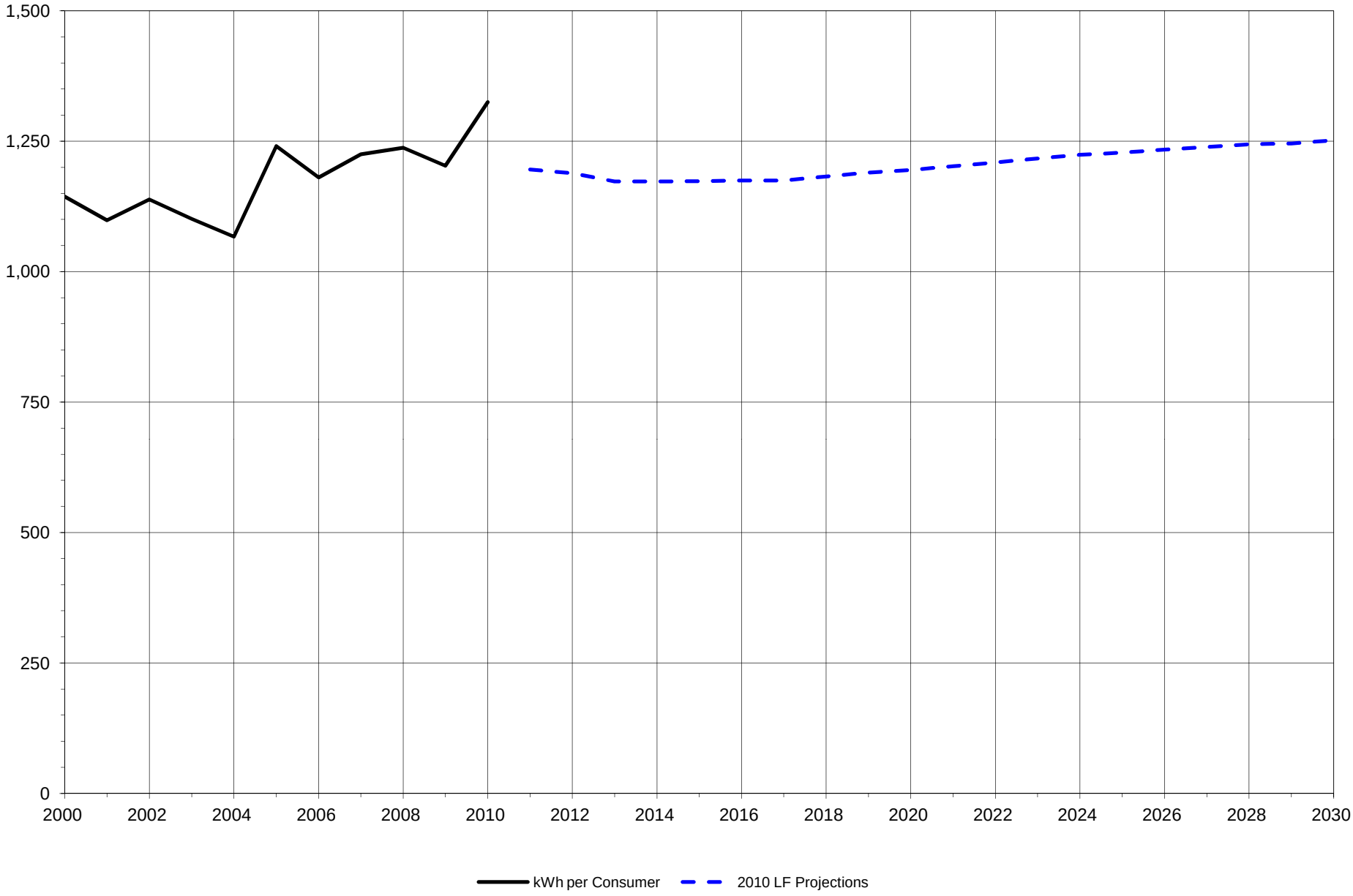
Cumberland Valley Electric
Kentucky 57 Bell
Total Consumers

Patterson & Dewar Engineers

Cumberland Valley Electric

Kentucky 57 Bell

Residential kWh per Cons. (Monthly Average)

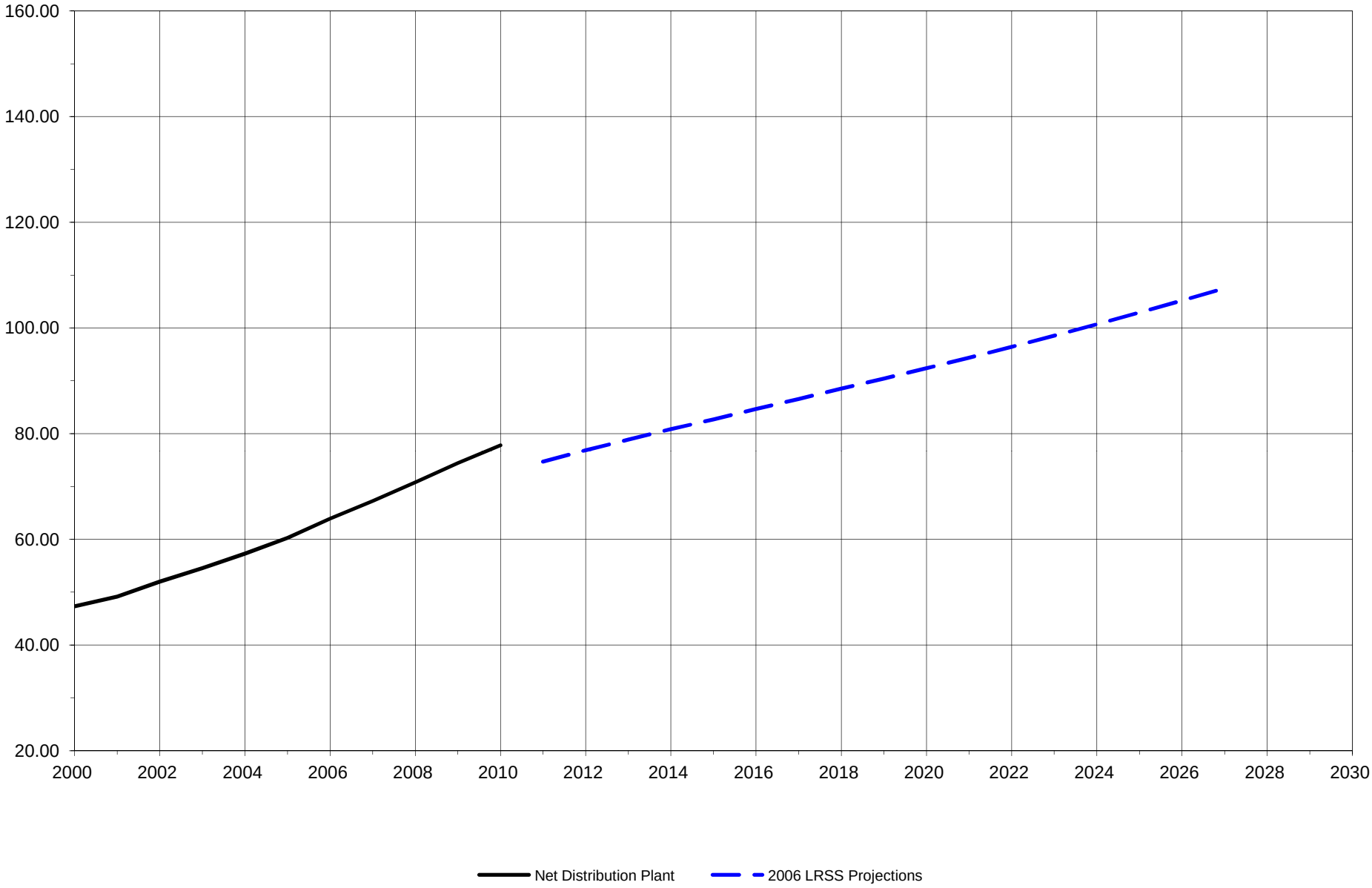


Patterson & Dewar Engineers

Cumberland Valley Electric

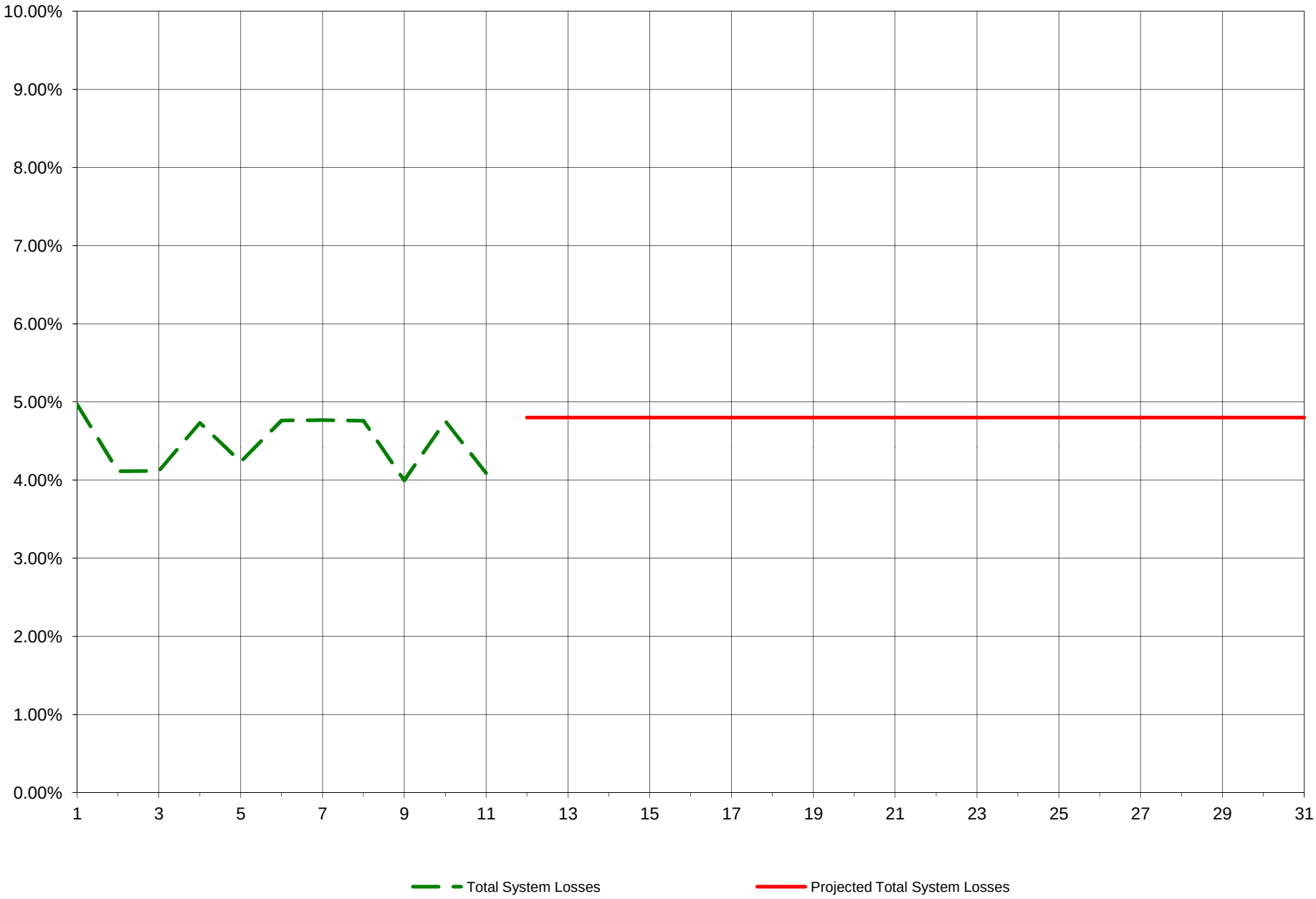
Kentucky 57 Bell

Net Distribution Plant Investment



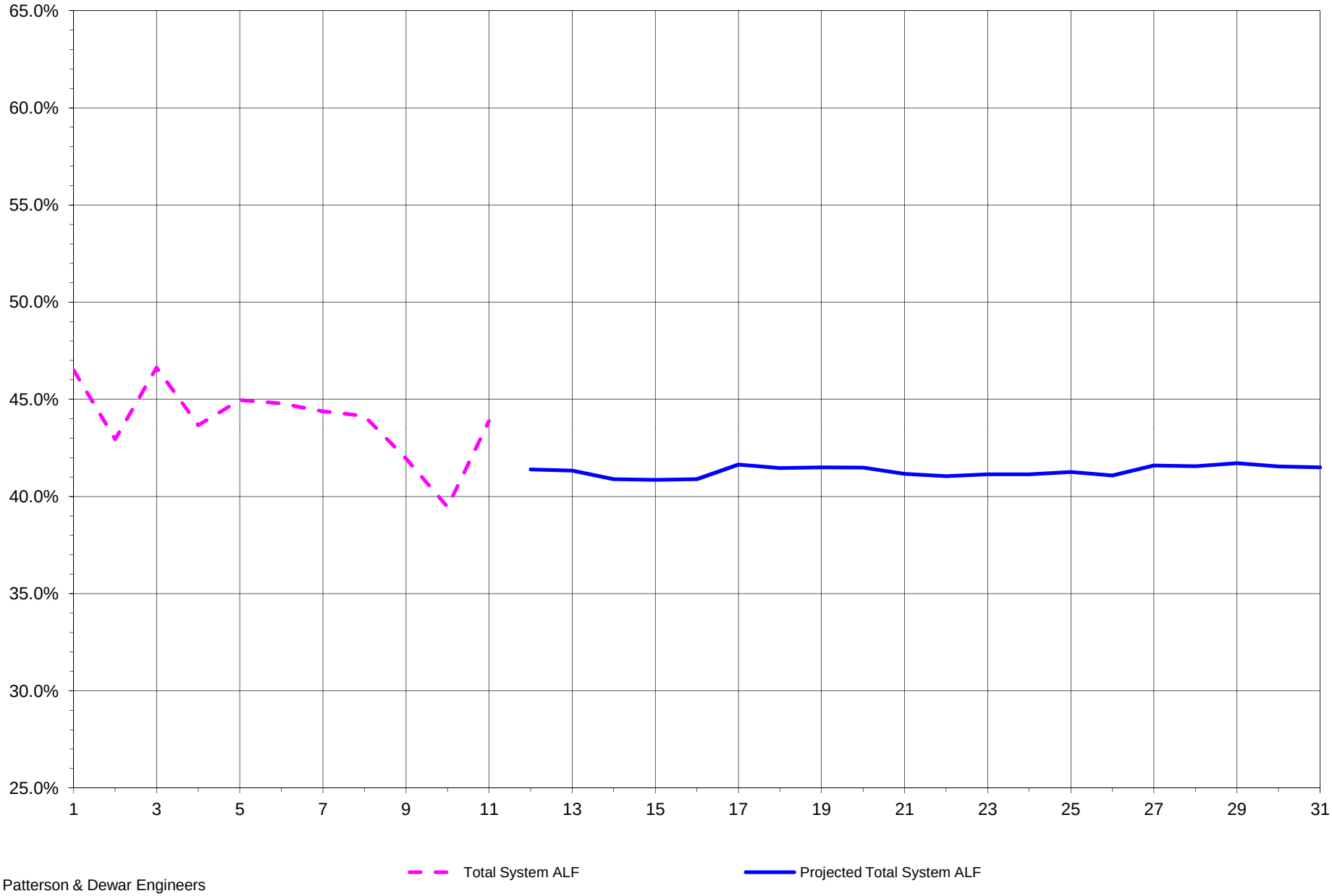
Patterson & Dewar Engineers

Cumberland Valley Electric
Kentucky 57 Bell
Annual System Losses



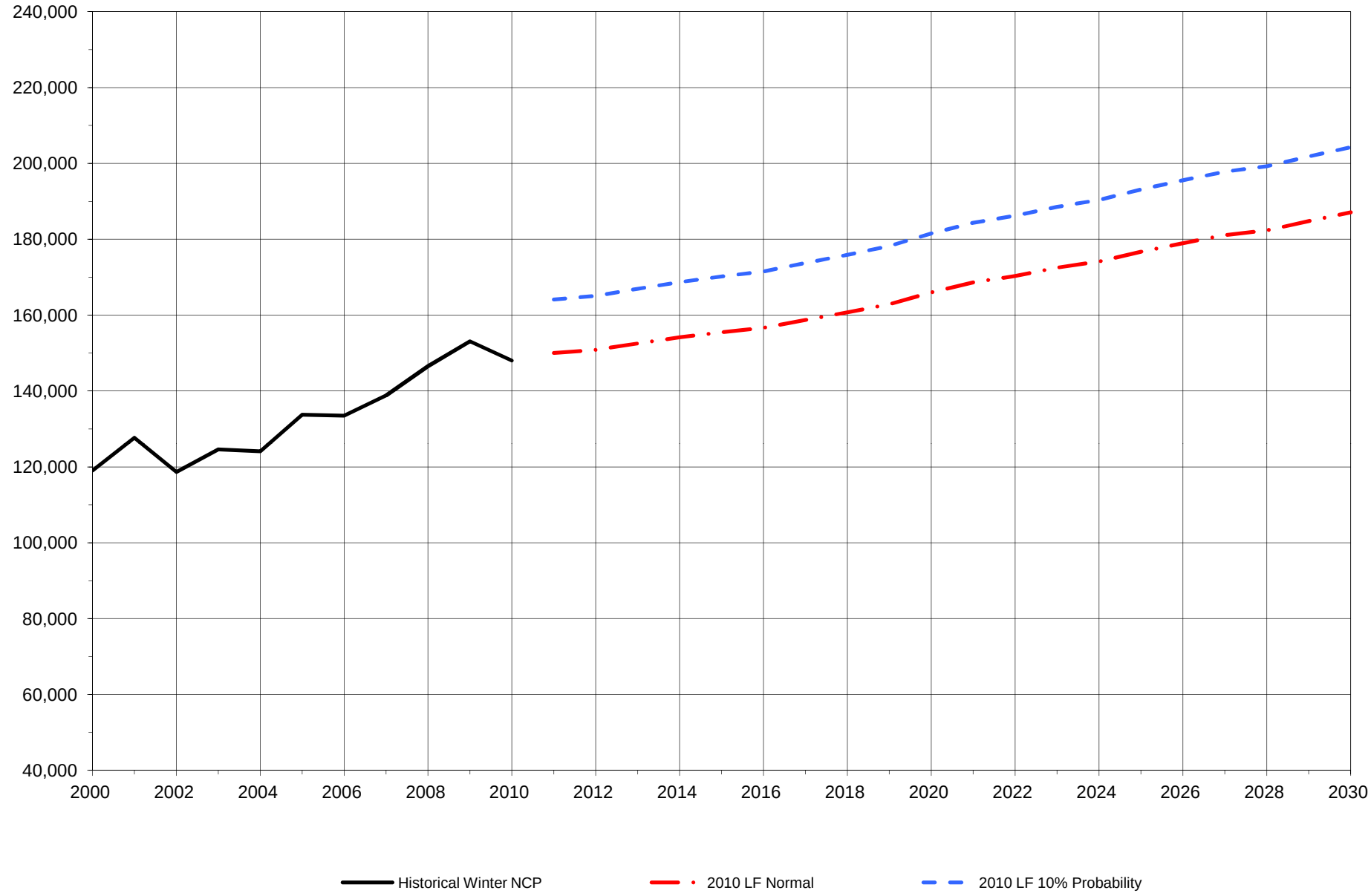
Patterson & Dewar Engineers

Cumberland Valley Electric
Kentucky 57 Bell
Annual Load Factor



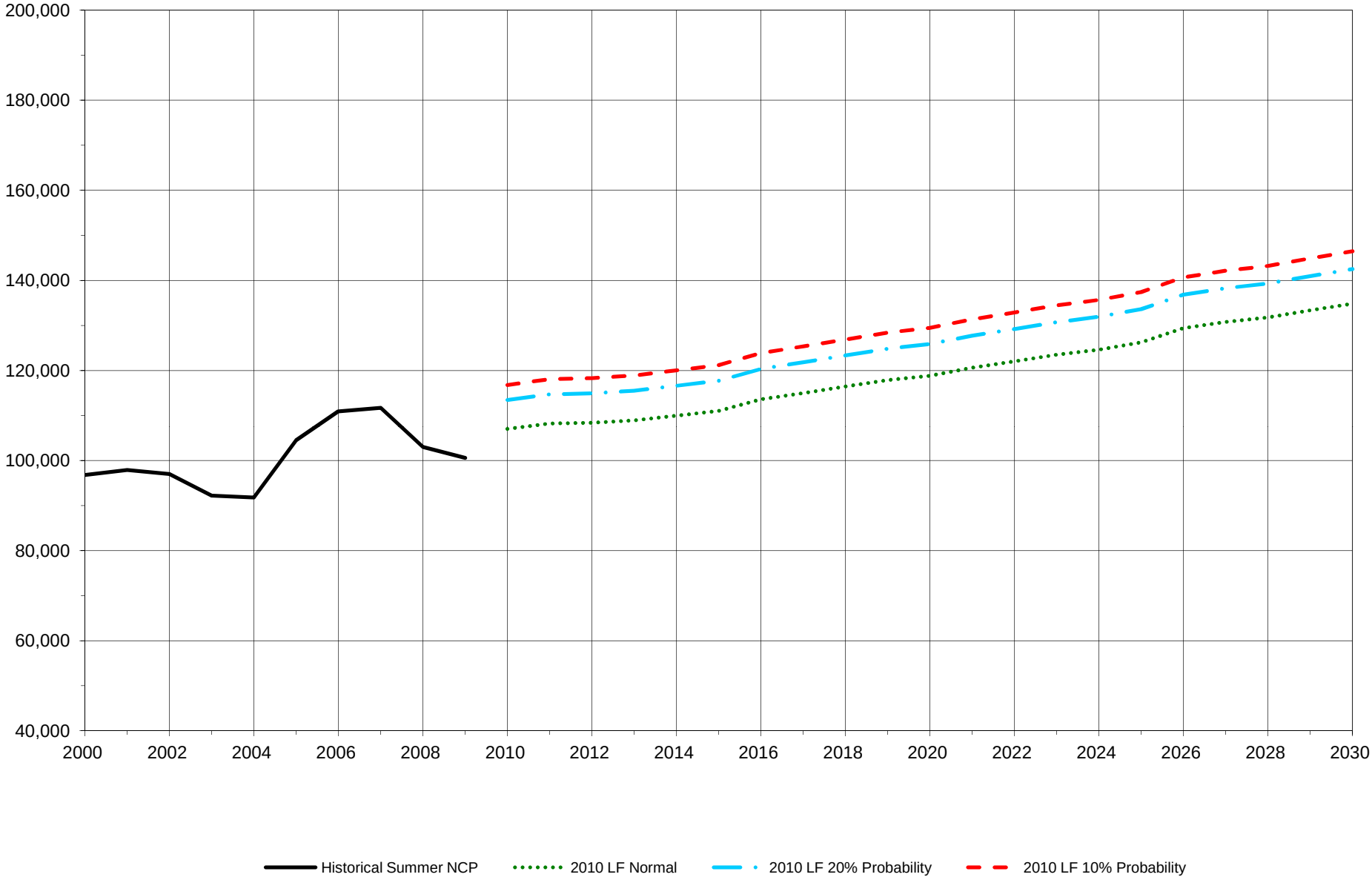
Patterson & Dewar Engineers

Cumberland Valley Electric
Kentucky 57 Bell
Total Non-Coincident Peak kW - Winter



Patterson & Dewar Engineers

Cumberland Valley Electric
Kentucky 57 Bell
Total Non-Coincident Peak kW - Summer



Patterson & Dewar Engineers

Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Historical Cost Data Ending 7/31/11
Exhibit B

DISTRIBUTION	12 Months Ending 7/31/10	12 Months Ending 7/31/11	Estimated For 2012	Estimated For 2013	Estimated For 2014	Estimated For 2015	Total for all Four Years
100 - NEW SERVICES*							
101 - Underground							
Number Services	78	75	75	75	75	75	300
Total Lineal Feet	32,305	24,407	24,375	24,375	24,375	24,375	97,500
Average Feet Per Service	414	325	325	325	325	325	325
Total Cost	$330,906	$306,189	$321,525	$331,200	$341,100	$351,300	**$1,345,125**
Average Cost Per Service	$4,242	$4,083	$4,287	$4,416	$4,548	$4,684	$4,484
102 - Overhead							
Number Services	342	372	372	372	372	372	1,488
Total Lineal Feet	75,943	88,392	88,536	88,536	88,536	88,536	354,144
Average Feet Per Service	222	238	238	238	238	238	238
Total Cost	$800,091	$757,675	$795,708	$819,516	$844,068	$869,364	**$3,328,656**
Average Cost Per Service	$2,339	$2,037	$2,139	$2,203	$2,269	$2,337	$2,237
						* Total code 100 miles = 85.5 miles	
200 - NEW CONSTRUCTION AND TIE LINES (None Required)	NA	NA	~	~	~	~	~
300 - LINE CONVERSIONS & CHANGES	NA	NA	$307,110	$342,620	$370,900	$162,080	**$1,182,710**
600 - MISCELLANEOUS DISTRIBUTION EQUIPMENT							
601 - Transformers and Meters							
Underground Transformers							
Number of Transformers	23	12	18	18	18	18	72
Total Cost of Transformers	$58,111	$40,703	$55,944	$57,618	$59,346	$61,128	**$234,036**
Average Cost of Trans.	$2,527	$3,392	$3,108	$3,201	$3,297	$3,396	$3,251
Overhead Transformers							
Number of Transformers	329	125	227	227	227	227	908
Total Cost of Transformers	$320,992	$147,578	$281,480	$289,879	$298,505	$307,358	**$1,177,222**
Average Cost of Trans.	$976	$1,181	$1,240	$1,277	$1,315	$1,354	$1,297
Transformers for Voltage Conversion*							
Number of Transformers	N/A	N/A	~	~	625	~	625
Total Cost of Transformers	N/A	N/A	$0	$0	$821,875	$0	**$821,875**
Average Cost of Transformers	N/A	N/A	~	~	$1,315	~	$1,315

*Transformers for voltage conversion on Jellico Creek Substation in Year 3.

Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Historical Cost Data Ending 7/31/11

DISTRIBUTION (continued)

600 - MISCELLANEOUS DISTRIBUTION EQUIPMENT (continued)

	12 Months Ending 7/31/10	12 Months Ending 7/31/11	Estimated For 2012	Estimated For 2013	Estimated For 2014	Estimated For 2015	Total for all Four Years
601 - Transformers and Meters (continued)							
Number of Meters (New members)	614	208	245	245	245	245	980
Total Cost of Meters	*	*	$36,750	$37,975	$39,200	$40,425	**$154,350**
Average Cost of Meters	*	*	$150	$155	$160	$165	$158
			* Future estimates are based on current meter and installation costs.				
Number of Meters (Replacement Meters)	*	*	1945	1434	2101	3420	8,900
Total Cost of Meters	*	*	$291,750	$222,270	$336,160	$564,300	**$1,414,480**
Average Cost of Meters	*	*	$ 150	$155	$160	$165	$159
			* Future estimates are based on a new replacement program for required testing cycle.				
602 - Service Wires for Increased Capacity							
Number Work Orders	50	46	46	46	46	46	184
Total Cost	$66,074	$94,271	$98,946	$101,936	$104,972	$108,100	**$413,954**
Average Cost	$1,321	$2,049	$2,151	$2,216	$2,282	$2,350	$2,250
603 - Sectionalizing Equipment (inc. lightning arrestors) *							
Number	N/A	N/A					
Total Cost	N/A	N/A	$450,000	$450,000	$450,000	$450,000	**$1,800,000**
Average Cost	N/A	N/A					
			* Future estimates are based on anticipated sectionalizing & lightning arrestor needs.				
604 - Line Regulators (None Required)							
Number Work Orders	N/A	N/A	~	~	~	~	~
Total Cost	N/A	N/A	$0	$0	$0	$0	**$0**
Average Cost	N/A	N/A	~	~	~	~	~
605 - Capacitors *							
Number Work Orders	N/A	N/A	~	~	~	~	~
Total Cost	N/A	N/A	$0	$3,500	$0	$0	**$3,500**
Average Cost	N/A	N/A	~	~	~	~	~
			* See notes under exhibit I				

Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Historical Cost Data Ending 7/31/11

DISTRIBUTION (continued)

600 - MISCELLANEOUS DISTRIBUTION EQUIPMENT (continued)

	12 Months Ending 7/31/10	12 Months Ending 7/31/11	Estimated For 2012	Estimated For 2013	Estimated For 2014	Estimated For 2015	Total for all Four Years
606 - Pole Replacement							
Number of Poles Replaced	194	258	258	258	258	258	1,032
Total Cost	$459,215	$635,796	$667,446	$687,570	$708,210	$729,366	**$2,792,592**
Average Cost per Pole	$2,367	$2,464	$2,587	$2,665	$2,745	$2,827	$2,706
608 - Conductor Replacement (non site specific) *							
Number Miles of Line	N/A	N/A	5	0	0	0	5
Total Cost	N/A	N/A	$150,000	$0	$0	$0	**$150,000**
Average Cost per Mile	N/A	N/A	$30,000	~	~	~	$30,000
			*Replacements will be made with either 2 ACSR or 1/0 ACSR.				
615 - New Radio System	N/A	N/A	$200,000	$200,000	$0	$0	**$400,000**

700 - OTHER DISTRIBUTION

701 - Security Lights							
Number Work Orders	571	621	621	621	621	621	2,484
Total Cost	$394,803	$381,725	$401,166	$412,965	$425,385	$438,426	**$1,677,942**
Average Cost	$691	$615	$646	$665	$685	$706	$676
702 - SCADA Equipment (None Required)							
Number of Work Orders	N/A	N/A	~	~	~	~	~
Total Cost	N/A	N/A	$0	$0	$0	$0	**$0**
Average Cost per Work Order	N/A	N/A	~	~	~	~	~
			* Future estimates are based on current costs and anticipated number of replacements.				

1500 - MISCELLANEOUS DISTRIBUTION EQUIPMENT

1501 - New Mapping (GIS) System	N/A	N/A	$0	$330,000	$300,000	$300,000	**$930,000**
			Total Year 1	**Total Year 2**	**Total Year 3**	**Total Year 4**	**Grand Total**
			$4,057,825	**$4,287,049**	**$5,099,721**	**$4,381,847**	**$17,826,442**

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Status of Previous CWP Projects
Exhibit C

Code & Status Legend

COM = Completed IP = In Progress
DEL = Deleted NP = No Progress

RUS Ref. No.	Substation	Line Section or Location	Existing Construction	Proposed Construction	CWP Miles	CWP Cost	Actual Cost	Status
New Construction and Tie Lines (Code 200 Items)								
There were no 200 codes in previous Construction Work Plan.								
Line Conversions and Changes (Code 300 Items)								
301.01	Alex Creek	Various	1 and 3ph 7.2 kV	1 and 3ph 14.4 kV	29.1	$174,614	$271,185	COM
301.02	Alex Creek	SUB-12540025	3ph 2 ACSR	3ph 336 ACSR DC	1.05	$87,822	$150,059	COM
305.01	Carpenter	23420001-23250003	1ph 1/0 ACSR	3ph 1/0 ACSR	4.98	$159,360	$256,484	COM
305.02	Carpenter	22840009-22840027	3ph 1/0 ACSR	3ph 336 ACSR	1.06	$65,067	$95,237	COM
306.01	Chad	38360034-38340007	3ph 4/0 ACSR	3ph 336 ACSR	2.57	$157,756	$462,852	COM
306.02	Chad	37770132-37760074	1ph 2 ACSR	3ph 1/0 ACSR	0.24	$7,990	$21,356	COM
306.03	Chad	38180008-38250007	3ph 1/0 ACSR	3ph 336 ACSR	5.29	$331,214	$301,281	COM
307.01	Cumb. Falls	14070088-14280021	2ph 2 ACSR	3ph 1/0 ACSR	1.59	$50,880	$64,374	COM
307.02	Cumb. Falls	SUB-14160064	3ph 4/0 ACSR	3ph 336 ACSR DC	1.06	$115,688	$96,729	COM
307.03	Cumb. Falls	8880109-8870243	3ph 1/0 ACSR	3ph 336 ACSR DC	1.18	$131,361	$163,065	COM
307.04	Cumb. Falls	14370064-14470025	1ph 2 ACSR	3ph 1/0 ACSR	0.91	$29,120	$69,280	COM
308.01	Emanuel	10650093-10750062	1ph 2 ACSR	3ph 1/0 ACSR	1.13	$37,621	NA	DEL
308.02	Emanuel	10360021-10150033	1ph 2 ACSR	3ph 1/0 ACSR	2.63	$89,141	$68,721	COM
308.03	Emanuel	10680014-10590148	3ph 4/0 ACSR	3ph 336 ACSR	1.46	$86,140	$44,891	COM
309.01	Frackes	22840028-22840060	3ph 1/0 ACSR	3ph 336 ACSR	0.68	$42,576	$51,161	COM
310.01	Girdler	SUB -10490101	3ph 1/0 ACSR	3ph 336 ACSR DC	0.45	$48,150	NA	DEL
310.02	Girdler	SUB -10590145	3ph 1/0 ACSR	3ph 336 ACSR	0.56	$33,040	$73,307	COM
310.03	Girdler	10590181-10590140	1ph 2 ACSR	3ph 1/0 ACSR	0.06	$1,958	$6,774	COM
310.04	Girdler	10170049-4970009	1ph 2 ACSR	3ph 1/0 ACSR	1.49	$48,634	$87,550	COM
310.05	Girdler	11430029-11430039	1ph 2 ACSR	3ph 1/0 ACSR	0.59	$19,643	$31,873	COM
310.06	Girdler	10480036-10480047	1ph 2 ACSR	3ph 1/0 ACSR	0.51	$17,319	$31,133	COM
312.01	Hinkle	17620083-17730044	1ph 2 ACSR	3ph 1/0 ACSR	1.00	$32,000	$89,021	COM
312.02	Hinkle	11660044-11760054	1ph 2 ACSR	3ph 1/0 ACSR	1.26	$41,949	$130,245	COM
313.01	Jellico	19780017-25080009	1ph 2 ACSR	3ph 1/0 ACSR	2.01	$64,320	$73,770	COM
313.02	Jellico	Various	1 and 3 ph 7.2 kV	1and 3 ph 14.4 kV	43.00	$279,512	$204,439	COM
314.01	Liberty Church	SUB-9670090	3ph 336 ACSR	3ph 336 ACSR DC	0.53	$56,710	$65,168	COM
314.02	Liberty Church	9770124-9870115	3ph 1/0 ACSR	3ph 336 ACSR	1.80	$106,200	$123,150	COM
315.01	North Corbin	9370071-9280088	3ph 4/0 ACSR DC	3ph 336 ACSR DC	1.62	$173,340	NA	DEL
315.02	North Corbin	9290080-9290072	3ph 1/0 ACSR	3ph 336 ACSR	0.80	$47,200	$69,956	COM
315.03	North Corbin	9280161-9190142	3ph 1/0 ACSR	3ph 336 ACSR	0.65	$38,350	$57,727	COM
318.01	Rockholds	15360042-15270043	3ph 4/0 ACSR	3ph 336 ACSR	2.12	$125,080	$34,829	COM
318.02	Rockholds	15070031-9870087	3ph 1/0 ACSR	3ph 336 ACSR	1.20	$70,800	$133,466	COM

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Summary of Cost Estimates
Exhibit D

			Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	Total CWP Costs
740c REF 100:	**Line Construction for New Services**	=	$1,117,233	$1,150,716	$1,185,168	$1,220,664	$4,673,781
740c REF 200:	**New Construction and Tie Lines**	=	$0	$0	$0	$0	$0
740c REF 300:	**Line Conversions and Line Changes**	=	$307,110	$342,620	$370,900	$162,080	$1,182,710
740c REF 400:	**New Substations, Switching Stations, Meter Points, etc.**	=	$0	$0	$0	$0	$0
740c REF 500:	**Substation and Meter Point Changes**	=	$0	$0	$0	$0	$0
740c REF 600:	**Miscellaneous Distribution Equipment**						
1. Code 601 -	Transformers and Meters	=	$665,924	$607,742	$1,555,086	$973,211	$3,801,963
2. Code 602 -	Sets of Service Wires For Increased Service Capacity	=	$98,946	$101,936	$104,972	$108,100	$413,954
3. Code 603 -	Sectionalizing Equipment	=	$450,000	$450,000	$450,000	$450,000	$1,800,000
4. Code 604 -	Line Voltage Regulators	=	$0	$0	$0	$0	$0
5. Code 605 -	Line Capacitors	=	$0	$3,500	$0	$0	$3,500
6. Code 606 -	Pole Replacements	=	$667,446	$687,570	$708,210	$729,366	$2,792,592
7. Code 607 -	Step Transformers	=	$0	$0	$0	$0	$0
8. Code 608 -	Aged Conductor Replacement	=	$150,000	$0	$0	$0	$150,000
9. Code 615 -	New Radio System	=	$200,000	$200,000	$0	$0	$400,000
740c REF 700:	**Other Distribution Items**						
1. Code 701 -	Security Lights	=	$401,166	$412,965	$425,385	$438,426	$1,677,942
2. Code 702 -	SCADA Equipment	=	$0	$0	$0	$0	$0
740c REF 1500:	**Miscellaneous Distribution Equipment**						
1. Code 1501 -	New Mapping (GIS) System	=	$0	$330,000	$300,000	$300,000	$930,000
	Total Estimated Distribution Requirements	=	**$4,057,825**	**$4,287,049**	**$5,099,721**	**$4,381,847**	**$17,826,442**

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Cost Estimate Breakdown For Loan Application and Financial Forecast
(RUS Form 740c Format)
Exhibit E

1. DISTRIBUTION

a. 740c Ref. Code 100 - New Services	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	LOAN TOTAL
101 - Underground - 75 Consumers per year	$321,525	$331,200	$341,100	$351,300	$1,345,125
102 - Overhead - 372 Consumers per year	$795,708	$819,516	$844,068	$869,364	$3,328,656
CODE 100 SUBTOTALS =	$1,117,233	$1,150,716	$1,185,168	$1,220,664	$4,673,781

TOTAL LOAN CODE 100 COSTS = $4,673,781

b. 740c Ref Code 200: New Construction and Tie Lines

RUS Ref. Nos.	Priority Code	Miles	Existing Construction	Proposed Construction	$ / Mile	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015
			No Construction						
				CODE 200 SUBTOTALS =		$0	$0	$0	$0

TOTAL LOAN CODE 200 COSTS = $0

c. 740c Ref Code 300: Line Conversions and Changes (See Exhibit F for further details)

RUS Ref. Nos.	Priority Code	Miles	Existing Construction	Proposed Construction	$ / Mile	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015
307.01	C	1.00	3PH 4/0 ACSR	DC 336 ACSR	$136,000			$136,000	
307.02	D	0.72	1PH 2ACSR	3PH 2 ACSR	$44,000				$31,680
307.03	D	0.20	1PH 2ACSR	3PH 2 ACSR	$44,000				$8,800
308.01	D	0.30	1PH 2 ACSR	3PH 2 ACSR	$44,000				$13,200
308.02	D	0.50	1PH 2 ACSR	3PH 2 ACSR	$44,000				$22,000
308.03	D	1.60	1PH 2 ACSR	3PH 2 ACSR	$44,000				$70,400
310.01	B	0.40	3PH 4/0 ACSR	DC 336 ACSR	$136,000		$54,400		
311.01	A	3.53	3PH 1/0 ACSR	3PH 336 ACSR	$87,000	$307,110			
314.01	B	0.52	3PH 336 ACSR	DC 336 ACSR	$136,000		$70,720		
314.02	B	2.50	3PH 1/0 ACSR	3PH 336 ACSR	$87,000		$217,500		
317.01	C	2.70	3PH 1/0 CU	3PH 336 ACSR	$87,000			$234,900	
318.01	D	0.40	1PH 2ACSR	2PH 2ACSR	$40,000				$16,000
				CODE 300 SUBTOTALS =		$307,110	$342,620	$370,900	$162,080

* Denotes carry-over from previous CWP (none included)

TOTAL LOAN CODE 300 COSTS = $1,182,710

d. 740c Ref Code 400: New Substations. Switching Stations, Metering Points - (See Exhibit G for further details)

RUS Ref. Nos.	Priority Code	Proposed Construction	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015
		None				
		CODE 400 SUBTOTALS =	$0	$0	$0	$0

TOTAL LOAN CODE 400 COSTS = $0

e. 740c Ref Code 500: Substation, Switching Stations, Metering Point Changes - (See Exhibit G for further details)

RUS Ref. Nos.	Priority Code	Proposed Construction	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015
		None				
		CODE 500 SUBTOTALS =	$0	$0	$0	$0

TOTAL LOAN CODE 500 COSTS = $0

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Cost Estimate Breakdown For Loan Application and Financial Forecast
(RUS Form 740c Format)
Exhibit E

f. 740c Ref Code 600: Miscellaneous Distribution Equipment

		Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	LOAN TOTAL
601	Transformers and Meter					
	Transformers - Underground - 18 per year	$55,944	$57,618	$59,346	$61,128	$234,036
	Transformers - Overhead - 227 per year	$281,480	$289,879	$298,505	$307,358	$1,177,222
	plus 25kV conversion replacements (625)	$0	$0	$821,875	$0	$821,875
	New Meters - 245 per year	$36,750	$37,975	$39,200	$40,425	$154,350
	New Replacement Meters	$291,750	$222,270	$336,160	$564,300	$1,414,480
	Subtotals =	$665,924	$607,742	$1,555,086	$973,211	$3,801,963
602	Service Wires for Increased Capacity					
	46 units per year =	$98,946	$101,936	$104,972	$108,100	$413,954
603	Sectionalizing Equipment =	$100,000	$100,000	$100,000	$100,000	$400,000
604	Line Voltage Regulators =	$0	$0	$0	$0	$0
605	Line Capacitors =	$0	$3,500	$0	$0	$3,500
606	Pole Replacements =	$667,446	$687,570	$708,210	$729,366	$2,792,592
607	Step Transformers	$0	$0	$0	$0	$0
608	Aged Conductor Replacement =	$150,000	$0	$0	$0	$150,000
	CODE 600 Totals =	**$1,682,316**	**$1,500,748**	**$2,468,268**	**$1,910,677**	**$7,562,009**

g. 740c Ref Code 700: Other Distribution

701	Security Lights - 621 units per year	$401,166	$412,965	$425,385	$438,426	$1,677,942
702	SCADA Equipment	$0	$0	$0	$0	$0
703	Lightning Arrestor Replacement	$350,000	$350,000	$350,000	$350,000	$1,400,000
715	New Radio System	$200,000	$200,000	$0	$0	$400,000
	CODE 700 Totals =	**$951,166**	**$962,965**	**$775,385**	**$788,426**	**$3,477,942**

h. 740c Ref Code 1500: Miscellaneous Distribution Equipment

1501	New Mapping (GIS) System	$0	$330,000	$300,000	$300,000	$930,000
	CODE 1500 Totals =	**$0**	**$330,000**	**$300,000**	**$300,000**	**$930,000**
	Total Distribution =	**$4,057,825**	**$4,287,049**	**$5,099,721**	**$4,381,847**	**$17,826,442**

NEW CONSTRUCTION		Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	TOTALS
100	Line Extensions	$1,117,233	$1,150,716	$1,185,168	$1,220,664	$4,673,781
601	Transformers and Meters (*see note below)	$374,174	$385,472	$397,051 #	$408,911	$1,565,608
701	Security Lights	$401,166	$412,965	$425,385	$438,426	$1,677,942
	Total New Construction =	**$1,892,573**	**$1,949,153**	**$2,007,604**	**$2,068,001**	**$7,917,331**
	*Note: Less replacement meters and transformers for conversions					**44%**

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2012-2015 CONSTRUCTION WORK PLAN

Cost Estimate Breakdown For Loan Application and Financial Forecast
(RUS Form 740c Format)
Exhibit E

SYSTEM IMPROVEMENTS

200	New Tie Lines	$0	$0	$0	$0	$0
300	Conversions (Code 300)	$307,110	$342,620	$370,900	$162,080	$1,182,710
400	New Substations (Code 400)	$0	$0	$0	$0	$0
500	Substation Changes (Code 500)	$0	$0	$0	$0	$0
601	Transformers for 25kV Conversions	$0	$0	$821,875	$0	$821,875
601	New Replacement meters	$291,750	$222,270	$336,160	$564,300	$1,414,480
602	Service Wires Uprated	$98,946	$101,936	$104,972	$108,100	$413,954
603	Sectionalizing Equipment	$100,000	$100,000	$100,000	$100,000	$400,000
604	Line Regulators	$0	$0	$0	$0	$0
605	Line Capacitors	$0	$3,500	$0	$0	$3,500
606	Pole Replacements	$667,446	$687,570	$708,210	$729,366	$2,792,592
607	Step Transformers	$0	$0	$0	$0	$0
608	Aged Conductor Replacement	$150,000	$0	$0	$0	$150,000
702	SCADA Equipment	$0	$0	$0	$0	$0
703	Lightning Arrestor Replacement	$350,000	$350,000	$350,000	$350,000	$1,400,000
715	New Radio System	$200,000	$200,000	$0	$0	$400,000
1501	New Mapping (GIS) System	$0	$330,000	$300,000	$300,000	$930,000
	Total System Improvements =	**$2,165,252**	**$2,337,896**	**$3,092,117**	**$2,313,846**	**$9,909,111**
						56%
	CWP Total =	**$4,057,825**	**$4,287,049**	**$5,099,721**	**$4,381,847**	**$17,826,442**

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Distribution Line Construction Recommendations and Cost Estimates

Exhibit F

Construction Justification Codes

1. Overload Single Phase Line
2. Overload Multi-phase Line
3. Excessive Voltage Drop
4. Balance Phase Loading
5. Improve Service Reliability
6. New Feeders (New or Existing Sub)
7. New Load Development
8. Area Voltage Conversion
9. Eliminate 2-way Feed to Open Delta Bank
10. Establish or Strengthen Main Tie Between Sub/Circuit
11. Highway Relocation Project
12. Economical Conductor Loading

RUS REF. NOS.	A-B-C-D Priority	Line Sections	Miles	Existing Construction	Proposed Construction	$/Mile	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	Construction Justification Codes
Substation 1 - Alex Creek											
No Construction											
Substation 2 - Arkland											
No Construction											
Substation 3 - Bacon Creek											
No Construction											
Substation 4 - Bledsoe											
No Construction											
Substation 5 - Carpenter											
No Construction											
Substation 6 - Chad											
No Construction											

2012-2015 CONSTRUCTION WORK PLAN

Distribution Line Construction Recommendations and Cost Estimates (Continued)

RUS REF. NOS.	A-B-C-D Priority	Line Sections	Miles	Existing Construction	Proposed Construction	$/Mile	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	Construction Justification Codes
Substation 7 - Cumberland Falls											
307.01	C	14160148 - 14270049	1.00	3PH 4/0 ACSR	DC 336 ACSR	$136,000			$136,000		4,5,6
307.02	D	14380088 - 14380054	0.72	1PH 2 ACSR	3PH 2 ACSR	$44,000				$31,680	1
307.03	D	08890114 - 08880215	0.20	1PH 2 ACSR	3PH 2 ACSR	$44,000				$8,800	1
						Subtotal =	$0	$0	$136,000	$40,480	
Substation 8 - Emanuel											
308.01	D	10670021 - 10670034	0.30	1PH 2 ACSR	3PH 2 ACSR	$44,000				$13,200	1,4,5
308.02	D	10770019 - 10780060	0.50	1PH 2 ACSR	3PH 2 ACSR	$44,000				$22,000	1,4,5
308.03	D	10650082 - 10750079	1.60	1PH 2 ACSR	3PH 2 ACSR	$44,000				$70,400	1,4,5
						Subtotal =	$0	$0	$0	$105,600	
Substation 9 - Girdler											
No Construction											
Substation 10 - Goldbug											
310.01	B	15620111 - 15720262	0.40	3PH 4/0 ACSR	DC 336 ACSR	$136,000		$54,400			4,5
						Subtotal =	$0	$54,400	$0	$0	
Substation 11 - Hinkle											
311.01	A	17020010 - 17220039	3.53	3PH 1/0 ACSR	3PH 336 ACSR	$87,000	$307,110				7
						Subtotal =	$307,110	$0	$0	$0	
Substation 12 - Jellico											
Note: The whole substation will be converted to 14.4/25 kV operation during the CWP period, but the reinsulation is already completed. Therefore no Code 300 item is used.											
Substation 13 - Liberty Church											
No Construction											
Substation 14 - North Corbin											
314.01	B	09280110 - 09280128	0.52	3PH 336 ACSR	DC 336 ACSR	$136,000		$70,720			3,5,10
314.02	B	09290032 - 10430020	2.50	3PH 1/0 ACSR	3PH 336 ACSR	$87,000		$217,500			3,5,10
						Subtotal =	$0	$288,220	$0	$0	
Substation 15 - Oven Fork											
No Construction											
Substation 16 - Pine Mountain											
No Construction											

2012-2015 CONSTRUCTION WORK PLAN

Distribution Line Construction Recommendations and Cost Estimates (Continued)

RUS REF. NOS.	A-B-C-D Priority	Line Sections	Miles	Existing Construction	Proposed Construction	$/Mile	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	Construction Justification Codes
Substation 17 - Rockholds											
317.01	C	15360024-15570002	2.70	3PH 1/0 CU	3PH 336 ACSR	$87,000			$234,900		5,10
						Subtotal =	$0	$0	$234,900	$0	
Substation 18 - South Corbin											
318.01	D	08580090 - 08590138	0.40	1PH 2 ACSR	2PH 2ACSR	$40,000				$16,000	1
						Subtotal =	$0	$0	$0	$16,000	

Subtotal for New Construction and Tie Lines (Code 200 Items) =	**$0**	**$0**	**$0**	**$0**
Subtotal for Line Conversions and Changes (Code 300 Items) =	**$307,110**	**$342,620**	**$370,900**	**$162,080**
Total Distribution Line Construction Per Year =	**$307,110**	**$342,620**	**$370,900**	**$162,080**

Total New Construction and Tie Lines (Code 200 Items) =	**$0**
Total Line Conversions and Changes (Code 300 Items) =	**$1,182,710**
Total Distribution Line Construction =	**$1,182,710**

CUMBERLAND VALLEY ELECTRIC

Kentucky 57 Bell

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2012-2015 CONSTRUCTION WORK PLAN

Substation and Meter Point Recommendations and Cost Estimates

Exhibit G

NEW SUBSTATIONS AND METER POINTS (Ref. Code 400):

None

SUBSTATION AND METER POINT CHANGES (Ref. Code 500):

None

CUMBERLAND VALLEY ELECTRIC
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2012-2015 CONSTRUCTION WORK PLAN

Voltage Regulator Recommendations and Cost Estimates

Exhibit H

A - Seasonal Load
B - Overloaded
C - Improved Circuit Regulatio
D - Excessive Voltage Drop
E - Unneeded
F - Switching Capacity

Substation/Circuit	Line Section	Existing	Recommendations	Projected 2015 Load Current - ASI	Remarks
Substation 1 - Alex Creek			(None)		
Substation 2 - Arkland			(None)		
Substation 3 - Bacon Creek			(None)		
Substation 4 - Bledsoe			(None)		
Substation 5 - Carpenter			(None)		
Substation 6 - Chad			(None)		
Substation 7 - Cumberland Falls			(None)		
Substation 8 - Emanuel			(None)		
Substation 9 - Girdler			(None)		
Substation 10 - Goldbug			(None)		
Substation 11 - Hinkle					
Ckt 2	11550005	(3) 167 KVA (7.62 kV)	Remove anytime	34 amps	E
Substation 12 - Jellico			(None)		
Substation 13 - Liberty Church			(None)		
Substation 14 - North Corbin			(None)		
Substation 15 - Oven Fork					
Ckt 2	35440008	NA	Add (3) 219 Amp (14.4 kV)	96 amps*	D
Substation 16 - Pine Mountain					
Ckt 2	37140019	(3) 333 KVA (14.4 kV)	Remove anytime	NA	E
Substation 17 - Rockholds			(None)		
Substation 18 - South Corbin			(None)		

* - Includes a future 3 MW load beyond these regulators
Note: CVE presently has the regulators and associated equipment in stock, and therefore; no costs are being shown in the CWP.

CUMBERLAND VALLEY ELECTRIC
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2012-2015 CONSTRUCTION WORK PLAN

Capacitor Recommendations and Cost Estimates
RUS Reference Code 605
Exhibit I

Substation	Circuit	Line Section	Existing Bank Size	Recommendations
1. Alex Creek				No recommendations
2. Arkland				No recommendations
3. Bacon Creek				No recommendations
4. Bledsoe				No recommendations
5. Carpenter	4	22590009	None	Add 900 KVAR switched bank (14.4 kV)
6. Chad				No recommendations
7. Cumberland Falls				No recommendations
8. Emanuel				No recommendations
9. Girdler				No recommendations
10. Goldbug				No recommendations
11. Hinkle				No recommendations
12. Jellico				No recommendations
13. Liberty Church				No recommendations
14. North Corbin				No recommendations
15. Oven Fork				No recommendations
16. Pine Mountain				No recommendations
17. Rockholds				No recommendations
18. South Corbin				No recommendations

Note : 1 bank to be installed x $3,500 per bank = $3,500

Capacitors are provided by EKPC.
$3,500 per bank is included to cover the cost of cutouts, arresters, crossarms, switches, and the labor to install.

CUMBERLAND VALLEY ELECTRIC

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Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Sectionalizing Summary and Cost Estimates
Exhibit J

For the purpose of this work plan, it is estimated that a total of $1,800,000 will be needed during the four year CWP period for sectionalizing, which includes the amount of $1,400,000 for the lightning arrestor replacement program previously discussed in the text of this report.

2012	=	$450,000
2013	=	$450,000
2014	=	$450,000
2015	=	$450,000
		$1,800,000

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Conductor Replacement (RUS Code 608)
Exhibit K

CVE estimates that it has less than 20 miles of old copper and 4 ACSR conductor on the entire on an "as needed" basis. system which could potentially cause future problems. CVE's plan is to replace this conductor

PLAN: 1. Replace all single phase (1ph) small copper lines (6A, 8A, etc.) that are causing line outages and/or are in poor condition.

2. Two and three phase (2ph & 3ph) copper lines are to be replaced as needed due to feeder loading conditions and/or poor conductor conditions.

3. Lines will be replaced based on circuit reliability and loading conditions.

4. New single phase lines are built using either 2 ACSR or 1/0 ACSR depending on the likelihood that the lines will require three-phase construction in the near future.

5. CVE's goal is to replace approximately 5 miles of this conductor in this CWP and will focus its efforts on the conductor which is in the worst condition.

Cost Estimate

Miles	Construction Type	Cost / Mile	Total Cost
5.0	1ph Cu to 1ph 2 or 1/0 ACSR	$30,000	$150,000

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

SYSTEM DESIGN GUIDELINES
Exhibit L

Each of the criteria items listed below was reviewed and concurred by the engineering staff at Cumberland Valley Electric and the RUS General Field Representative.

Construction proposed in this construction work plan is required to meet the following minimum standards of adequacy for voltages, thermal loading, safety, and reliability on the system.

1) The maximum voltage drop from the substation on primary distribution lines is not to exceed 8 volts unregulated, 16 volts with one set of line voltage regulators, and 24 volts with two sets of line voltage regulators. Ordinarily, lines will be limited to one bank of line regulators.

2) The following equipment is not to be thermally loaded by more than the percentage shown on the nameplate.

Power Transformers:	95%	summer rating / 95% winter rating
Voltage Regulators:	100%	at 10% buck or boost; 160% at 5% boost or buck.
Oil Circuit Reclosers:	100%	
Line Fuses:	80%	

3) Primary conductors are considered for replacement when loaded to 65% of the thermal rating. Major tie lines between substations can be loaded to 100% during emergency situations.

4) Poles and crossarms are to be replaced as soon as practicable if found to be physically deteriorated by inspection.

5) Old conductors are to be replaced as needed.

6) Primary distribution lines are to be rebuilt if they are found to be unsafe or in violation of the National Electrical Safety Code or other applicable code clearances.

7) New lines and line conversions are to be built according to the standard primary voltage levels as recommended in the Long Range System Study.

8) New primary conductor sizes are to be determined on a case by case basis using the Economic Conductor sizing computer program and engineering and operations judgement . A minimum of 1/0 ACSR is to be used on main lines, and a minimum of 2 ACSR is to be used on tap lines.

9) All new primary construction is to be overhead except where underground is required to comply with governmental or environmental regulations, local restrictions, or favorable economics.

10) All new distribution lines are to be designed and built according to RUS standard construction specifications and guidelines.

11) A single-phase tap will be considered for multi-phasing if any of the following conditions are present:
    - Serves more than 60 meters
    - Load current is 40 amps or greater
    - Serves an area that is growing

United States Department of Agriculture | Rural Economic and Community Development | Rural Utilities Service | Washington, DC 20250

Exhibit M - O&M Survey

May 4, 2010

SUBJECT: OPERATIONS AND MAINTENANCE SURVEY

TO: TED HAMPTON, PRESIDENT & CEO
CUMBERLAND VALLEY ELECTRIC

In accordance with 7 CFR 1730-1, a review and evaluation of your electric system and facilities as related to system operation and maintenance was made on May 4, 2010.

The objectives of this review are to carry out RUS's responsibility for loan security and to assure that your electric plant is being operated and maintained in a safe and satisfactory condition and that you are providing an acceptable quality of service.

My review has indicated that your facilities are being adequately operated and maintained and you have an effective O & M program supported by proper records. There are relatively few comments and recommendations for further improvements.

We observed numerous poles with telephone attachments left standing next to electric poles which need to be removed. Cable TV attachments require constant follow-up to ensure code compliance. I have also been recommending more aggressive right-of-way tree trimming to include directional trimming of yard trees.

Mike Norman

MIKE NORMAN
RUS FIELD REPRESENTATIVE

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL UTILITIES SERVICE

REVIEW RATING SUMMARY

BORROWER DESIGNATION: KY 57

DATE PREPARED: May 4, 2010

Ratings on form are: 0: Unsatisfactory -- No Records; 2: Acceptable, but Should be Improved -- See Attached Recommendations
NA: Not Applicable; 1: Corrective Action Needed; 3: Satisfactory -- No Additional Action Required at this Time

PART I. TRANSMISSION and DISTRIBUTION FACILITIES

1. Substations (Transmission and Distribution)		(Rating)
a. Safety, Clearance, Code Compliance		NA
b. Physical Conditions: Structure, Major Equipment, Appearance		NA
c. Inspection Records - Each Substation		NA
d. Oil Spill Prevention		NA
2. Transmission Lines		
a. Right-of-Way: Clearing, Erosion, Appearance, Intrusions		NA
b. Physical Condition: Structure, Conductor, Guying		NA
c. Inspection Program and Records		NA
3. Distribution Lines - Overhead		
a. Inspection Program and Records		3
b. Compliance with Safety Codes:	Clearances	3
	Foreign Structures	2
	Attachments	2
c. Observed Physical Condition from Field Checking:		
	Right-of-Way	3
	Other	

4. Distribution - Underground Cable	(Rating)
a. Grounding and Corrosion Control	3
b. Surface Grading, Appearance	3
c. Riser Pole: Hazards, Guying, Condition	3
5. Distribution Line Equipment: Conditions and Records	
a. Voltage Regulators	3
b. Sectionalizing Equipment	3
c. Distribution Transformers	3
d. Pad Mounted Equipment	
Safety: Locking, Dead Front, Barriers	3
Appearance: Settlement, Condition	3
Other	
e. Kilowatt-hour and Demand Meter	
Reading and Testing	3

PART II. OPERATIONS and MAINTENANCE

6. Line Maintenance and Work Order Procedures		(Rating)
a. Work Planning & Scheduling		3
b. Work Backlogs:	Right-of-Way Maintenance	3
	Poles	3
	Retirement of Idle Services	3
	Other	

7. Service Interruptions

a. Average Annual Hours/Consumer by Cause (Complete for each of the previous 5 years)

PREVIOUS 5 YEARS (Year)	POWER SUPPLIER a.	MAJOR STORM b.	SCHEDULED c.	ALL OTHER d.	TOTAL e.	(Rating)
2005	0.10	0.02	0.01	1.61	1.74	3
2006		0.10	0.13	2.45	2.68	3
2007	0.12	0.02	0.06	1.30	1.50	3
2008	7.80	1.80	3.60	74.40	87.60	3
2009	17.82	91.56	3.12	50.94	163.44	3

b. Emergency Restoration Plan: 3

8. Power Quality	(Rating)
a. General Freedom from Complaints	3
9. Loading and Load Balance	
a. Distribution Transformer Loading	3
b. Load Control Apparatus	NA
c. Substation and Feeder Loading	3
10. Maps and Plant Records	
a. Operating Maps: Accurate and Up-to-Date	3
b. Circuit Diagrams	3
c. Staking Sheets	3

PART III. ENGINEERING

11. System Load Conditions and Losses		(Rating)
a. Annual System Losses	4.80%	3
b. Annual Load Factor	41.0%	3
c. Power Factor at Monthly Peak	95+%	3
d. Ratios of Individual Substation Annual Peak kW to kVA		3
12. Voltage Conditions		
a. Voltage Surveys		3
b. Substation Transformer Output Voltage Spread		3

13. Load Studies and Planning	(Rating)
a. Long Range Engineering Plan	3
b. Construction Work Plan	3
c. Sectionalizing Study	3
d. Load Data for Engineering Studies	3
e. Load Forecasting Data	3

PART IV. OPERATION AND MAINTENANCE BUDGETS

YEAR	For Previous 2 Years		For Present Year	For Future 3 Years		
	2008	2009	2010	2011	2012	2013
	Actual $ Thousands	Actual $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands
Normal Operation	1,122	1,186	1,304	1,343	1,383	1,425
Normal Maintenance	2,314	2,768	2,644	2,723	2,805	2,889
Additional (Deferred) Maintenance						
Total	3,436	3,954	3,948	4,066	4,188	4,314

14. Budgeting: Adequacy of Budgets for Needed Work 3 *(Rating)*

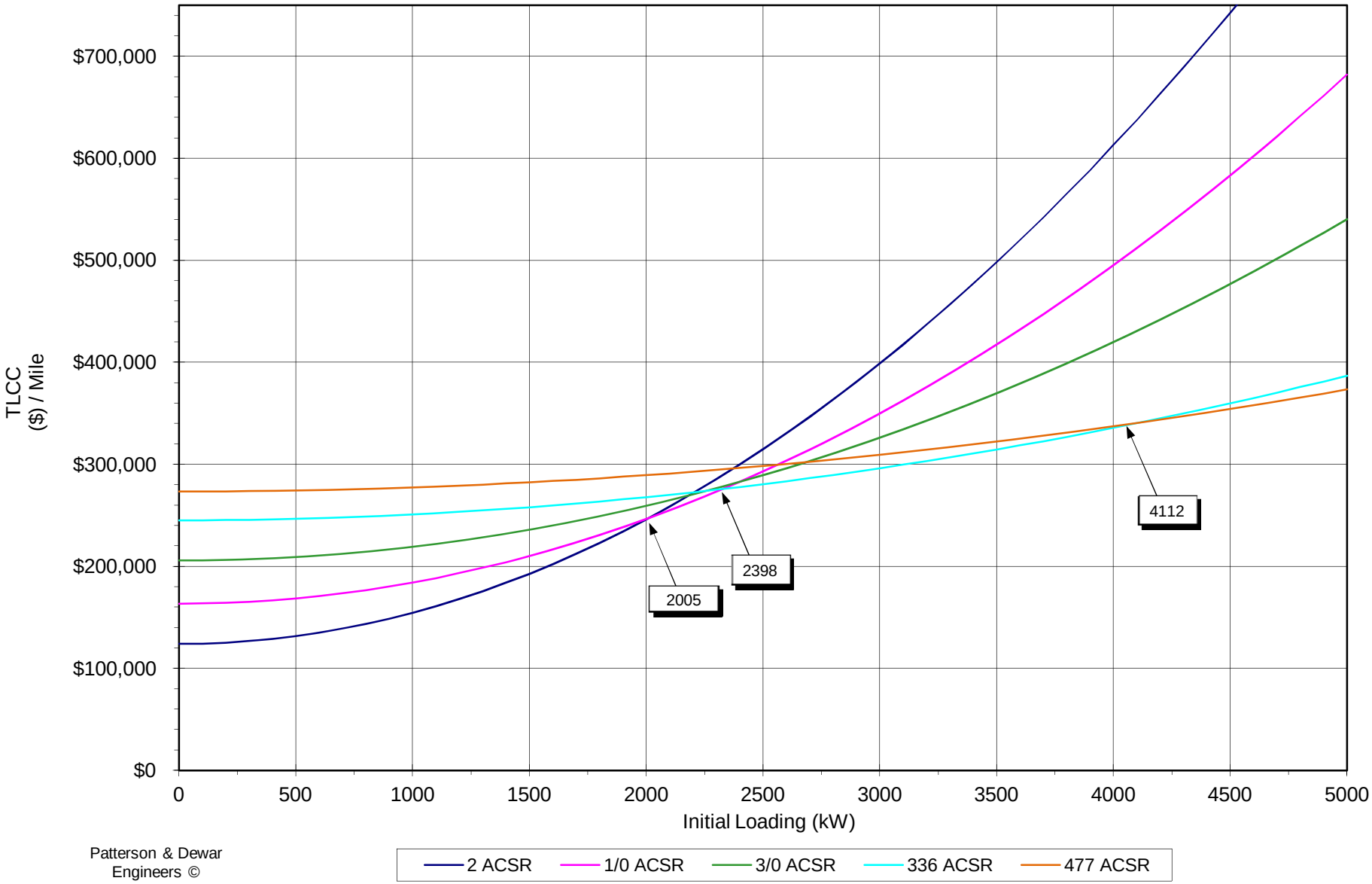
15. Date Discussed with Board of Directors 5.13.2010 *(Date)*

EXPLANATORY NOTES

ITEM NO.	COMMENTS
3b.	Poles with telephone attachments left standing close to electric poles should be removed. Cable TV attachments require constant monitoring and follow-up to ensure code requirements are met.

		TITLE	DATE
RATED BY:			
REVIEWED BY:	Jack Hamptons	PRESIDENT & CEO	05/04/10
REVIEWED BY:	Mike	RUS GFR	05/04/10

Cumberland Valley Electric
Conductor Life Cycle Analysis
Total Life Cycle Cost - Three Phase 7.62 kV



Patterson & Dewar
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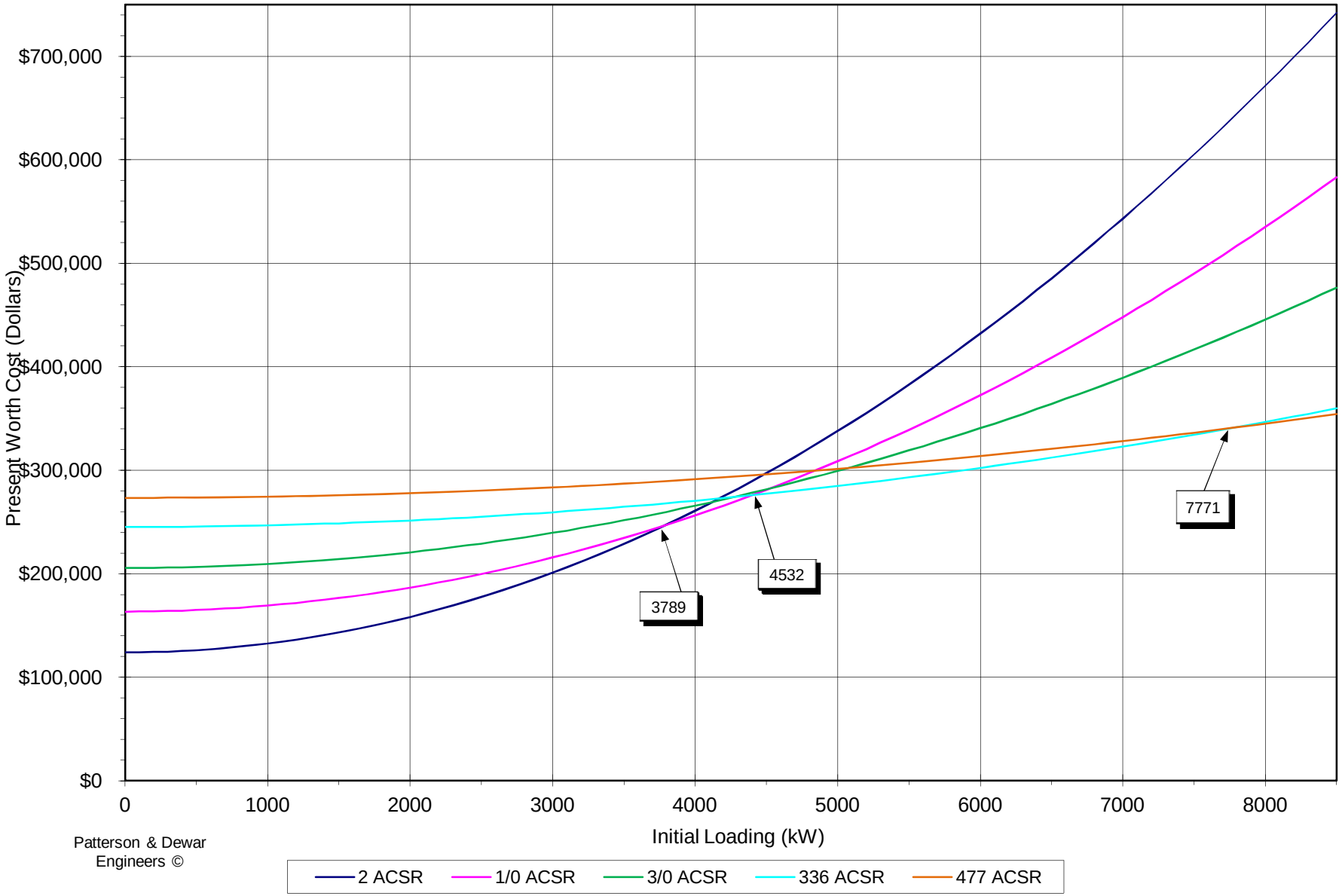
EXHIBIT N
Page 1 of 2

Cumberland Valley Electric
Conductor Life Cycle Analysis
Total Life Cycle Cost - Three Phase 14.4 kV



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Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Substation Loading ~ Existing System
Summer ~ August, 2010 Winter ~ December 2010
Exhibit O

Substation		EKPC Sub Transformer Capacity				December 2010 Peak					August 2010 Peak				
No.	Name	Voltage KV	Base (MVA)	Summer (MVA)	Winter (MVA)	(MW)	Power Factor	(MVAR)	(MVA)	% Loading	(MW)	Power Factor	(MVAR)	(MVA)	% Loading
1	Alex Creek	69-24.94	7.0	6.8	9.1	2.6	99.2%	0.3	2.6	29%	1.6	95.8%	0.5	1.7	25%
2	Arkland	69-12.47	6.4	6.2	8.3	6.3	93.0%	2.5	6.8	82%	5.2	89.6%	2.6	5.9	94%
3	Bacon Creek	69-12.47	14.0	13.6	18.1	3.7	99.7%	0.3	3.7	20%	5.0	95.5%	1.5	5.2	38%
4	Bledsoe	69-24.94	11.2	11.1	15.7	5.7	99.8%	-0.4	5.7	36%	4.3	83.5%	2.8	5.1	46%
5	Carpenter	69-24.94	25.2	24.5	32.7	19.1	99.1%	2.5	19.2	59%	12.7	94.7%	4.3	13.4	55%
6	Chad	69-24.94	14.0	13.6	18.1	8.7	98.8%	1.3	8.8	48%	4.9	97.9%	1.0	5.0	37%
7	Cumberland Falls	69-13.20	11.2	11.1	15.7	12.4	99.7%	1.0	12.4	79%	7.9	97.7%	1.7	8.1	73%
8	Emanuel	69-12.47	14.0	13.6	18.1	12.8	99.5%	1.3	12.8	71%	8.9	96.0%	2.6	9.3	68%
9	Girdler	69-13.20	11.2	11.1	15.7	7.3	99.5%	0.8	7.3	47%	4.7	96.0%	1.4	4.9	44%
10	Goldbug	69-13.20	14.0	13.6	18.1	10.0	99.2%	1.3	10.1	56%	9.9	94.4%	3.4	10.5	77%
11	Hinkle	69-13.20	14.0	13.6	18.1	6.5	99.8%	0.5	6.5	36%	5.6	94.7%	1.9	5.9	43%
12	Jellico	69-13.20	5.6	5.5	7.9	2.5	100.0%	0.1	2.5	32%	2.0	97.8%	0.4	2.0	37%
13	Liberty Church	69-13.20	11.2	11.1	15.7	7.0	99.5%	0.7	7.0	45%	4.9	97.0%	1.2	5.1	46%
14	North Corbin	69-13.20	14.0	13.6	18.1	7.8	99.6%	0.7	7.8	43%	6.5	95.4%	2.1	6.8	50%
15	Oven Fork	69-24.94	10.0	8.8	14.9	8.9	100.0%	-0.1	8.9	59%	6.9	89.2%	3.5	7.7	87%
16	Pine Mountain	69-24.94	14.0	13.6	18.1	7.6	99.2%	1.0	7.7	43%	6.1	92.0%	2.6	6.6	49%
17	Rockholds	69-13.20	11.2	11.1	15.7	6.9	99.3%	0.8	7.0	44%	5.6	95.6%	1.7	5.8	53%
18	South Corbin	69-13.20	14.0	13.6	18.1	12.3	99.6%	1.1	12.3	68%	9.7	96.2%	2.7	10.1	74%
					System Totals =	148.0	99.4%	15.6	148.8		112.4	94.7%	38.1	118.7	

Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Substation Loading ~ Winter 2015/16 Peak

Exhibit O

Substation		EKPC Sub Transformer Capacity				December 2010 Peak					Projected Winter 2015/2016				
No.	Name	Voltage KV	Base (MVA)	Summer (MVA)	Winter (MVA)	(MW)	Power Factor	(MVAR)	(MVA)	% Loading	(MW)	Power Factor	(MVAR)	(MVA)	% Loading
1	Alex Creek	69-24.94	7.0	6.8	9.1	2.6	99.2%	0.3	2.6	29%	3.0	99.2%	0.4	3.0	33.5%
2	Arkland [1]	69-12.47	6.4	6.2	8.3	6.3	93.0%	2.5	6.8	82%	6.3	93.0%	2.5	6.8	81.6%
3	Bacon Creek	69-12.47	14.0	13.6	18.1	3.7	99.7%	0.3	3.7	20%	4.4	99.0%	0.6	4.5	24.6%
4	Bledsoe	69-24.94	11.2	11.1	15.7	5.7	99.8%	-0.4	5.7	36%	6.5	98.4%	1.2	6.6	41.7%
5	Carpenter	69-24.94	25.2	24.5	32.7	19.1	99.1%	2.5	19.2	59%	21.8	100.0%	0.5	21.8	66.9%
6	Chad [2]	69-24.94	14.0	13.6	18.1	8.7	98.8%	1.3	8.8	48%	7.5	99.8%	0.5	7.6	41.6%
7	Cumberland Falls	69-13.20	11.2	11.1	15.7	12.4	99.7%	1.0	12.4	79%	14.4	100.0%	0.3	14.4	91.7%
8	Emanuel [3]	69-12.47	14.0	13.6	18.1	12.8	99.5%	1.3	12.8	71%	12.9	99.9%	0.7	12.9	71.1%
9	Girdler	69-13.20	11.2	11.1	15.7	7.3	99.5%	0.8	7.3	47%	8.5	99.8%	0.6	8.5	54.2%
10	Goldbug	69-13.20	14.0	13.6	18.1	10.0	99.2%	1.3	10.1	56%	11.6	100.0%	0.3	11.6	64.1%
11	Hinkle [5]	69-13.20	14.0	13.6	18.1	6.5	99.8%	0.5	6.5	36%	8.4	100.0%	0.2	8.4	46.2%
12	Jellico	69-13.20	5.6	5.5	7.9	2.5	100.0%	0.1	2.5	32%	2.9	98.3%	0.5	3.0	37.6%
13	Liberty Church	69-13.20	11.2	11.1	15.7	7.0	99.5%	0.7	7.0	45%	8.2	100.0%	0.1	8.2	52.0%
14	North Corbin [3]	69-13.20	14.0	13.6	18.1	7.8	99.6%	0.7	7.8	43%	11.1	100.0%	0.4	11.1	61.3%
15	Oven Fork [4]	69-24.94	10.0	8.8	14.9	8.9	100.0%	-0.1	8.9	59%	13.3	99.1%	1.8	13.4	90.0%
16	Pine Mountain [2]	69-24.94	14.0	13.6	18.1	7.6	99.2%	1.0	7.7	43%	13.7	100.0%	0.2	13.7	75.4%
17	Rockholds	69-13.20	11.2	11.1	15.7	6.9	99.3%	0.8	7.0	44%	8.1	99.9%	0.4	8.1	51.4%
18	South Corbin	69-13.20	14.0	13.6	18.1	12.3	99.6%	1.1	12.3	68%	14.6	100.0%	0.2	14.6	80.7%
				System Totals =		148.0	99.2%	15.62	149.27		177.3	99.5%	10.9	178.2	

[1] CVE contacted mining customer fed from Arkland. Load is expected to either stay the same or decline.

[2] 2.575 MW to be transferred to Pine Mountain from Chad and an additional 2.5 MW load is expected to be added to Pine Mountain

[3] 2.073 MW to be transferred to North Corbin from Emanuel

[4] New 3 MW load expected to be added to Oven Fork

[5] New 750 KW load expected to be added to Hinkle

Cumberland Valley Electric
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Substation Loading ~ Projected Summer 2015 Loads

Exhibit O

Substation		EKPC Sub Transformer Capacity				August 2010					Projected Summer 2015				
No.	Name	Voltage KV	Base (MVA)	Summer (MVA)	Winter (MVA)	(MW)	Power Factor	(MVAR)	(MVA)	% Loading	(MW)	Power Factor	(MVAR)	(MVA)	% Loading
1	Alex Creek	69-24.94	7.0	6.8	9.1	1.6	95.8%	0.5	1.7	25%	1.9	95.8%	1.7	2.0	29%
2	Arkland [1]	69-12.47	6.4	6.2	8.3	5.2	89.6%	2.6	5.9	94%	5.2	89.6%	5.8	5.9	94%
3	Bacon Creek	69-12.47	14.0	13.6	18.1	5.0	95.5%	1.5	5.2	38%	5.9	94.9%	6.2	6.3	46%
4	Bledsoe	69-24.94	11.2	11.1	15.7	4.3	83.5%	2.8	5.1	46%	4.8	82.4%	5.8	5.9	53%
5	Carpenter	69-24.94	25.2	24.5	32.7	12.7	94.7%	4.3	13.4	55%	14.6	95.5%	15.2	15.2	62%
6	Chad [2]	69-24.94	14.0	13.6	18.1	4.9	97.9%	1.0	5.0	37%	4.2	98.8%	4.2	4.3	31%
7	Cumberland Falls	69-13.20	11.2	11.1	15.7	7.9	97.7%	1.7	8.1	73%	9.2	97.9%	9.4	9.4	85%
8	Emanuel [3]	69-12.47	14.0	13.6	18.1	8.9	96.0%	2.6	9.3	68%	9.0	96.3%	9.3	9.3	69%
9	Girdler	69-13.20	11.2	11.1	15.7	4.7	96.0%	1.4	4.9	44%	5.5	96.3%	5.6	5.7	52%
10	Goldbug	69-13.20	14.0	13.6	18.1	9.9	94.4%	3.4	10.5	77%	11.4	95.2%	12.0	12.0	88%
11	Hinkle [5]	69-13.20	14.0	13.6	18.1	5.6	94.7%	1.9	5.9	43%	7.2	94.9%	7.5	7.6	56%
12	Jellico	69-13.20	5.6	5.5	7.9	2.0	97.8%	0.4	2.0	37%	2.3	96.2%	2.2	2.4	43%
13	Liberty Church	69-13.20	11.2	11.1	15.7	4.9	97.0%	1.2	5.1	46%	5.8	97.5%	5.8	5.9	53%
14	North Corbin [3]	69-13.20	14.0	13.6	18.1	6.5	95.4%	2.1	6.8	50%	9.3	95.7%	9.7	9.8	72%
15	Oven Fork [4]	69-24.94	10.0	8.8	14.9	6.9	89.2%	3.5	7.7	87%	10.4	88.4%	11.7	11.7	133%
16	Pine Mountain [2]	69-24.94	14.0	13.6	18.1	6.1	92.0%	2.6	6.6	49%	10.9	92.7%	11.7	11.8	86%
17	Rockholds	69-13.20	11.2	11.1	15.7	5.6	95.6%	1.7	5.8	53%	6.5	96.1%	6.7	6.8	61%
18	South Corbin	69-13.20	14.0	13.6	18.1	9.7	96.2%	2.7	10.1	74%	11.5	96.6%	11.9	11.9	88%
					System Totals =	112.4	94.3%	38.1	119.1		135.7	94.4%	123.8	143.8	

[1] CVE contacted mining customer fed from Arkland. Load is expected to either stay the same or decline.

[2] 2.575 MW to be transferred to Pine Mountain from Chad and an additional 2.5 MW load is expected to be added to Pine Mountain

[3] 2.073 MW to be transferred to North Corbin from Emanuel

[4] A new 3 MW load is expected to be added to Oven Fork. A substation study will be performed when needed if load develops. Also, see note below.

[4] EKPC needs to add fans to Oven Fork Substation during the first year of the CWP. These are needed even without the possible new load.

[5] New 750 KW load expected to be added to Hinkle

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

Summary of Opens and Closes
Exhibit P

No.	Substation Area	Line Section		Priority	Sub Load Transfer	Transferred Load (kW)
		Close	Open			
1	Alex Creek	none	none			
2	Arkland	none	none			
3	Bacon Creek	none	none			
4	Bledsoe	none	none			
5	Carpenter	none	none			
6	Chad	37590028 to 37690075	Load side of 37690021	When CVE completes current work	To Sub 16	See note*
7	Cumberland Falls					
8	Emanuel	10430020 to 10330018	10440037	Alongside CWP projects 314.01 and 314.02	To Sub 14	2,073 kW
9	Girdler					
10	Goldbug	15720212 to 15720217	14880025 (See Map)	Alongside CWP project 310.01	No	Same Sub
11	Hinkle[1]					
12	Jellico	119980014 to 19980018	19890008	Complete before winter 11/12	No	Same Sub
13	Liberty Church					
14	North Corbin	See Emanuel (shown above) for load transfer of 2,073 kW from Emanuel to North Corbin				
15	Oven Fork[2]					
16	Pine Mountain	See Chad (shown above) for load transfer of 2,575 kW from Chad to Pine Mountain				
17	Rockholds	none	none			
18	South Corbin	none	none			

* Note: 2,575 kW of future load to be transferred from Chad to Pine Mountain, and an additional 2.5 MW load is expected to be added to Pine Mountain on this same feed.

Additional Notes:
[1]New 3 MW load expected to be added to Oven Fork Substation during CWP period.
[2]New 750 kW load expected to be added to Hinkle during CWP period.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 307.01 **Estimated Cost: $136,000**

Description of Proposed Construction

Conversion of 1.0 miles of three phase 4/0 ACSR conductor with three phase, double circuit 336 ACSR conductor. Replace poles and equipment as required.

Substation: Cumberland Falls Line Sections: 14160148 – 14270049 Miles: 1.0

Existing Phase Wire: 3 ph, 4/0 ACSR Proposed Phase Wire: 3 ph, 336 ACSR DC

Reason for Proposed Construction

The above work is required to relieve an existing three phase line that is becoming overloaded and provide CVE with the ability to effectively split the load more evenly between circuits on the substation. This will also provide higher reliability and improve sectionalizing coordination on the substation.

Results of Proposed Construction

Load on Ckt. 2 before system improvement = 158 amps
Load on Ckt. 2 after system improvement = 121 amps
Voltage drop on the circuit extremities (Section 14390033) will be reduced by 1.9 volts.
Peak KW losses on the substation will be reduced from 318 KW to 293 KW.

Alternate Corrective Plans Investigated

No other reasonable alternatives existed for this project.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 307.02 **Estimated Cost: $31,680**

Description of Proposed Construction

Conversion of 0.72 miles of single phase 2 ACSR conductor to three phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: Cumberland Falls Line Sections: 14380088-14380054 Miles: 0.72

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 3 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 52 amps
Load on section after system improvement = 17 amps
Voltage drop on the circuit extremities before system improvement = 4.4 volts
Voltage drop on the circuit extremities after system improvement = 2.5 volts
Peak KW losses in the area will be reduced from 2.86 KW to .80 KW.

Alternate Corrective Plans Investigated

A tie line was considered; however, it was found to be impractical.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 307.03 **Estimated Cost: $8,800**

Description of Proposed Construction

Conversion of 0.20 miles of single phase 2 ACSR conductor to three phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: Cumberland Falls Line Sections: 08890114-08880215 Miles: 0.20

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 3 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 43 amps
Load on section after system improvement = 14 amps
Voltage drop on the circuit extremities before system improvement = 2.26 volts
Voltage drop on the circuit extremities after system improvement = 2.14 volts
Peak KW losses in the area will be reduced from 0.61 KW to 0.12 KW.

Alternate Corrective Plans Investigated

A tie line to Section 08790142 was considered; however, the load reduction would not be enough to sufficiently unload the tap in the long term.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 308.01 **Estimated Cost: $13,200**

Description of Proposed Construction

Conversion of 0.30 miles of single phase 2 ACSR conductor to three phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: Emanuel Line Sections: 10670021 - 10670034 Miles: 0.30

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 3 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 53 amps
Load on section after system improvement = 30 amps
Voltage drop on the circuit extremities before system improvement = 3.0 volts
Voltage drop on the circuit extremities after system improvement = 2.7 volts
Peak KW losses in the area will be reduced from 1.0 KW to 0.27 KW.

Alternate Corrective Plans Investigated

A tie line to Section 10570034 was considered; however, the terrain made it impractical.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 308.02 **Estimated Cost: $22,000**

Description of Proposed Construction

Conversion of 0.50 miles of single phase 2 ACSR conductor to three phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: Emanuel Line Sections: 10770019 - 10780060 Miles: 0.50

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 3 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 46 amps
Load on section after system improvement = 24 amps
Voltage drop on the circuit extremities before system improvement = 3.81 volts
Voltage drop on the circuit extremities after system improvement = 3.45 volts
Peak KW losses in the area will be reduced from 1.46 KW to 0.42 KW.

Alternate Corrective Plans Investigated

No other reasonable alternatives existed.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 308.03 **Estimated Cost: $70,400**

Description of Proposed Construction

Conversion of 1.60 miles of single phase 2 ACSR conductor to three phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: Emanuel Line Sections: 10650082 - 10750079 Miles: 1.60

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 3 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 54 amps
Load on section after system improvement = 18 amps
Voltage drop on the circuit extremities before system improvement = 5.2 volts
Voltage drop on the circuit extremities after system improvement = 2.3 volts
Peak KW losses in the area will be reduced from 5.04 KW to 1.42 KW.

Alternate Corrective Plans Investigated

No other reasonable alternatives existed.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 310.01 **Estimated Cost: $54,400**

Description of Proposed Construction

Conversion of 0.4 miles of three phase 4/0 ACSR conductor with three phase, double circuit 336 ACSR conductor. Replace poles and equipment as required.

Substation: Goldbug Line Sections: 15620111 - 15720262 Miles: 0.4

Existing Phase Wire: 3 ph, 4/0 ACSR Proposed Phase Wire: 3 ph, 336 ACSR DC

Reason for Proposed Construction

The above work is required to provide CVE with the ability to effectively split the load more evenly between circuits on the substation and improve voltage levels in the area. This will also provide higher reliability, fewer losses, and improve sectionalizing coordination on the substation.

Results of Proposed Construction

Load on Ckt. 2 before system improvement = 107 amps
Load on Ckt. 2 after system improvement = 75 amps
Voltage drop on the circuit extremities (Section 15820056) will be reduced from 4.92 to 0.3 volts due to the project and associated feed change.
Peak KW losses on the substation will be reduced from 341 KW to 296 KW.

Alternate Corrective Plans Investigated

No other reasonable alternatives existed.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 311.01 **Estimated Cost: $307,110**

Description of Proposed Construction

Conversion of 3.53 miles of three phase 1/0 ACSR conductor to three phase 336 ACSR conductor. Replace poles and equipment as required.

Substation: Hinkle Line Sections: 17020010-17220039 Miles: 3.53

Existing Phase Wire:3 ph, 1/0 ACSR Proposed Phase Wire: 3 ph, 336 ACSR

Reason for Proposed Construction

The above work is required to relieve conductors that are becoming overloaded due to normal load growth in the area and a 750 KW mining load expected to be added soon. The project will also improve the voltage drop on a feeder which is already being regulated downline from the substation.

Results of Proposed Construction

Conductor loading on the sections involved will be reduced significantly.
Voltage drop on the circuit extremities (Section 17920013) will be reduced by 2.28 volts.
Peak KW losses on the substation will be reduced from 178 KW to 162 KW.

Alternate Corrective Plans Investigated

No reasonable load transfers were possible and no other reasonable options were available.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 314.01 **Estimated Cost: $70,720**

Description of Proposed Construction

Conversion of 0.52 miles of three phase 336 ACSR conductor with three phase, double circuit 336 ACSR conductor. Replace poles and equipment as required.

Substation: North Corbin Line Sections: 09280110 - 09280128 Miles: 0.52

Existing Phase Wire: 3 ph, 336 ACSR Proposed Phase Wire: 3 ph, 336 ACSR DC

Reason for Proposed Construction

The above work is required to make a feed change and relieve an existing three phase line that is becoming overloaded, which is currently fed from Emanuel Substation. This construction project (along with project 314.02) will provide a means to split the circuit and improve service in the entire area by transferring part of the load to North Corbin Substation. This will also provide higher reliability and improve sectionalizing coordination in the area.

Results of Proposed Construction

Load on Ckt. 4 from Emmanuel before system improvement = 280 amps
Load on Ckt. 4 from Emmanuel after system improvement = 188 amps
Voltage drop on the circuit extremities (Section 10830007) will be reduced by 4.1 volts due to the projects and associated feed change.
Peak KW losses on the substation will be reduced from 495 KW to 415 KW.

Alternate Corrective Plans Investigated

Consideration was given to increasing the conductor size on Ckt. 4 from Emanuel, but the chosen alternatives (314.01 and 314.02) provided an excellent solution at a more reasonable cost.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 314.02 **Estimated Cost: $217,500**

Description of Proposed Construction

Conversion of 2.50 miles of three phase 1/0 ACSR conductor to three phase 336 ACSR conductor. Replace poles and equipment as required.

Substation: North Corbin Line Sections: 09290032 - 10430020 Miles: 2.50

Existing Phase Wire:3 ph, 1/0 ACSR Proposed Phase Wire: 3 ph, 336 ACSR

Reason for Proposed Construction

The above work is required to make a feed change and relieve an existing three phase line that is becoming overloaded, which is currently fed from Emanuel Substation. This construction project is to be done in conjunction with project 314.01 and will provide a means to split the circuit and improve service in the entire area by transferring part of the load to North Corbin Substation. This will also provide higher reliability and improve sectionalizing coordination in the area.

Results of Proposed Construction

Load on Ckt. 4 from Emanuel before system improvement = 280 amps
Load on Ckt. 4 from Emanuel after system improvement = 188 amps
Voltage drop on the circuit extremities (Section 10830007) will be reduced by 4.1 volts due to the projects and associated feed change.
Peak KW losses on the substation will be reduced from 495 KW to 415 KW.

Alternate Corrective Plans Investigated

Consideration was given to increasing the conductor size on Ckt. 4 from Emanuel, but the chosen alternatives (314.01 and 314.02) provided an excellent solution at a more reasonable cost.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 317.01 **Estimated Cost: $234,900**

Description of Proposed Construction

Conversion of 2.70 miles of three phase 1/0 CU conductor to three phase 336 ACSR conductor. Replace poles and equipment as required.

Substation: Rockholds Line Sections: 15360024 - 15570002 Miles: 2.70

Existing Phase Wire:3 ph, 1/0 CU Proposed Phase Wire: 3 ph, 336 ACSR

Reason for Proposed Construction

The above work is required to establish a strong tie between Rockholds and Carpenter Substations which will improve service reliability. By providing the ability to backfeed load between the two substations in outage situations and during other emergency conditions via auto transformers between the substations with different voltages, service reliability is improved. The work will also replace deteriorated conductor which will further improve service reliability.

Results of Proposed Construction

Voltage improvements and loss improvements will result but are insignificant. Service reliability and backfeed capability will be greatly improved because of the strong tie.

Alternate Corrective Plans Investigated

No other reasonable alternatives were available.

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

CFR Code and CWP Item Number: 318.01 **Estimated Cost: $16,000**

Description of Proposed Construction

Conversion of 0.40 miles of single phase 2 ACSR conductor to two phase 2 ACSR conductor. Replace poles and equipment as required.

Substation: South Corbin Line Sections: 08580090 - 08590138 Miles: 0.40

Existing Phase Wire: 1 ph, 2 ACSR Proposed Phase Wire: 2 ph, 2 ACSR

Reason for Proposed Construction

The above work is required to relieve a single phase line that is projected to be overloaded. The ability to sectionalize the line will also be improved.

Results of Proposed Construction

Load on section before system improvement = 56 amps
Load on section after system improvement = 30 amps
Voltage drop on the circuit extremities before system improvement = 5.52 volts
Voltage drop on the circuit extremities after system improvement = 5.22 volts
Peak KW losses in the area will be reduced from 1.49 KW to .32 KW.

Alternate Corrective Plans Investigated

No other reasonable alternatives were available.

CUMBERLAND VALLEY ELECTRIC

Kentucky 57 Bell

Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

LARGE POWER LOADS

December 2010

Exhibit R

Map Number	Substation	Account Name	Metered kWh	Metered kW demand	Load Factor
c35620190	Arkland	North Fork Coal Corp	741,600	1,735	58.4
c9631930	Bacon Crk	Sudhirbhai Patel	880	9	13.4
c9540650	Bacon Crk	Polymer Logistics	2,891	24	16.5
c9631360	Bacon Crk	Country Inn	22,560	100	30.8
c9631910	Bacon Crk	Tri-county Cineplex	39,900	151	36.1
c9640840	Bacon Crk	Central Automotive Supp	17,520	63	38.0
9630620	Bacon Crk	Vanco	54,900	183	41.0
c9641430	Bacon Crk	City of Corbin (Tech Ctr)	17,040	56	41.6
c9636100	Bacon Crk	Arrow Group LLC	22,967	69	45.5
c9641350	Bacon Crk	Baptist Reg Med Ctr	24,720	70	48.2
c9630340	Bacon Crk	Fiesta Mexicana	13,920	39	48.8
9636210	Bacon Crk	City of Corbin	121,920	335	49.7
c9641380	Bacon Crk	Falls Rd Plaza LLC	16,480	44	51.2
c9646080	Bacon Crk	Q R C	52,920	141	51.3
c9630690	Bacon Crk	Days Inn	43,200	107	55.2
c9631700	Bacon Crk	Corbin Host LLC	45,800	111	56.4
c9630360	Bacon Crk	Two J-Major LLC	29,520	69	58.4
c9631560	Bacon Crk	McDonalds	37,880	84	61.6
c9641500	Bacon Crk	Trinity Corp	27,200	60	61.9
9641240	Bacon Crk	The Heritage	119,520	245	66.6
9641210	Bacon Crk	Corbin Nursing Home	100,560	203	67.7
c9631680	Bacon Crk	Speedway	35,520	63	77.0
9640830	Bacon Crk	Baptist Reg Med Ctr	1,116,000	1,889	80.7
37720440	Bledsoe	MT Enterprises Inc	27,250	427	8.7
41040210	Bledsoe	Xinergy	92,400	656	19.2
36870310	Bledsoe	Clover Coal Co	177,840	1,130	21.5
36870490	Bledsoe	Clover Coal Co	31,200	97	43.9
37720230	Bledsoe	Bluegrass Materials Co	210,960	279	103.3
c22146010	Carpenter	Mountain Side Coal Co	0	98	0.0
22460070	Carpenter	F M Coal Corp	265,680	978	37.1
16770050	Carpenter	Blue Gem Asset	84,000	241	47.6
22320260	Carpenter	Speciatly Coal Processing	680,400	1,703	54.6
22690030	Carpenter	Bell Co Forestry	551,040	1,073	70.2
38180360	Chad	Bluegrass Materials Co	36,000	535	9.2
c38430240	Chad	Cumberland Mine Ser Inc	23,280	133	23.9
c37680570	Chad	United Cent Ind Sub Co	18,240	89	28.0
c38280760	Chad	A R H Daniel Boone Clinic	10,360	32	44.2
c38280610	Chad	Glenn Baker	55,320	156	48.4
39120250	Chad	Kingdom Come St Park	26,880	70	52.5
c38180830	Chad	Bluegrass Materials Co	31,577	64	67.4
39146030	Chad	Black Mtn Resources	66,000	133	67.8
c38180840	Chad	MT Enterprises Inc	4,680	6	106.6
c14371080	Cumberland Falls	Pewitt Farm & Feed	831	61	1.9
c8886030	Cumberland Falls	Johnny Wheels	26,200	216	16.6
c8790580	Cumberland Falls	General Molded Products	50,880	132	52.7
14256010	Cumberland Falls	Cumberland Falls State	381,960	789	66.1

CUMBERLAND VALLEY ELECTRIC

Kentucky 57 Bell

Gray, Kentucky

2012-2015 CONSTRUCTION WORK PLAN

LARGE POWER LOADS

December 2010

Exhibit R

Map Number	Substation	Account Name	Metered kWh	Metered kW demand	Load Factor
c10520790	Emanuel	North American Gem US	320	4	10.9
10540230	Emanuel	Jackson Msc.	244,800	683	49.0
c10770060	Emanuel	Jim Mitchell	16,120	43	51.2
c10650070	Emanuel	Knox Co Ecc Opp Council	21,240	50	58.0
c10670750	Emanuel	New Wave Comm	49,200	75	89.6
c15820260	Goldbug	Southeastern KY Rehab	57,600	160	49.2
15820150	Goldbug	Williamsburg Plastics	801,000	1,696	64.5
14691010	Goldbug	U S Dept of State	162,240	252	88.0
c17020170	Hinkle	Alva Patterson	72,960	750	13.3
16246020	Liberty Ch	True Energy	42,480	527	11.0
c9576050	Liberty Ch	Northern Contours	15,680	80	26.8
c9570850	Liberty Ch	Southeastern KY Rehab	22,680	113	27.4
9570970	Liberty Ch	Tri Co Assemblies	130,080	431	41.2
9570700	Liberty Ch	Northern Contours	208,200	633	44.9
c9670550	Liberty Ch	Pepsi Cola Bottling	20,200	53	52.1
c9670520	Liberty Ch	Teco Coal Corp	22,099	54	55.9
16146020	Liberty Ch	True Energy	41,520	74	76.7
9570950	Liberty Ch	Tri Co Assemblies	241,800	395	83.6
9670010	Liberty Ch	Hess Creek	155,040	242	87.5
9360530	N. Corbin	K Mart	71,360	178	54.8
9360560	N. Corbin	NCS Pearson	84,320	188	61.3
c9186050	N. Corbin	Young Operating	16,640	23	98.8
c35730430	Oven Fork	Cumberland River Coal	866,160	3,094	38.2
c35620190	Oven Fork	Cumberland River Coal	866,160	3,094	38.2
c39050070	Oven Fork	Southeastern KY Rehab	24,480	85	39.3
37526010	Pine Mtn	Infinity Energy	203,400	745	37.3
c37470010	Pine Mtn	Bituminous Laurel Mine	1,998,000	6,120	44.6
37220090	Pine Mtn	Infinity Energy	121,680	174	95.5
c9960570	Rockholds	Tim Crawford	6,760	128	7.2
c9622090	S. Corbin	Moonbow Plaza Bingo	5,211	44	16.2
c9721580	S. Corbin	Drives & Conveyors	11,400	85	18.3
9631420	S. Corbin	Worley & Assoc	53,280	174	41.8
c9631510	S. Corbin	Corbin Bingo Parlor	14,979	45	45.5
c9630470	S. Corbin	Mountain View Lodge	56,160	111	69.1
c9621860	S. Corbin	Mac's Convenience Stores	27,320	51	73.2

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012 - 2015 CONSTRUCTION WORK PLAN

Consumer Outage Hours
(Outage hours per consumer per year)
Exhibit S

	Outage Cause				
Year	Power Supplier	Extreme Storm	Pre-Arranged	Other	Totals
2006	0.00	0.10	0.13	2.45	2.68
2007	0.12	0.02	0.06	1.30	1.50
2008	0.13	0.03	0.06	1.24	1.46
2009	0.30	1.53	0.05	0.85	2.72
2010	0.32	0.03	0.29	0.94	1.58
Five Year Average =	0.17	0.34	0.12	1.36	1.99

CUMBERLAND VALLEY ELECTRIC
Kentucky 57 Bell
Gray, Kentucky

2012 - 2015 CONSTRUCTION WORK PLAN

Smart Grid Components Included in CWP

Exhibit T

	Cost Year A 2012	Cost Year B 2013	Cost Year C 2014	Cost Year D 2015	Total
1501 - New Mapping (GIS) System	$0	$330,000	$300,000	$300,000	$930,000

APPENDIX I
2015 Design Load ~ BSI

Summary

Balanced Voltage Drop Report
Source: CUMBERLAND F...

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CUMBERLAND F...		ABC	CUMBERLAND	8.00Y	126.0	0.00	0.00	657.67	0	15782	332	100	0.00	0.0	0.000	0.000	0	0	0	1826
---------- Feeder No. 4 (CKT26-04) Beginning with Device 26-04 ----------																				
26-04	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	99.00	0	2376	41	100	0.00	0.0	0.000	0.000	0	0	0	301
---------- Feeder No. 3 (CKT26-03) Beginning with Device 26-03 ----------																				
26-03	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	191.68	0	4595	227	100	0.00	0.0	0.000	0.000	0	0	0	562
---------- Feeder No. 1 (CKT26-01) Beginning with Device 26-01 ----------																				
26-01	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	208.17	0	4997	-12	-100	0.00	0.0	0.000	0.000	0	0	0	576
---------- Feeder No. 2 (CKT26-02) Beginning with Device 26-02 ----------																				
26-02	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	158.94	0	3814	77	100	0.00	0.0	0.000	0.000	0	0	0	387

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	15157	307	0	0	0	0	318	0.00	15782
KVAR	799	12	-955	-42	0	0	518		332

Lowest Voltage = 119.24 on Element 08470004
Max Accm VoltD = 6.76 on Element 08470004
Max Elem VoltD = 1.78 on Element 08570048

Balanced Voltage Drop Report
Source: GIRDLER

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
GIRDLER		ABC	GIRDLER	8.00Y	126.0	0.00	0.00	391.00	0	9362	657	100	0.00	0.0	0.000	0.000	0	0	0	1425	
---------- Feeder No. 1 (CKT106-01) Beginning with Device 106-01 ----------																					
106-01	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	126.85	0	3045	-14	-100	0.00	0.0	0.000	0.000	0	0	0	487	
L 11050019	11050017	A	15 KV 2 UR	7.43Y	117.0	0.03	9.02	2.37	1	16	6	94	0.00	0.0	9.104	0.331	0	0	0	2	L
L 05950009	11050019	A	2 ACSR 6/1	7.43Y	117.0	0.02	9.04	2.43	1	16	8	89	0.00	0.0	9.328	0.224	0	0	0	2	L
L 05950010	05950009	A	15 KV 2 UR	7.43Y	117.0	0.01	9.05	2.43	1	16	8	89	0.00	0.0	9.433	0.105	0	0	0	2	L
L 11050014	11050013	A	2 ACSR 6/1	7.43Y	117.0	0.09	9.01	20.36	11	151	12	100	0.10	0.1	8.472	0.154	0	0	0	16	L
L 05950001	11050014	A	2 ACSR 6/1	7.43Y	116.9	0.05	9.06	19.75	11	146	9	100	0.06	0.0	8.563	0.091	0	0	0	15	L
L 05950006	05950001	A	2 ACSR 6/1	7.42Y	116.9	0.02	9.08	18.15	10	134	14	99	0.02	0.0	8.607	0.044	0	0	0	14	L
L 05950002	05950003	A	2 ACSR 6/1	7.42Y	116.9	0.03	9.11	18.15	10	134	14	99	0.03	0.0	8.662	0.055	0	0	0	14	L
L 05950007	05950002	A	2 ACSR 6/1	7.42Y	116.8	0.06	9.17	14.66	8	109	2	100	0.05	0.0	8.815	0.152	0	0	0	13	L
L 05950008	05950007	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.19	12.28	7	91	2	100	0.01	0.0	8.859	0.045	0	0	0	11	L
L 05950004	05950008	A	2 ACSR 6/1	7.42Y	116.8	0.03	9.21	12.28	7	91	2	100	0.02	0.0	8.946	0.086	0	0	0	11	L
L 05850001	05950004	A	2 ACSR 6/1	7.41Y	116.7	0.04	9.25	11.10	6	82	5	100	0.03	0.0	9.075	0.129	0	0	0	10	L
L 05850003	05850001	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.27	8.66	5	63	12	98	0.01	0.0	9.156	0.081	0	0	0	8	L
L 05850002	05850003	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.29	7.75	4	55	15	96	0.01	0.0	9.222	0.066	0	0	0	7	L
L 05850004	05850002	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.31	7.75	4	55	15	96	0.01	0.0	9.318	0.096	0	0	0	7	L
L 05850005	05850004	A	2 ACSR 6/1	7.41Y	116.7	0.01	9.32	6.87	4	49	12	97	0.00	0.0	9.357	0.039	0	0	0	6	L
L 05850008	05850006	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.32	1.44	1	10	5	89	0.00	0.0	9.388	0.031	0	0	0	2	L
L 05850007	05850008	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.32	0.60	0	4	2	89	0.00	0.0	9.495	0.107	0	0	0	1	L
L 05850011	05850007	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.33	0.60	0	4	2	89	0.00	0.0	9.671	0.175	0	0	0	1	L
L 05850009	05850005	A	2 ACSR 6/1	7.41Y	116.6	0.06	9.38	5.47	3	40	7	99	0.02	0.0	9.754	0.397	0	0	0	4	L
L 05850010	05850009	A	2 ACSR 6/1	7.40Y	116.6	0.02	9.40	5.47	3	40	7	99	0.01	0.0	9.865	0.111	0	0	0	4	L
L 05860001	05850010	A	2 ACSR 6/1	7.40Y	116.6	0.01	9.41	4.50	2	33	4	99	0.00	0.0	9.937	0.071	0	0	0	3	L
L 05860002	05860001	A	2 ACSR 6/1	7.40Y	116.5	0.05	9.46	4.50	2	33	4	99	0.01	0.0	10.349	0.413	0	0	0	3	L
L 05860003	05860002	A	15 KV 2 UR	7.40Y	116.5	0.01	9.47	4.47	3	33	4	99	0.00	0.0	10.398	0.048	0	0	0	2	L
L 05860004	05860003	A	15 KV 2 UR	7.40Y	116.5	0.01	9.48	2.87	2	19	9	90	0.00	0.0	10.480	0.082	0	0	0	1	L
L 05950005	05950007	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.18	1.57	1	11	-4	-94	0.00	0.0	9.273	0.458	0	0	0	1	L
---------- Feeder No. 2 (CKT106-02) Beginning with Device 106-02 ----------																					
106-02	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	120.47	0	2854	466	99	0.00	0.0	0.000	0.458	0	0	0	380	
---------- Feeder No. 3 (CKT106-03) Beginning with Device 106-03 ----------																					
106-03	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	91.76	0	2198	137	100	0.00	0.0	0.000	0.458	0	0	0	375	
---------- Feeder No. 4 (CKT106-04) Beginning with Device 106-04 ----------																					
106-04	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	52.78	0	1265	69	100	0.00	0.0	0.000	0.458	0	0	0	183	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8995	182	0	0	0	0	185	0.00	9362
KVAR	760	19	-323	-3	0	0	204		657

Lowest Voltage = 116.52 on Element 05860004
Max Accm VoltD = 9.48 on Element 05860004
Max Elem VoltD = 0.43 on Element 11120022

Balanced Voltage Drop Report
Source: LIBERTY CHURCH

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

	Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
	LIBERTY CHURCH		ABC	LIBERTY CH	8.00Y	126.0	0.00	0.00	372.25	0	8935	-10	-100	0.00	0.0	0.000	0.000	0	0	0	1004	
---------- Feeder No. 3 (CKT107-03) Beginning with Device 107-03 ----------																						
	107-03	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	0.24	0	5	2	93	0.00	0.0	0.000	0.000	0	0	0	1	
---------- Feeder No. 2 (CKT107-02) Beginning with Device 107-02 ----------																						
	107-02	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	183.29	0	4398	128	100	0.00	0.0	0.000	0.000	0	0	0	657	
C	09770067	09770094	ABC	1/0 ACSR 6	7.99Y	125.8	0.11	0.21	183.29	80	4394	120	100	3.87	0.1	0.156	0.043	0	0	0	657	C
---------- Feeder No. 1 (CKT107-01) Beginning with Device 107-01 ----------																						
	107-01	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	188.91	0	4532	-139	-100	0.00	0.0	0.000	0.043	0	0	0	346	
C	09670042	09670040	ABC	1/0 ACSR 6	7.98Y	125.7	0.23	0.34	173.27	75	4148	-241	-100	8.04	0.2	0.898	0.101	0	0	0	301	C
C	09670032	09670042	ABC	1/0 ACSR 6	7.97Y	125.6	0.08	0.42	171.37	75	4095	-250	-100	2.70	0.1	0.933	0.035	0	0	0	297	C
C	09670059	09670032	ABC	1/0 ACSR 6	7.97Y	125.5	0.05	0.47	171.09	74	4085	-256	-100	1.67	0.0	0.954	0.021	0	0	0	296	C
C	09670010	09670059	ABC	1/0 ACSR 6	7.97Y	125.4	0.10	0.57	166.12	72	3966	-236	-100	3.28	0.1	0.999	0.045	0	0	0	285	C
C	09670027	09670010	ABC	1/0 ACSR 6	7.96Y	125.3	0.16	0.72	165.28	72	3942	-243	-100	5.33	0.1	1.072	0.073	0	0	0	281	C
C	09770040	09670027	ABC	1/0 ACSR 6	7.94Y	125.0	0.27	0.99	164.49	72	3918	-250	-100	9.06	0.2	1.198	0.126	0	0	0	278	C
C	09770041	09770040	ABC	1/0 ACSR 6	7.93Y	124.9	0.12	1.11	162.36	71	3858	-249	-100	3.98	0.1	1.255	0.057	0	0	0	272	C
C	09770039	09770041	ABC	1/0 ACSR 6	7.92Y	124.7	0.16	1.27	159.16	69	3778	-254	-100	5.11	0.1	1.330	0.076	0	0	0	263	C
C	09770025	09770039	ABC	1/0 ACSR 6	7.91Y	124.6	0.10	1.37	157.87	69	3742	-257	-100	3.28	0.1	1.380	0.049	0	0	0	260	C
C	09680033	09770025	ABC	1/0 ACSR 6	7.87Y	123.9	0.77	2.14	157.48	68	3730	-257	-100	24.80	0.7	1.755	0.375	0	0	0	259	C
C	09680032	09680033	ABC	1/0 ACSR 6	7.86Y	123.7	0.13	2.27	156.46	68	3681	-281	-100	4.09	0.1	1.818	0.063	0	0	0	257	C
C	09680019	09680032	ABC	1/0 ACSR 6	7.84Y	123.5	0.21	2.48	155.86	68	3663	-281	-100	6.66	0.2	1.921	0.103	0	0	0	255	C
C	09680018	09680019	ABC	1/0 ACSR 6	7.83Y	123.3	0.25	2.73	155.86	68	3656	-287	-100	8.08	0.2	2.045	0.125	0	0	0	255	C
C	09680040	09680018	ABC	1/0 ACSR 6	7.82Y	123.1	0.13	2.86	155.42	68	3638	-291	-100	4.30	0.1	2.112	0.067	0	0	0	254	C
C	09680015	09680040	ABC	1/0 ACSR 6	7.81Y	123.1	0.07	2.93	155.42	68	3634	-295	-100	2.25	0.1	2.147	0.035	0	0	0	254	C
C	09680024	09680015	ABC	1/0 ACSR 6	7.81Y	123.0	0.06	2.99	155.06	67	3623	-295	-100	2.04	0.1	2.179	0.032	0	0	0	253	C
C	09680022	09680024	ABC	1/0 ACSR 6	7.79Y	122.7	0.32	3.31	154.50	67	3608	-303	-100	10.25	0.3	2.340	0.161	0	0	0	249	C
C	09680021	09680022	ABC	1/0 ACSR 6	7.78Y	122.6	0.14	3.45	151.19	66	3521	-303	-100	4.35	0.1	2.412	0.072	0	0	0	242	C
C	09680029	09680021	ABC	1/0 ACSR 6	7.76Y	122.3	0.29	3.74	151.17	66	3516	-308	-100	9.24	0.3	2.564	0.152	0	0	0	241	C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8483	137	0	0	0	0	316	0.00	8935
KVAR	533	10	-938	-13	0	0	399		-10

Lowest Voltage = 119.99 on Element 16130034
Max Accm VoltD = 6.01 on Element 16130034
Max Elem VoltD = 0.77 on Element 09680033

Balanced Voltage Drop Report
Source: BACON CREEK

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
BACON CREEK		ABC	BACON CREE	8.00Y	126.0	0.00	0.00	187.44	0	4454	-638	-99	0.00	0.0	0.000	0.000	0	0	0	167	
---------- Feeder No. 3 (CKT87-03) Beginning with Device 87-03 ----------																					
87-03	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.59	0	1118	-234	-98	0.00	0.0	0.000	0.000	0	0	0	123	
---------- Feeder No. 2 (CKT87-02) Beginning with Device 87-02 ----------																					
87-02	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	97.52	0	2335	165	100	0.00	0.0	0.000	0.000	0	0	0	3	
---------- Feeder No. 1 (CKT87-01) Beginning with Device 87-01 ----------																					
87-01	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.96	0	1001	-569	-87	0.00	0.0	0.000	0.000	0	0	0	41	
H 09640137	87-01	ABC	336 ACSR 1	8.00Y	126.0	-0.00	-0.00	47.96	9	1001	-569	-87	0.01	0.0	0.007	0.007	0	0	0	41	H
H 09640138	09640137	ABC	336 ACSR 1	8.00Y	126.0	-0.00	-0.00	47.96	9	1001	-569	-87	0.06	0.0	0.040	0.033	0	0	0	41	H
H 09640200	09640138	ABC	4/0 ACSR 6	8.00Y	126.0	0.00	-0.00	0.00	0	0	0	100	0.00	0.0	0.045	0.005	0	0	0	0	H
H 09640165	09640138	ABC	336 ACSR 1	8.00Y	126.0	-0.00	-0.00	47.96	9	1001	-569	-87	0.04	0.0	0.060	0.019	0	0	0	41	H
H 09640168	09640165	ABC	336 ACSR 1	8.00Y	126.0	-0.00	-0.01	47.88	9	997	-571	-87	0.13	0.0	0.126	0.066	0	0	0	39	H
H 09640135	09640165	ABC	1/0 ACSR 6	8.00Y	126.0	0.00	-0.00	0.02	0	0	0	100	0.00	0.0	0.143	0.084	0	0	0	1	H

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	4298	147	0	0	0	0	9	0.00	4454
KVAR	341	12	-992	-13	0	0	15		-638

Lowest Voltage = 125.60 on Element 09640142
Max Accm VoltD = 0.40 on Element 09640142
Max Elem VoltD = 0.18 on Element 09640128

Balanced Voltage Drop Report
Source: HINKLE

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
HINKLE		ABC	HINKLE	8.00Y	126.0	0.00	0.00	351.00	0	8422	-220	-100	0.00	0.0	0.000	0.000	0	0	0	1310
---------- Feeder No. 3 (CKT53-03) Beginning with Device 53-03 ----------																				
53-03	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	151.86	0	3628	358	100	0.00	0.0	0.000	0.000	0	0	0	467
---------- Feeder No. 2 (CKT53-02) Beginning with Device 53-02 ----------																				
53-02	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.97	0	1150	-52	-100	0.00	0.0	0.000	0.000	0	0	0	171
---------- Feeder No. 1 (CKT53-01) Beginning with Device 53-01 ----------																				
53-01	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	82.28	0	1887	-584	-96	0.00	0.0	0.000	0.000	0	0	0	341
---------- Feeder No. 4 (CKT53-04) Beginning with Device 53-04 ----------																				
53-04	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	73.26	0	1757	58	100	0.00	0.0	0.000	0.000	0	0	0	331

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8066	179	0	0	0	0	178	0.00	8422
KVAR	390	10	-808	-27	0	0	215		-220

Lowest Voltage = 117.73 on Element 17920014
Max Accm VoltD = 8.27 on Element 17920014
Max Elem VoltD = 0.67 on Element 11540012

Balanced Voltage Drop Report
Source: NORTH CORBIN

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
NORTH CORBIN		ABC	NORTH CORB	8.00Y	126.0	0.00	0.00	412.70	0	9901	310	100	0.00	0.0	0.000	0.000	0	0	0	1397	
---------- Feeder No. 1 (CKT48-01) Beginning with Device 48-01 ----------																					
48-01	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	107.54	0	2581	5	100	0.00	0.0	0.000	0.000	0	0	0	301	
---------- Feeder No. 2 (CKT48-02) Beginning with Device 48-02 ----------																					
48-02	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	72.20	0	1728	132	100	0.00	0.0	0.000	0.000	0	0	0	263	
---------- Feeder No. 3 (CKT48-03) Beginning with Device 48-03 ----------																					
48-03	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	233.08	0	5592	174	100	0.00	0.0	0.000	0.000	0	0	0	833	
C 09370016	48-03	ABC	1/0 ACSR 6	8.00Y	125.9	0.09	0.09	233.08	101	5592	174	100	3.73	0.1	0.026	0.026	0	0	0	833	C
C 09370039	09370016	ABC	4/0 ACSR 6	7.93Y	124.8	1.10	1.19	233.08	69	5588	170	100	47.05	0.8	0.675	0.649	0	0	0	833	C
C 09270071	09370039	ABC	4/0 ACSR 6	7.91Y	124.6	0.24	1.43	233.08	69	5541	88	100	10.48	0.2	0.819	0.145	0	0	0	833	C
C 09280093	09270071	ABC	4/0 ACSR 6	7.90Y	124.4	0.18	1.61	233.08	69	5531	70	100	7.85	0.1	0.927	0.108	0	0	0	833	C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	9507	188	0	0	0	0	206	0.00	9901
KVAR	650	16	-640	-50	0	0	334		310

Lowest Voltage = 119.35 on Element 04940019
Max Accm VoltD = 6.65 on Element 04940019
Max Elem VoltD = 1.10 on Element 09370039

Balanced Voltage Drop Report
Source: BLEDSOE

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
BLEDSOE		ABC	BLEDSOE	15.12Y	126.0	0.00	0.00	160.28	0	7157	-1278	-98	0.00	0.0	0.000	0.000	0	0	0	927
---------- Feeder No. 2 (CKT51-02) Beginning with Device 51-02 ----------																				
51-02	BLEDSOE	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	43.39	0	1964	-135	-100	0.00	0.0	0.000	0.000	0	0	0	182
---------- Feeder No. 1 (CKT51-01) Beginning with Device 51-01 ----------																				
51-01	BLEDSOE	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	117.24	0	5194	-1143	-98	0.00	0.0	0.000	0.000	0	0	0	745

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	6839	198	0	0	0	0	120	0.00	7157
KVAR	-104	-2	-1292	-1	0	0	120		-1278

Lowest Voltage = 123.63 on Element c36360170
Max Accm VoltD = 2.37 on Element c36360170
Max Elem VoltD = 0.24 on Element 36540001

Balanced Voltage Drop Report
Source: ROCKHOLDS

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
ROCKHOLDS		ABC	ROCKHOLD	8.00Y	126.0	0.00	0.00	370.36	0	8878	449	100	0.00	0.0	0.000	0.000	0	0	0	1591
---------- Feeder No. 3 (CKT22-03) Beginning with Device 22-03 ----------																				
22-03	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	145.53	0	3490	155	100	0.00	0.0	0.000	0.000	0	0	0	638
---------- Feeder No. 2 (CKT22-02) Beginning with Device 22-02 ----------																				
22-02	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	75.89	0	1821	-3	-100	0.00	0.0	0.000	0.000	0	0	0	388
---------- Feeder No. 1 (CKT22-01) Beginning with Device 22-01 ----------																				
22-01	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	149.12	0	3567	296	100	0.00	0.0	0.000	0.000	0	0	0	565

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8537	177	0	0	0	0	164	0.00	8878
KVAR	855	19	-653	-5	0	0	233		449

Lowest Voltage = 119.44 on Element 15160024
Max Accm VoltD = 6.56 on Element 15160024
Max Elem VoltD = 0.57 on Element 15040010

Balanced Voltage Drop Report
Source: EMANUEL

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Cons On	Cons Thru	
EMANUEL		ABC	EMANUEL	8.00Y	126.0	0.00	0.00	684.09	0	16397	870	100	0.00	0.0	0.000	0.000	0	0	0	2267	
---------- Feeder No. 3 (CKT21-03) Beginning with Device 21-03 ----------																					
21-03	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	61.36	0	1469	102	100	0.00	0.0	0.000	0.000	0	0	0	204	
---------- Feeder No. 4 (CKT21-04) Beginning with Device 21-04 ----------																					
21-04	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	280.79	0	6718	546	100	0.00	0.0	0.000	0.000	0	0	0	926	
C 10560004	21-04	ABC	4/0 ACSR 6	8.00Y	125.9	0.08	0.08	280.79	83	6718	546	100	3.88	0.1	0.037	0.037	0	0	0	926	C
C 10560030	10560004	ABC	4/0 ACSR 6	7.98Y	125.7	0.19	0.28	280.79	83	6714	539	100	9.14	0.1	0.124	0.087	0	0	0	926	C
C 10560043	10560030	ABC	4/0 ACSR 6	7.97Y	125.6	0.17	0.45	280.79	83	6705	524	100	8.14	0.1	0.201	0.077	0	0	0	926	C
C 10560001	10560043	ABC	4/0 ACSR 6	7.96Y	125.3	0.22	0.66	280.79	83	6696	509	100	10.23	0.2	0.298	0.097	0	0	0	926	C
C 10660050	10560001	ABC	4/0 ACSR 6	7.95Y	125.3	0.07	0.73	280.18	82	6672	485	100	3.19	0.0	0.329	0.030	0	0	0	923	C
C 10660011	10660050	ABC	4/0 ACSR 6	7.95Y	125.2	0.08	0.82	279.97	82	6664	477	100	4.01	0.1	0.367	0.038	0	0	0	922	C
C 10660048	10660011	ABC	4/0 ACSR 6	7.94Y	125.1	0.09	0.91	279.97	82	6660	470	100	4.49	0.1	0.410	0.043	0	0	0	922	C
C 10660044	10660048	ABC	4/0 ACSR 6	7.93Y	124.9	0.15	1.06	279.44	82	6643	456	100	7.16	0.1	0.479	0.069	0	0	0	920	C
C 10660073	10660044	ABC	4/0 ACSR 6	7.93Y	124.9	0.08	1.14	279.44	82	6636	443	100	4.06	0.1	0.518	0.039	0	0	0	920	C
C 10660036	10660073	ABC	4/0 ACSR 6	7.92Y	124.8	0.07	1.22	279.44	82	6632	436	100	3.51	0.1	0.551	0.034	0	0	0	920	C
C 10660018	10660036	ABC	4/0 ACSR 6	7.92Y	124.7	0.10	1.32	279.44	82	6629	430	100	4.91	0.1	0.598	0.047	0	0	0	920	C
L 10420021	10420060	ABC	1/0 ACSR 6	7.43Y	117.0	0.11	9.01	61.26	27	1366	36	100	1.31	0.1	8.134	0.131	0	0	0	252	L
L 10520013	10420021	ABC	1/0 ACSR 6	7.43Y	117.0	0.03	9.04	53.60	23	1194	21	100	0.26	0.0	8.168	0.034	0	0	0	219	L
L 10520054	10520013	ABC	1/0 ACSR 6	7.42Y	116.9	0.04	9.08	52.59	23	1171	31	100	0.37	0.0	8.217	0.050	0	0	0	217	L
L 10520031	10520054	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	3.54	2	24	-10	-92	0.00	0.0	8.277	0.060	0	0	0	2	L
L 10520021	10520031	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	1.87	1	13	-5	-93	0.00	0.0	8.301	0.024	0	0	0	1	L
L 10520022	10520054	ABC	1/0 ACSR 6	7.42Y	116.9	0.07	9.15	50.89	22	1133	47	100	0.65	0.1	8.311	0.094	0	0	0	214	L
L 10520062	10520022	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.15	1.40	1	9	5	87	0.00	0.0	8.355	0.044	0	0	0	2	L
L 10520066	10520022	C	2 ACSR 6/1	7.42Y	116.8	0.01	9.15	2.36	1	17	1	100	0.00	0.0	8.425	0.114	0	0	0	3	L
L 10520049	10520066	C	2 ACSR 6/1	7.42Y	116.8	0.00	9.16	1.44	1	10	5	89	0.00	0.0	8.499	0.074	0	0	0	2	L
L 10520070	10520049	C	2 ACSR 6/1	7.42Y	116.8	0.00	9.16	0.38	0	3	1	95	0.00	0.0	8.517	0.018	0	0	0	1	L
L 10520071	10520070	C	2 ACSR 6/1	7.42Y	116.8	0.00	9.16	0.00	0	0	0	100	0.00	0.0	8.534	0.018	0	0	0	0	L
L 10520018	10520022	C	2 ACSR 6/1	7.42Y	116.9	0.00	9.15	2.18	1	15	-5	-95	0.00	0.0	8.362	0.051	0	0	0	2	L
L 10520017	10520022	ABC	1/0 ACSR 6	7.42Y	116.8	0.05	9.19	48.99	21	1090	45	100	0.43	0.0	8.378	0.067	0	0	0	207	L
L 10520035	10520034	ABC	1/0 ACSR 6	7.42Y	116.8	0.03	9.22	48.99	21	1089	45	100	0.25	0.0	8.417	0.040	0	0	0	207	L
L 10520037	10520035	ABC	2 ACSR 6/1	7.42Y	116.8	0.00	9.22	1.03	1	23	-1	-100	0.00	0.0	8.517	0.100	0	0	0	4	L
L 10520038	10520037	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.23	1.98	1	13	-6	-91	0.00	0.0	8.564	0.047	0	0	0	1	L
L 10520039	10520037	ABC	2 ACSR 6/1	7.42Y	116.8	0.00	9.23	0.47	0	9	5	87	0.00	0.0	8.588	0.071	0	0	0	3	L
L 10520058	10520039	C	2 ACSR 6/1	7.42Y	116.8	0.00	9.23	1.27	1	8	4	89	0.00	0.0	8.604	0.017	0	0	0	2	L
L 10520040	10520035	ABC	1/0 ACSR 6	7.41Y	116.7	0.05	9.27	47.74	21	1061	43	100	0.41	0.0	8.484	0.067	0	0	0	202	L
L 10520042	10520040	ABC	1/0 ACSR 6	7.41Y	116.7	0.04	9.31	46.74	20	1038	53	100	0.35	0.0	8.544	0.060	0	0	0	200	L
L 10520043	10520042	ABC	1/0 ACSR 6	7.41Y	116.6	0.05	9.35	45.99	20	1021	53	100	0.38	0.0	8.611	0.067	0	0	0	197	L
L 10520051	10520043	A	2 ACSR 6/1	7.41Y	116.6	0.00	9.36	2.25	1	15	7	91	0.00	0.0	8.651	0.039	0	0	0	2	L
L 10520052	10520051	A	2 ACSR 6/1	7.41Y	116.6	0.00	9.36	2.25	1	15	7	91	0.00	0.0	8.695	0.044	0	0	0	2	L
L 10520044	10520052	A	2 ACSR 6/1	7.41Y	116.6	0.00	9.36	0.69	0	5	2	93	0.00	0.0	8.786	0.091	0	0	0	1	L
L 10520004	10520052	A	2 ACSR 6/1	7.41Y	116.6	0.00	9.36	1.56	1	10	5	89	0.00	0.0	8.719	0.024	0	0	0	1	L
L 10520036	10520043	ABC	1/0 ACSR 6	7.40Y	116.6	0.05	9.40	44.67	19	991	47	100	0.39	0.0	8.684	0.073	0	0	0	193	L
L 10520032	10520036	ABC	1/0 ACSR 6	7.40Y	116.6	0.04	9.44	44.26	19	982	51	100	0.33	0.0	8.747	0.064	0	0	0	192	L
L 10520024	10520032	ABC	1/0 ACSR 6	7.40Y	116.5	0.06	9.50	43.25	19	959	47	100	0.44	0.0	8.835	0.088	0	0	0	184	L
L 10520025	10520024	ABC	1/0 ACSR 6	7.39Y	116.5	0.05	9.55	42.26	18	937	42	100	0.39	0.0	8.916	0.081	0	0	0	180	L
L 10520020	10520025	C	2 ACSR 6/1	7.39Y	116.4	0.04	9.59	44.13	25	325	-32	-100	0.13	0.0	8.958	0.042	0	0	0	44	L
L 10520012	10520061	C	2 ACSR 6/1	7.38Y	116.2	0.16	9.76	44.13	25	325	-32	-100	0.50	0.2	9.116	0.157	0	0	0	44	L
L 10520008	10520012	C	2 ACSR 6/1	7.38Y	116.2	0.07	9.83	38.80	22	284	-33	-99	0.19	0.1	9.194	0.078	0	0	0	38	L
L 10520009	10520008	C	2 ACSR 6/1	7.37Y	116.1	0.04	9.87	37.23	21	272	-40	-99	0.11	0.0	9.243	0.049	0	0	0	36	L
L 10520045	10520009	C	2 ACSR 6/1	7.37Y	116.1	0.03	9.90	34.16	19	248	-43	-99	0.09	0.0	9.288	0.045	0	0	0	33	L
L 10520069	10520045	C	2 ACSR 6/1	7.37Y	116.1	0.03	9.93	34.16	19	248	-43	-99	0.08	0.0	9.328	0.040	0	0	0	33	L
L 10520060	10520059	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.94	5.76	3	42	0	100	0.00	0.0	9.398	0.070	0	0	0	5	L
L 10520074	10520060	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.95	4.51	3	33	-5	-99	0.00	0.0	9.454	0.056	0	0	0	4	L
L 10520073	10520074	C	2 ACSR 6/1	7.37Y	116.0	0.00	9.95	3.63	2	25	-8	-95	0.00	0.0	9.499	0.045	0	0	0	3	L
L 10520075	10520073	C	2 ACSR 6/1	7.37Y	116.0	0.00	9.95	1.97	1	14	-3	-98	0.00	0.0	9.543	0.044	0	0	0	2	L
L 10520072	10520075	C	2 ACSR 6/1	7.37Y	116.0	0.00	9.96	1.67	1	11	-5	-91	0.00	0.0	9.730	0.187	0	0	0	1	L
L 10520057	10520069	C	2 ACSR 6/1	7.37Y	116.0	0.02	9.95	25.85	14	185	-45	-97	0.05	0.0	9.373	0.045	0	0	0	24	L
L 10520056	10520057	C	2 ACSR 6/1	7.37Y	116.0	0.04	9.99	25.13	14	179	-48	-97	0.09	0.0	9.456	0.083	0	0	0	23	L
L 10520048	10520056	C	2 ACSR 6/1	7.36Y	116.0	0.02	10.02	16.44	9	118	-29	-97	0.03	0.0	9.523	0.067	0	0	0	17	L
L 10520068	10520067	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.02	1.36	1	9	-4	-91	0.00	0.0	9.650	0.128	0	0	0	1	L
L 10520063	10520048	C	2 ACSR 6/1	7.36Y	116.0	0.01	10.03	12.47	7	89	-24	-97	0.01	0.0	9.559	0.037	0	0	0	12	L
L 10520064	10520063	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.03	9.15	5	64	-20	-95	0.00	0.0	9.589	0.029	0	0	0	8	L
L 10520065	10520064	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.03	4.42	2	32	-6	-98	0.00	0.0	9.616	0.028	0	0	0	5	L
L 10530003	10520065	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.04	1.98	1	13	-6	-91	0.00	0.0	9.704	0.088	0	0	0	1	L
L 10530004	10530003	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.04	0.00	0	0	0	100	0.00	0.0	9.784	0.080	0	0	0	0	L
L 10530001	10520065	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.04	2.53	1	19	0	100	0.00	0.0	9.666	0.050	0	0	0	3	L
L 10530002	10530001	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.04	1.98	1	14	-2	-99	0.00	0.0	9.690	0.023	0	0	0	2	L
L 10520010	10520064	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.03	3.54	2	24	-10	-92	0.00	0.0	9.637	0.048	0	0	0	2	L
L 10520033	10520048	C	2 ACSR 6/1	7.36Y	116.0	0.01	10.02	2.14	1	16	-3	-98	0.00	0.0	9.640	0.118	0	0	0	2	L
L 10520023	10520033	C	2 ACSR 6/1	7.36Y	116.0	0.00	10.02	1.67	1	11	-5	-91	0.00	0.0	9.681	0.041	0	0	0	1	L
L 10520046	10520056	C	2 ACSR 6/1	7.37Y	116.0	0.00	10.00	4.16	2	30	-6	-98	0.00	0.0	9.510	0.054	0	0	0	3	L
L 10520047	10520046	C	2 ACSR 6/1	7.37Y	116.0	0.00	10.00	2.26	1	17	0	100	0.00	0.0	9.553	0.043	0	0	0	2	L
L 10520055	10520069	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.94	2.79	2	20	2	100	0.00	0.0	9.417	0.089	0	0	0	4	L
L 10520006	10520012	C	2 ACSR 6/1	7.38Y	116.2	0.01	9.76	4.18	2	30	5	99	0.00	0.0	9.157	0.042	0	0	0	5	L
L 10520007	10520006	C	2 ACSR 6/1	7.38Y	116.2	0.00	9.76	2.00	1	13	6	91	0.00	0.0	9.203	0.046	0	0	0	2	L

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Balanced Voltage Drop Report
Source: EMANUEL

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
L 10520026	10520025	ABC	1/0 ACSR 6	7.39Y	116.4	0.03	9.58	27.72	12	611	73	99	0.15	0.0	8.990	0.073	0	0	0	134	L
L 10520029	10520026	ABC	1/0 ACSR 6	7.39Y	116.4	0.02	9.60	27.09	12	596	72	99	0.11	0.0	9.048	0.059	0	0	0	132	L
L 10520019	10520029	ABC	1/0 ACSR 6	7.39Y	116.4	0.02	9.62	26.91	12	593	70	99	0.08	0.0	9.090	0.041	0	0	0	130	L
L 10520011	10520019	ABC	1/0 ACSR 6	7.39Y	116.3	0.03	9.65	26.80	12	590	69	99	0.13	0.0	9.158	0.068	0	0	0	129	L
L 10620014	10520011	ABC	1/0 ACSR 6	7.39Y	116.3	0.01	9.66	26.71	12	588	68	99	0.05	0.0	9.186	0.028	0	0	0	128	L
L 10620042	10620014	ABC	1/0 ACSR 6	7.39Y	116.3	0.01	9.68	26.58	12	585	67	99	0.06	0.0	9.218	0.032	0	0	0	127	L
L 10620043	10620042	ABC	1/0 ACSR 6	7.38Y	116.3	0.06	9.73	25.89	11	569	74	99	0.24	0.0	9.355	0.137	0	0	0	125	L
L 10620036	10620043	C	2 ACSR 6/1	7.38Y	116.3	0.00	9.73	1.15	1	8	-3	-94	0.00	0.0	9.414	0.058	0	0	0	1	L
L 10620037	10620043	C	2 ACSR 6/1	7.38Y	116.2	0.06	9.79	27.47	15	202	15	100	0.10	0.0	9.435	0.079	0	0	0	38	L
L 10620003	10620023	C	2 ACSR 6/1	7.38Y	116.2	0.02	9.81	26.83	15	198	13	100	0.04	0.0	9.466	0.031	0	0	0	37	L
L 10620024	10620003	C	2 ACSR 6/1	7.38Y	116.2	0.00	9.81	1.35	1	9	-4	-91	0.00	0.0	9.513	0.047	0	0	0	1	L
L 10620007	10620003	C	2 ACSR 6/1	7.38Y	116.2	0.03	9.84	25.63	14	188	17	100	0.05	0.0	9.508	0.043	0	0	0	36	L
L 10620029	10620047	C	2 ACSR 6/1	7.37Y	116.1	0.03	9.87	11.21	6	82	10	99	0.02	0.0	9.588	0.080	0	0	0	14	L
L 10620018	10620029	C	2 ACSR 6/1	7.37Y	116.1	0.00	9.87	1.13	1	7	4	87	0.00	0.0	9.638	0.050	0	0	0	1	L
L 10620010	10620029	C	2 ACSR 6/1	7.37Y	116.1	0.02	9.89	10.15	6	75	6	100	0.01	0.0	9.665	0.077	0	0	0	13	L
L 10620032	10620010	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.90	9.67	5	71	4	100	0.00	0.0	9.697	0.032	0	0	0	11	L
L 10620056	10620032	C	2 ACSR 6/1	7.37Y	116.1	0.00	9.90	3.03	2	22	0	100	0.00	0.0	9.751	0.054	0	0	0	4	L
L 10620055	10620056	C	2 ACSR 6/1	7.37Y	116.1	0.00	9.90	1.55	1	10	5	89	0.00	0.0	9.785	0.034	0	0	0	3	L
L 10620011	10620055	C	2 ACSR 6/1	7.37Y	116.1	0.00	9.90	0.29	0	2	1	89	0.00	0.0	9.849	0.064	0	0	0	1	L
L 10620054	10620032	C	2 ACSR 6/1	7.37Y	116.1	0.02	9.92	5.42	3	39	9	97	0.01	0.0	9.850	0.152	0	0	0	6	L
L 10630014	10620054	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.93	4.21	2	31	5	99	0.00	0.0	9.917	0.067	0	0	0	5	L
L 10630016	10630014	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.94	4.21	2	31	5	99	0.00	0.0	9.969	0.052	0	0	0	5	L
L 10630001	10630016	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.95	1.38	1	9	4	91	0.00	0.0	10.187	0.218	0	0	0	2	L
L 10630012	10630001	C	2 ACSR 6/1	7.37Y	116.0	0.01	9.96	1.38	1	9	4	91	0.00	0.0	10.456	0.268	0	0	0	2	L
L 10630013	10630012	C	2 ACSR 6/1	7.37Y	116.0	0.01	9.97	1.38	1	9	4	91	0.00	0.0	10.732	0.276	0	0	0	2	L
L 10630015	10630013	C	2 ACSR 6/1	7.37Y	116.0	0.01	9.98	1.38	1	9	4	91	0.00	0.0	10.844	0.113	0	0	0	2	L
L 10620025	10620007	C	2 ACSR 6/1	7.37Y	116.1	0.03	9.87	14.43	8	106	7	100	0.03	0.0	9.585	0.077	0	0	0	22	L
L 10620044	10620025	C	2 ACSR 6/1	7.37Y	116.1	0.01	9.89	14.43	8	106	7	100	0.01	0.0	9.619	0.034	0	0	0	21	L
L 10620059	10620044	C	2 ACSR 6/1	7.37Y	116.1	0.02	9.90	14.43	8	106	7	100	0.01	0.0	9.658	0.039	0	0	0	20	L
L 10620049	10620059	C	2 ACSR 6/1	7.37Y	116.0	0.05	9.95	12.53	7	92	9	100	0.04	0.0	9.806	0.148	0	0	0	17	L
L 10620050	10620049	C	2 ACSR 6/1	7.37Y	116.0	0.02	9.97	12.53	7	92	9	100	0.02	0.0	9.868	0.061	0	0	0	17	L
L 10520050	10620050	C	2 ACSR 6/1	7.36Y	116.0	0.06	10.03	12.53	7	92	9	100	0.04	0.0	10.035	0.168	0	0	0	16	L
L 10630009	10520050	C	2 ACSR 6/1	7.36Y	115.9	0.05	10.08	12.53	7	92	8	100	0.03	0.0	10.165	0.130	0	0	0	16	L
L 10630002	10630009	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.08	3.49	2	25	4	99	0.00	0.0	10.198	0.032	0	0	0	4	L
L 10630010	10630002	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.08	3.49	2	25	4	99	0.00	0.0	10.225	0.027	0	0	0	4	L
L 10630011	10630010	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.09	0.75	0	5	2	93	0.00	0.0	10.261	0.035	0	0	0	1	L
L 10630003	10630009	C	2 ACSR 6/1	7.36Y	115.9	0.01	10.09	4.71	3	34	5	99	0.00	0.0	10.216	0.050	0	0	0	9	L
L 10630007	10630003	C	2 ACSR 6/1	7.36Y	115.9	0.01	10.09	3.40	2	25	1	100	0.00	0.0	10.297	0.082	0	0	0	6	L
L 10630008	10630007	C	2 ACSR 6/1	7.36Y	115.9	0.01	10.10	2.27	1	16	-4	-97	0.00	0.0	10.464	0.166	0	0	0	2	L
L 10630004	10630003	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.09	1.32	1	9	4	91	0.00	0.0	10.254	0.039	0	0	0	2	L
L 10630006	10630004	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.09	0.69	0	5	2	93	0.00	0.0	10.313	0.059	0	0	0	1	L
L 10630005	10630004	C	2 ACSR 6/1	7.36Y	115.9	0.00	10.09	0.63	0	4	2	89	0.00	0.0	10.315	0.060	0	0	0	1	L
L 10520014	10620050	C	2 ACSR 6/1	7.37Y	116.0	0.00	9.97	0.00	0	0	0	100	0.00	0.0	9.946	0.079	0	0	0	1	L
L 10620017	10620059	C	2 ACSR 6/1	7.37Y	116.1	0.00	9.90	0.74	0	5	2	93	0.00	0.0	9.756	0.098	0	0	0	2	L
L 10620030	10620043	ABC	1/0 ACSR 6	7.38Y	116.3	0.01	9.74	15.65	7	342	54	99	0.02	0.0	9.385	0.030	0	0	0	83	L
L 10620031	10620030	ABC	1/0 ACSR 6	7.38Y	116.3	0.01	9.75	15.65	7	342	54	99	0.03	0.0	9.424	0.039	0	0	0	82	L
L 10620013	10620031	ABC	1/0 ACSR 6	7.38Y	116.2	0.02	9.77	14.30	6	311	60	98	0.05	0.0	9.523	0.099	0	0	0	77	L
L 10620020	D10-62-P010	B	2 ACSR 6/1	7.38Y	116.2	0.01	9.78	5.00	3	33	16	90	0.00	0.0	9.584	0.060	0	0	0	5	L
L 10620016	10620020	B	2 ACSR 6/1	7.38Y	116.2	0.01	9.79	3.79	2	25	12	90	0.00	0.0	9.631	0.048	0	0	0	3	L
L 10620006	10620016	B	2 ACSR 6/1	7.38Y	116.2	0.01	9.80	3.79	2	25	12	90	0.00	0.0	9.701	0.070	0	0	0	1	L
L 10620045	10620006	B	2 ACSR 6/1	7.38Y	116.2	0.00	9.80	0.00	0	0	0	100	0.00	0.0	9.755	0.054	0	0	0	0	L
L 10620009	10620006	B	2 ACSR 6/1	7.38Y	116.2	0.01	9.80	3.79	2	25	12	90	0.00	0.0	9.778	0.077	0	0	0	1	L
L 10620001	10620020	B	2 ACSR 6/1	7.38Y	116.2	0.00	9.78	1.21	1	8	4	89	0.00	0.0	9.649	0.066	0	0	0	2	L
L 10620057	10620013	ABC	1/0 ACSR 6	7.38Y	116.2	0.02	9.79	12.14	5	265	45	99	0.03	0.0	9.608	0.085	0	0	0	70	L
L 10620019	10620057	ABC	1/0 ACSR 6	7.38Y	116.2	0.01	9.79	12.14	5	265	45	99	0.01	0.0	9.635	0.026	0	0	0	70	L
L 10620038	10620019	ABC	1/0 ACSR 6	7.38Y	116.2	0.01	9.81	11.98	5	262	44	99	0.03	0.0	9.702	0.068	0	0	0	69	L
L 10620039	10620038	ABC	1/0 ACSR 6	7.38Y	116.2	0.01	9.81	11.38	5	249	38	99	0.02	0.0	9.748	0.046	0	0	0	66	L
L 10620040	10620039	ABC	1/0 ACSR 6	7.38Y	116.2	0.01	9.82	10.97	5	239	41	99	0.02	0.0	9.800	0.052	0	0	0	64	L
L 10620041	10620040	A	2 ACSR 6/1	7.38Y	116.2	0.01	9.83	0.82	0	5	3	86	0.00	0.0	9.989	0.189	0	0	0	2	L
L 10620026	10620041	A	2 ACSR 6/1	7.38Y	116.2	0.00	9.83	0.00	0	0	0	100	0.00	0.0	10.076	0.087	0	0	0	1	L
L 10620027	10620040	ABC	1/0 ACSR 6	7.38Y	116.2	0.02	9.84	10.70	5	234	38	99	0.03	0.0	9.905	0.105	0	0	0	62	L
L 10620028	10620027	A	2 ACSR 6/1	7.38Y	116.2	0.00	9.84	0.33	0	2	1	89	0.00	0.0	9.939	0.034	0	0	0	1	L
L 10620033	10620027	ABC	1/0 ACSR 6	7.38Y	116.2	0.01	9.85	10.42	5	228	35	99	0.01	0.0	9.956	0.051	0	0	0	59	L
L 10620051	10620033	C	1/0 ACSR 6	7.38Y	116.1	0.00	9.85	2.71	1	18	-8	-91	0.00	0.0	10.054	0.099	0	0	0	1	L
L 10620034	10620033	ABC	1/0 ACSR 6	7.38Y	116.1	0.01	9.86	9.67	4	210	43	98	0.01	0.0	9.997	0.041	0	0	0	58	L
L 10620035	10620034	ABC	1/0 ACSR 6	7.37Y	116.1	0.01	9.86	9.32	4	202	39	98	0.01	0.0	10.037	0.040	0	0	0	55	L
L 10620005	10620035	ABC	1/0 ACSR 6	7.37Y	116.1	0.00	9.87	9.32	4	202	39	98	0.01	0.0	10.064	0.027	0	0	0	55	L
L 10620052	10620005	ABC	1/0 ACSR 6	7.37Y	116.1	0.01	9.88	8.63	4	187	39	98	0.02	0.0	10.143	0.078	0	0	0	50	L
L 10620046	10620052	A	2 ACSR 6/1	7.37Y	116.1	0.06	9.93	25.88	14	187	39	98	0.08	0.0	10.215	0.072	0	0	0	50	L
L 10620053	10620004	A	2 ACSR 6/1	7.37Y	116.0	0.06	10.00	25.88	14	187	39	98	0.09	0.0	10.298	0.083	0	0	0	50	L
L 10620048	10620053	A	2 ACSR 6/1	7.36Y	115.8	0.16	10.16	25.88	14	187	39	98	0.23	0.1	10.511	0.213	0	0	0	50	L
L 10730005	10620048	A	2 ACSR 6/1	7.35Y	115.8	0.09	10.25	25.88	14	186	39	98	0.12	0.1	10.623	0.112	0	0	0	50	L
L 10730003	10730005	A	2 ACSR 6/1	7.35Y	115.7	0.03	10.28	25.24	14	182	36	98	0.05	0.0	10.667	0.044	0	0	0	49	L
L 10730004	10730003	A	2 ACSR 6/1	7.35Y	115.7	0.03	10.31	25.24	14	182	36	98	0.04	0.0	10.709	0.042	0	0	0	49	L
L 10730001	10730004	A	2 ACSR 6/1	7.34Y	115.6	0.07	10.38	23.91	13	173	32	98	0.09	0.1	10.809	0.100	0	0	0	47	L
L 10730006	10730001	A	2 ACSR 6/1	7.34Y	115.6	0.06	10.44	23.30	13	168	30	98	0.07	0.0	10.892	0.082	0	0	0	45	L
L 10720009	10730006	A	2 ACSR 6/1	7.34Y	115.5	0.05	10.48	22.28	12	161	26	99	0.06	0.0	10.962	0.070	0	0	0	44	L
L 10720003	10720009	A	2 ACSR 6/1	7.33Y	115.5	0.03	10.51	20.88	12	151	28	98	0.04	0.0	11.013	0.051	0	0	0	41	L

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Balanced Voltage Drop Report
Source: EMANUEL

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
L 10720001	10720003	A	2 ACSR 6/1	7.33Y	115.4	0.06	10.58	19.94	11	143	31	98	0.07	0.0	11.116	0.103	0	0	0	40	L
L 10720008	10720001	A	2 ACSR 6/1	7.33Y	115.4	0.00	10.58	0.00	0	0	0	100	0.00	0.0	11.251	0.134	0	0	0	2	L
L 10720014	10720008	A	2 ACSR 6/1	7.33Y	115.4	0.00	10.58	0.00	0	0	0	100	0.00	0.0	11.398	0.148	0	0	0	1	L
L 10720011	10720001	A	2 ACSR 6/1	7.33Y	115.4	0.00	10.58	1.67	1	11	-5	-91	0.00	0.0	11.166	0.050	0	0	0	1	L
L 10720013	10720001	A	2 ACSR 6/1	7.33Y	115.4	0.03	10.61	17.92	10	127	33	97	0.03	0.0	11.177	0.061	0	0	0	36	L
L 10720007	10720013	A	2 ACSR 6/1	7.32Y	115.3	0.07	10.68	16.71	9	116	38	95	0.06	0.1	11.312	0.135	0	0	0	35	L
L 10720004	10720007	A	2 ACSR 6/1	7.32Y	115.3	0.06	10.74	16.71	9	116	38	95	0.06	0.0	11.435	0.123	0	0	0	35	L
L 10720005	10720004	A	2 ACSR 6/1	7.32Y	115.2	0.05	10.79	16.39	9	114	37	95	0.04	0.0	11.532	0.097	0	0	0	34	L
L 10720012	10720005	A	2 ACSR 6/1	7.31Y	115.2	0.05	10.84	16.39	9	114	37	95	0.04	0.0	11.630	0.097	0	0	0	34	L
L 10720010	10720012	A	2 ACSR 6/1	7.31Y	115.1	0.03	10.87	15.67	9	109	34	95	0.02	0.0	11.687	0.058	0	0	0	32	L
L 10820032	10720010	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.87	0.77	0	5	2	93	0.00	0.0	11.728	0.041	0	0	0	3	L
L 10820015	10720010	A	2 ACSR 6/1	7.31Y	115.1	0.02	10.89	14.91	8	104	32	96	0.02	0.0	11.736	0.049	0	0	0	29	L
L 10820017	10820015	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	1.07	1	7	-3	-92	0.00	0.0	11.772	0.035	0	0	0	3	L
L 10820018	10820017	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	1.05	1	7	-3	-92	0.00	0.0	11.820	0.049	0	0	0	2	L
L 10820019	10820018	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	1.05	1	7	-3	-92	0.00	0.0	11.861	0.040	0	0	0	2	L
L 10820004	10820019	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	11.908	0.047	0	0	0	1	L
L 10820037	10820004	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	11.970	0.063	0	0	0	1	L
L 10820039	10820037	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	12.147	0.176	0	0	0	1	L
L 10820038	10820037	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	12.019	0.048	0	0	0	0	L
L 10820036	10820004	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	11.951	0.043	0	0	0	0	L
L 10820003	10820018	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.90	0.00	0	0	0	100	0.00	0.0	11.853	0.033	0	0	0	0	L
L 10820001	10820015	A	2 ACSR 6/1	7.31Y	115.1	0.01	10.91	13.81	8	95	34	94	0.01	0.0	11.766	0.030	0	0	0	25	L
L 10820002	10820001	A	2 ACSR 6/1	7.31Y	115.1	0.02	10.93	13.32	7	92	32	94	0.01	0.0	11.809	0.043	0	0	0	23	L
L 10820034	10820002	A	2 ACSR 6/1	7.31Y	115.1	0.00	10.93	0.15	0	1	0	100	0.00	0.0	11.866	0.057	0	0	0	1	L
L 10820027	10820002	A	2 ACSR 6/1	7.31Y	115.1	0.01	10.94	12.90	7	89	31	94	0.01	0.0	11.840	0.030	0	0	0	21	L
L 10820028	10820027	A	2 ACSR 6/1	7.30Y	115.0	0.04	10.98	12.90	7	89	31	94	0.03	0.0	11.940	0.101	0	0	0	21	L
L 10820029	10820006	A	2 ACSR 6/1	7.30Y	115.0	0.02	11.00	12.90	7	89	31	94	0.02	0.0	11.996	0.055	0	0	0	21	L
L 10820026	10820029	A	2 ACSR 6/1	7.30Y	115.0	0.02	11.02	11.94	7	83	28	95	0.01	0.0	12.049	0.054	0	0	0	19	L
L 10820007	10820026	A	2 ACSR 6/1	7.30Y	114.9	0.03	11.05	10.86	6	75	24	95	0.02	0.0	12.146	0.096	0	0	0	17	L
L 10820008	10820007	A	2 ACSR 6/1	7.30Y	114.9	0.01	11.07	10.48	6	73	23	95	0.01	0.0	12.189	0.044	0	0	0	16	L
L 10820031	10820008	A	2 ACSR 6/1	7.30Y	114.9	0.02	11.09	10.19	6	71	22	96	0.01	0.0	12.242	0.052	0	0	0	15	L
L 10820030	10820031	A	2 ACSR 6/1	7.30Y	114.9	0.02	11.11	8.80	5	62	18	96	0.01	0.0	12.318	0.076	0	0	0	13	L
L 10820022	10820030	A	2 ACSR 6/1	7.29Y	114.9	0.02	11.12	8.45	5	59	17	96	0.01	0.0	12.387	0.069	0	0	0	11	L
L 10820024	10820022	A	2 ACSR 6/1	7.29Y	114.9	0.00	11.13	0.69	0	5	2	93	0.00	0.0	12.450	0.063	0	0	0	1	L
L 10820023	10820022	A	2 ACSR 6/1	7.29Y	114.8	0.04	11.16	7.77	4	55	14	97	0.02	0.0	12.545	0.159	0	0	0	9	L
L 10820016	10820023	A	2 ACSR 6/1	7.29Y	114.8	0.03	11.19	5.19	3	34	17	89	0.01	0.0	12.698	0.152	0	0	0	7	L
L 10830002	10830003	A	2 ACSR 6/1	7.29Y	114.8	0.01	11.19	3.32	2	22	11	89	0.00	0.0	12.754	0.057	0	0	0	5	L
L 10830011	10830002	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.20	1.34	1	9	4	91	0.00	0.0	12.804	0.050	0	0	0	2	L
L 10830012	10830011	A	2 ACSR 6/1	7.29Y	114.8	0.01	11.20	0.40	0	3	1	95	0.00	0.0	13.431	0.627	0	0	0	1	L
L 10830006	10830012	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.21	0.40	0	3	1	95	0.00	0.0	13.520	0.089	0	0	0	1	L
L 10830008	10830006	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.21	0.40	0	3	1	95	0.00	0.0	13.666	0.146	0	0	0	1	L
L 10830007	10830006	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.21	0.00	0	0	0	100	0.00	0.0	14.149	0.629	0	0	0	0	L
L 10830010	10830002	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.20	0.69	0	5	2	93	0.00	0.0	12.832	0.078	0	0	0	1	L
L 10830001	10830002	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.20	1.29	1	8	4	89	0.00	0.0	12.796	0.042	0	0	0	2	L
L 10820009	10820023	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.16	2.86	2	21	-2	-100	0.00	0.0	12.590	0.045	0	0	0	2	L
L 10820010	10820009	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.17	1.99	1	13	-6	-91	0.00	0.0	12.674	0.083	0	0	0	1	L
L 10820011	10820010	A	2 ACSR 6/1	7.29Y	114.8	0.01	11.17	1.99	1	13	-6	-91	0.00	0.0	12.844	0.171	0	0	0	1	L
L 10920011	10820011	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.17	0.00	0	0	0	100	0.00	0.0	12.974	0.130	0	0	0	0	L
L 10920010	10820011	A	2 ACSR 6/1	7.29Y	114.8	0.00	11.17	1.99	1	13	-6	-91	0.00	0.0	12.884	0.040	0	0	0	1	L
L 10720006	10720005	A	2 ACSR 6/1	7.32Y	115.2	0.00	10.79	0.00	0	0	0	100	0.00	0.0	11.608	0.075	0	0	0	0	L
L 10720002	10720001	A	2 ACSR 6/1	7.33Y	115.4	0.00	10.58	0.69	0	5	2	93	0.00	0.0	11.158	0.042	0	0	0	1	L
L 10730007	10730001	A	2 ACSR 6/1	7.34Y	115.6	0.00	10.38	0.00	0	0	0	100	0.00	0.0	10.860	0.051	0	0	0	1	L
L 10730002	10730001	A	2 ACSR 6/1	7.34Y	115.6	0.00	10.38	0.63	0	4	2	89	0.00	0.0	10.856	0.046	0	0	0	1	L
L 10620015	10620005	ABC	1/0 ACSR 6	7.37Y	116.1	0.00	9.87	0.32	0	6	3	89	0.00	0.0	10.128	0.063	0	0	0	2	L
L 10620012	10620031	B	2 ACSR 6/1	7.38Y	116.2	0.00	9.75	3.67	2	26	-9	-94	0.00	0.0	9.495	0.072	0	0	0	3	L
L 10620021	10620043	B	2 ACSR 6/1	7.38Y	116.3	0.00	9.73	2.44	1	16	8	89	0.00	0.0	9.376	0.021	0	0	0	3	L
L 10620022	10620021	B	2 ACSR 6/1	7.38Y	116.3	0.00	9.74	1.38	1	9	4	91	0.00	0.0	9.442	0.066	0	0	0	1	L
L 10620008	10620042	C	2 ACSR 6/1	7.39Y	116.3	0.00	9.68	0.00	0	0	0	100	0.00	0.0	9.284	0.066	0	0	0	0	L
L 10520027	10520026	B	2 ACSR 6/1	7.39Y	116.4	0.00	9.58	1.92	1	14	0	100	0.00	0.0	9.051	0.062	0	0	0	2	L
L 10520028	10520027	B	2 ACSR 6/1	7.39Y	116.4	0.00	9.58	1.04	1	7	-3	-92	0.00	0.0	9.122	0.070	0	0	0	1	L
L 10520002	10520032	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.45	2.21	1	16	1	100	0.00	0.0	8.823	0.075	0	0	0	7	L
L 10520001	10520002	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.45	1.73	1	13	-1	-100	0.00	0.0	8.872	0.050	0	0	0	4	L
L 10520005	10520001	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.45	0.02	0	0	0	100	0.00	0.0	8.925	0.052	0	0	0	1	L
L 10520041	10520042	B	2 ACSR 6/1	7.41Y	116.7	0.00	9.31	1.13	1	8	4	89	0.00	0.0	8.594	0.050	0	0	0	2	L
L 10520053	10520013	C	2 ACSR 6/1	7.43Y	117.0	0.01	9.05	1.87	1	13	-5	-93	0.00	0.0	8.350	0.182	0	0	0	1	L
L 10420089	10520053	C	2 ACSR 6/1	7.43Y	117.0	0.00	9.05	1.87	1	13	-5	-93	0.00	0.0	8.384	0.034	0	0	0	1	L
L 10420044	10520053	C	2 ACSR 6/1	7.43Y	117.0	0.00	9.05	0.00	0	0	0	100	0.00	0.0	8.405	0.055	0	0	0	0	L
L 10520015	10420021	B	2 ACSR 6/1	7.42Y	116.9	0.07	9.09	23.02	13	170	14	100	0.10	0.1	8.246	0.113	0	0	0	33	L
L 10520016	10520003	B	2 ACSR 6/1	7.42Y	116.9	0.02	9.10	23.02	13	170	14	100	0.02	0.0	8.275	0.029	0	0	0	33	L
L 10520030	10520016	B	2 ACSR 6/1	7.42Y	116.9	0.05	9.15	22.25	12	165	11	100	0.06	0.0	8.350	0.075	0	0	0	31	L
L 10420024	10520030	B	2 ACSR 6/1	7.42Y	116.8	0.03	9.18	21.80	12	162	9	100	0.04	0.0	8.402	0.052	0	0	0	29	L
L 10420078	10420024	B	2 ACSR 6/1	7.42Y	116.8	0.00	9.18	1.25	1	8	4	89	0.00	0.0	8.440	0.038	0	0	0	1	L
L 10420025	10420024	B	2 ACSR 6/1	7.42Y	116.8	0.02	9.20	20.66	11	153	5	100	0.02	0.0	8.432	0.030	0	0	0	28	L
L 10420086	10420025	B	2 ACSR 6/1	7.42Y	116.8	0.00	9.20	1.75	1	12	6	89	0.00	0.0	8.471	0.039	0	0	0	1	L
L 10420087	10420086	B	2 ACSR 6/1	7.42Y	116.8	0.01	9.20	1.75	1	12	6	89	0.00	0.0	8.572	0.101	0	0	0	1	L
L 10420045	10420025	B	2 ACSR 6/1	7.41Y	116.8	0.04	9.24	19.07	11	141	-1	-100	0.05	0.0	8.518	0.086	0	0	0	26	L
L 10420046	10420045	B	2 ACSR 6/1	7.41Y	116.8	0.00	9.24	0.58	0	4	2	89	0.00	0.0	8.558	0.040	0	0	0	2	L
L 10420007	10420045	B	2 ACSR 6/1	7.41Y	116.7	0.03	9.27	18.55	10	137	-2	-100	0.04	0.0	8.581	0.063	0	0	0	24	L

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Balanced Voltage Drop Report
Source: EMANUEL

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
L 10420048	10420007	B	2 ACSR 6/1	7.41Y	116.7	0.02	9.29	17.14	10	127	-8	-100	0.02	0.0	8.627	0.045	0	0	0	23	L
L 10420049	10420048	B	2 ACSR 6/1	7.41Y	116.7	0.02	9.31	17.14	10	127	-8	-100	0.03	0.0	8.679	0.052	0	0	0	23	L
L 10420084	10420049	B	2 ACSR 6/1	7.41Y	116.7	0.00	9.31	0.81	0	5	3	86	0.00	0.0	8.858	0.179	0	0	0	1	L
L 10420051	10420049	B	2 ACSR 6/1	7.41Y	116.7	0.03	9.33	16.09	9	119	-12	-99	0.03	0.0	8.746	0.067	0	0	0	21	L
L 10420064	10420051	B	2 ACSR 6/1	7.41Y	116.6	0.04	9.38	13.83	8	102	-10	-100	0.04	0.0	8.871	0.125	0	0	0	18	L
L 10420079	10420064	B	2 ACSR 6/1	7.40Y	116.6	0.02	9.39	13.49	7	99	-11	-99	0.01	0.0	8.920	0.049	0	0	0	16	L
L 10420080	10420079	B	2 ACSR 6/1	7.40Y	116.6	0.03	9.42	13.49	7	99	-11	-99	0.02	0.0	9.001	0.081	0	0	0	16	L
L 10430023	10420080	B	2 ACSR 6/1	7.40Y	116.6	0.02	9.44	11.33	6	83	-11	-99	0.02	0.0	9.075	0.074	0	0	0	12	L
L 10430018	10430023	B	2 ACSR 6/1	7.40Y	116.5	0.03	9.46	9.65	5	69	-17	-97	0.02	0.0	9.214	0.140	0	0	0	11	L
L 10430019	10430018	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.46	3.44	2	23	-10	-92	0.00	0.0	9.257	0.043	0	0	0	2	L
L 10430062	10430019	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.47	3.44	2	23	-10	-92	0.00	0.0	9.298	0.042	0	0	0	2	L
L 10430009	10430062	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.47	1.56	1	11	-5	-91	0.00	0.0	9.355	0.057	0	0	0	1	L
L 10430026	10430018	B	2 ACSR 6/1	7.40Y	116.5	0.01	9.47	6.28	3	46	-7	-99	0.00	0.0	9.270	0.056	0	0	0	9	L
L 10430048	10430026	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.47	1.51	1	11	-2	-98	0.00	0.0	9.299	0.029	0	0	0	2	L
L 10430049	10430048	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.47	0.49	0	3	2	83	0.00	0.0	9.340	0.041	0	0	0	1	L
L 10430052	10430049	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.47	0.49	0	3	2	83	0.00	0.0	9.442	0.101	0	0	0	1	L
L 10430027	10430026	B	2 ACSR 6/1	7.40Y	116.5	0.01	9.48	4.77	3	35	-6	-99	0.00	0.0	9.378	0.108	0	0	0	7	L
L 10430030	10430027	B	2 ACSR 6/1	7.40Y	116.5	0.01	9.49	4.37	2	31	-7	-98	0.00	0.0	9.497	0.120	0	0	0	5	L
L 10430024	10430030	B	2 ACSR 6/1	7.40Y	116.5	0.01	9.50	3.64	2	25	-11	-92	0.00	0.0	9.604	0.106	0	0	0	4	L
L 10430037	10430024	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.50	2.08	1	14	-6	-92	0.00	0.0	9.680	0.076	0	0	0	1	L
L 10430012	10430024	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.50	1.56	1	11	-5	-91	0.00	0.0	9.684	0.080	0	0	0	2	L
L 10430013	10430012	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.50	0.00	0	0	0	100	0.00	0.0	9.826	0.142	0	0	0	1	L
L 10430036	10430013	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.50	0.00	0	0	0	100	0.00	0.0	9.919	0.093	0	0	0	1	L
L 10430022	10430027	B	2 ACSR 6/1	7.40Y	116.5	0.00	9.48	0.50	0	3	2	83	0.00	0.0	9.441	0.063	0	0	0	2	L
L 10430005	10420080	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.42	1.35	1	9	-4	-91	0.00	0.0	9.066	0.065	0	0	0	1	L
L 10430003	10420080	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.42	0.28	0	2	1	89	0.00	0.0	9.053	0.053	0	0	0	2	L
L 10430004	10430003	B	2 ACSR 6/1	7.40Y	116.6	0.00	9.42	0.20	0	1	1	71	0.00	0.0	9.103	0.050	0	0	0	1	L
L 10420050	10420049	B	2 ACSR 6/1	7.41Y	116.7	0.00	9.31	0.41	0	3	1	95	0.00	0.0	8.712	0.033	0	0	0	1	L
L 10420047	10420007	B	2 ACSR 6/1	7.41Y	116.7	0.00	9.27	1.59	1	11	5	91	0.00	0.0	8.651	0.070	0	0	0	1	L
---------- Feeder No. 1 (CKT21-01) Beginning with Device 21-01 ----------																					
21-01	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	238.19	0	5715	175	100	0.00	0.0	0.000	0.070	0	0	0	793	
C 10660023	10660035	ABC	4/0 ACSR 6	7.92Y	124.8	0.10	1.21	234.10	69	5569	73	100	4.28	0.1	1.078	0.059	0	0	0	776	C
C 10660057	10660023	ABC	4/0 ACSR 6	7.92Y	124.7	0.07	1.28	233.57	69	5552	60	100	3.25	0.1	1.123	0.045	0	0	0	774	C
C 10660105	10660057	ABC	4/0 ACSR 6	7.92Y	124.7	0.05	1.33	232.88	68	5533	46	100	2.08	0.0	1.151	0.029	0	0	0	772	C
C 10660106	10-66-P158-A	ABC	4/0 ACSR 6	7.92Y	124.7	0.01	1.34	232.88	68	5531	42	100	0.52	0.0	1.158	0.007	0	0	0	772	C
C 10660102	10660106	ABC	4/0 ACSR 6	7.91Y	124.6	0.08	1.42	232.70	68	5526	40	100	3.60	0.1	1.208	0.050	0	0	0	771	C
C 10660087	10660102	ABC	4/0 ACSR 6	7.90Y	124.4	0.17	1.59	228.00	67	5411	36	100	7.44	0.1	1.315	0.107	0	0	0	757	C
C 10660026	10660087	ABC	4/0 ACSR 6	7.90Y	124.3	0.07	1.66	226.65	67	5371	27	100	2.87	0.1	1.357	0.042	0	0	0	751	C
C 10660027	10660026	ABC	4/0 ACSR 6	7.89Y	124.2	0.11	1.77	226.26	67	5359	26	100	4.57	0.1	1.424	0.067	0	0	0	749	C
---------- Feeder No. 2 (CKT21-02) Beginning with Device 21-02 ----------																					
21-02	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	103.99	0	2496	47	100	0.00	0.0	0.000	0.067	0	0	0	344	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	15703	166	0	0	0	0	528	0.00	16397
KVAR	901	6	-917	-10	0	0	891		870

Lowest Voltage = 114.79 on Element 10830008
Max Accm VoltD = 11.21 on Element 10830008
Max Elem VoltD = 0.65 on Element 10650172

Balanced Voltage Drop Report
Source: OVEN FORK

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
OVEN FORK		ABC	OVENFORK	15.12Y	126.0	0.00	0.00	255.36	0	11248	-2767	-97	0.00	0.0	0.000	0.000	0	0	0	884
---------- Feeder No. 3 (CKT641-03) Beginning with Device 641-3 ----------																				
641-3	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	48.57	0	2094	685	95	0.00	0.0	0.000	0.000	0	0	0	1
---------- Feeder No. 2 (CKT641-02) Beginning with Device 641-02 ----------																				
641-02	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	138.75	0	5507	-3047	-87	0.00	0.0	0.000	0.000	0	0	0	415
---------- Feeder No. 1 (CKT641-01) Beginning with Device 641-01 ----------																				
641-01	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	80.89	0	3647	-406	-99	0.00	0.0	0.000	0.000	0	0	0	468

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	10688	285	0	0	0	0	275	0.00	11248
KVAR	-275	2	-2755	-4	0	0	264		-2767

Lowest Voltage = 123.33 on Element 35570011
Max Accm VoltD = 2.67 on Element 35570011
Max Elem VoltD = 0.21 on Element 34690003

Balanced Voltage Drop Report
Source: CHAD

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CHAD		ABC	CHAD	15.12Y	126.0	0.00	0.00	245.65	0	11115	791	100	0.00	0.0	0.000	0.000	0	0	0	1417
---------- Feeder No. 4 (CKT103-04) Beginning with Device 103-04 ----------																				
103-04	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	148.80	0	6750	-23	-100	0.00	0.0	0.000	0.000	0	0	0	822
---------- Feeder No. 1 (CKT103-01) Beginning with Device 103-01 ----------																				
103-01	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	18.67	0	835	139	99	0.00	0.0	0.000	0.000	0	0	0	141
---------- Feeder No. 2 (CKT103-02) Beginning with Device 103-02 ----------																				
103-02	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	46.99	0	2088	428	98	0.00	0.0	0.000	0.000	0	0	0	285
---------- Feeder No. 3 (CKT103-03) Beginning with Device 103-03 ----------																				
103-03	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	32.24	0	1441	248	99	0.00	0.0	0.000	0.000	0	0	0	169

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	10645	322	0	0	0	0	147	0.00	11115
KVAR	1453	45	-981	-9	0	0	283		791

Lowest Voltage = 123.21 on Element 37850012
Max Accm VoltD = 2.79 on Element 37850012
Max Elem VoltD = 0.19 on Element 38440011

Balanced Voltage Drop Report
Source: ALEX CREEK

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
ALEX CREEK		ABC	ALEX CREEK	15.12Y	126.0	0.00	0.00	73.73	0	3316	434	99	0.00	0.0	0.000	0.000	0	0	0	616
---------- Feeder No. 1 (CKT110-01) Beginning with Device 110-01 ----------																				
110-01	ALEX CREEK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	73.73	0	3316	434	99	0.00	0.0	0.000	0.000	0	0	0	616

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	3191	65	0	0	0	0	60	0.00	3316
KVAR	360	7	0	0	0	0	67		434

Lowest Voltage = 121.61 on Element 12020002
Max Accm VoltD = 4.39 on Element 12020002
Max Elem VoltD = 0.23 on Element 11690001

Balanced Voltage Drop Report
Source: PINE MOUNTAIN

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
PINE MOUNTAIN		ABC	PINE MNT	15.12Y	126.0	0.00	0.00	208.18	0	9442	-121	-100	0.00	0.0	0.000	0.000	0	0	0	332	
---------- Feeder No. 1 (CKT50-01) Beginning with Device 50-01 ----------																					
50-01	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	30.93	0	1365	323	97	0.00	0.0	0.000	0.000	0	0	0	181	
---------- Feeder No. 2 (CKT50-02) Beginning with Device 50-02 ----------																					
50-02	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	136.52	0	6133	-853	-99	0.00	0.0	0.000	0.000	0	0	0	12	
H 37570033	37570035	ABC	336 ACSR 1	15.12Y	126.0	-0.19	-0.04	-29.22	6	3	-1324	0	0.85	29.9	1.917	1.193	0	0	0	0	H
H 37480001	37480004	ABC	336 ACSR 1	15.13Y	126.1	-0.01	-0.05	-29.22	6	2	-1326	0	0.06	3.1	2.004	0.087	0	0	0	0	H
H 37480002	37480001	ABC	336 ACSR 1	15.13Y	126.1	-0.03	-0.08	-29.22	6	2	-1326	0	0.14	7.5	2.207	0.203	0	0	0	0	H
H 37580001	37-58-P001-A	ABC	1/0 ACSR 6	15.15Y	126.2	-0.16	-0.24	-29.22	13	2	-1326	0	1.78	100.0	2.991	0.784	0	0	0	0	H
H 37590028	37580001	ABC	1/0 ACSR 6	15.15Y	126.2	0.00	-0.24	0.00	0	0	0	100	0.00	0.0	3.412	0.421	0	0	0	0	H
---------- Feeder No. 3 (CKT50-03) Beginning with Device 50-03 ----------																					
50-03	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	43.79	0	1944	409	98	0.00	0.0	0.000	0.421	0	0	0	139	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	9106	304	0	0	0	0	32	0.00	9442
KVAR	1108	36	-1328	0	0	0	63		-121

Lowest Voltage = 124.61 on Element 32920002
Max Accm VoltD = 1.39 on Element 32920002
Max Elem VoltD = 0.15 on Element 36090007

Balanced Voltage Drop Report
Source: ARKLAND

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
ARKLAND		ABC	ARKLAND	7.56Y	126.0	0.00	0.00	381.98	0	8052	3198	93	0.00	0.0	0.000	0.000	0	0	0	1	
---------- Feeder No. 2 (CKT73-02) Beginning with Device 73-02 ----------																					
73-02	ARKLAND	ABC	280-VWVE	7.56Y	126.0	0.00	0.00	0.00	0	0	0	100	0.00	0.0	0.000	0.000	0	0	0	0	
---------- Feeder No. 1 (CKT73-01) Beginning with Device 73-01 ----------																					
73-01	ARKLAND	ABC	280-VWVE	7.56Y	126.0	0.00	0.00	381.98	0	8052	3198	93	0.00	0.0	0.000	0.000	0	0	0	1	
C 34980002	73-01	ABC	1/0 ACSR 6	7.55Y	125.9	0.10	0.10	381.98	166	8052	3198	93	5.17	0.1	0.013	0.013	0	0	0	1	C
C 34980008	34-98-P001-A	ABC	1/0 ACSR 6	7.54Y	125.7	0.22	0.31	381.98	166	8046	3193	93	11.62	0.1	0.043	0.030	0	0	0	1	C
C 34980009	34980008	ABC	1/0 ACSR 6	7.41Y	123.4	2.25	2.57	381.98	166	8035	3182	93	121.10	1.5	0.355	0.312	0	0	0	1	C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	7756	158	0	0	0	0	138	0.00	8052
KVAR	3005	61	0	0	0	0	132		3198

Lowest Voltage = 123.43 on Element 34980009
Max Accm VoltD = 2.57 on Element 34980009
Max Elem VoltD = 2.25 on Element 34980009

Balanced Voltage Drop Report
Source: SOUTH CORBIN

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
SOUTH CORBIN		ABC	SOUTH CORB	8.00Y	126.0	0.00	0.00	669.14	0	16060	222	100	0.00	0.0	0.000	0.000	0	0	0	2078
---------- Feeder No. 5 (CKT45-05) Beginning with Device 45-05 ----------																				
45-05	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	70.41	0	1670	-259	-99	0.00	0.0	0.000	0.000	0	0	0	174
---------- Feeder No. 4 (CKT45-04) Beginning with Device 45-04 ----------																				
45-04	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	195.59	0	4695	52	100	0.00	0.0	0.000	0.000	0	0	0	654
---------- Feeder No. 1 (CKT45-01) Beginning with Device 45-01 ----------																				
45-01	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	126.91	0	3046	-42	-100	0.00	0.0	0.000	0.000	0	0	0	391
---------- Feeder No. 2 (CKT45-02) Beginning with Device 45-02 ----------																				
45-02	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	200.91	0	4804	417	100	0.00	0.0	0.000	0.000	0	0	0	582
---------- Feeder No. 3 (CKT45-03) Beginning with Device 45-03 ----------																				
45-03	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	76.90	0	1845	54	100	0.00	0.0	0.000	0.000	0	0	0	277

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	15446	373	0	0	0	0	242	0.00	16060
KVAR	1125	30	-1305	-32	0	0	404		222

Lowest Voltage = 120.48 on Element 08490017
Max Accm VoltD = 5.52 on Element 08490017
Max Elem VoltD = 0.29 on Element 09530160

Balanced Voltage Drop Report
Source: JELLICO

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
JELLICO		ABC	JELLICO	8.00Y	126.0	0.00	0.00	136.29	0	3215	-604	-98	0.00	0.0	0.000	0.000	0	0	0	703
---------- Feeder No. 2 (CKT41-02) Beginning with Device 41-02 ----------																				
41-02	JELLICO	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	100.69	0	2391	-350	-99	0.00	0.0	0.000	0.000	0	0	0	468
---------- Feeder No. 1 (CKT41-01) Beginning with Device 41-01 ----------																				
41-01	JELLICO	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	35.90	0	824	-254	-96	0.00	0.0	0.000	0.000	0	0	0	235

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	3044	19	0	0	0	0	152	0.00	3215
KVAR	-105	3	-637	-3	0	0	137		-604

Lowest Voltage = 117.19 on Element 25150011
Max Accm VoltD = 8.81 on Element 25150011
Max Elem VoltD = 0.68 on Element 20540003

Balanced Voltage Drop Report
Source: GOLDBUG

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
GOLDBUG		ABC	GOLDBUG	8.00Y	126.0	0.00	0.00	524.23	0	12579	339	100	0.00	0.0	0.000	0.000	0	0	0	1774
---------- Feeder No. 4 (CKT64-04) Beginning with Device 64-04 ----------																				
64-04	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.23	0	1061	-400	-94	0.00	0.0	0.000	0.000	0	0	0	73
---------- Feeder No. 3 (CKT64-03) Beginning with Device 64-03 ----------																				
64-03	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	135.72	0	3101	999	95	0.00	0.0	0.000	0.000	0	0	0	110
---------- Feeder No. 2 (CKT64-02) Beginning with Device 64-02 ----------																				
64-02	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	107.96	0	2570	-329	-99	0.00	0.0	0.000	0.000	0	0	0	593
---------- Feeder No. 1 (CKT64-01) Beginning with Device 64-01 ----------																				
64-01	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	243.60	0	5847	69	100	0.00	0.0	0.000	0.000	0	0	0	998

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	12042	195	0	0	0	0	341	0.00	12579
KVAR	1114	19	-1262	-17	0	0	484		339

Lowest Voltage = 118.64 on Element 14650053
Max Accm VoltD = 7.36 on Element 14650053
Max Elem VoltD = 0.64 on Element 14690107

Balanced Voltage Drop Report
Source: CARPENTER

Database: C:\DOCUMENTS AND SETTINGS\SCONOVER\MY DOCUMENTS\CLIENT AND CLIENT PROJECTS\CUMBERLAND VALLEY - 2011 CWP\MILSOFT KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CARPENTER		ABC	CARPENTER	15.12Y	126.0	0.00	0.00	523.97	0	23765	360	100	0.00	0.0	0.000	0.000	0	0	0	3466
---------- Feeder No. 4 (CKT85-04) Beginning with Device 85-04 ----------																				
85-04	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	194.94	0	8843	20	100	0.00	0.0	0.000	0.000	0	0	0	1007
---------- Feeder No. 2 (CKT85-02) Beginning with Device 85-02 ----------																				
85-02	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	126.94	0	5677	961	99	0.00	0.0	0.000	0.000	0	0	0	653
---------- Feeder No. 1 (CKT85-01) Beginning with Device 85-01 ----------																				
85-01	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	77.92	0	3496	520	99	0.00	0.0	0.000	0.000	0	0	0	806
---------- Feeder No. 3 (CKT85-03) Beginning with Device 85-03 ----------																				
85-03	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	129.21	0	5749	-1140	-98	0.00	0.0	0.000	0.000	0	0	0	1000

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	22741	389	0	0	0	0	635	0.00	23765
KVAR	2245	37	-2884	-21	0	0	983		360

Lowest Voltage = 117.80 on Element 23420005
Max Accm VoltD = 8.20 on Element 23420005
Max Elem VoltD = 0.78 on Element 22330044

Substation Summary:

Substation	KW	KW Losses	KVAR	KVAR Losses	KVA	% Capacity
GIRDLER	9362.00	185.00	983.00	204.00	9385.05	0.00
LIBERTY CHURCH	8936.00	316.00	942.00	399.00	8935.13	0.00
ALEX CREEK	3316.00	60.00	434.00	67.00	3344.62	0.00
CHAD	11114.00	147.00	1781.00	283.00	11142.67	0.00
BACON CREEK	4454.00	9.00	368.00	15.00	4499.16	0.00
PINE MOUNTAIN	9442.00	32.00	1207.00	63.00	9443.06	0.00
BLEDSOE	7157.00	120.00	14.00	120.00	7270.47	0.00
ARKLAND	8052.00	138.00	3198.00	132.00	8663.31	0.00
OVEN FORK	11248.00	275.00	-9.00	264.00	11583.12	0.00
CARPENTER	23765.00	635.00	3265.00	983.00	23767.49	0.00
JELLICO	3215.00	152.00	35.00	137.00	3271.27	0.00
GOLDBUG	12578.00	341.00	1617.00	484.00	12583.19	0.00
ROCKHOLDS	8878.00	164.00	1107.00	233.00	8889.64	0.00
CUMBERLAND F...	15782.00	318.00	1329.00	518.00	15785.93	0.00
HINKLE	8423.00	178.00	615.00	215.00	8425.02	0.00
EMANUEL	16397.00	528.00	1798.00	891.00	16420.27	0.00
SOUTH CORBIN	16061.00	242.00	1559.00	404.00	16061.42	0.00
NORTH CORBIN	9901.00	206.00	1000.00	334.00	9906.12	0.00
Total:	188081.00	4046.00	21243.00	5746.00	189376.98	

APPENDIX II
2015 Design Load ~ ASI

Summary

Balanced Voltage Drop Report
Source: CUMBERLAND F...

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case: 12/27/2011 23:35 Page 1

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CUMBERLAND F...		ABC	CUMBERLAND	8.00Y	126.0	0.00	0.00	657.37	0	15776	283	100	0.00	0.0	0.000	0.000	0	0	0	1826
---------- Feeder No. 4 (CKT26-04) Beginning with Device 26-04 ----------																				
26-04	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	136.50	0	3264	280	100	0.00	0.0	0.000	0.000	0	0	0	310
---------- Feeder No. 3 (CKT26-03) Beginning with Device 26-03 ----------																				
26-03	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	191.68	0	4595	227	100	0.00	0.0	0.000	0.000	0	0	0	562
---------- Feeder No. 1 (CKT26-01) Beginning with Device 26-01 ----------																				
26-01	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	208.17	0	4997	-12	-100	0.00	0.0	0.000	0.000	0	0	0	576
---------- Feeder No. 2 (CKT26-02) Beginning with Device 26-02 ----------																				
26-02	CUMBERLAND F...	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	121.96	0	2920	-212	-100	0.00	0.0	0.000	0.000	0	0	0	378

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	15157	327	0	0	0	0	293	0.00	15776
KVAR	799	14	-965	-42	0	0	476		283

Lowest Voltage = 119.24 on Element 08470004
Max Accm VoltD = 6.76 on Element 08470004
Max Elem VoltD = 1.78 on Element 08570048

Balanced Voltage Drop Report
Source: GIRDLER

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
GIRDLER		ABC	GIRDLER	8.00Y	126.0	0.00	0.00	391.00	0	9362	657	100	0.00	0.0	0.000	0.000	0	0	0	1425	
---------- Feeder No. 1 (CKT106-01) Beginning with Device 106-01 ----------																					
106-01	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	126.85	0	3045	-14	-100	0.00	0.0	0.000	0.000	0	0	0	487	
L 11140004	11140007	A	2 ACSR 6/1	7.48Y	117.8	0.20	8.17	40.51	23	302	28	100	0.49	0.2	7.526	0.181	0	0	0	41	L
L 11140022	11140004	A	2 ACSR 6/1	7.48Y	117.8	0.00	8.17	1.18	1	8	4	89	0.00	0.0	7.573	0.047	0	0	0	2	L
L 11140005	11140004	A	2 ACSR 6/1	7.47Y	117.7	0.13	8.30	39.41	22	294	24	100	0.31	0.1	7.648	0.122	0	0	0	39	L
L 11040004	11140005	A	2 ACSR 6/1	7.47Y	117.6	0.11	8.42	37.81	21	281	28	100	0.25	0.1	7.757	0.108	0	0	0	38	L
L 11050020	11040004	A	2 ACSR 6/1	7.47Y	117.6	0.00	8.42	0.23	0	2	1	89	0.00	0.0	7.785	0.028	0	0	0	1	L
L 11050021	11040004	A	2 ACSR 6/1	7.46Y	117.5	0.12	8.54	37.60	21	279	27	100	0.27	0.1	7.871	0.114	0	0	0	37	L
L 11050022	11050021	A	2 ACSR 6/1	7.46Y	117.4	0.06	8.59	36.28	20	269	31	99	0.12	0.0	7.927	0.056	0	0	0	36	L
L 11050023	11050022	A	2 ACSR 6/1	7.45Y	117.4	0.03	8.62	35.29	20	262	27	99	0.06	0.0	7.954	0.027	0	0	0	34	L
L 11050024	11050023	A	2 ACSR 6/1	7.44Y	117.2	0.16	8.78	33.19	18	247	20	100	0.32	0.1	8.129	0.175	0	0	0	32	L
L 11050025	11050024	A	2 ACSR 6/1	7.44Y	117.1	0.10	8.88	33.19	18	246	20	100	0.20	0.1	8.242	0.113	0	0	0	32	L
L 11050015	11050025	A	2 ACSR 6/1	7.44Y	117.1	0.03	8.91	10.61	6	78	14	98	0.02	0.0	8.328	0.086	0	0	0	13	L
L 11050016	11050015	A	2 ACSR 6/1	7.43Y	117.1	0.02	8.93	9.52	5	70	10	99	0.01	0.0	8.409	0.081	0	0	0	12	L
L 11050026	11050016	A	2 ACSR 6/1	7.43Y	117.1	0.01	8.94	8.67	5	64	7	99	0.00	0.0	8.436	0.028	0	0	0	11	L
L 11050009	11050027	A	2 ACSR 6/1	7.43Y	117.0	0.02	8.96	7.38	4	54	11	98	0.01	0.0	8.517	0.081	0	0	0	10	L
L 11050008	11050009	A	2 ACSR 6/1	7.43Y	117.0	0.01	8.97	5.21	3	39	3	100	0.00	0.0	8.583	0.065	0	0	0	7	L
L 11050017	11050008	A	2 ACSR 6/1	7.43Y	117.0	0.02	8.99	4.42	2	33	0	100	0.01	0.0	8.773	0.190	0	0	0	5	L
L 11050019	11050017	A	15 KV 2 UR	7.43Y	117.0	0.03	9.02	2.37	1	16	6	94	0.00	0.0	9.104	0.331	0	0	0	2	L
L 05950009	11050019	A	2 ACSR 6/1	7.43Y	117.0	0.02	9.04	2.43	1	16	8	89	0.00	0.0	9.328	0.224	0	0	0	2	L
L 05950010	05950009	A	15 KV 2 UR	7.43Y	117.0	0.01	9.05	2.43	1	16	8	89	0.00	0.0	9.433	0.105	0	0	0	2	L
L 11050018	11050017	A	2 ACSR 6/1	7.43Y	117.0	0.00	8.99	2.35	1	16	-6	-94	0.00	0.0	8.848	0.075	0	0	0	3	L
L 11050010	11050018	A	2 ACSR 6/1	7.43Y	117.0	0.00	8.99	1.08	1	8	-3	-94	0.00	0.0	9.060	0.213	0	0	0	2	L
L 11060003	11050010	A	2 ACSR 6/1	7.43Y	117.0	0.00	8.99	0.00	0	0	0	100	0.00	0.0	9.277	0.217	0	0	0	1	L
L 11060004	11060003	A	2 ACSR 6/1	7.43Y	117.0	0.00	8.99	0.00	0	0	0	100	0.00	0.0	9.382	0.104	0	0	0	1	L
L 11050011	11050008	A	2 ACSR 6/1	7.43Y	117.0	0.00	8.97	0.87	0	6	3	89	0.00	0.0	8.623	0.041	0	0	0	2	L
L 11050013	11050025	A	2 ACSR 6/1	7.43Y	117.1	0.04	8.93	21.57	12	160	9	100	0.06	0.0	8.318	0.076	0	0	0	18	L
L 11050014	11050013	A	2 ACSR 6/1	7.43Y	117.0	0.09	9.01	20.36	11	151	12	100	0.10	0.1	8.472	0.154	0	0	0	16	L
L 05950001	11050014	A	2 ACSR 6/1	7.43Y	116.9	0.05	9.06	19.75	11	146	9	100	0.06	0.0	8.563	0.091	0	0	0	15	L
L 05950006	05950001	A	2 ACSR 6/1	7.42Y	116.9	0.02	9.08	18.15	10	134	14	99	0.02	0.0	8.607	0.044	0	0	0	14	L
L 05950002	05950003	A	2 ACSR 6/1	7.42Y	116.9	0.03	9.11	18.15	10	134	14	99	0.03	0.0	8.662	0.055	0	0	0	14	L
L 05950007	05950002	A	2 ACSR 6/1	7.42Y	116.8	0.06	9.17	14.66	8	109	2	100	0.05	0.0	8.815	0.152	0	0	0	13	L
L 05950008	05950007	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.19	12.28	7	91	2	100	0.01	0.0	8.859	0.045	0	0	0	11	L
L 05950004	05950008	A	2 ACSR 6/1	7.42Y	116.8	0.03	9.21	12.28	7	91	2	100	0.02	0.0	8.946	0.086	0	0	0	11	L
L 05850001	05950004	A	2 ACSR 6/1	7.41Y	116.7	0.04	9.25	11.10	6	82	5	100	0.03	0.0	9.075	0.129	0	0	0	10	L
L 05850003	05850001	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.27	8.66	5	63	12	98	0.01	0.0	9.156	0.081	0	0	0	8	L
L 05850002	05850003	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.29	7.75	4	55	15	96	0.01	0.0	9.222	0.066	0	0	0	7	L
L 05850004	05850002	A	2 ACSR 6/1	7.41Y	116.7	0.02	9.31	7.75	4	55	15	96	0.01	0.0	9.318	0.096	0	0	0	7	L
L 05850005	05850004	A	2 ACSR 6/1	7.41Y	116.7	0.01	9.32	6.87	4	49	12	97	0.00	0.0	9.357	0.039	0	0	0	6	L
L 05850008	05850006	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.32	1.44	1	10	5	89	0.00	0.0	9.388	0.031	0	0	0	2	L
L 05850007	05850008	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.32	0.60	0	4	2	89	0.00	0.0	9.495	0.107	0	0	0	1	L
L 05850011	05850007	A	2 ACSR 6/1	7.41Y	116.7	0.00	9.33	0.60	0	4	2	89	0.00	0.0	9.671	0.175	0	0	0	1	L
L 05850009	05850005	A	2 ACSR 6/1	7.41Y	116.6	0.06	9.38	5.47	3	40	7	99	0.02	0.0	9.754	0.397	0	0	0	4	L
L 05850010	05850009	A	2 ACSR 6/1	7.40Y	116.6	0.02	9.40	5.47	3	40	7	99	0.01	0.0	9.865	0.111	0	0	0	4	L
L 05860001	05850010	A	2 ACSR 6/1	7.40Y	116.6	0.01	9.41	4.50	2	33	4	99	0.00	0.0	9.937	0.071	0	0	0	3	L
L 05860002	05860001	A	2 ACSR 6/1	7.40Y	116.5	0.05	9.46	4.50	2	33	4	99	0.01	0.0	10.349	0.413	0	0	0	3	L
L 05860003	05860002	A	15 KV 2 UR	7.40Y	116.5	0.01	9.47	4.47	3	33	4	99	0.00	0.0	10.398	0.048	0	0	0	2	L
L 05860004	05860003	A	15 KV 2 UR	7.40Y	116.5	0.01	9.48	2.87	2	19	9	90	0.00	0.0	10.480	0.082	0	0	0	1	L
L 05950005	05950007	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.18	1.57	1	11	-4	-94	0.00	0.0	9.273	0.458	0	0	0	1	L
L 11050012	11050025	A	2 ACSR 6/1	7.44Y	117.1	0.00	8.88	1.17	1	8	-3	-94	0.00	0.0	8.282	0.041	0	0	0	1	L
---------- Feeder No. 2 (CKT106-02) Beginning with Device 106-02 ----------																					
106-02	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	120.47	0	2854	466	99	0.00	0.0	0.000	0.041	0	0	0	380	
---------- Feeder No. 3 (CKT106-03) Beginning with Device 106-03 ----------																					
106-03	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	91.76	0	2198	137	100	0.00	0.0	0.000	0.041	0	0	0	375	
---------- Feeder No. 4 (CKT106-04) Beginning with Device 106-04 ----------																					
106-04	GIRDLER	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	52.78	0	1265	69	100	0.00	0.0	0.000	0.041	0	0	0	183	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8995	182	0	0	0	0	185	0.00	9362
KVAR	760	19	-323	-3	0	0	204		657

Lowest Voltage = 116.52 on Element 05860004
Max Accm VoltD = 9.48 on Element 05860004
Max Elem VoltD = 0.43 on Element 11120022

Balanced Voltage Drop Report
Source: LIBERTY CHURCH

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
LIBERTY CHURCH		ABC	LIBERTY CH	8.00Y	126.0	0.00	0.00	370.30	0	8887	-173	-100	0.00	0.0	0.000	0.000	0	0	0	1004
---------- Feeder No. 3 (CKT107-03) Beginning with Device 107-03 ----------																				
107-03	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	0.24	0	5	2	93	0.00	0.0	0.000	0.000	0	0	0	1
---------- Feeder No. 2 (CKT107-02) Beginning with Device 107-02 ----------																				
107-02	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	183.23	0	4396	127	100	0.00	0.0	0.000	0.000	0	0	0	657
---------- Feeder No. 1 (CKT107-01) Beginning with Device 107-01 ----------																				
107-01	LIBERTY CHURCH	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	187.27	0	4485	-302	-100	0.00	0.0	0.000	0.000	0	0	0	346

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8483	218	0	0	0	0	185	0.00	8887
KVAR	533	16	-969	-14	0	0	261		-173

Lowest Voltage = 120.07 on Element 16130034
Max Accm VoltD = 5.93 on Element 16130034
Max Elem VoltD = 0.74 on Element 09980009

Balanced Voltage Drop Report
Source: BACON CREEK

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
BACON CREEK		ABC	BACON CREE	8.00Y	126.0	0.00	0.00	187.44	0	4454	-638	-99	0.00	0.0	0.000	0.000	0	0	0	167
---------- Feeder No. 3 (CKT87-03) Beginning with Device 87-03 ----------																				
87-03	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.59	0	1118	-234	-98	0.00	0.0	0.000	0.000	0	0	0	123
---------- Feeder No. 2 (CKT87-02) Beginning with Device 87-02 ----------																				
87-02	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	97.52	0	2335	165	100	0.00	0.0	0.000	0.000	0	0	0	3
---------- Feeder No. 1 (CKT87-01) Beginning with Device 87-01 ----------																				
87-01	BACON CREEK	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.96	0	1001	-569	-87	0.00	0.0	0.000	0.000	0	0	0	41

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	4298	147	0	0	0	0	9	0.00	4454
KVAR	341	12	-992	-13	0	0	15		-638

Lowest Voltage = 125.60 on Element 09640142
Max Accm VoltD = 0.40 on Element 09640142
Max Elem VoltD = 0.18 on Element 09640128

Balanced Voltage Drop Report
Source: HINKLE

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
HINKLE		ABC	HINKLE	8.00Y	126.0	0.00	0.00	383.20	0	9188	-436	-100	0.00	0.0	0.000	0.000	0	0	0	1310
---------- Feeder No. 3 (CKT53-03) Beginning with Device 53-03 ----------																				
53-03	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	183.54	0	4403	142	100	0.00	0.0	0.000	0.000	0	0	0	467
---------- Feeder No. 2 (CKT53-02) Beginning with Device 53-02 ----------																				
53-02	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	47.97	0	1150	-52	-100	0.00	0.0	0.000	0.000	0	0	0	171
---------- Feeder No. 1 (CKT53-01) Beginning with Device 53-01 ----------																				
53-01	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	81.88	0	1877	-584	-95	0.00	0.0	0.000	0.000	0	0	0	341
---------- Feeder No. 4 (CKT53-04) Beginning with Device 53-04 ----------																				
53-04	HINKLE	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	73.26	0	1757	58	100	0.00	0.0	0.000	0.000	0	0	0	331

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8816	209	0	0	0	0	162	0.00	9188
KVAR	753	18	-1450	-28	0	0	271		-436

Lowest Voltage = 120.01 on Element 17920014
Max Accm VoltD = 5.99 on Element 17920014
Max Elem VoltD = 0.66 on Element 11540012

Balanced Voltage Drop Report
Source: NORTH CORBIN

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
NORTH CORBIN		ABC	NORTH CORB	8.00Y	126.0	0.00	0.00	505.79	0	12136	-318	-100	0.00	0.0	0.000	0.000	0	0	0	1770	
---------- Feeder No. 1 (CKT48-01) Beginning with Device 48-01 ----------																					
48-01	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	107.54	0	2581	5	100	0.00	0.0	0.000	0.000	0	0	0	301	
---------- Feeder No. 2 (CKT48-02) Beginning with Device 48-02 ----------																					
48-02	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	179.17	0	4301	17	100	0.00	0.0	0.000	0.000	0	0	0	623	
---------- Feeder No. 3 (CKT48-03) Beginning with Device 48-03 ----------																					
48-03	NORTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	219.36	0	5254	-339	-100	0.00	0.0	0.000	0.000	0	0	0	846	
C 09370016	48-03	ABC	1/0 ACSR 6	8.00Y	125.9	0.07	0.07	219.36	95	5254	-339	-100	3.30	0.1	0.026	0.026	0	0	0	846	C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	11576	217	0	0	0	0	343	0.00	12136
KVAR	707	17	-1566	-50	0	0	573		-318

Lowest Voltage = 118.92 on Element 10830008
Max Accm VoltD = 7.08 on Element 10830008
Max Elem VoltD = 0.87 on Element 09370039

Balanced Voltage Drop Report
Source: BLEDSOE

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
BLEDSOE		ABC	BLEDSOE	15.12Y	126.0	0.00	0.00	160.28	0	7157	-1278	-98	0.00	0.0	0.000	0.000	0	0	0	927
---------- Feeder No. 2 (CKT51-02) Beginning with Device 51-02 ----------																				
51-02	BLEDSOE	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	43.39	0	1964	-135	-100	0.00	0.0	0.000	0.000	0	0	0	182
---------- Feeder No. 1 (CKT51-01) Beginning with Device 51-01 ----------																				
51-01	BLEDSOE	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	117.24	0	5194	-1143	-98	0.00	0.0	0.000	0.000	0	0	0	745

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	6839	198	0	0	0	0	120	0.00	7157
KVAR	-104	-2	-1292	-1	0	0	120		-1278

Lowest Voltage = 123.63 on Element c36360170
Max Accm VoltD = 2.37 on Element c36360170
Max Elem VoltD = 0.24 on Element 36540001

Balanced Voltage Drop Report
Source: ROCKHOLDS

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
ROCKHOLDS		ABC	ROCKHOLD	8.00Y	126.0	0.00	0.00	370.35	0	8878	449	100	0.00	0.0	0.000	0.000	0	0	0	1591
---------- Feeder No. 3 (CKT22-03) Beginning with Device 22-03 ----------																				
22-03	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	145.53	0	3490	155	100	0.00	0.0	0.000	0.000	0	0	0	638
---------- Feeder No. 2 (CKT22-02) Beginning with Device 22-02 ----------																				
22-02	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	75.88	0	1821	-3	-100	0.00	0.0	0.000	0.000	0	0	0	388
---------- Feeder No. 1 (CKT22-01) Beginning with Device 22-01 ----------																				
22-01	ROCKHOLDS	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	149.12	0	3567	296	100	0.00	0.0	0.000	0.000	0	0	0	565

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8537	178	0	0	0	0	164	0.00	8878
KVAR	855	19	-653	-5	0	0	233		449

Lowest Voltage = 119.44 on Element 15160024
Max Accm VoltD = 6.56 on Element 15160024
Max Elem VoltD = 0.57 on Element 15040010

Balanced Voltage Drop Report
Source: EMANUEL

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

	Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
	EMANUEL		ABC	EMANUEL	8.00Y	126.0	0.00	0.00	592.28	0	14195	775	100	0.00	0.0	0.000	0.000	0	0	0	1894	
	---------- Feeder No. 3 (CKT21-03) Beginning with Device 21-03 ----------																					
	21-03	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	61.36	0	1469	102	100	0.00	0.0	0.000	0.000	0	0	0	204	
	---------- Feeder No. 4 (CKT21-04) Beginning with Device 21-04 ----------																					
	21-04	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	189.11	0	4516	453	100	0.00	0.0	0.000	0.000	0	0	0	553	
	---------- Feeder No. 1 (CKT21-01) Beginning with Device 21-01 ----------																					
	21-01	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	238.17	0	5714	173	100	0.00	0.0	0.000	0.000	0	0	0	793	
C	10660023	10660035	ABC	4/0 ACSR 6	7.92Y	124.8	0.10	1.20	234.07	69	5569	71	100	4.28	0.1	1.078	0.059	0	0	0	776	C
C	10660057	10660023	ABC	4/0 ACSR 6	7.92Y	124.7	0.07	1.28	233.54	69	5552	58	100	3.25	0.1	1.123	0.045	0	0	0	774	C
C	10660105	10660057	ABC	4/0 ACSR 6	7.92Y	124.7	0.05	1.33	232.85	68	5532	44	100	2.08	0.0	1.151	0.029	0	0	0	772	C
C	10660106	10-66-P158-A	ABC	4/0 ACSR 6	7.92Y	124.7	0.01	1.34	232.85	68	5530	41	100	0.52	0.0	1.158	0.007	0	0	0	772	C
C	10660102	10660106	ABC	4/0 ACSR 6	7.91Y	124.6	0.08	1.42	232.68	68	5526	38	100	3.60	0.1	1.208	0.050	0	0	0	771	C
C	10660087	10660102	ABC	4/0 ACSR 6	7.90Y	124.4	0.17	1.59	227.97	67	5410	34	100	7.44	0.1	1.315	0.107	0	0	0	757	C
C	10660026	10660087	ABC	4/0 ACSR 6	7.90Y	124.3	0.07	1.66	226.62	67	5371	25	100	2.87	0.1	1.357	0.042	0	0	0	751	C
C	10660027	10660026	ABC	4/0 ACSR 6	7.89Y	124.2	0.11	1.77	226.23	67	5359	24	100	4.57	0.1	1.424	0.067	0	0	0	749	C
	---------- Feeder No. 2 (CKT21-02) Beginning with Device 21-02 ----------																					
	21-02	EMANUEL	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	103.99	0	2496	47	100	0.00	0.0	0.000	0.067	0	0	0	344	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	13634	242	0	0	0	0	319	0.00	14195
KVAR	843	14	-632	-10	0	0	560		775

Lowest Voltage = 118.68 on Element 16370008
Max Accm VoltD = 7.32 on Element 16370008
Max Elem VoltD = 0.55 on Element 10760018

Balanced Voltage Drop Report
Source: OVEN FORK

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
OVEN FORK		ABC	OVENFORK	15.12Y	126.0	0.00	0.00	331.68	0	14565	3771	97	0.00	0.0	0.000	0.000	0	0	0	883
---------- Feeder No. 3 (CKT641-03) Beginning with Device 641-3 ----------																				
641-3	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	125.72	0	4597	3375	81	0.00	0.0	0.000	0.000	0	0	0	1
---------- Feeder No. 2 (CKT641-02) Beginning with Device 641-02 ----------																				
641-02	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	140.48	0	6322	802	99	0.00	0.0	0.000	0.000	0	0	0	414
---------- Feeder No. 1 (CKT641-01) Beginning with Device 641-01 ----------																				
641-01	OVEN FORK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	80.89	0	3647	-406	-99	0.00	0.0	0.000	0.000	0	0	0	468

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	13841	375	0	0	0	0	349	0.00	14565
KVAR	5685	188	-2433	-4	0	0	335		3771

Lowest Voltage = 119.95 on Element c35440140
Max Accm VoltD = 6.05 on Element c35440140
Max Elem VoltD = 0.41 on Element 35520026

Balanced Voltage Drop Report
Source: CHAD

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CHAD		ABC	CHAD	15.12Y	126.0	0.00	0.00	184.28	0	8355	265	100	0.00	0.0	0.000	0.000	0	0	0	1072
---------- Feeder No. 4 (CKT103-04) Beginning with Device 103-04 ----------																				
103-04	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	88.78	0	3990	-549	-99	0.00	0.0	0.000	0.000	0	0	0	477
---------- Feeder No. 1 (CKT103-01) Beginning with Device 103-01 ----------																				
103-01	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	18.67	0	835	139	99	0.00	0.0	0.000	0.000	0	0	0	141
---------- Feeder No. 2 (CKT103-02) Beginning with Device 103-02 ----------																				
103-02	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	46.99	0	2088	428	98	0.00	0.0	0.000	0.000	0	0	0	285
---------- Feeder No. 3 (CKT103-03) Beginning with Device 103-03 ----------																				
103-03	CHAD	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	32.24	0	1441	248	99	0.00	0.0	0.000	0.000	0	0	0	169

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	8045	272	0	0	0	0	37	0.00	8355
KVAR	1147	39	-990	-6	0	0	76		265

Lowest Voltage = 125.12 on Element 34750002
Max Accm VoltD = 0.88 on Element 34750002
Max Elem VoltD = 0.13 on Element 38280013

Balanced Voltage Drop Report
Source: ALEX CREEK

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
ALEX CREEK		ABC	ALEX CREEK	15.12Y	126.0	0.00	0.00	73.73	0	3316	434	99	0.00	0.0	0.000	0.000	0	0	0	616
---------- Feeder No. 1 (CKT110-01) Beginning with Device 110-01 ----------																				
110-01	ALEX CREEK	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	73.73	0	3316	434	99	0.00	0.0	0.000	0.000	0	0	0	616

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	3191	65	0	0	0	0	60	0.00	3316
KVAR	360	7	0	0	0	0	67		434

Lowest Voltage = 121.61 on Element 12020002
Max Accm VoltD = 4.39 on Element 12020002
Max Elem VoltD = 0.23 on Element 11690001

Balanced Voltage Drop Report
Source: PINE MOUNTAIN

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
PINE MOUNTAIN		ABC	PINE MNT	15.12Y	126.0	0.00	0.00	326.41	0	14751	1271	100	0.00	0.0	0.000	0.000	0	0	0	677
---------- Feeder No. 1 (CKT50-01) Beginning with Device 50-01 ----------																				
50-01	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	30.93	0	1365	323	97	0.00	0.0	0.000	0.000	0	0	0	181
---------- Feeder No. 2 (CKT50-02) Beginning with Device 50-02 ----------																				
50-02	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	252.54	0	11442	539	100	0.00	0.0	0.000	0.000	0	0	0	357
---------- Feeder No. 3 (CKT50-03) Beginning with Device 50-03 ----------																				
50-03	PINE MOUNTAIN	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	43.79	0	1944	409	98	0.00	0.0	0.000	0.000	0	0	0	139

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	14206	347	0	0	0	0	198	0.00	14751
KVAR	2236	46	-1291	-2	0	0	282		1271

Lowest Voltage = 120.71 on Element 37850012
Max Accm VoltD = 5.29 on Element 37850012
Max Elem VoltD = 0.67 on Element 37580001

Balanced Voltage Drop Report
Source: ARKLAND

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
ARKLAND		ABC	ARKLAND	7.56Y	126.0	0.00	0.00	381.98	0	8052	3198	93	0.00	0.0	0.000	0.000	0	0	0	1	
---------- Feeder No. 2 (CKT73-02) Beginning with Device 73-02 ----------																					
73-02	ARKLAND	ABC	280-VWVE	7.56Y	126.0	0.00	0.00	0.00	0	0	0	100	0.00	0.0	0.000	0.000	0	0	0	0	
---------- Feeder No. 1 (CKT73-01) Beginning with Device 73-01 ----------																					
73-01	ARKLAND	ABC	280-VWVE	7.56Y	126.0	0.00	0.00	381.98	0	8052	3198	93	0.00	0.0	0.000	0.000	0	0	0	1	
C 34980002	73-01	ABC	1/0 ACSR 6	7.55Y	125.9	0.10	0.10	381.98	166	8052	3198	93	5.17	0.1	0.013	0.013	0	0	0	1	C
C 34980008	34-98-P001-A	ABC	1/0 ACSR 6	7.54Y	125.7	0.22	0.31	381.98	166	8046	3193	93	11.62	0.1	0.043	0.030	0	0	0	1	C
C 34980009	34980008	ABC	1/0 ACSR 6	7.41Y	123.4	2.25	2.57	381.98	166	8035	3182	93	121.10	1.5	0.355	0.312	0	0	0	1	C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	7756	158	0	0	0	0	138	0.00	8052
KVAR	3005	61	0	0	0	0	132		3198

Lowest Voltage = 123.43 on Element 34980009
Max Accm VoltD = 2.57 on Element 34980009
Max Elem VoltD = 2.25 on Element 34980009

Balanced Voltage Drop Report
Source: SOUTH CORBIN

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
SOUTH CORBIN		ABC	SOUTH CORB	8.00Y	126.0	0.00	0.00	669.13	0	16060	221	100	0.00	0.0	0.000	0.000	0	0	0	2078
---------- Feeder No. 5 (CKT45-05) Beginning with Device 45-05 ----------																				
45-05	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	70.41	0	1670	-259	-99	0.00	0.0	0.000	0.000	0	0	0	174
---------- Feeder No. 4 (CKT45-04) Beginning with Device 45-04 ----------																				
45-04	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	195.59	0	4695	52	100	0.00	0.0	0.000	0.000	0	0	0	654
---------- Feeder No. 1 (CKT45-01) Beginning with Device 45-01 ----------																				
45-01	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	126.91	0	3046	-42	-100	0.00	0.0	0.000	0.000	0	0	0	391
---------- Feeder No. 2 (CKT45-02) Beginning with Device 45-02 ----------																				
45-02	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	200.89	0	4804	417	100	0.00	0.0	0.000	0.000	0	0	0	582
---------- Feeder No. 3 (CKT45-03) Beginning with Device 45-03 ----------																				
45-03	SOUTH CORBIN	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	76.90	0	1845	54	100	0.00	0.0	0.000	0.000	0	0	0	277

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	15446	373	0	0	0	0	241	0.00	16060
KVAR	1125	31	-1305	-32	0	0	403		221

Lowest Voltage = 120.58 on Element 09520143
Max Accm VoltD = 5.42 on Element 09520143
Max Elem VoltD = 0.29 on Element 09530160

Balanced Voltage Drop Report
Source: JELLICO

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
JELLICO		ABC	JELLICO	8.00Y	126.0	0.00	0.00	134.78	0	3190	-538	-99	0.00	0.0	0.000	0.000	0	0	0	703	
---------- Feeder No. 2 (CKT41-02) Beginning with Device 41-02 ----------																					
41-02	JELLICO	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	99.30	0	2367	-284	-99	0.00	0.0	0.000	0.000	0	0	0	468	
L 19980018	19980014	B	2 ACSR 6/1	0.00Y	0.0	-0.00	126.00	-1.01	1	0	0	100	0.00	0.0	9.278	0.096	0	0	0	2	L
L 19980019	19980018	B	2 ACSR 6/1	0.00Y	0.0	-0.00	126.00	-0.50	0	0	0	100	0.00	0.0	9.342	0.063	0	0	0	1	L
L 19970013	D19-97-P005D	B	2 ACSR 6/1	7.49Y	118.0	0.02	8.01	5.66	3	38	-19	-89	0.02	0.0	9.318	0.286	0	0	0	7	L
L 19970010	19970013	B	2 ACSR 6/1	7.49Y	118.0	0.00	8.02	5.41	3	35	-20	-87	0.00	0.0	9.394	0.076	0	0	0	6	L
L 19970011	19970010	B	2 ACSR 6/1	7.49Y	118.0	0.01	8.03	4.99	3	30	-23	-79	0.01	0.0	9.561	0.167	0	0	0	5	L
L 19860003	19970011	B	2 ACSR 6/1	7.49Y	118.0	0.00	8.03	4.90	3	28	-23	-77	0.00	0.0	9.675	0.114	0	0	0	3	L
L 19860004	19860003	B	2 ACSR 6/1	7.49Y	118.0	0.00	8.03	2.89	2	17	-14	-77	0.00	0.0	9.723	0.047	0	0	0	2	L
L 19860001	19860004	B	2 ACSR 6/1	7.49Y	118.0	0.00	8.03	1.45	1	8	-7	-75	0.00	0.0	9.837	0.115	0	0	0	1	L
L 19860002	19970011	B	2 ACSR 6/1	7.49Y	118.0	0.00	8.03	0.07	0	0	0	100	0.00	0.0	9.628	0.067	0	0	0	1	L
L 19970012	D19-97-P005	A	2 ACSR 6/1	7.49Y	118.0	0.02	8.01	3.46	2	23	11	90	0.00	0.0	9.206	0.174	0	0	0	4	L
L 19970005	19970012	A	2 ACSR 6/1	7.49Y	118.0	0.00	8.01	0.71	0	5	2	93	0.00	0.0	9.292	0.086	0	0	0	1	L
L 19970003	19970012	A	2 ACSR 6/1	7.49Y	118.0	0.00	8.01	0.76	0	5	3	86	0.00	0.0	9.266	0.060	0	0	0	1	L
L 19970002	19970012	A	2 ACSR 6/1	7.49Y	118.0	0.01	8.02	1.99	1	13	7	88	0.00	0.0	9.358	0.151	0	0	0	2	L
L 19970006	19970008	ABC	2 ACSR 6/1	7.49Y	117.9	0.07	8.07	27.61	15	614	-94	-99	0.44	0.1	9.168	0.136	0	0	0	97	L
L 19970004	D19-97-P011	A	2 ACSR 6/1	7.49Y	117.9	0.04	8.10	2.27	1	15	7	91	0.00	0.0	9.665	0.497	0	0	0	3	L
L 25070003	19970004	A	2 ACSR 6/1	7.49Y	117.9	0.01	8.12	1.81	1	12	6	89	0.00	0.0	9.914	0.248	0	0	0	2	L
L 25170006	25070003	A	2 ACSR 6/1	7.49Y	117.9	0.00	8.12	1.31	1	9	4	91	0.00	0.0	9.983	0.070	0	0	0	1	L
L 25170007	25170006	A	2 ACSR 6/1	7.48Y	117.9	0.02	8.15	1.31	1	9	4	91	0.00	0.0	10.549	0.566	0	0	0	1	L
L 25170005	25070003	A	2 ACSR 6/1	7.49Y	117.9	0.00	8.12	0.50	0	3	2	83	0.00	0.0	10.191	0.277	0	0	0	1	L
L 19970001	19970006	ABC	2 ACSR 6/1	7.48Y	117.8	0.16	8.23	26.99	15	598	-101	-99	0.94	0.2	9.474	0.306	0	0	0	94	L
L 25070001	19970001	ABC	2 ACSR 6/1	7.48Y	117.7	0.04	8.27	26.58	15	587	-107	-98	0.25	0.0	9.560	0.085	0	0	0	93	L
L 25070002	25070001	ABC	2 ACSR 6/1	7.47Y	117.7	0.03	8.31	26.41	15	582	-109	-98	0.19	0.0	9.623	0.063	0	0	0	92	L
L 25060011	D25-06-P017	ABC	2 ACSR 6/1	7.47Y	117.7	0.03	8.34	26.41	15	582	-109	-98	0.18	0.0	9.683	0.060	0	0	0	92	L
L 25060010	25060011	A	2 ACSR 6/1	7.47Y	117.6	0.05	8.38	7.72	4	57	-6	-99	0.02	0.0	9.931	0.248	0	0	0	13	L
L 25160035	D25-16-P040	A	2 ACSR 6/1	7.47Y	117.6	0.03	8.41	7.72	4	57	-6	-99	0.02	0.0	10.091	0.160	0	0	0	13	L
L 25170001	25160035	A	2 ACSR 6/1	7.47Y	117.6	0.00	8.41	0.00	0	0	0	100	0.00	0.0	10.210	0.119	0	0	0	0	L
L 25170002	25160035	A	2 ACSR 6/1	7.47Y	117.6	0.02	8.43	7.72	4	57	-6	-99	0.01	0.0	10.177	0.086	0	0	0	13	L
L 25170003	25170002	A	2 ACSR 6/1	7.47Y	117.6	0.00	8.43	2.12	1	12	-10	-77	0.00	0.0	10.346	0.170	0	0	0	1	L
L 25170004	25170002	A	2 ACSR 6/1	7.46Y	117.6	0.02	8.45	6.09	3	45	4	100	0.01	0.0	10.289	0.113	0	0	0	12	L
L 25160021	25170004	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.46	5.39	3	40	2	100	0.00	0.0	10.375	0.086	0	0	0	10	L
L 25160022	25160021	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.47	5.39	3	40	2	100	0.00	0.0	10.460	0.086	0	0	0	9	L
L 25160007	25160022	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.48	4.29	2	31	6	98	0.00	0.0	10.511	0.050	0	0	0	7	L
L 25160008	25160007	A	2 ACSR 6/1	7.46Y	117.5	0.02	8.50	3.10	2	21	10	90	0.00	0.0	10.708	0.197	0	0	0	5	L
L 25160009	25160008	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.50	0.00	0	0	0	100	0.00	0.0	10.809	0.101	0	0	0	0	L
L 25160002	25160008	A	2 ACSR 6/1	7.46Y	117.5	0.02	8.52	3.10	2	21	10	90	0.00	0.0	10.892	0.185	0	0	0	5	L
L 25160010	25160002	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.52	0.76	0	5	3	86	0.00	0.0	10.961	0.068	0	0	0	1	L
L 25160017	25160002	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.52	2.34	1	16	8	89	0.00	0.0	10.988	0.095	0	0	0	4	L
L 25260003	25160017	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.52	0.17	0	1	1	71	0.00	0.0	11.054	0.066	0	0	0	1	L
L 25260001	25160017	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.53	1.62	1	11	5	91	0.00	0.0	11.077	0.089	0	0	0	2	L
L 25260004	25260001	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.53	1.62	1	11	5	91	0.00	0.0	11.161	0.084	0	0	0	2	L
L 25260005	25260004	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.54	1.31	1	9	4	91	0.00	0.0	11.452	0.290	0	0	0	1	L
L 25260002	25260001	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.53	0.00	0	0	0	100	0.00	0.0	11.172	0.095	0	0	0	0	L
L 25060001	25060011	ABC	2 ACSR 6/1	7.46Y	117.5	0.16	8.49	23.33	13	514	-95	-98	0.80	0.2	10.031	0.349	0	0	0	78	L
L 25060002	25060001	ABC	2 ACSR 6/1	7.46Y	117.5	0.00	8.50	2.30	1	48	-20	-92	0.00	0.0	10.139	0.108	0	0	0	7	L
L 25060009	D25-06-P009	A	2 ACSR 6/1	7.46Y	117.5	0.01	8.51	3.87	2	28	-6	-98	0.00	0.0	10.251	0.112	0	0	0	4	L
L 25060005	25060009	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.51	1.77	1	13	-3	-97	0.00	0.0	10.340	0.089	0	0	0	2	L
L 25060006	25060005	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.51	0.87	0	6	3	89	0.00	0.0	10.427	0.087	0	0	0	1	L
L 25060007	25060006	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.51	0.00	0	0	0	100	0.00	0.0	10.618	0.192	0	0	0	0	L
L 25060004	25060009	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.51	1.45	1	8	-7	-75	0.00	0.0	10.291	0.040	0	0	0	1	L
L 25060008	D25-06-P009D	A	2 ACSR 6/1	7.46Y	117.5	0.00	8.50	1.73	1	11	-6	-88	0.00	0.0	10.236	0.096	0	0	0	2	L
L 25060003	25060001	ABC	2 ACSR 6/1	7.45Y	117.3	0.25	8.74	21.08	12	466	-76	-99	1.11	0.2	10.622	0.590	0	0	0	71	L
L 25160004	25060003	ABC	2 ACSR 6/1	7.44Y	117.2	0.02	8.76	21.08	12	465	-77	-99	0.11	0.0	10.678	0.056	0	0	0	71	L
L 25160036	D25-16-P009	A	2 ACSR 6/1	7.44Y	117.2	0.00	8.76	3.28	2	20	-14	-82	0.00	0.0	10.746	0.068	0	0	0	3	L
L 25160012	25160036	A	2 ACSR 6/1	7.44Y	117.2	0.00	8.77	3.28	2	20	-14	-82	0.00	0.0	10.789	0.043	0	0	0	3	L
L 25160013	25160004	ABC	2 ACSR 6/1	7.44Y	117.2	0.03	8.79	19.47	11	429	-71	-99	0.11	0.0	10.747	0.069	0	0	0	64	L
L 25160014	25160013	ABC	2 ACSR 6/1	7.44Y	117.2	0.03	8.82	18.90	10	415	-78	-98	0.13	0.0	10.835	0.088	0	0	0	62	L
L 25160015	25160014	A	2 ACSR 6/1	7.44Y	117.2	0.00	8.82	1.15	1	7	-5	-81	0.00	0.0	10.859	0.023	0	0	0	2	L
L 25160003	25160014	ABC	2 ACSR 6/1	7.44Y	117.2	0.02	8.84	18.55	10	408	-73	-98	0.09	0.0	10.895	0.060	0	0	0	60	L
L 25160006	25160003	C	2 ACSR 6/1	7.44Y	117.2	0.01	8.85	5.28	3	37	-13	-94	0.00	0.0	10.964	0.069	0	0	0	5	L
L 25160027	25160006	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.85	3.76	2	27	-5	-98	0.00	0.0	11.011	0.046	0	0	0	4	L
L 25160030	25160027	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.85	0.82	0	5	3	86	0.00	0.0	11.042	0.031	0	0	0	2	L
L 25160029	25160030	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.85	0.82	0	5	3	86	0.00	0.0	11.072	0.030	0	0	0	2	L
L 25160025	25160029	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.86	0.82	0	5	3	86	0.00	0.0	11.129	0.056	0	0	0	2	L
L 25160011	25160025	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.86	0.82	0	5	3	86	0.00	0.0	11.165	0.036	0	0	0	1	L
L 25160023	25160027	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.86	3.14	2	22	-8	-94	0.00	0.0	11.058	0.047	0	0	0	2	L
L 25160018	25160023	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.86	0.00	0	0	0	100	0.00	0.0	11.081	0.023	0	0	0	0	L
L 25160020	25160006	C	2 ACSR 6/1	7.44Y	117.2	0.00	8.85	1.67	1	10	-8	-78	0.00	0.0	11.006	0.042	0	0	0	1	L
L 25160019	25160006	C	2 ACSR 6/1	7.44Y	117.2	0.00	8.85	0.00	0	0	0	100	0.00	0.0	10.989	0.024	0	0	0	0	L
L 25160001	25160003	ABC	2 ACSR 6/1	7.44Y	117.1	0.02	8.87	16.82	9	371	-60	-99	0.09	0.0	10.969	0.074	0	0	0	55	L
L 25160033	D25-16-P004	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.87	1.58	1	11	5	91	0.00	0.0	11.035	0.066	0	0	0	3	L
L 25160026	25160001	A	2 ACSR 6/1	7.44Y	117.1	0.00	8.87	1.45	1	8	-7	-75	0.00	0.0	10.996	0.027	0	0	0	1	L
L 25160016	25160001	ABC	2 ACSR 6/1	7.44Y	117.1	0.02	8.89	15.97	9	352	-58	-99	0.07	0.0	11.032	0.063	0	0	0	51	L
L 25160034	D25-16-P003	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.89	2.08	1	15	-5	-95	0.00	0.0	11.091	0.059	0	0	0	2	L
L 25160024	25160016	ABC	2 ACSR 6/1	7.44Y	117.1	0.02	8.91	15.29	8	337	-53	-99	0.07	0.0	11.105	0.072	0	0	0	49	L

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Balanced Voltage Drop Report
Source: JELLICO

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru	
L 25160031	D25-16-P001	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.91	0.12	0	1	0	100	0.00	0.0	11.127	0.023	0	0	0	2	L
L 25160028	D25-16-P001D	C	2 ACSR 6/1	7.44Y	117.1	0.00	8.91	2.23	1	13	-11	-76	0.00	0.0	11.152	0.048	0	0	0	1	L
L 25160032	25160024	ABC	2 ACSR 6/1	7.43Y	117.0	0.04	8.95	14.62	8	323	-43	-99	0.13	0.0	11.248	0.144	0	0	0	46	L
L 25150025	25160032	ABC	2 ACSR 6/1	7.43Y	117.0	0.02	8.98	14.44	8	319	-46	-99	0.07	0.0	11.330	0.082	0	0	0	45	L
L 25150013	25150025	ABC	2 ACSR 6/1	7.43Y	117.0	0.02	9.00	13.35	7	296	-27	-100	0.06	0.0	11.404	0.074	0	0	0	43	L
L 25150022	D25-15-P004	C	2 ACSR 6/1	7.43Y	117.0	0.00	9.00	0.65	0	4	2	89	0.00	0.0	11.547	0.143	0	0	0	1	L
L 25150001	25150013	ABC	2 ACSR 6/1	7.43Y	116.9	0.07	9.07	13.16	7	292	-29	-100	0.20	0.1	11.677	0.272	0	0	0	42	L
L 25150024	D25-15-P008	A	2 ACSR 6/1	7.42Y	116.9	0.01	9.08	10.80	6	79	15	98	0.01	0.0	11.708	0.031	0	0	0	14	L
L 25150009	25150024	A	2 ACSR 6/1	7.42Y	116.9	0.01	9.09	9.23	5	65	21	95	0.01	0.0	11.752	0.044	0	0	0	12	L
L 25150010	25150009	A	2 ACSR 6/1	7.42Y	116.9	0.03	9.12	7.89	4	53	26	90	0.01	0.0	11.851	0.099	0	0	0	10	L
L 25150002	25150010	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.12	1.80	1	12	6	89	0.00	0.0	11.892	0.041	0	0	0	2	L
L 25150003	25150010	A	2 ACSR 6/1	7.42Y	116.8	0.04	9.16	6.09	3	41	20	90	0.01	0.0	12.069	0.218	0	0	0	8	L
L 25250001	25150003	A	2 ACSR 6/1	7.42Y	116.8	0.02	9.18	5.05	3	34	17	89	0.01	0.0	12.192	0.123	0	0	0	7	L
L 25250005	25250001	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.19	3.00	2	20	10	89	0.00	0.0	12.229	0.037	0	0	0	4	L
L 25250004	25250005	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.19	2.13	1	14	7	89	0.00	0.0	12.273	0.044	0	0	0	3	L
L 25250003	25250001	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.19	1.17	1	8	4	89	0.00	0.0	12.354	0.161	0	0	0	2	L
L 25250002	25150003	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.16	1.04	1	7	3	92	0.00	0.0	12.145	0.076	0	0	0	1	L
L 25150019	25150001	ABC	2 ACSR 6/1	7.42Y	116.9	0.01	9.08	9.77	5	213	-44	-98	0.02	0.0	11.728	0.051	0	0	0	28	L
L 25150023	D25-15-P015	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	1.10	1	7	4	87	0.00	0.0	11.784	0.056	0	0	0	2	L
L 25150021	D25-15-P009	A	2 ACSR 6/1	7.42Y	116.9	0.04	9.12	22.92	13	167	-31	-98	0.08	0.0	11.818	0.090	0	0	0	21	L
L 25150008	25150021	A	2 ACSR 6/1	7.42Y	116.8	0.03	9.15	22.23	12	161	-34	-98	0.05	0.0	11.875	0.057	0	0	0	20	L
L 25150007	25150008	A	2 ACSR 6/1	7.42Y	116.8	0.03	9.18	18.58	10	137	-14	-99	0.04	0.0	11.953	0.079	0	0	0	18	L
L 25150026	25150007	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.19	4.41	2	32	-6	-98	0.00	0.0	12.013	0.059	0	0	0	4	L
L 25150030	25150026	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.19	0.76	0	5	3	86	0.00	0.0	12.041	0.028	0	0	0	1	L
L 25150029	25150026	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.19	3.35	2	22	-11	-89	0.00	0.0	12.067	0.054	0	0	0	2	L
L 25150018	25150029	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.19	0.00	0	0	0	100	0.00	0.0	12.095	0.028	0	0	0	0	L
L 25150006	25150007	A	2 ACSR 6/1	7.42Y	116.8	0.02	9.20	13.31	7	98	-12	-99	0.02	0.0	12.008	0.055	0	0	0	13	L
L 25150012	25150006	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.21	7.12	4	53	2	100	0.00	0.0	12.046	0.038	0	0	0	7	L
L 25150004	25150012	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.22	4.23	2	28	14	89	0.00	0.0	12.118	0.072	0	0	0	4	L
L 25150011	25150004	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.22	1.97	1	13	6	91	0.00	0.0	12.165	0.047	0	0	0	2	L
L 25150005	25150006	A	2 ACSR 6/1	7.42Y	116.8	0.01	9.21	4.96	3	36	-6	-99	0.00	0.0	12.069	0.061	0	0	0	5	L
L 25150017	25150005	A	1/0 ACSR 6	7.42Y	116.8	0.00	9.21	3.79	2	28	1	100	0.00	0.0	12.093	0.024	0	0	0	4	L
L 25150020	25150017	A	1/0 ACSR 6	7.42Y	116.8	0.00	9.21	3.79	2	28	1	100	0.00	0.0	12.131	0.038	0	0	0	4	L
L 25150015	25150020	A	1/0 ACSR 6	7.42Y	116.8	-0.00	9.21	1.67	1	10	-8	-78	0.00	0.0	12.169	0.038	0	0	0	1	L
L 25150014	25150020	A	2 ACSR 6/1	7.42Y	116.8	0.00	9.21	1.09	1	7	4	87	0.00	0.0	12.159	0.028	0	0	0	1	L
L 25150016	25150019	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	4.69	3	27	-22	-78	0.00	0.0	11.787	0.060	0	0	0	2	L
L 25150027	25150016	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	2.12	1	12	-10	-77	0.00	0.0	11.825	0.038	0	0	0	1	L
L 25150028	25150016	A	2 ACSR 6/1	7.42Y	116.9	0.00	9.08	2.57	1	15	-12	-78	0.00	0.0	11.826	0.039	0	0	0	1	L
L 25160005	25160004	A	2 ACSR 6/1	7.44Y	117.2	0.00	8.76	0.00	0	0	0	100	0.00	0.0	10.743	0.065	0	0	0	0	L
---------- Feeder No. 1 (CKT41-01) Beginning with Device 41-01 ----------																					
41-01	JELLICO	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	35.90	0	824	-254	-96	0.00	0.0	0.000	0.065	0	0	0	235	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	3044	8	0	0	0	0	151	0.00	3190
KVAR	-105	0	-637	-3	0	0	136		-538

Lowest Voltage = 116.80 on Element 19980018
Max Accm VoltD = 126.00 on Element 19980018
Max Elem VoltD = 0.69 on Element 20540003

Balanced Voltage Drop Report
Source: GOLDBUG

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
GOLDBUG		ABC	GOLDBUG	8.00Y	126.0	0.00	0.00	523.64	0	12566	277	100	0.00	0.0	0.000	0.000	0	0	0	1774
---------- Feeder No. 4 (CKT64-04) Beginning with Device 64-04 ----------																				
64-04	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	78.72	0	1864	-308	-99	0.00	0.0	0.000	0.000	0	0	0	248
---------- Feeder No. 3 (CKT64-03) Beginning with Device 64-03 ----------																				
64-03	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	135.67	0	3100	997	95	0.00	0.0	0.000	0.000	0	0	0	110
---------- Feeder No. 2 (CKT64-02) Beginning with Device 64-02 ----------																				
64-02	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	75.79	0	1755	-480	-96	0.00	0.0	0.000	0.000	0	0	0	418
---------- Feeder No. 1 (CKT64-01) Beginning with Device 64-01 ----------																				
64-01	GOLDBUG	ABC	280-VWVE	8.00Y	126.0	0.00	0.00	243.60	0	5847	69	100	0.00	0.0	0.000	0.000	0	0	0	998

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	12042	230	0	0	0	0	294	0.00	12566
KVAR	1114	24	-1278	-17	0	0	434		277

Lowest Voltage = 118.64 on Element 14650053
Max Accm VoltD = 7.36 on Element 14650053
Max Elem VoltD = 0.41 on Element 14590149

Balanced Voltage Drop Report
Source: CARPENTER

Database: D:\1 ~ P&D OPEN & ONGOING PROJECTS\1 ~ CO OPS\KY57 ~ CUMBERLAND VALLEY ELECTRIC LRP & WP\2011 CWP\MILSOFT MODEL FILES\KY57 FUTURE SYS BSI (172+10% MW) MODEL.WM\
Title:
Case:

Units Displayed In Volts
-Base Voltage:120.0-

Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Element Length (mi)	Element KW	Element KVAR	Element Cons On	Element Cons Thru
CARPENTER		ABC	CARPENTER	15.12Y	126.0	0.00	0.00	524.58	0	23789	-542	-100	0.00	0.0	0.000	0.000	0	0	0	3466
---------- Feeder No. 4 (CKT85-04) Beginning with Device 85-04 ----------																				
85-04	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	196.44	0	8867	-883	-100	0.00	0.0	0.000	0.000	0	0	0	1007
---------- Feeder No. 2 (CKT85-02) Beginning with Device 85-02 ----------																				
85-02	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	126.94	0	5677	961	99	0.00	0.0	0.000	0.000	0	0	0	653
---------- Feeder No. 1 (CKT85-01) Beginning with Device 85-01 ----------																				
85-01	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	77.92	0	3496	520	99	0.00	0.0	0.000	0.000	0	0	0	806
---------- Feeder No. 3 (CKT85-03) Beginning with Device 85-03 ----------																				
85-03	CARPENTER	ABC	280-VWVE	15.12Y	126.0	0.00	0.00	129.21	0	5749	-1140	-98	0.00	0.0	0.000	0.000	0	0	0	1000

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	22741	413	0	0	0	0	635	0.00	23789
KVAR	2245	44	-3794	-21	0	0	983		-542

Lowest Voltage = 118.96 on Element 23260005
Max Accm VoltD = 7.04 on Element 23260005
Max Elem VoltD = 0.59 on Element 22330044

Substation Summary:

Substation	KW	KW Losses	KVAR	KVAR Losses	KVA	% Capacity
GIRDLER	9362.00	185.00	983.00	204.00	9385.05	0.00
LIBERTY CHURCH	8886.00	185.00	810.00	261.00	8888.28	0.00
ALEX CREEK	3316.00	60.00	434.00	67.00	3344.62	0.00
CHAD	8354.00	37.00	1262.00	76.00	8358.84	0.00
BACON CREEK	4454.00	9.00	368.00	15.00	4499.16	0.00
PINE MOUNTAIN	14751.00	198.00	2564.00	282.00	14805.83	0.00
BLEDSOE	7157.00	120.00	14.00	120.00	7270.47	0.00
ARKLAND	8052.00	138.00	3198.00	132.00	8663.31	0.00
OVEN FORK	14565.00	349.00	6208.00	335.00	15045.05	0.00
CARPENTER	23789.00	635.00	3272.00	983.00	23794.91	0.00
JELLICO	3203.00	151.00	31.00	136.00	3235.17	0.00
GOLDBUG	12566.00	294.00	1572.00	434.00	12568.85	0.00
ROCKHOLDS	8879.00	164.00	1107.00	233.00	8889.46	0.00
CUMBERLAND F...	15777.00	293.00	1289.00	476.00	15778.82	0.00
HINKLE	9187.00	162.00	1042.00	271.00	9197.96	0.00
EMANUEL	14195.00	319.00	1417.00	560.00	14216.60	0.00
SOUTH CORBIN	16060.00	241.00	1559.00	403.00	16061.20	0.00
NORTH CORBIN	12136.00	343.00	1297.00	573.00	12140.56	0.00
Total:	194689.00	3883.00	28427.00	5561.00	196144.16	

Ted Hampton
Manager

APPENDIX III

Telephone: (606) 528-2677
(606) 546-9295
(606) 589-4421
FAX: (606) 528-8458

CUMBERLAND VALLEY ELECTRIC

P.O. Box 440
Gray, Kentucky 40734

P.O. Box C
Cumberland, Kentucky, 40823

October 13, 2011

RESOLUTION - WORK PLAN

Whereas, a Construction Work Plan for 2012 - 2015, in the amount of $17,826,442 was prepared by Patterson & Dewar Engineers, Inc., and presented to the board of directors.

Now therefore be it resolved, that Cumberland Valley Electric's Board of Directors adopt the 2012 - 2015 Construction Work Plan as a course of action to be followed, or until amended with the approval of the Rural Utilities Service.

I, Lansford Lay, Secretary-Treasurer of Cumberland Valley Electric, Inc., do hereby certify that the above is a true and correct excerpt from the minutes of the meeting of the Board of Directors of Cumberland Valley Electric, held on October 13, 2011, at which meeting a quorum was present.

LANSFORD LAY, SECRETARY-TREASURER

USDA Rural Development

United States Department of Agriculture
Rural Development

APPENDIX IV

NOV 17 2011

Mr. Ted Hampton
President and CEO
Cumberland Valley Electric, Inc.
P.O. Box 440
Gray, Kentucky 40734-0440

Dear Mr. Hampton:

The USDA Rural Utilities Service (RUS) has reviewed the Environmental Report (ER) covering the facilities recommended in Cumberland Valley Electric's 2012-2015 Construction Work Plan (CWP). In accordance with 7 CFR Part 1794, Environmental Policies and Procedures, as amended, all projects proposed in the CWP appear to meet the criteria for a Categorical Exclusion (§1794.21[b],[7],[9],[15] and §1794.22[a][1][i],[5]). No additional environmental information needs to be submitted for review, provided there are no extraordinary circumstances, and the projects do not change from what has been described in the CWP/ER.

Your CWP was approved by Mike Norman on November 9, 2011, contingent on approval of the ER. Cumberland Valley Electric now has environmental clearance for all projects in the CWP and is responsible for acquiring the necessary permits for construction and operation of the proposed projects. If any line conversion projects are sited through easements on public forest lands, additional state and federal permits/reviews may be required for these projects.

The environmental staff would like to thank for you for submitting the CWP environmental worksheet with your 2012-2015 CWP, as it helps to expedite the environmental review process. Submittal of this form does not negate the need to prepare an ER for the CWP. Projects not requiring agency contacts must at a minimum include an environmental project description (see RUS Bulletin 1794A-600 for guidance). In addition, when completing the CWP environmental worksheet for code 300 projects, **a separate field/line item must be completed for each code 300 project.**

Thank you for your assistance and cooperation in helping us fulfill our environmental review requirements. If you have any questions, please contact me at (202) 720-1432 or Ms. Lauren McGee, Environmental Scientist, at (202) 720-1482 or lauren.mcgee@wdc.usda.gov.

Sincerely,

CHARLES M. PHILPOTT
Chief, Engineering Branch
Northern Regional Division
USDA Rural Utilities Service

APPENDIX V

Anticipated Annual Additional Cost of Operation After Completion of all CWP Projects:

Estimated Depreciation:

Account No.	*Balance 11/30/2011*	*Monthly Rate X 12*	*Depreciation*	*per cent of total*	*Estimated Capitalization*	*Estimated Depreciation*
36200	$756,822.52	3.10%	$23,461.50	0.84%	$139,068	$4,311
36400	$25,140,874.80	4.00%	$1,005,634.99	36.13%	$5,960,890	$238,436
36500	$22,937,228.62	2.80%	$642,242.40	23.08%	$3,806,885	$106,593
36700	$3,097,837.82	4.00%	$123,913.51	4.45%	$734,496	$29,380
36800	$11,085,048.33	3.10%	$343,636.50	12.35%	$2,036,902	$63,144
36900	$7,339,097.77	3.60%	$264,207.52	9.49%	$1,566,087	$56,379
37000	$6,463,447.99	3.40%	$219,757.23	7.90%	$1,302,609	$44,289
37100	$4,004,669.99	4.00%	$160,186.80	5.76%	$949,506	$37,980
37300	$0.00	0.00%	$0.00	0.00%	$0	$0
39000	$0.00	0.00%	$0.00	0.00%	$0	$0
	$80,825,027.84		$2,783,040.45	100.00%	$16,496,442	**$580,511**

Estimated Property Taxes:

2010 Taxes	*Property @ 12/31/10*	*Average Rate*	*Work Plan Amount* *	*Estimated Taxes*
$592,755	$52,008,797	1.14%	$16,496,442	**$188,013**

Estimated Interest Expense:

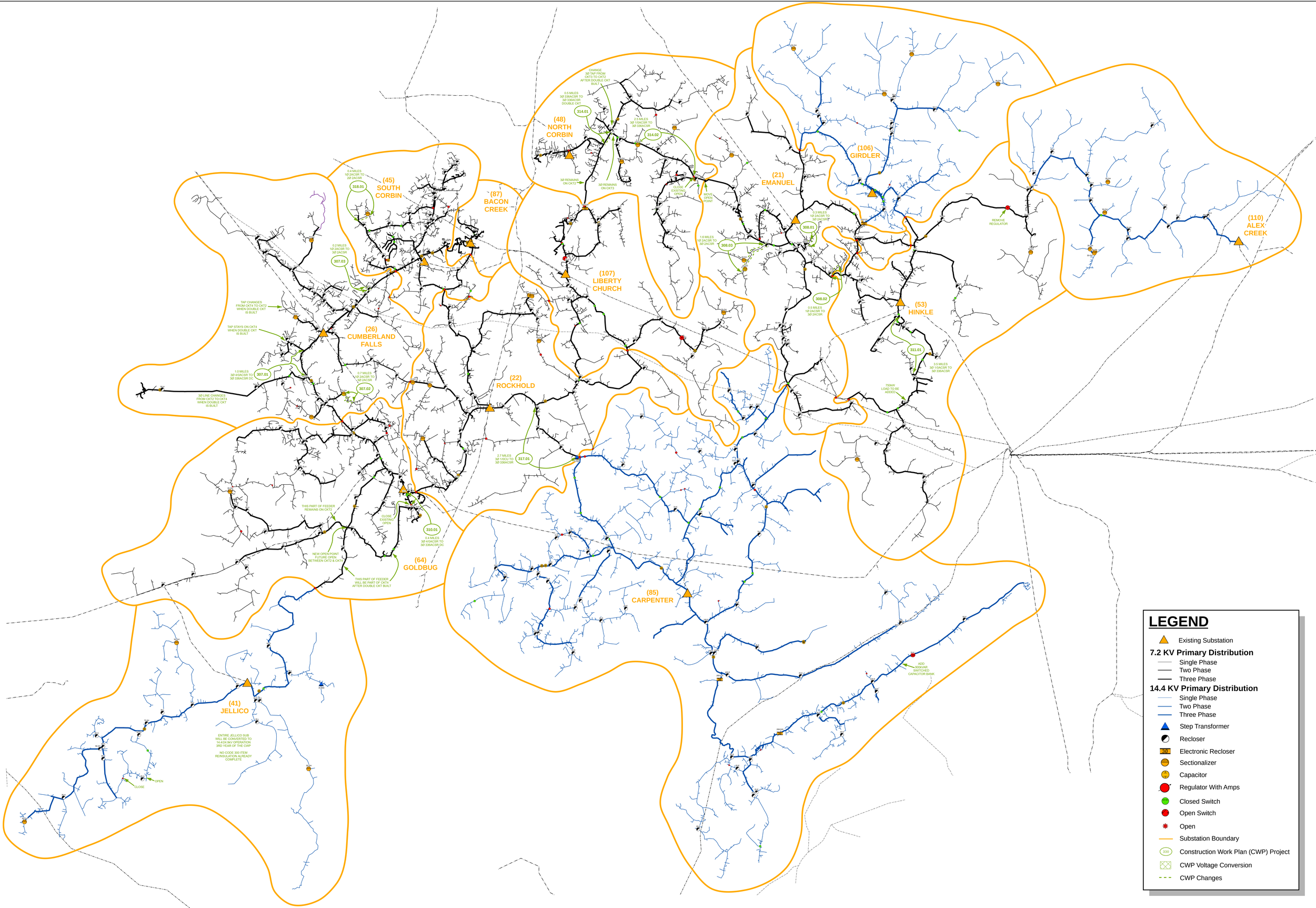
Plant	*Estimated Interest Rate*	*Estimated Interest Expense*
$16,496,442	5.00%	**$824,822**

Estimated Operation and Maintenance Expense:

Plant	*Estimated O&M %*	*Estimated O&M Expense*
$16,496,442	4.72%	**$778,632**

Estimated cost of operation after the proposed facilities are completed: **$2,371,979**

* *This CPCN is for the 2012 ~ 2015 CWP ($17,826,42) less the GIS and Radio System ($1,330,000) = $16,496,442; said amount for the GIS and New Radio System will be filed on a separate CPCN.*



LEGEND

- Existing Substation

7.2 KV Primary Distribution

- Single Phase
- Two Phase
- Three Phase

14.4 KV Primary Distribution

- Single Phase
- Two Phase
- Three Phase
- Step Transformer
- Recloser
- Electronic Recloser
- Sectionalizer
- Capacitor
- Regulator With Amps
- Closed Switch
- Open Switch
- Open
- Substation Boundary
- Construction Work Plan (CWP) Project
- CWP Voltage Conversion
- CWP Changes

2012-2015 CONSTRUCTION WORK PLAN
PROJECTED FUTURE SYSTEM
AFTER SYSTEM IMPROVEMENTS

PATTERSON & DEWAR ENGINEERS, INC.
850 CENTER WAY, NORCROSS, GEORGIA 30071
PHONE: (770) 453-1410 FAX: (770) 453-1411
www.pd-engineers.com
ENGINEERS - SURVEYORS

0 2 4 8 12 16 Miles

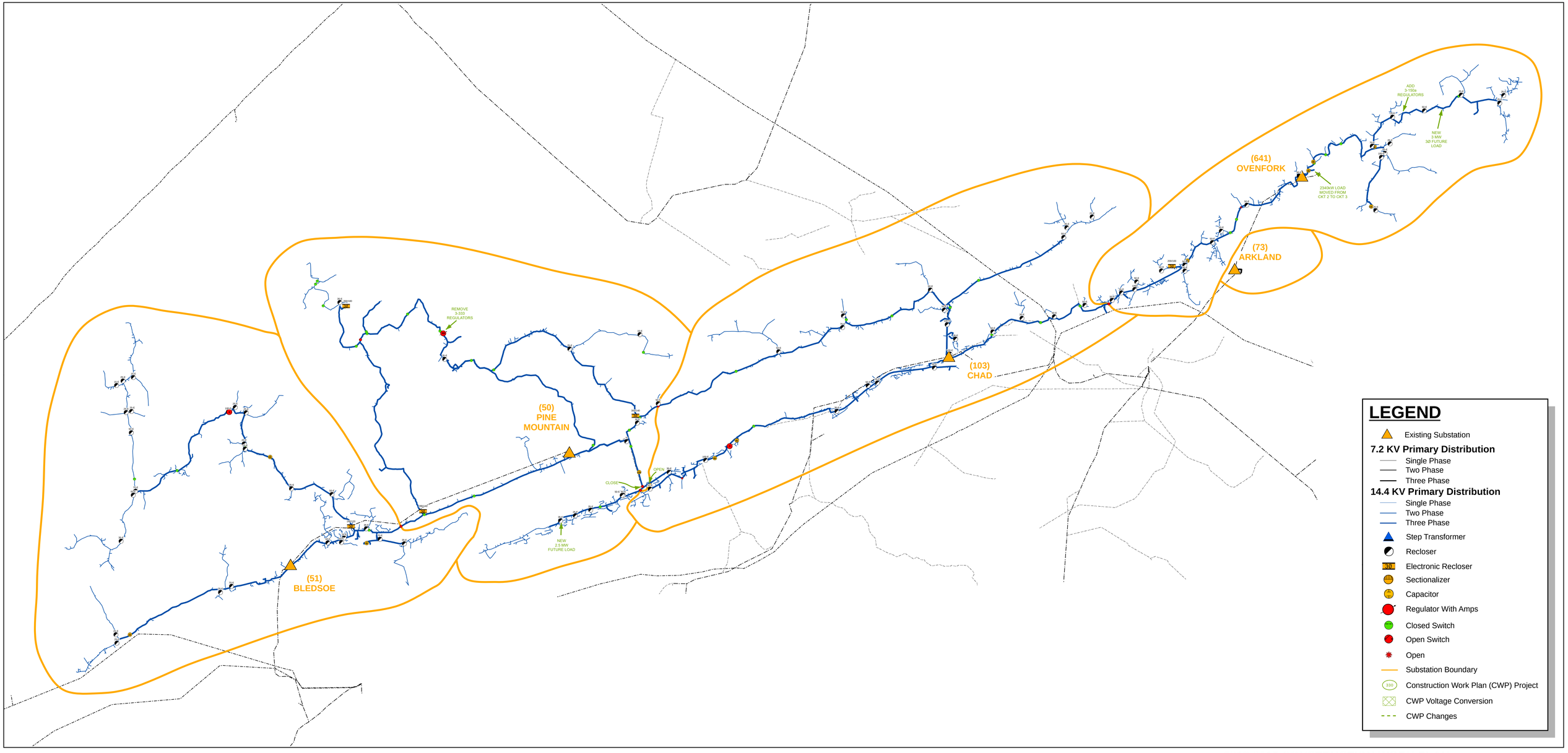
N W E S

DATE	REVISIONS

CUMBERLAND VALLEY
RURAL ELECTRIC COOPERATIVE
GRAY, KENTUCKY
KENTUCKY 57

MAP
CORBIN
SHEET 1 OF 2

PATTERSON & DEWAR ENGINEERS, INC. NORCROSS, GA
DWN BY: SLR | CKD BY: | APPD BY: | ENGRS FILE: KY57.01.11 | DATE: OCTOBER 2011



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SHEET 2 OF 2