KY PSC CASE 2008-00043

FLEMING – MASON ENERGY COOPERATIVE

A Touchstone Energy Cooperative

KENTUCKY 52 FLEMING

Flemingsburg, Kentucky

CONSTRUCTION WORK PLAN (CWP) ~ PART 1 OF 2
January 1, 2008 ~ December 31, 2009 (Part 1)

January, 2008

by:

Gary Grubbs, PE
Dane Tyler, PE

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FLEMING – MASON ENERGY COOPERATIVE

KENTUCKY 52 FLEMING

Flemingsburg, Kentucky

CONSTRUCTION WORK PLAN (CWP) ~ PART 1 OF 2
January 1, 2008 – December 31, 2009 (Part 1)

ENGINEERING CERTIFICATION

Fleming-Mason Energy elected, with approval of the RUS KY GFR, to develop a four-year CWP and to seek Board approval, RUS financing and a KY PSC CPCN for the first two years with the second two years re-evaluated prior to seeking same.

Upon completion of the construction proposed herein, the above indicated electric distribution system can provide adequate and dependable service to approximately 24,663 customers with residential using a monthly average of 1,314 kilowatt-hours per consumer. The peak demand (normal 50%) is estimated to be approximately 174,000 kW in the summer of 2009 and 221,000 kW in the winter of 2009-2010.

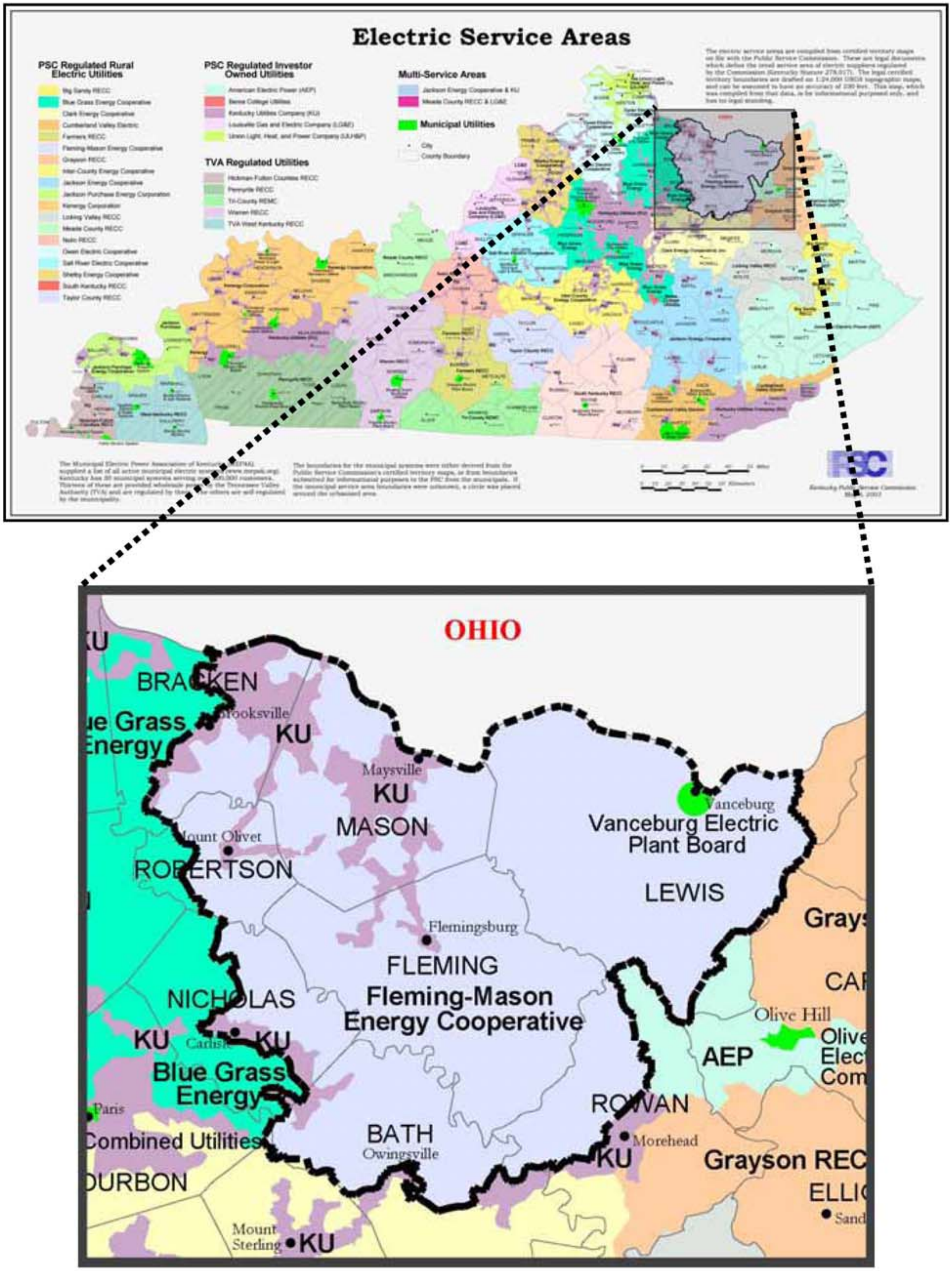
I certify that this 2008-2009 Construction Work Plan (Part 1 of 2) was prepared by me or under my direct supervision, and that I am a duly registered professional engineer under the laws of the State of Kentucky.

STATE OF KENTUCKY
G. E. GRUBBS
13008
REGISTERED
PROFESSIONAL ENGINEER

Patterson & Dewar Engineers, Inc.

Gary Grubbs
Kentucky P.E. No. 13008

KENTUCKY MAP WITH FLEMING - MASON ENERGY'S SERVICE AREA NOTED



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

January 9, 2008

2008-2009 Construction Workplan (CWP)

Chris Perry, President and CEO
Fleming-Mason Energy Corporation

I have completed my review of the cooperative's 2008-2009 CWP, which was prepared by Patterson & Dewar, and find it to be generally satisfactory for loan contract purposes. Approval to proceed with the proposed distribution system construction is contingent upon RUS's review and approval of an Environmental Report (reference 7 CFR 1794).

Headquarters, SCADA, and load management projects will be reviewed/approved by the Northern Regional Division office, as necessary. This action will be taken after their receipt of the CWP and other supporting documents (i.e., appropriate feasibility and engineering studies).

You should make a special effort to inform all of the cooperative's employees and contractors, involved in the construction of utility plant of any commitments made in the Environmental Report covering the construction of the facilities recommended in the CWP.

Changes (line improvements, tie lines, extensions, substations, etc.) in the CWP will require RUS approval. The environmental acceptability of any such changes shall also be established in accordance with 7 CFR 1794. The procedure for satisfying these environmental requirements shall be the same as that used in connection with this CWP approval.

It is your responsibility to determine whether or not loan funds and/or general funds are available for the proposed construction. If general funds are used, the requirements as outlined in 7 CFR 1717 need to be followed.

The construction shall be accomplished in accordance with RUS requirements. Specific reference should be made to 7 CFR 1726, Electric System Construction Policies and Procedures.

Mike Norman

Mike Norman
RUS Field Representative

FLEMING-MASON ENERGY
COOPERATIVE, INC.

P.O. BOX 328 • FLEMINGSBURG, KENTUCKY 41041 • (606) 845-2661 • FAX (606) 845-1008

DECEMBER 2007

ENVIRONMENTAL REPORT

KY 52

2008-2009 Construction Work Plan

The projects in this work plan consist of code 300 line conversions and conductor replacements only.

President and CEO

JAN 14 2008

Mr. Chris Perry
President and Chief Executive Officer
Fleming-Mason Energy Corporation
P.O. Box 328
Flemingsburg, Kentucky 41041

Dear Mr. Perry:

We have reviewed the Environmental Report (ER) covering all the facilities recommended in your 2008-2009 Construction Work Plan (CWP). The ER is complete and complies with all requirements of 7 CFR Part 1794, Environmental Policies and Procedures. We have determined that the projects proposed in your CWP are categorical exclusions and no further environmental documentation is required unless the projects change from those described in the ER. Your CWP was approved by Mike Norman on January 9, 2008, contingent on approval of the ER. All environmental considerations have been satisfied and you now have written approval of the CWP projects.

Fleming-Mason Energy Corporation is responsible for ensuring that any environmental commitments made in the ER are fulfilled in the construction of the projects whether by construction contract or by force account labor.

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) 720-1994.

Sincerely,

CHARLES M. PHILPOTT

CHARLES M. PHILPOTT
Chief, Engineering Branch
Northern Regional Division
USDA Rural Development-Utilities Programs

cc: Official File:KY-37/Reading File:NEB/Engineer:NEB
GFR:Norman/Rankin:EES/Reading File:EES
RUS:EES:DRankin:720-1953:1/8./08:KY52CWP.doc
DR
52

FLEMING-MASON ENERGY
COOPERATIVE, INC.

P.O. BOX 328 • FLEMINGSBURG, KENTUCKY 41041 • (606) 845-2661 • FAX (606) 845-1008

WHEREAS, A Construction Work Plan for 2008-2009 in the amount of $ 10,933,504 has been prepared by Patterson & Dewar Engineering, Inc.

NOW, THEREFORE BE IT RESOLVED, that Fleming-Mason Energy's Board of Directors adopt the 2008-2009 Work Plan as a course of action, to be followed, or until amended with the approval of the Rural Utilities Service.

I, Lonnie C. Vice, Secretary-Treasurer of Fleming-Mason Energy Cooperative, 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 Fleming-Mason Energy Cooperative, Inc. held on December 6, 2007.

Lonnie C Vice

Lonnie C. Vice, Secretary/Treasurer

FLEMING - MASON ENERGY COOPERATIVE

KENTUCKY 52 FLEMING

Flemingsburg, Kentucky

01/08 ~ 12/09 CONSTRUCTION WORK PLAN

January 1, 2008

I. EXECUTIVE SUMMARY

A. Purpose, Results and General Basis of Study

Fleming-Mason Energy elected, with approval of the RUS KY GFR, to develop a four-year CWP and to seek Board approval, RUS financing and a KY PSC CPCN for the first two years with the second two years re-evaluated prior to seeking same.

This report documents the Winter 2005 ~ 2006 (Part 1 of 2) system engineering analysis, and summarizes the proposed construction for FLEMING - MASON ENERGY COOPERATIVE's (FME's) electric distribution system for the two-year period of January 1, 2008 through December 31, 2009.

The proposed construction program is to be financed by the Rural Utilities Service, (RUS) and/or a supplemental lender. 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 FME distribution system can provide adequate and dependable service to the following approximate customer count:

Classification	Count	Usage kWh/ Month
Residential	17,967	1,314
Seasonal	4,718	279
Small Commercial	1,703	7,166
Public Building	265	807
Large Commercial	7	7,071,416
Other	3	2,166
Total	**24,663**	~

The 2009 projected number of consumers and total peak system load were taken directly from the Cooperative's 2006 Load Forecast Report (LFR) as approved by RUS. The 50% probability winter extreme highest KW demand was used for the loading conditions for the next two years.

This loading level was agreed to by FME management and the RUS General Field Representative (GFR).

A review of FME's 2003 Long Range System Study (LRSS), finds the load projections and recommendations to be adequate for the two-year planning period.

The cooperative's Operations and Maintenance Survey (Review Rating Summary - RUS Form 300), was completed on January 20, 2005. Several items were 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 winter 2005-2006 conditions. The existing base system model has also been grown to the projected winter 2009-2010 loading to develop a future system model. The projected future loading is in agreement with the currently approved 2006 LF. The basis of the system analysis is the RUS guidelines and FME's system design and operating criteria SDOC).

The summer 2006 system was also reviewed as portions of FME's system may peak in the summer and not in the winter.

The analysis for this CWP utilized Milsoft Utility Solution's (MUS's) WindMil (WM)® software, and the results were used as the basis for determining the capital needs for FME's electric distribution system. The base system computer model was validated using actual line voltage readings made in the field.

B. Service Area, Distribution System and Power Supply

The corporate office of Fleming - Mason Energy Cooperative is located in Flemingsburg, KY. FME consists of one operating district that serves portions of the following counties in Kentucky:

- Bath 2,658 (Customers as of 07/31/06)
- Bracken 785
- Fleming 6,670
- Lewis 4,845
- Mason 2,989
- Nicholas 859
- Robertson 819
- Rowan 3,826

FME operates over 3,438 miles of primary line within the aforementioned counties. Said lines operate presently at voltages of 7.2/12.47 kV or 14.4/25 kV grounded wye. There are a total of 13 distribution substations presently serving the entire FME system. One of the substations is dedicated to a single large industrial consumer.

The following data was taken, or derived, from Fleming - Mason Energy Cooperative's December 2006 RUS Form 7:

Number of Consumers	=	23,482	
KWh Purchased	=	917,647,883	
KWh Sold	=	895,834,226	
KWh Used by Company	=	401,780	
KWh Unaccounted for	=	21,411,877	
KWh losses (%)	=	2.33	% *
KWh losses (%)	=	5.17	% **
Max. NCP kW Demand	=	160,093	***
Total Distribution Plant	=	$64,738,065	
Miles of Distribution	=	3,456	
Consumers per Mile	=	6.79	
Annual Load Factor	=	65.4	%

* *Sales to 5 Large-Power consumers included (< 1000 KVA)*
** *Sales to 5 Large-Power customers excluded (< 1000 KVA)*
*** *Coincident peak*

FME'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 FME and other EKPC cooperatives located in the central and eastern half of Kentucky.

C. System Organization and Operation

FME's headquarters as mentioned earlier is located in Flemingsburg, Kentucky. The system is operated and maintained under the leadership of a CEO, two Operations Superintendents and a System Engineer. Additional support staff of technicians, administrators and aides compliments the System Operations Department.

FME utilizes in-house staking and a mix of in-house and contract construction crews. The contract crews are used mainly for system improvement type projects.

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

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:

- COMP ~ Complete
- CPC ~ Complete Pending Closeout
- DEL ~ Deleted
- NP ~ No Progress
- IP ~ In Progress

FME currently has the following approximate amounts of small, aged primary conductor in service:

CONST	CONDUCTOR	MILES	VOLTAGE	MILES	VOLTAGE
1PH	**8A CWC**	3	7.2 KV	0	14.4 KV
1PH	**6A CWC**	156	7.2 KV	93	14.4 KV
1PH	**6HD CU**	15	7.2 KV	8	14.4 KV
1PH	**6 ACSR**	2	7.2 KV	0	14.4 KV
1PH	**4 ACSR**	1,076	7.2 KV	593	14.4 KV
2PH	**6A CWC**	2	7.2 KV	1	14.4 KV
2PH	**6HD CU**	1	7.2 KV	1	14.4 KV
2PH	**4 ACSR**	1	7.2 KV	1	14.4 KV
3PH	**6A CWC**	0	7.2 KV	6	14.4 KV
3PH	**6HD CU**	1	7.2 KV	8	14.4 KV
3PH	**4 ACSR**	15	7.2 KV	11	14.4 KV
3PH	**2HD CU**	0	7.2 KV	2	14.4 KV

Amounts above are based on the existing FME GIS and System Model

Replacement of said conductor is based upon loading, reliability and operational criteria. This work plan recommends replacing a portion of these aged lines.

E. Summary of Construction Program and Costs

The costs of the recommended distribution plant changes over the next two years have been projected as follows:

2008	$ 5,466,752
2009	$ 5,466,752
Total	$10,933,504

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

2002	$ 2,959,360
2003	$ 2,936.729
2004	$ 4,669,498
2005	$ 3,999,009
2006	$ 5,330,748
Avg.	$ 3,979,069

The data mentioned above was taken from FME's five previous year-end ***Financial and Statistical Reports***, Line 15, page 3 of the RUS Form 7. 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.

A further breakdown of the construction program cost is summarized as follows:

		2008	**2009**	**Totals**
New Construction	=	$ 4,196,372	$4,256,772	$8,453,144
System Improvements (740C 300)	=	$ 1,240,180	$ 1,240,180	$2,480,360
CWP Totals	=	$5,436,552	$5,496,952	$10,933,504

The total amount above is eligible for RUS loan funds. Each capital item recommended herein was reviewed with engineering and management staff prior to inclusion in this CWP. Approximately 77% of the total capital is for new construction and miscellaneous distribution equipment, leaving approximately 23% for system improvements.

II. BASIS OF STUDY AND PROPOSED CONSTRUCTION

A. Design and Operational Criteria

Exhibit L presents FME's System Design and Operational Criteria (SDOC). On September 23, 2007, the Kentucky RUS General Field Representative (GFR) reviewed and concurred with FME's criteria. The proposed construction as outlined in this 2008-2009 CWP is necessary for meeting the minimum standards set forth in the system's design and operational criteria.

The criteria presented herein are for use in design and operational guidelines only. System conditions may result in a breach/change of a specific criterion.

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 June 30, 2007.

Line Construction projects are grouped by project type and the averages are expressed on a cost per mile basis. Several of the projected conversion costs do not have a historical cost to reference. These estimates are tabulated, but the cost utilized is based on other system experiences.

C. Analysis of Current System Studies

1. 2006 Load Forecast Report (LFR)

The 2006 Load Forecast Report was approved by FME's Board in July 2006. The report was prepared by EKPC in cooperation with FME's management and staff. The report utilized statistical models to forecast future energy and demand requirements. EKPC provided the economic, demographic, and weather information. FME 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 2005-2025. A 2.3% per year growth in energy sales was projected for the period. Winter and summer peak kW demands were projected to grow approximately 2.7% and 2.2% per year, respectively. The system annual load factor was expected to remain at the 57% level. The LFR offers various projection scenarios for planning purposes and they are as follows:

Winter Peaks	**Summer Peaks**
Mild (99%)	N/A
Normal (50%)	Normal (50%)
Extreme (20%)	Extreme (20%)
Optimistic (10%)	Optimistic (10%)
Pessimistic (03%)	Pessimistic (03%)

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 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. The extreme winter and summer scenarios with a 20% probability of occurrence were used in this work plan for the future system substation loading conditions.

2. 2003 Long Range System Study (LRSS)

Distribution System Solutions, Inc. prepared a twelve-year LRSS for FME's distribution system in November of 2002. RUS's approval was granted in the winter of 2002. The system configuration and the loads for the winter of 01/02 form the basis for the LRSS.

Consideration should be given for a new LRSS prior to the 2012 to 2013 time period when the current LRSS will be almost 10 years old. This recommendation assumes no other system changes warranting a new study sooner.

The LRSS determined the most economical approach for FME is to continue voltage conversions.

The LRSS also recommends FME standardize on three-phase line construction using primarily 1/0 ACSR, 336 ACSR and 556 ACSR conductor sizes. Exhibit N provides a summary of the current Economical Conductor Analysis that agrees with the recommendations of the LRSS.

In summary, the LRSS appears to be valid for the next 2 years including system improvements necessary to satisfy current and projected system needs through the year 2009. Recommendations incorporated in this CWP are in compliance with the current LRSS.

3. 2005 Operations and Maintenance Survey (RUS Form 300)

In January 2005 FME personnel met with the RUS GFR and conducted a review of FME'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, maintenance and engineering programs were found to be satisfactory with no major capital items identified or recommended.

No items were noted on the O&M Survey which requires corrective action.

Some items were noted for improvement; however, no corrective action was recommended. A summary of those items is given as follows:

- Telephone poles left standing after pole replacement should be removed.
- Cable TV attachments need to be monitored continuously for compliance with the NESC.
- A review of idle services and billing records should be conducted.

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 1996 through 2006 and for the projected years of 2007 through 2015.

The distribution system exhibits a growth in peak demand from 120 MW in the winter of 1996~1997 to 203 MW by the winter 2004~2005. This represents approximately a 6.5% per year growth rate.

The system is experiencing an annual 2.5% growth in consumers. There were 18,567 consumers in 1996, increasing to 23,482 in 2006. The two year 2009 projection is 24,663 total consumers. This growth rate is expected to continue for the long term.

The annual total distribution non-coincident peak (NCP) load factor was 67.4% for 2006. FME's distribution load factor has ranged from a low of 61.6% to a high of 72.1% over the past twelve years depending on the severity of the summer and winter peaks. A load factor of approximately 55% was used in the LF to project the worst case scenarios, and is also used in the preparation of this work plan.

The annual distribution system losses were 3.3% for 2006 (includes sales to Large Power Customers). The 2006 total energy sales for FME were 895,834,226 kWh. With 3,421 miles of distribution line, the 1,000 kWh billed per mile per year ratio calculates to be 261. According to REA Bulletin 45-4, the acceptable loss for this ratio is approximately 8.2%. FME's losses in recent years have averaged 5.2% (after adjusting for Large Power sales), which is well within RUS' established guidelines.

2. Special Loads

Several spot loads were accounted for in this Work Plan.

3. Substation Load Data

Exhibit O summarizes the substation loading and capacities for winter 2006 ~ 2007 system peak conditions. The projected winter 2009 ~ 2010 conditions with and without the recommended system improvements are also presented The exhibit identifies each substation, its voltage levels, winding capacity, percent of full load, 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.

FME's System Design and Operational Criteria (SDOC), Exhibit L, establishes that a substation's current loading condition is not to exceed 95% of its full nameplate KVA capacity without planning its uprating. This criterion also matches EKPC's policy. Currently none of FME's substations are loaded over this level.

Adequate and reasonable power factor levels are currently being maintained on all substations on FME's system. A capacitor study is included within the scope of this Work Plan and the results are listed in Exhibit I.

4. Circuit Loading and Voltage Conditions

The 2006 ~ 2007 non-coincident winter distribution peak for FME was 136.6 MW[1] established during December 2006. The corresponding peak kWh consumer billing data (January 2006) was used to develop the base system model for the peak 2006-2007 winter conditions.

During December 2006 the system served approximately 23,482 consumers with each residential consumer averaging 1,250 kilowatt-hours each.

Appendix 1 presents the primary analysis for the base Winter 2006 ~ 2007 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.

Maps 1 (N & S) are circuit diagrams of FME's primary electric system illustrating voltage drops and loads of the base winter 2006 ~ 2007 system.

Maps 2 (N & S) are circuit diagrams of FME's primary electric system illustrating voltage drops and loads of the base winter 2006 ~ 2007 system with 2009 ~ 2010 Peak Loading.

Appendix 2 is a primary analysis of the existing 2006 ~ 2007 system configuration with the projected future 2009 ~ 2010 peak winter 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.

To show that the recommended improvements are valid, ***Appendix 3*** is given. It reflects the future 2009 ~ 2010 winter system after completion of the system improvements.

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.

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[1] Does not include four EKPC Direct-Serve Customers

5. System Outages and Reliability

FME 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.

The five year (2002 ~ 2006) consumer outage average is 18.92 hours per consumer per year, which is well in excess of RUS's guideline of 5.0 hours per consumer per year. It should be noted that four of the five years had much less than the RUS 5.0 outage hours per consumer and that it was a devastating ice storm in 2003 that skewed the average. FME will shortly begin work on the recommended components of a newly developed Sectionalizing study.

III. REQUIRED CONSTRUCTION ITEMS

A. Service to New Consumers (740C 100)

During the 24 month period ending June 30, 2007, FME added 1,272 underground and overhead services for new consumers. The average line extension cost for each new service was approximately $1,907. It is estimated that 1,200 new underground and overhead services will be built over the next two years. Extending these costs for underground and overhead services on a per unit basis, it is estimated that over the next two years $2,608,800 in capital will be required to construct the new lines. This calculates to be an average of $1,304,400 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 52 % of the capital required for this work plan is estimated to be for new consumer services.

B. New Tie-Lines (740C 200)

No Tie-Lines

C. Distribution Lines - Additions and Changes ~ 740C 300

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-capable lines may improve service reliability. Tie capabilities 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.

Reviewing the winter 2006-2007 primary analysis of Appendix 1 and considering the load growth estimates of the winter 2009-2010, the distribution line system improvements are as follows. The two year CWP distribution line construction estimate for 740C 300 is $2,480,360 including line conversions and changes (which does not include copper replacement). No new tie-lines are required or recommended.

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

XYY	=	Construction Item Number
X	=	RUS Reference Prefix (2 for tie lines; 3 for line conversions)
ZZ	=	Consecutive Number

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 T also summarizes the justification for each project.

D. Substation and Meter Point Additions and Changes ~ 740C 500

System Design and Operational Criteria (SDOC), Exhibit L, establishes that a substation's projected future loading condition is not to exceed 95% 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 each of EKPC / FME's substations are well below the SDOC loading criteria. Recommendations have been included herein to transfer load to provide even greater balance and reliability for said substations.

E. Miscellaneous Distribution Equipment ~ 740C 600

1. Transformers (Including Auto/Step)[2] and Meters (740C 601)

For the 24 month period ending June 30, 2007, FME purchased approximately 1,950 transformers and 1,250 meters. On this basis FME is expected to purchase 2,400 [3] new transformers and 1,200 new meters during the next two years. The average capitalized cost for each transformer is $1,070 and for each meter is $110. Five additional Auto/Step Transformer Banks will be required for $20,000. This yields a capital requirement of $2,746,720 for the CWP period.

2. Service Upgrades (740C 602)

For the 24 month period ending June 30, 2007, FME increased the service wire capacity of 723 consumers. On this basis[4] FME is expected to upgrade 500 services during the next two years. The average cost for each service upgrade is approximately $1,500. This yields a capital requirement of $750,000 for the CWP period.

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[2] Auto / Step Transformers included within 740C 601 per RUS KY GFR; see Exhibit H for actual info.

[3] Transformer purchases increased from prior 24 month period due to additional voltage conversion projects included with this CWP.

[4] The number used is lower than previous quantity due to a "tighter" reclassification of what type jobs as coded as 740C 602s.

3. Sectionalizing Equipment ~ Additions and Changes (740C 603)

A complete line sectionalizing review evaluating device coordination and fault current duty is to be included under a separate cover of this work plan. EKPC provided FME low-side source impedance data so that available fault currents at each substation and delivery point can be determined. Also, any device overloading conditions and line configuration changes resulting from the system improvements and revisions included in the work plan are to be included in the study.

Preliminary estimates of this sectionalizing review call for a total cost for the work plan, (RUS Code 603 – sectionalizing equipment) to be $200,000, or an average annual cost of $100,000. Please refer to the System Design and Operational Criteria, Exhibit L, for additional details concerning the sectionalizing system design criteria.

4. Line Regulators ~ Additions and Changes (740C 604)

Exhibit H and Maps 1 and 2 present the line voltage regulator changes and cost estimates. The cost of line regulator changes is categorized by RUS reference Code 604.

A number of line regulators are recommended in this CWP. Excessive voltage drops are projected for some areas; therefore, regulators are included herein. The use of said regulators allows management the greatest flexibility in conducting facility upgrades.

Exhibit H itemizes the location of the new regulators and FME is recommended to add the regulators only as system problems are field measured and verified. The cost estimate[5] for the new regulators is $66,000 with purchases included for the years 2008 and 2009 (annual cost of $33,000).

5. Capacitors ~ Additions and Changes (740C 605)

Exhibit I presents the capacitor recommendations for this CWP. They are also included in Map 1 and 2. Recommendations are included to comply with EKPC power factor policy of no less than 90% at peak for each cooperative delivery point. Recommendations have been included to maintain approximately 95% 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 lower.

FME is encouraged to continue the enforcement of its power factor penalty clause in their C&I service contract, hopefully to get C&I to install both fixed and switched capacitor banks to satisfy their needs. If however, this effort is unsuccessful, FME 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 capacitors, auxiliary equipment (crossarms, cutouts, etc.) and installation costs of the capacitor stations are incurred by FME. The cost estimate[6] for the new capacitors is $100,000 with purchases included for the years 2008 and 2009 (annual cost of $50,000). All capacitor recommendations are based on the computer output of the WindMil (WM)® software of Milsoft Utility Solutions, Inc. 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.

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[5] FME already has several regulators on hand that can be relocated / reused thus decreasing most purchases

[6] FME already has several capacitors on hand that can be relocated / reused thus decreasing most purchases

6. Poles (740C 606)

FME's in-service poles have been inspected twice during two prior pole inspection cycles and numerous system improvements have been made in recent years. These activities have modernized such plant and thus led to a reduction in pole replacement requirements.

Current estimates for pole replacements can be found in Exhibit B. The present projected cost for pole replacements based on adjusted historical data is 800 pole change-outs averaging $2,092 each for a total cost of $1,673,600.

F. Other Distribution Equipment (740C 700)

1. Security Lights (740C 701)

For the 24 month period ending June 30, 2007, FME increased the number of security lights in service by approximately 650 units. On this basis FME is expected to install 626 new lights during the next two years. The average cost for each new light is $524. This yields a capital requirement of $328,024 for the CWP period.

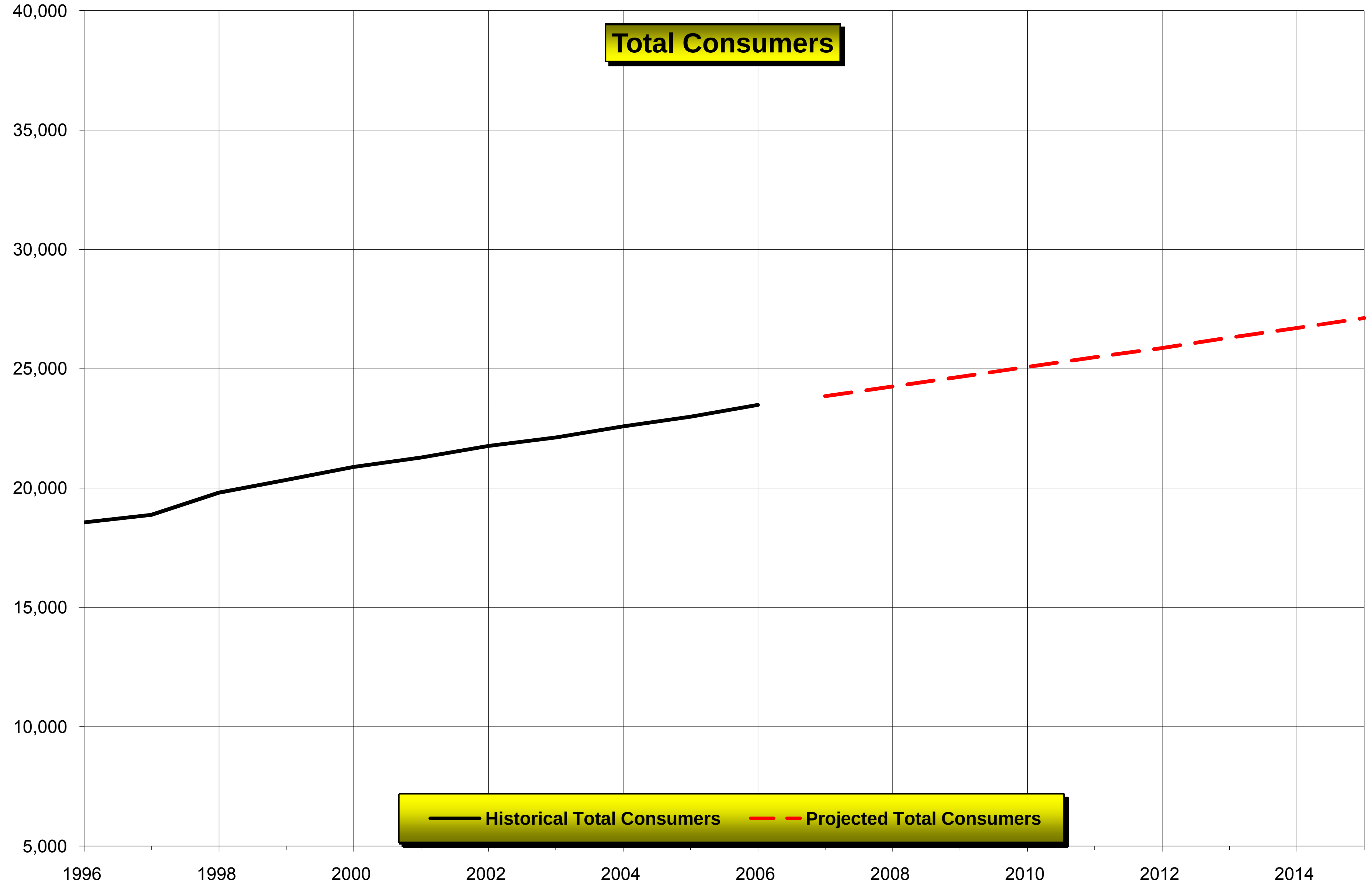
IV. CONCLUSION

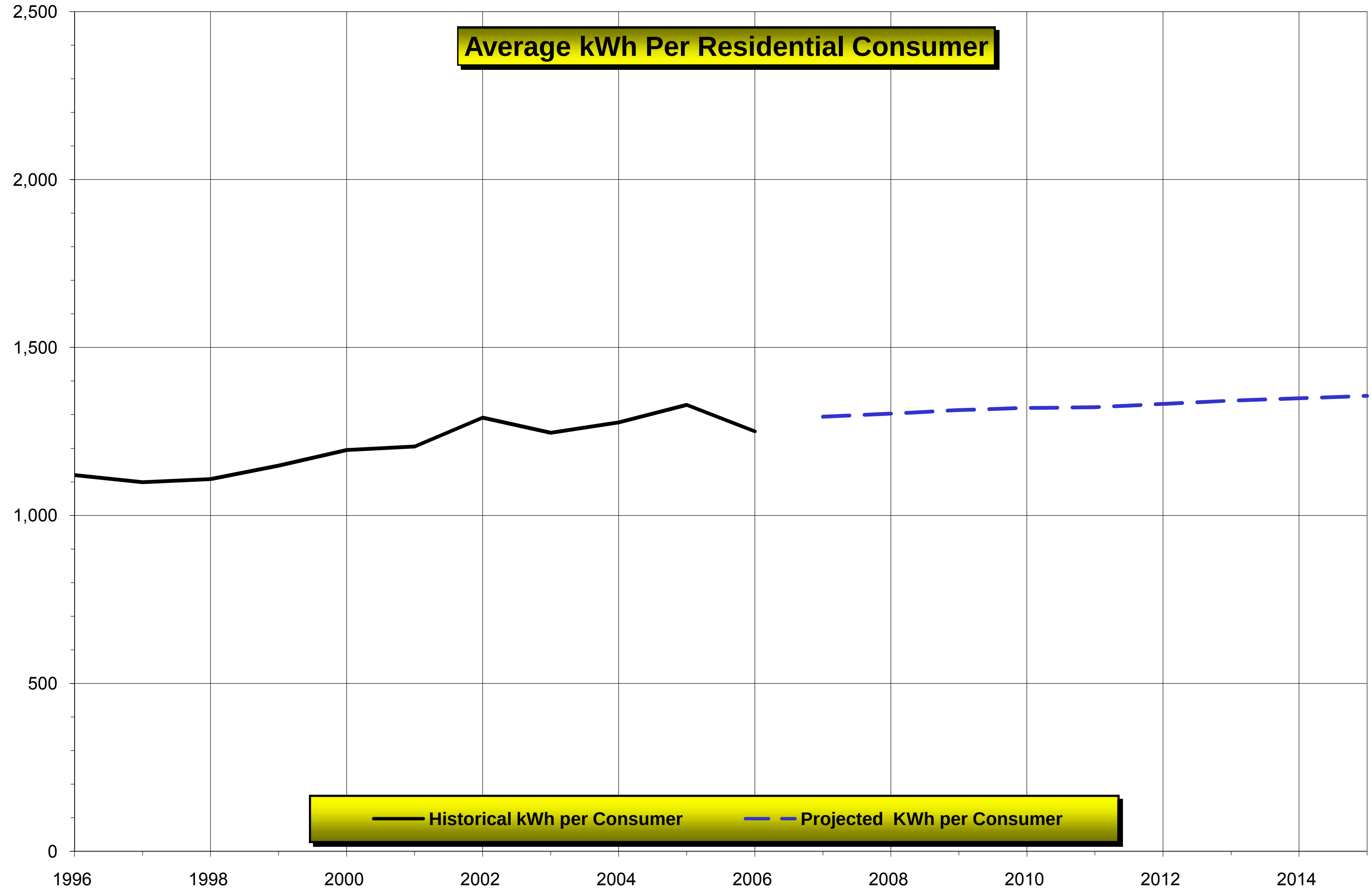
The recommendations set forth in this construction work plan will enable ***FLEMING - MASON ENERGY COOPERATIVE*** to serve the projected 2009-2010 peak winter conditions. The construction recommendations are in accordance with RUS prescribed guidelines and other economic criteria established by FME's Long Range System Study, and related power supply studies. Any questions or comments regarding this report should be directed to Gary Grubbs of Patterson & Dewar Engineers. His email addresses is ggrubbs@pd-engineers.com and phone number is 270-404-5030.

FLEMING - MASON ENERGY STATISTICAL DATA*

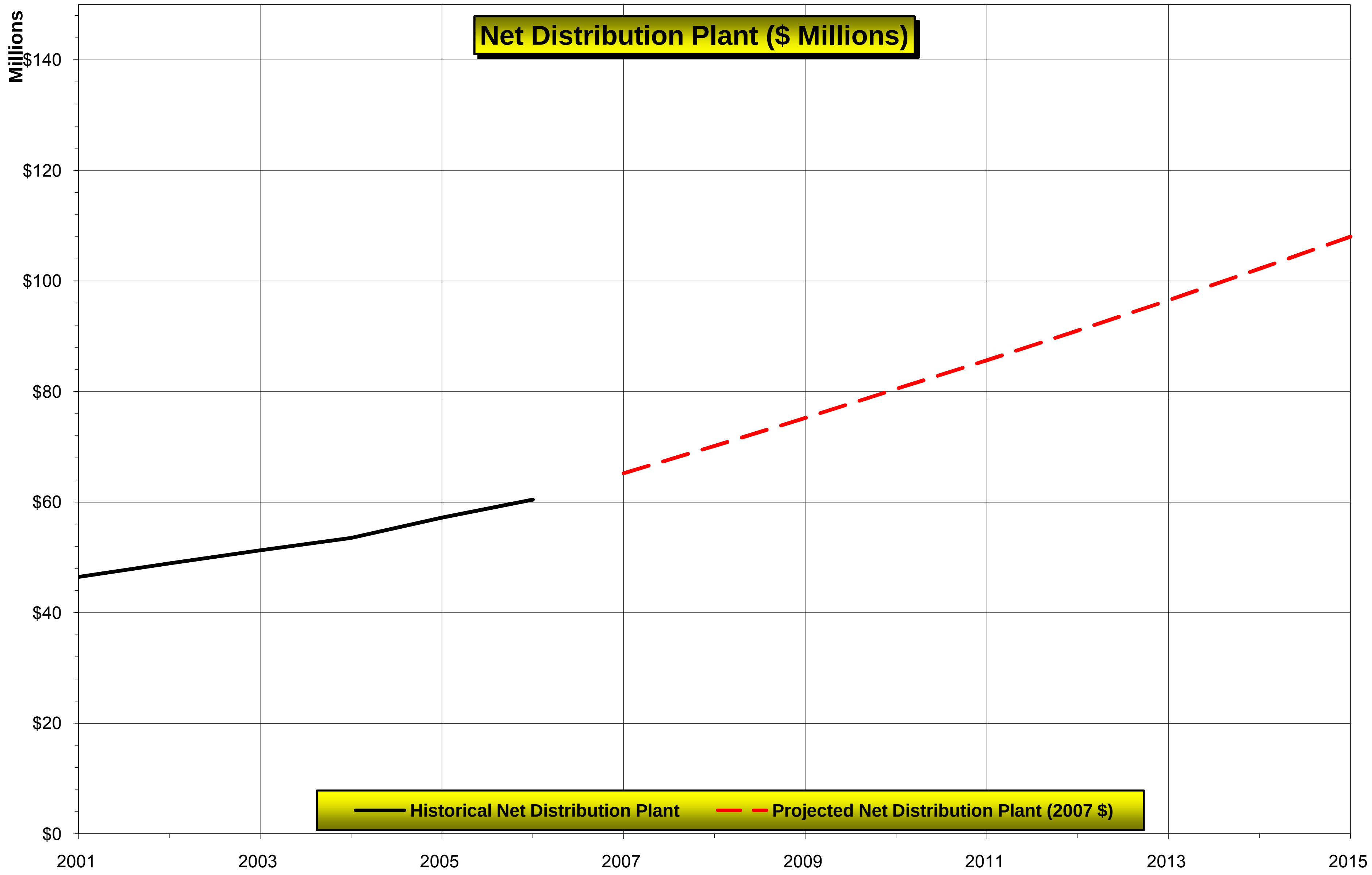
Year	Total Consumers (Annual Average) Actual	Total Consumers Projected	kWh / Consumer Residential (Monthly Average) Actual	kWh / Consumer Residential Projected	Net Distribution Plant Investment** Actual	Net Distribution Plant Investment** Projected	Annual System Losses*** Actual	Annual System Losses*** Projected	Annual Load Factor Actual	Annual Load Factor Projected	Total Coincident Peak MW Period	Actual	Projections Normal	Projections 10%
1996	18,567		1,120		~		3.80%		61.6%		1996-97	120		
1997	18,885		1,099		~		3.80%		62.6%		1997-98	117		
1998	19,810		1,108		~		3.40%		66.1%		1998-99	132		
1999	20,342		1,148		~		3.80%		65.1%		1999-00	142		
2000	20,883		1,195		~		3.50%		62.5%		2000-01	156		
2001	21,284		1,205		$46,487,499		2.60%		63.1%		2001-02	162		
2002	21,762		1,291		$48,928,306		2.40%		72.1%		2002-03	194		
2003	22,122		1,246		$51,284,962		3.00%		69.6%		2003-04	182		
2004	22,580		1,277		$53,513,394		2.70%		67.3%		2004-05	203		
2005	22,993		1,329		$57,198,654		2.80%		67.6%		2005-06	181		
2006	23,482		1,250		$60,443,462		3.30%		67.4%		2006-07	160		
2007		23,851		1,294		$65,237,528		3.30%		65.0%	2007-08		210	223
2008		24,255		1,303		$70,175,417		3.30%		65.0%	2008-09		216	229
2009		24,663		1,314		$75,261,442		3.30%		65.0%	2009-10		221	235
2010		25,072		1,320		$80,500,048		3.30%		65.0%	2010-11		226	240
2011		25,480		1,322		$85,691,410		3.30%		65.0%	2011-12		231	245
2012		25,871		1,332		$91,038,510		3.30%		65.0%	2012-13		237	252
2013		26,300		1,342		$96,546,023		3.30%		65.0%	2013-14		243	258
2014		26,711		1,349		$102,218,762		3.30%		65.0%	2014-15		248	264
2015		27,123		1,356		$108,018,762		3.30%		65.0%	2015-16		253	269

* From RUS approved 2006 KY52/EKPC Load Forecast
** Plant Investment Taken From 2003 KY52 LRSS (Without Depreciation)
*** Includes Sales To All Large Power Customers

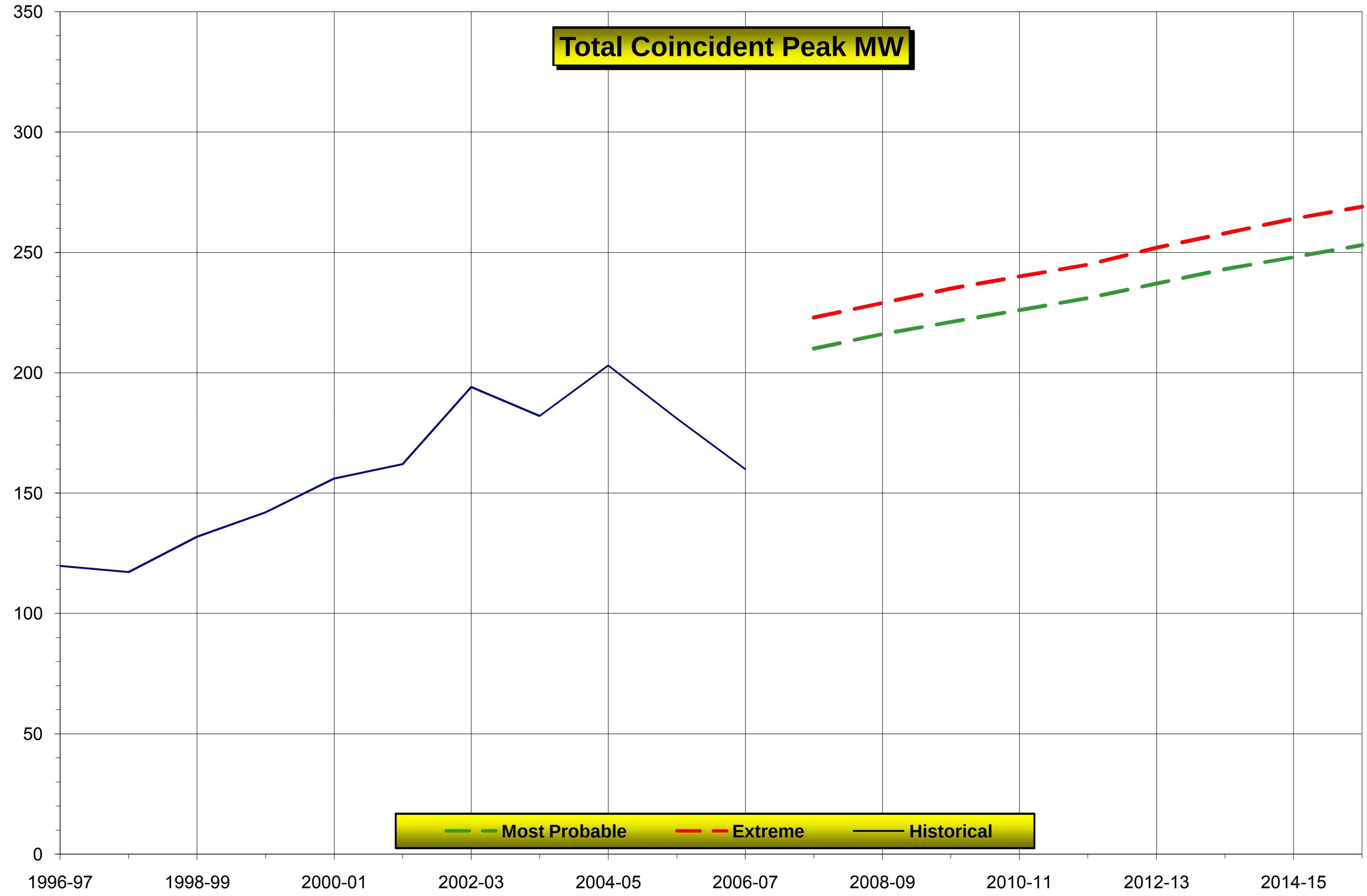

Total Consumers
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Historical Total Consumers
Projected Total Consumers



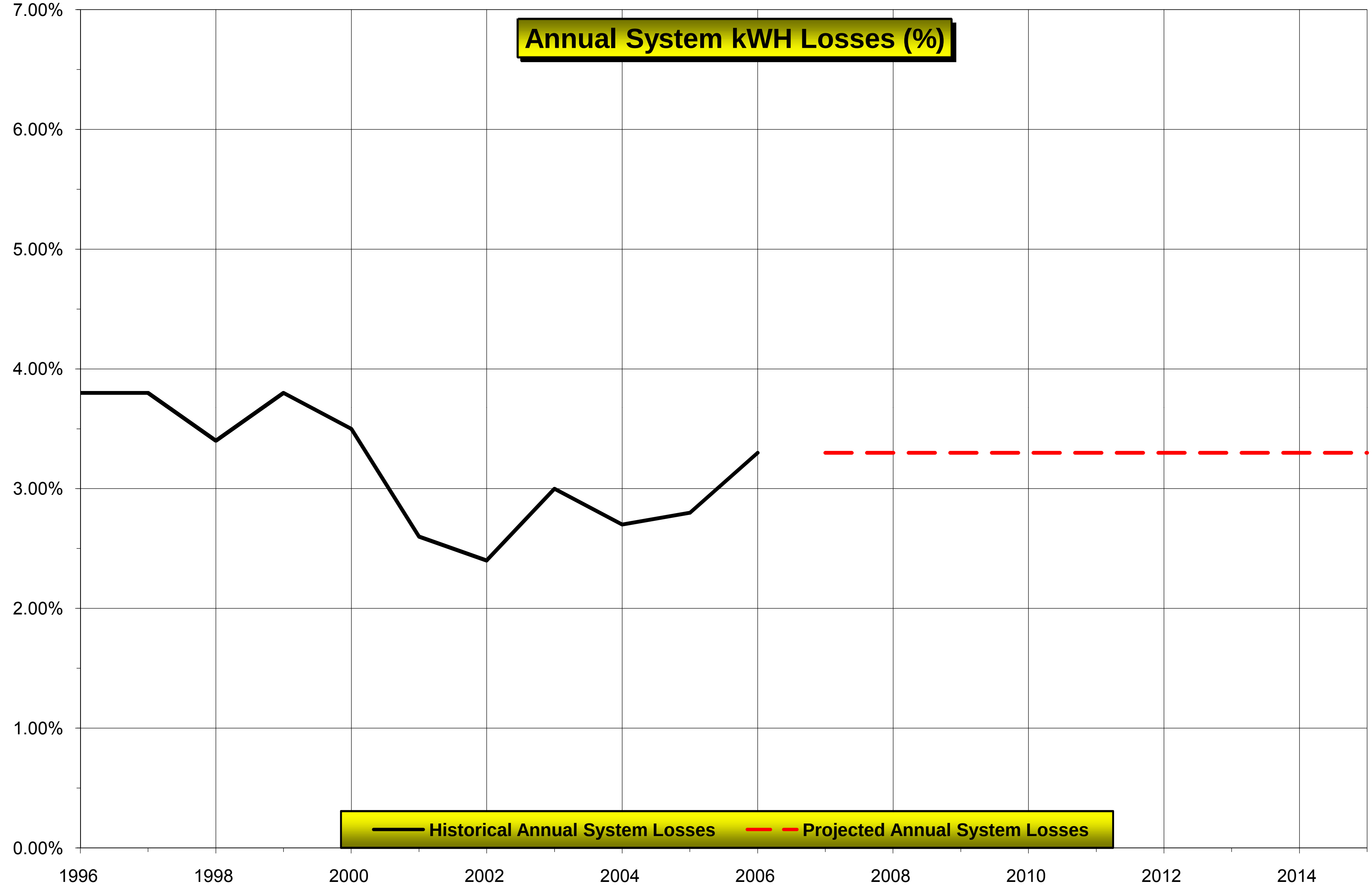
Average kWh Per Residential Consumer
2,500
2,000
1,500
1,000
500
0
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Historical kWh per Consumer
Projected KWh per Consumer

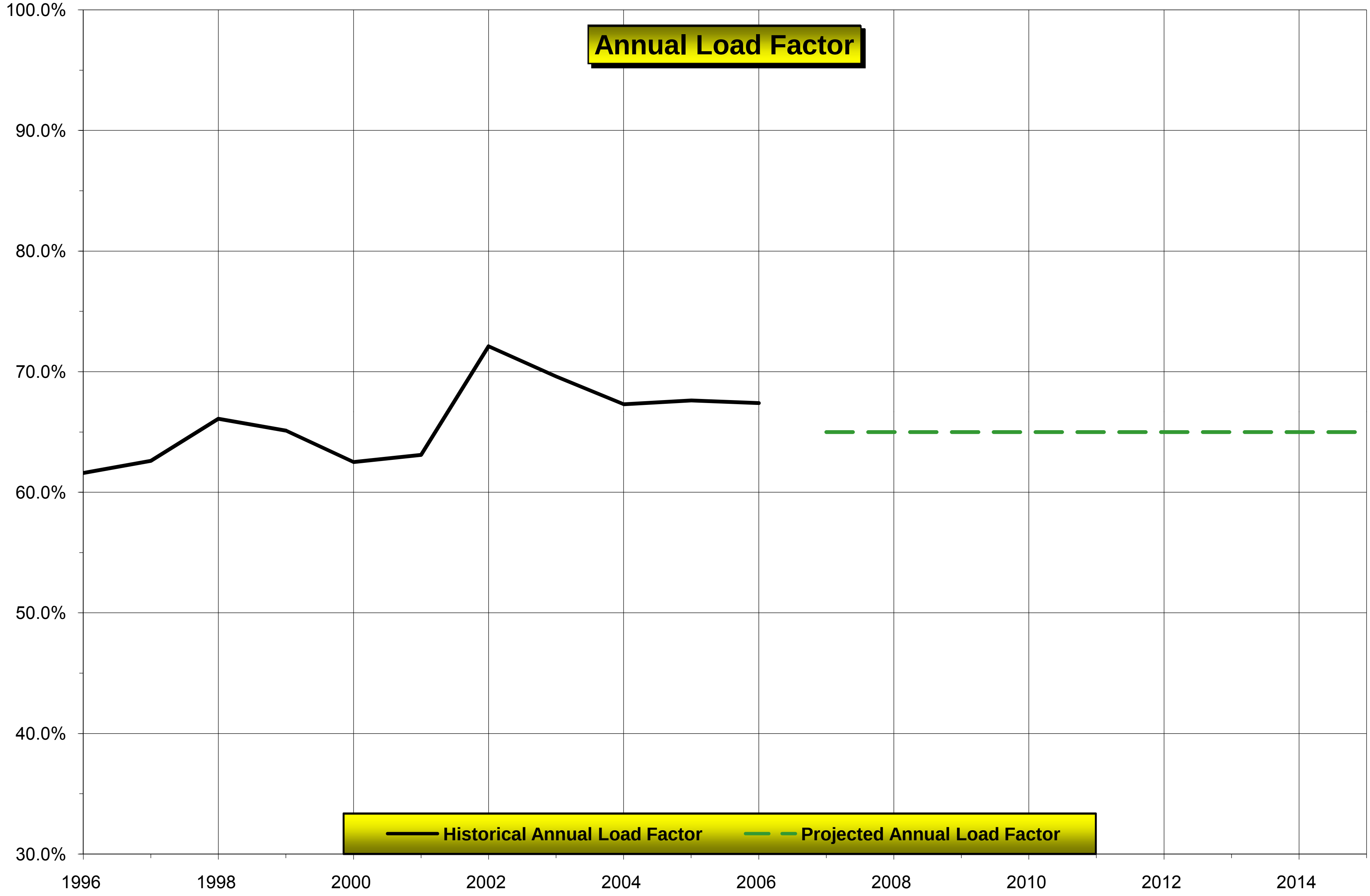


Net Distribution Plant ($ Millions)
Millions
$140
$120
$100
$80
$60
$40
$20
$0
2001
2003
2005
2007
2009
2011
2013
2015
Historical Net Distribution Plant
Projected Net Distribution Plant (2007 $)



Total Coincident Peak MW
350
300
250
200
150
100
50
0
1996-97
1998-99
2000-01
2002-03
2004-05
2006-07
2008-09
2010-11
2012-13
2014-15
Most Probable
Extreme
Historical


Annual System kWH Losses (%)
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Historical Annual System Losses
Projected Annual System Losses


Annual Load Factor
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Historical Annual Load Factor
Projected Annual Load Factor

Historical Cost ~ Data Ending June 30, 2007

DISTRIBUTION			Estimated 2008	Estimated 2009	CWP (24 Months)
100 ~ NEW SERVICES					
Overhead and Underground					
Number of Services	716	556	600	600	1,200
Total Lineal Feet	186,453	160,195	172,800	172,800	345,600
Average Feet Per Service	260	288	288	288	288
Total Cost	$1,269,689	$1,155,679	**$1,284,600**	**$1,324,200**	**$2,608,800**
Average Cost Per Service	$1,773	$2,079	$2,141	$2,207	$2,174
200 ~ NEW CONSTRUCTION AND TIE LINES ~ None			$0	$0	**$0**
300 ~ LINE CONVERSIONS & CHANGES			**$1,240,180**	**$1,240,180**	**$2,480,360**
500 ~ SUBSTATIONS ~ None			**$0**	**$0**	**$0**
600 ~ MISCELLANEOUS DISTRIBUTION EQUIPMENT					
601 ~ Transformers & Meters					
Number of Transformers	1,050	900	1,200	1,200	2,400
Total Cost of Transformers			$1,284,000	$1,284,000	$2,568,000
Average Cost of Transformers			$1,070	$1,070	$1,070
Number of Auto and Step Transformers			3	2	5
Total Cost of Auto and Step Transformers			$12,000	$8,000	$20,000
Average Cost of Auto and Step Transformers			$4,000	$4,000	$4,000
Number of New Meters 1ø	196	960	600	600	1,200
Total Cost of Meters			$54,000	$54,000	$108,000
Average Cost of Meters			$90	$90	$90
Number of New Meters 3ø	69	33	30	30	60
Total Cost of Meters			$15,360	$15,360	$30,720
Average Cost of Meters			$512	$512	$512
			$1,365,360	**$1,361,360**	**$2,726,720**
602 ~ Service Up-Grades*					
Number	377	346	250	250	500
Total Cost	$757,973	$892,432	**$375,000**	**$375,000**	**$750,000**
Average Cost	$2,011	$2,579	$1,500	$1,500	$1,500
603 ~ Sectionalizing Equipment					
Number			Various	Various	
Total Cost			**$100,000**	**$100,000**	**$200,000**
Average Cost					
604 ~ Line Regulators					
Number			Various	Various	10
Total Cost			**$33,000**	**$33,000**	**$66,000**
Average Cost			-	-	$6,600
605 ~ Capacitors**					
Number			Various	Various	25
Total Cost			**$50,000**	**$50,000**	**$100,000**
Average Cost			-	-	$4,000
606 ~ Poles					
Number	400	400	400	400	800
Total Cost	$643,280	$642,936	**$824,400**	**$849,200**	**$1,673,600**
Average Cost per Pole	$1,943	$2,001	$2,061	$2,123	$2,092
700 ~ OTHER DISTRIBUTION					
701 ~ Security Lights					
Number	341	313	313	313	626
Total Cost	$201,872	$140,850	**$164,012**	**$164,012**	**$328,024**
Average Cost	$592	$450	$524	$524	$524
			$5,436,552	**$5,496,952**	**$10,933,504**

* Historical data included other misc items
** EKPC purchased capacitors previously

2003 ~ 2006 CWP Project Status

2003/06 740 C #	Project Description	Status	2008/09 740C #
350-1	Section 23077, 3-ph 336.4 ACSR	Complete	
352-2	Sections 22146, 1-ph #2 ACSR	Complete	
353-2	Section 22152, 1-ph #2 ACSR	Complete	
354-2	Section 21088, 3-ph 1/0 ACSR	Complete	
355-2	Section 21100, 3-ph 1/0 ACSR	Complete	
356-2	Section 21264, 1-ph #2 ACSR	Complete	
357-3	Section 33104, 3-ph 1/0 ACSR	Complete	
358-3	Section 32322, 3-ph 1/0 ACSR	Complete	
359-3	Section 32030, 3-ph 1/0 ACSR	Complete	
360-3	Section 32124, 3-ph 1/0 ACSR	Complete	
361-3	Section 32450, 3-ph 1/0 ACSR	Complete	
362-3	Section 33112, Convert to 25kV	Complete	
363-4	Section 2204012, 3-ph 1/0 ACSR	Complete	
364-4	Section 41328, 1-ph #2 ACSR	Deferred	
365-4	Section 44572, 3-ph 1/0 ACSR	Deleted	
366-4	Section 43236, 3-ph 1/0 ACSR	Deferred	
367-4	Section 41180, 1-ph #2 ACSR	Deferred	
369-4	Section 44588, 1-ph #2 ACSR	Deleted	
370-4	Section 42100, 1-ph #2 ACSR	Deferred	
371-4	Section 43280, Convert to 25kV	Complete	
372-4	Section 43448, Convert to 25kV	Deferred	
373-4	Section 42262, Convert to 25kV	Deferred	
374-5	Section 51271, 3-ph 4/0 ACSR	Complete	
375-5	Section 52606, 1-ph #2 ACSR	Carry Over	358
376-5	Section 52584, 1-ph #2 ACSR	Deferred	
377-5	Section 52328 3-ph 1/0 ACSR	Carry Over	306 & 307
378-5	Section 53409, 3-ph 1/0 ACSR	Deferred	
379-5	Section 53636-end, 1-ph #2 ACSR	Deleted	
380-6	Section 64254-64280, 3-ph 336.4 ACSR	Complete	
381-6	Section 64468, 3-ph 1/0 ACSR	Deleted	
382-6	Section 62006,1-ph #2 ACSR	Complete	
383-6	Section 62316, Convert to 25kV	In Progress	
384-7	Section 73608, 1-ph #2 ACSR	Deferred	
385-7	Section 73392, 3-ph #2 ACSR	Deferred	
386-7	Section 73412, 1-ph #2 ACSR	Deferred	
387-7	Section 73482, 1-ph #2 ACSR	Deferred	
388-8	Section 95541, 3-ph 1/0 ACSR	Carry Over	357
389-8	Section 95542, 3-ph 336.4 ACSR	Carry Over	349
390-9	Section 95172, 3-ph 1/0 ACSR	Deleted	

Summary of CFR 740C Distribution Cost Estimates

			Cost Year 1 2008	Cost Year 2 2009	Total CWP Costs
740C REF 100:	**Line Construction for New Services**	=	$1,284,600	$1,324,200	**$2,608,800**
740C REF 200:	**New Construction and Tie Lines**	=	$0	$0	**$0**
740C REF 300:	**Line Conversions and Line Changes**	=	$1,240,180	$1,240,180	**$2,480,360**
740C REF 400:	**New Substations & Metering Points**	=	$0	$0	**$0**
740C REF 500:	**Substation and Meter Point Changes**	=	$0	$0	**$0**
740C REF 600:	**Miscellaneous Distribution Equipment**				
1. Code 601 ~	Transformers and Meters	=	$1,353,360	$1,353,360	**$2,706,720**
2. Code 602 ~	Increased Service Capacity	=	$375,000	$375,000	**$750,000**
3. Code 603 ~	Sectionalizing Equipment	=	$100,000	$100,000	**$200,000**
4. Code 604 ~	Line Voltage Regulators	=	$66,000	$0	**$66,000**
5. Code 605 ~	Line Capacitors	=	$50,000	$50,000	**$100,000**
6. Code 606 ~	Poles	=	$824,400	$849,200	**$1,673,600**
7. Code 607 ~	Conductor Replacement	=	$0	$0	**$0**
8. Code 612 ~	Step & Auto Transformers	=	$10,000	$10,000	**$20,000**
					$5,516,320
740C REF 700:	**Other Distribution Items**				
1. Code 701 ~	Security Lights	=	$164,012	$164,012	**$328,024**
	Total Estimated Distribution Requirements	=	$5,467,552	$5,465,952	**$10,933,504**

COST ESTIMATE BREAKDOWN FOR 740C

1. DISTRIBUTION

a. 740C Ref. Code 100 - New Services

		Cost Year 1 2008	Cost Year 2 2009	08/09 CWP Totals
100	Overhead and Underground ~ 600 Consumers per year	$1,284,600	$1,324,200	$2,608,800
		$1,284,600	**$1,324,200**	**$2,608,800**
	TOTAL LOAN CODE 100 MILES = 65 ***CODE 100 TOTALS =***			**$2,608,800**

b. 740C Ref Code 200: New Construction and Tie Lines (See Exhibit F for further details)

Reference Number	Priority Code	Miles	Existing Construction	Proposed Construction	$/Mile	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
NONE		0.0						
					CODE 200 TOTALS =	**$0**	**$0**	**$0**
							TOTAL LOAN CODE 200 COSTS =	**$0**

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

Reference Number	Priority Code	Miles	Existing Construction	Proposed Construction	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
306		9.60	1ø 4 ACSR	1ø 4 ACSR	$59,000		$59,000
307		9.90	1ø 4 ACSR	1ø 4 ACSR	$60,500		$60,500
309		5.00	various	various	$58,500		$58,500
310		1.00	1ø 4 ACSR	3ø 1/0 ACSR			$45,000
311		30.50	various	various	$172,500		$165,000
312		3.00	1ø 4 ACSR	1ø 4 ACSR		$26,000	$26,000
313		6.30	various	various	$75,150		$75,150
314		5.30	various	various		$174,500	$167,000
328		3.20	1ø 4 ACSR	1ø 4 ACSR	$27,000		$27,000
330		3.50	various	various	$42,750		$42,750
331		1.70	1ø 4 ACSR	3ø 1/0 ACSR	$76,500		$76,500
332		5.70	1ø 4 ACSR	3ø 1/0 ACSR		$259,500	$252,000
333		1.00	1ø 4 ACSR	2ø 1/0 ACSR	$19,650		$19,650
334		13.30	various	various		$246,000	$238,500
335		0.70	1ø 4 ACSR	2ø 1/0 ACSR	$23,310		$23,310
338		2.80	various	various		$88,500	$88,500
339		5.50	1ø 4 ACSR	1ø 4 ACSR	$38,500		$38,500
341		10.10	various	various		$169,500	$162,000
344		10.20	1ø 4 ACSR	1ø 4 ACSR	$62,000		$62,000
348		1.20	3ø 4 ACSR	3ø 4/0 ACSR		$91,200	$91,200
349		1.50	1ø 4 ACSR	3ø 4/0 ACSR	$114,000		$114,000
353		8.00	various	various	$299,000		$291,500
356		0.10	1ø 4 ACSR	3ø 1/0 ACSR	$9,000		$9,000
357		1.30	1ø 4 ACSR	3ø 4/0 ACSR		$98,800	$98,800
358		2.80	various	various	$126,000		$126,000
359		6.00	various	various		$63,000	$63,000
		149.20	**miles**		**$1,263,360**	**$1,217,000**	
				CODE 300 TOTALS =			**$2,480,360**

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

Reference Number	Priority Code	Proposed Construction	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
NONE	N/A	NONE			
			$0	**$0**	
		CODE 400 TOTALS =			**$0**

COST ESTIMATE BREAKDOWN FOR 740C (continued)

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

Reference Number	Priority Code	Proposed Construction	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
		CODE 500 TOTALS =	**$0**	**$0**	
			TOTAL LOAN CODE 500 COSTS =		**$0**

f. 740c Ref Code 600: Miscellaneous Distribution Equipment

Reference Number	Priority Code	Proposed Construction	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
601		Transformers and Meters (Underground & Overhead)			
		Uprated Transformers ~ Combined with OH	$0	$0	$0
		New UG ~ 0 per year @ (combined with OH)	$0	$0	$0
		New OH ~ 1200 per year @ $1,070	$1,284,000	$1,284,000	$2,568,000
		25 kV Conversion ~ Combined with OH	$0	$0	$0
		New Auto & Step Transformers	$12,000	$8,000	$20,000
		New 1PH AMR Meters ~ 600 per year @ $90	$54,000	$54,000	$108,000
		New 3PH AMR Meters ~ 30 per year @ $988	$15,360	$15,360	$30,720
		* Replacement AMR Meters ~ 0 per year @	$0	$0	$0
		Subtotals =	$1,365,360	$1,361,360	$2,726,720
602		Service Increased Capacity ~ 250 / year @ $1,500 each =	$375,000	$375,000	$750,000
603		Sectionalizing Equipment =	$100,000	$100,000	$200,000
604		Line Voltage Regulators =	$66,000	$0	$66,000
605		Line Capacitors =	$50,000	$50,000	$100,000
606		Pole ~ 400 poles / year @ $2,092 =	$824,400	$849,200	$1,673,600
607		Conductor Replacement ~ Non Site Specific =	$0	$0	$0
	* Financing not requested	***CODE 600 TOTALS =***	**$2,780,760**	**$2,735,560**	**$5,516,320**

g. 700 - Other Distribution

Reference Number	Priority Code	Proposed Construction	Cost Year 1 2008	Cost Year 2 2009	CWP Totals
701		Security Lights ~ 313 units per year @ $524 each =	$164,012	$164,012	$328,024
		CODE 700 TOTALS =	**$164,012**	**$164,012**	**$328,024**
		TOTAL DISTRIBUTION =	**$5,492,732**	**$5,440,772**	**$10,933,504**

BREAKDOWN OF COST ESTIMATES FOR FINANCIAL FORECAST

NEW CONSTRUCTION		Cost Year 1 2008	Cost Year 2 2009	CWP Totals
Line Extensions		$1,284,600	$1,324,200	$2,608,800
Transformers and Meters		$1,365,360	$1,361,360	$2,726,720
Security Lights		$164,012	$164,012	$328,024
TOTAL NEW CONSTRUCTION =	**52%**	**$2,813,972**	**$2,849,572**	**$5,663,544**
SYSTEM IMPROVEMENTS				
New Tie Lines		$0	$0	$0
Conversions (Code 300)		$1,263,360	$1,217,000	$2,480,360
Transformers for Conversions		$0	$0	$0
New Substations		$0	$0	$0
Substation Changes		$0	$0	$0
Service Wires Uprated		$375,000	$375,000	$750,000
Sectionalizing Equipment		$100,000	$100,000	$200,000
Line Regulators		$66,000	$0	$66,000
Line Capacitors		$50,000	$50,000	$100,000
Pole Replacements		$824,400	$849,200	$1,673,600
TOTAL SYSTEM IMPROVEMENTS =	**48%**	**$2,678,760**	**$2,591,200**	**$5,269,960**
			Total CWP Costs =	**$10,933,504**

LINE CONSTRUCTION COST PER MILE

Description	New Cost 2007-2009 CWP		
1ph 6 CU to 1ph 2ACSR	$	24,500	/ mile
1ph 6 CU to 2ph 2ACSR	$	33,300	/ mile
1ph 6 CU to 3ph 2ACSR	$	39,000	/ mile
1ph 2ACSR to 2ph 2ACSR	$	29,000	/ mile
1ph 2ACSR to 3ph 2ACSR	$	37,000	/ mile
2ph 2ACSR to 3ph 2ACSR	$	15,000	/ mile
1ph 6 CU to 1ph 1/0ACSR	$	27,000	/ mile
1ph 6 CU to 2ph 1/0ACSR	$	40,000	/ mile
1ph 6 CU to 3ph 1/0ACSR	$	45,000	/ mile
1ph 1/0ACSR to 2ph 1/0ACSR	$	31,000	/ mile
1ph 1/0ACSR to 3ph 1/0ACSR	$	35,000	/ mile
2ph 1/0ACSR to 3ph 1/0ACSR	$	17,500	/ mile
2ph 6 CU to 3ph 1/0ACSR	$	42,000	/ mile
3ph 6 CU to 3ph 1/0ACSR	$	45,000	/ mile
New 3ph 1/0ACSR	$	40,000	/ mile
1ph 6 CU to 3ph 336ACSR	$	76,000	/ mile
2ph 6 CU to 3ph 336ACSR	$	76,000	/ mile
3ph 1/0ACSR to 336ACSR	$	76,000	/ mile
New 3ph 336ACSR	$	80,000	/ mile
Any Double Circuit 336ACSR	$	105,000	/ mile
New 3ph 556ACSR	$	100,000	/ mile
1ph 25kV conversion	$	10,000	/ mile
3ph 25kV conversion	$	13,000	/ mile
Transformers	$	625	each

Substation and Meter Point Cost Estimates

CODE 400: <u>NEW SUBSTATIONS AND METER POINTS</u>

East Kentucky Power Cooperative owns and maintains all substations

CODE 500: <u>SUBSTATION AND METER POINT CHANGES</u>

East Kentucky Power Cooperative owns and maintains all substations

FME REGULATOR STATIONS ~ 740C 604

SUBSTATION	STATUS	STATION	CWP	#	SIZE (A)	VOLT	AMPS	% LOAD	REMARKS
CHARTER	EXISTING	RG34	~	3	100	14.4	57	57%	~
	INSTALL	~	604-01	1	50	7.2	43	86%	~
	INSTALL	~	604-02	3	100	14.4	59	59%	~
FLEMINGSBURG	REMOVE	REG331	~	3	100	14.4	82		REMOVE
	EXISTING	REG176	~	3	200	7.2	95	48%	~
	REMOVE	RG30	319B	3	200	14.4	86		REMOVE
HILDA 1	INSTALL	~	604-03	1	100	7.2	75	75%	~
	REMOVE	RG26	~	3	100	7.2	123		REMOVE
	INSTALL	~	604-04	3	200	7.2	159	80%	~
	INSTALL	~	604-05	3	100	7.2	81	81%	~
HILLSBORO	REMOVE	RG1260263416	~	1	100	7.2	15		REMOVE
	EXISTING	RG-1448482752	~	3	100	14.4	14	14%	~
	INSTALL	~	604-06	3	100	14.4	73	73%	~
MAYSVILLE	REMOVE	RG14	~	1	100	14.4	84		REMOVE
	INSTALL	~	604-07	1	50	7.2	29	58%	~
	INSTALL	~	604-08	1	100	7.2	64	64%	~
MURPHYSVILLE	REMOVE	RG15	~	1	50	7.2	52		REMOVE
	REMOVE	REG167	~	3	200	14.4	114		REMOVE
	INSTALL	~	604-09	3	150	14.4	133	89%	~
	INSTALL	~	604-10	1	100	7.2	61	61%	~
OAK RIDGE	REMOVE	RG35	~	3	100	7.2	23		REMOVE
PEASTICKS	EXISTING	RG29378565	~	1	100	7.2	35	35%	~
	EXISTING	RG1949182874	~	1	?	7.2	59	?	UNKNOWN SIZE; NEEDS 100A
PLUMBERS LANDING	EXISTING	RG938754825	~	3	200	7.2	154	77%	~
	REMOVE	RG28	~	3	200	7.2	34		REMOVE
	REMOVE	REG249	~	1	50	7.2	72		REMOVE
RECTORVILLE	EXISTING	RG13	~	3	200	7.2	200	100%	REVIEW UNBALANCED LOADING
SHARKY	TEMPORARY	~	~	3	150	7.2	118	79%	~
SNOW HILL	EXISTING	REG248	~	1	50	7.2	26	52%	AFTER LOAD TRANSFER

Capacitor Recommendations and Cost Estimates
RUS 740C Category 605

Substation	Circuit	Line Section	Existing Bank KVAR	kV*	Recommendations
Charters	Tollesboro	CO23032	300	14.4	Existing
	Holly	CO17587	300	14.4	Existing
	Holly	CO17967	300	14.4	Existing
	Vanceburg	CO23849	300	14.4	Existing
	Vanceburg	CO19548	300	14.4	Existing
	Vanceburg	CO19328	~	~	Add 300 kVAR ~ 14.4kV
Flemingsburg	Underbuild	CO13068	300	14.4	Remove
	Underbuild	CO7695	~	~	Add 300 kVAR ~ 7.2kV
	Underbuild	CO7659	~	~	Add 300 kVAR ~ 7.2kV
	Tilton	CO13230	0*	7.62	Existing
	Cowan	CO16036	300	14.4	Existing
	Mt. Carmel	CO30675	600	14.4	Remove
	Mt. Carmel	CO25429	~	~	Add 300 kVAR ~ 14.4kV
Hilda	Cranston	CO4248	0*	7.62	Existing
	Cranston	CO4247	300	7.62	Existing
	Cranston	CO4432	~	~	Add 300 kVAR ~ 7.2kV
	Inter Change	CO332	600	7.62	Existing
	Bluestone	CO473	300	7.62	Existing
	Park Hills	CO3035	300	7.62	Existing
Hillsboro	Sherburne	CO-973969714	~	~	Add 300 kVAR ~ 7.2kV
Maysville	Moransburg	CO24533	0*	14.4	Existing
	Moransburg	CO24699	300	14.4	Existing
	Moransburg	CO23930	~	~	Add 300 kVAR ~ 14.4kV
	Moransburg	CO24172	~	~	Add 300 kVAR ~ 14.4kV
	Industrial	CO-554407469	600	14.4	Existing
	Industrial	???	~	~	Add 600 kVAR ~ 14.4kV
	Maysville	CO23958	450	14.4	Existing
Murphysville	Moransburg	CO27633	300	14.4	Existing
	Moransburg	CO30135	~	~	Add 300 kVAR ~ 14.4kV
Oak Ridge	Mud Lick	CO18809	300	14.4	Existing
	Burtonville	CO18692	300	14.4	Remove
	Burtonville	CO18079	0*	14.4	Remove
Peasticks	Sharpsburg	CO9766	~	~	Add 300 kVAR - 14.4kV
	Sharpsburg	CO10808	~	~	Add 300 kVAR - 14.4kV
Plummers Landing	Hillsboro	CO5407	300	7.62	Remove
	Hillsboro	CO3500	300	7.62	Existing
	Hillsboro	CO4737	~	~	Add 300 kVAR - 7.2kV
	Hillsboro	CO4942	~	~	Add 300 kVAR - 7.2kV
	Hillsboro	CO3038	~	~	Add 300 kVAR - 7.2kV
	Blue Bank	CO6538	0*	7.62	Existing
Rectorville	Plumville	CO28597	300	14.4	Existing
	Tollesboro	CO21372	~	~	Add 300 kVAR - 7.2kV
Sharkey	Sharkey	CO3575	300	7.62	Existing
Snow Hill	Blue Lick	CO16855	300	14.4	Remove
	Blue Lick	CO13971	~	~	Add 300 kVAR - 14.4kV

Capacitor Recommendations and Cost Estmates
(Continued)

7.62kV Capacitors	Totals	
300 kVAR Banks Installed	12	**
300 kVAR Banks Removed	1	
300 kVAR Banks Required	7	
600 kVAR Banks Installed	1	
600 kVAR Banks Removed	0	
600 kVAR Banks Required	1	
14.4kV Capacitors		
300 kVAR Banks Installed	12	**
300 kVAR Banks Removed	4	
300 kVAR Banks Required	4	
450 kVAR Banks Installed	0	
450 kVAR Banks Removed	0	
450 kVAR Banks Required	0	
600 kVAR Banks Installed	0	
600 kVAR Banks Removed	1	
600 kVAR Banks Required	0	

*   Install 7.62 kV Capacitors instead of 7.2 kV

** (4) 300 KVAR 7.2 kV & (4) 300 KVAR 14.4 kV Added to Totals for Additional Voltage Support

Sectionalizing Recommendations and Cost Estimates
RUS Reference Code 603

Fleming-Mason EC has retained the firm of Patterson & Dewar Engineers, Inc. to develop and deliver a new sectionalizing study of their complete electrical distribution system. Said study will review and recommend coordination philosophy with input from the FME engineering and operation staff. The recommendations will comprise fusing, recloser and breaker settings, sectionalizing equipment and all pertinent devices from the low-side of each substation to the end of each circuit/feeder. Coordination with substation high-side fusing and relaying will be included within the scope of the study.

The estimated cost of the equipment and labor for this project is slightly greater than $200,000.

RUS 740C CODE 603: $200,000

System Design and Operating Criteria (SDOC)

Each of the criteria items listed below was reviewed and concurred by the RUS General Field Representative (GFR) for Fleming-Mason Energy (FME) on August 28, 2007.

Construction proposed in this construction work plan (CWP) is required to meet the following minimum standards of adequacy for voltages, thermal loading, safety and reliability on the system. Note that references to future conditions imply the current CWP projections.

It is further understood that the criteria given herein is considered to be a guideline and not a mandate. Oftentimes system conditions will occur which may result in a breach of a specific criteria. Such a condition is considered to be only temporary and is not intended for long range operations.

I. SYSTEM DESIGN CRITERIA

A. Substations:

1. FME's power supplier, East Kentucky Power Cooperative (EKPC), has the primary responsibility for providing the substation transformer capacity including regulation. It is EKPC's responsibility to provide FME the requested delivery voltage to FME's low side inter-connect point for power distribution.
2. EKPC establishes the capacity of the equipment in each substation. It is defined for both the winter and the summer peak conditions. EKPC's current policy is to load power transformers to 95 percent of the full winter or summer rating with at least a 95 percent power factor. When that load level is exceeded, system planning is set in place for either providing additional capacity in the service area or evaluating opportunities for temporary transfer of load to adjoining substation(s).
3. All new substations and/or delivery points will be justified per the current Long Range System Study as well as power supply studies following the format required by the Power Supplier.
4. Substation feeder protection will be accomplished per the following criteria:
   - Phase pickup levels will be such to protect feeder conductors as well as to be approximately 1.5 - 2.0 times full load continuous current levels.
   - Ground pickup will be set to respond to the minimum down line calculated fault current level based on a 40 ohm high impedance primary fault.
   - Coordination will be determined via the criteria established in the forthcoming sectionalizing study.
5. Feeder current balance should be maintained at plus or minus 20% of the average per phase loading at peak conditions.

B. Distribution Lines:

1. All new distribution lines are to be designed and built according to RUS standard construction specifications and guidelines for the ***medium*** NESC loading district.
2. 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.
3. New lines and line conversions are to be built according to the standard 7.2/12.47 kV or 14.4/25 kV primary voltage levels as recommended in the current Long Range System Study.

4. New primary conductor sizes are to be determined on a case by case basis using the Economic Conductor Analysis computer program along with local input based upon specific system conditions. A minimum of 1/0 ACSR is to be used on main three-phase lines and a minimum of 2 ACSR is to be used on tap lines.
5. Primary conductors are not to be loaded for long periods of time, over 50% of their thermal rating for summer loading, or 65% for winter. Operating capacity is defined as the manufacturer's conductor ratings at the conductor's maximum operating temperature of 75° C (or 167° F), with a 25° C or (77° F) ambient temperature and a 2 mph wind. Major tie lines between substations can be loaded to 100% of operating capacity during back feed or emergency situations.
6. The maximum voltage drop from the substation on primary distribution lines is normally not to exceed 8 volts unregulated, 16 volts with one bank of line voltage regulators, and 24 volts with two banks of line voltage regulators.
7. Single-phase taps will be considered for multi-phasing if conditions are present that meet all of the following criteria:
    - Serve more than 60 consumers @ 7.2/12.47 kV or 120 @ 14.4/5 kV.
    - Have a projected future load over 250 to 360 kW @ 7.2/12.47 kV (35 to 50 amps) or equivalent at 14.4/25 kV.
    - The tap serves an area that is growing.
8. Conductors are to be considered for replacement if found to be in poor condition and have contributed to multiple line outages.

C. Distribution Line Equipment:

1. Distribution class MOV arresters and related pole grounds are to be considered for installation at a minimum of every 1,500 feet of line when additional equipment arresters are not present.
2. Line voltage regulator projected future loading will be limited to 95% of nameplate rating at 10% buck or boost or 150% at 5% buck or boost.
3. Capacitor banks will be installed on distribution lines as required to maintain no less than 95% lagging power factor at peak loading conditions. Capacitors will be located so as to maximize the kW loss reduction and to limit the voltage rise on the circuit extremities.
4. Line sectionalizing devices (e.g. circuit reclosers - CR, sectionalizers, fuses, etc.) are to be applied per the following guidelines:
    - No sectionalizing device will be located such that its rated nameplate maximum fault interrupting capacity is exceeded.
    - Vacuum interrupting devices will be evaluated on all newly purchased units in lieu of oil interrupting.
    - The sectionalizing system shall be designed such that any 40 ohm primary fault will be detected, interrupted and isolated.
    - Sectionalizing devices should not be loaded more than 85% of continuous nameplate ratings.

- CR to CR coordination is to be based on a minimum separation of 3 cycle for electronic controls or 8 cycles for hydraulic controls between delayed curves at the maximum fault on the down line device with a minimum of 12 cycles separation between delayed curves desired.
- Line reclosers shall operate on the time current characteristics curves established in the forthcoming sectionalizing study
- Line reclosers are to be maintained systematically based on the number of operations and/or years since last maintained. Present criteria are 5 years or 100 operations, which ever comes first.

D. Service Reliability:

1. Outage datum will be accumulated and evaluated in accordance with the latest RUS Bulletin 161-1.
2. Outages will be evaluated and classified as to cause by substation. The outages will then be evaluated for any reduction efforts that may be possible.
3. System wide total consumer outages are to be limited to less than 5 consumer outage hour's average per year; less than 3.5 consumer outage hours will be targeted.
4. Efforts, where practical, shall be made to provide alternative feeds to critical loads and substation feeders.
5. FME's power supplier, EKPC, will be encouraged to maintain a power supplier outage average per year of less than 1.0 hour per consumer. Power supply annual average above 1.0 hour will be reviewed and evaluated for possible system improvement.

E. Voltage Conditions:

1. Voltage levels will be maintained in accordance with the latest RUS Bulletin 169-4 and the latest edition of the American National Standards Institute (ANSI) Standard C84.1. (See **Table 1**) The ANSI Standard defines "Range A" and "Range B" voltage limits as follows:

   - **Range A - Service Voltage**

     Electric supply systems shall be so designed and operated that most service voltages are within the limits specified for this range. The occurrence of service voltages outside these limits is to be infrequent.

   - **Range A - Utilization Voltage**

     User systems shall be so designed and operated such that, with service voltages within Range A limits, most utilization voltages are within the limits specified for this range. Utilization equipment shall be so designed and rated to give fully satisfactory performance throughout this range.

   - **Range B - Service and Utilization Voltages**

     This range includes voltages above and below Range A limits that necessarily result from practical design and operating conditions on supply and/or user systems. Although such conditions are a part of practical operations, they shall be limited in extent, frequency and duration. When they occur, corrective measures shall be undertaken within a reasonable time to improve voltages to meet Range A requirements.

Insofar as practicable, utilization equipment shall be designed to give acceptable performances in the extremes of this range of utilization voltage, although not necessarily as good performance as in Range A.

Table 1. Voltage Ranges ANSI Standard C84.1 (120 volt base)

Range	Minimum			Maximum
	Utilization Voltage*		Service Voltage	Utilization & Service Voltage
	Non-lighting loads	Loads including lighting		
A	108	110	114	126
B	104	106	110	127

*** Note**: Caution should be exercised in using minimum utilization voltage as in some cases they may not be satisfactory for the equipment served. For example, where existing 220-volt motors are used on 208-volt circuits, the minimum utilization voltage permitted would not be adequate for the operation or motors.

2. Basic RUS Recommended Design Criteria (**Table 2**):

- Rural electric distributions systems should be designed and operated to meet the voltage level requirements of “Range A” in ANSI C84.1-1970. Users’ utilization electrical equipment of all types will generally be designed to give satisfactory performance in this range.
- It is recognized that maintaining voltage levels within “Range A” on all parts of the system at all times cannot be assured. Due to the economics of operation, there may be some system voltages that fall in extremes of “Range B” and even beyond. This may occasionally occur as the feeder reaches its design loading limit at annual or semi-annual peak loads.
- When voltages frequently extend into “Range B”, they should be corrected to conform to “Range A” requirements within a reasonable time. If voltages on any part of the system fall outside the limits of “Range B”, corrective actions should be taken immediately to bring these voltages within “Range B” requirements within a reasonable time.

Table 2. Voltage Drops for Rural Electric Distribution System Design (120 volt base)

	Maximum Volts Drop	Percent Volts Drop
Substation regulated bus (output) to last distribution transformer (primary)	8	6.67 %
Distribution transformer (primary) to service delivery connection to consumers’ wiring (meter or entrance)	4	3.33 %
Utility service delivery point (meter or entrance switch) to consumers’ utilization terminal (outlet):		
Loads including Lights	4	3.33 %
Non-lighting Loads	6	5.00 %

Some types of utilization equipment will not perform satisfactorily or efficiently at the extremes of "Range B" voltages. Outside "Range B" voltage limits, many types of utilization equipment may fail to operate and may be seriously damaged or suffer shortened operating life. Voltages above these limits of Range B may be especially damaging to the users' equipment.

3. The voltage input to distribution substations should be kept within limits as follows:

- Substation voltages are kept within the design limits of the substation transformers and other equipment.
- The substation voltage regulator can maintain the voltages on its output bus within the limits given in **Table 3**.

Table 3. Voltage Level Limits and Spread for Rural Electric Distribution Systems. (Measured at center of regulator bandwidth - 120 volt base)

	Voltage Levels (Volts)		**Voltage Spread (Volts)**
	Minimum	Maximum	
Substation Regulated Bus with Regulator:			
Line Drop Compensator in Use	122	126	4
Distribution Transformer Primary Terminals:			
Adjacent to substation bus	122	126	4
At end of line (8-Volt drop)	118	122	4
Service Connection (Meter Socket):			
At transformer nearest substation bus	118	126	8
At end of line (8-Volt drop on primary)	114	122	8
Point of Consumer Utilization: At transformer nearest to substation bus			
(Lighting load)	112	126	14
(Non-lighting loads)	108	126	18
At 8-volt drop on primary			
(Lighting load)	110	122	12
(Non-lighting load)	108	122	14

4. Basic RUS recommended operating conditions, voltage level and limit values are based on the following:
   - The outgoing substation voltage is regulated by a suitable voltage regulator.
   - The regulator voltage band width setting does not exceed two volts on a 120-volt base.
   - Voltage values used are at the center of the voltage regulator band width.
   - Only sustained voltages apply to these levels and limits. The flicker and variations caused by motor starting, equipment switching, variation of voltage within the voltage regulator band width, and similar short duration variations are not considered.
   - Refer to RUS Bulletin 169-27, *Voltage Regulator Application on Rural Distribution Systems*, for detailed guidelines on voltage regulator installation and appropriate settings for voltage level, bandwidth, time delay, range of regulation, and line drop compensation (LDC).

F. Annual System Losses:

Annual system losses will be monitored and evaluated annually per the guidelines established by the latest RUS Bulletin 45-4.

1. Efforts should be made to limit the annual distribution system losses to 5% or less.
2. When there is a more than 1.0 - 1.5% change in losses from one year to the next, efforts are to be made to evaluate the cause. Such efforts should include the following to assure that there is not a metering error with the power supplier or a large power consumer resulting incorrect charges and/or revenue:
   - Check all substations that have had a change in metering equipment over the last 12 - 24 months.
   - Check all new substations that were constructed over the last 12 - 24 months and verify correctness of metering.
   - Check all new or recently revised large power load metering and verify correctness.
3. Line drop compensation (LDC) should be utilized on all substation regulators to improve line voltage swings and reduce overhead transformer no-load losses during off-peak conditions. Line regulators should also to utilize LDC when controls can be satisfactorily applied and monitored.
4. Purchases of the following distribution equipment should be based on evaluated losses to reduce system losses and to contribute to a higher annual load factor:
   - Consumer overhead transformers
   - Consumer underground transformers
   - Voltage Regulators

United States Department of Agriculture
Rural Development

Rural Business–Cooperative Service • Rural Housing Service • Rural Utilities Service
Washington, DC 20250

January 20, 2005

SUBJECT: OPERATIONS AND MAINTENANCE SURVEY

TO: TONY OVERBEY, PRESIDENT AND CEO
FLEMING-MASON ENERGY COOPERATIVE

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 January 20, 2005.

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. There are several comments and recommendations for further improvements.

There were several improvements from the O & M Survey in 2002. A line inspection program was implemented. There are fewer telephone poles to be removed. Power quality issues have been improved. A long range plan was prepared.

There are still some telephone poles remaining close to the electric poles following pole change-outs. Most of the telephone lines have been transferred but the old telephone poles need to be removed. Constant follow-up is still required to ensure code compliance of cable TV attachments. Actual line losses with large power loads removed is still too high. Improvement efforts are in progress. There are a few idle services to be removed and the report of idle services should be corrected.

A more aggressive right-of-way clearing program is recommended. For example custom trimming may no longer be economically feasible and trees growing on the transformer pole should always be removed.

MIKE NORMAN
RUS FIELD REPRESENTATIVE

Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send commends regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Officer, OC, OMB Control # 0572-0025, AG Box 7630, Washington, DC 20250.
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UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL UTILITIES SERVICE

REVIEW RATING SUMMARY

BORROWER DESIGNATION: KY 52

DATE PREPARED: 1/20/2005

Ratings on form are:
NA: Not Applicable
0: Unsatisfactory -- No Records
1: Corrective Action Needed
2: Acceptable, but Should be Improved -- See Attached Recommendations
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	(Rating)
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		(Rating)
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	NA

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		(Rating)
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	NA
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	2
	Other	NA

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)
1999	0.11	0.68	0.26	4.08	5.13	2
2000	1.47	2.33	0.17	3.18	7.15	2
2001	0.68		0.00	2.65	3.33	3
2002	0.29		0.03	2.01	2.33	3
2003	0.82	81.96	0.22	1.72	84.72	2

b. Emergency Restoration Plan: 3

8. Power Quality	(Rating)
a. General Freedom from Complaints	3

9. Loading and Load Balance	(Rating)
a. Distribution Transformer Loading	3
b. Load Control Apparatus	NA
c. Substation and Feeder Loading	3

10. Maps and Plant Records	(Rating)
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	2.97%	2
b. Annual Load Factor	69.0%	3
c. Power Factor at Monthly Peak	95+%	3
d. Ratios of Individual Substation Annual Peak kW to kVA		3

12. Voltage Conditions	(Rating)
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						
	For Previous 2 Years		For Present Year	For Future 3 Years		
YEAR	2002	2003	2004	2005	2006	2007
	Actual $ Thousands	Actual $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands
Normal Operation	$1,042,297	$906,448	$1,039,667	$1,070,857	$1,102,983	$1,136,072
Normal Maintenance	$2,146,960	$2,574,843	$2,771,580	$2,854,727	$2,940,369	$3,028,580
Additional (Deferred) Maintenance						
Total	$3,189,257	$3,481,291	$3,811,247	$3,925,584	$4,043,352	$4,164,652

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

15. Date Discussed with Board of Directors 2/3/2005

EXPLANATORY NOTES

ITEM NO.	COMMENTS
3b.	There are still some telephone poles left standing next to electric poles which need to be removed. Constant follow-up is required to ensure code compliance of cable TV attachments.
6b.	There are some idle services to be removed and the report of idle services needs to be reconciled with billing records.
7a.	There was a devastating ice storm in 2003.
11a.	Actual line losses without large power loads is still too high. We are working to reduce line losses in many areas.

		TITLE	DATE
RATED BY:	Christopher S. Perry, PE	MANAGER OF ENGINEERING	1/20/2005
REVIEWED BY:		PRESIDENT & CEO	1/20/2005
REVIEWED BY:	Mike [illegible]	RUS GFR	1/20/2005

RUS FORM 300 (2/98)

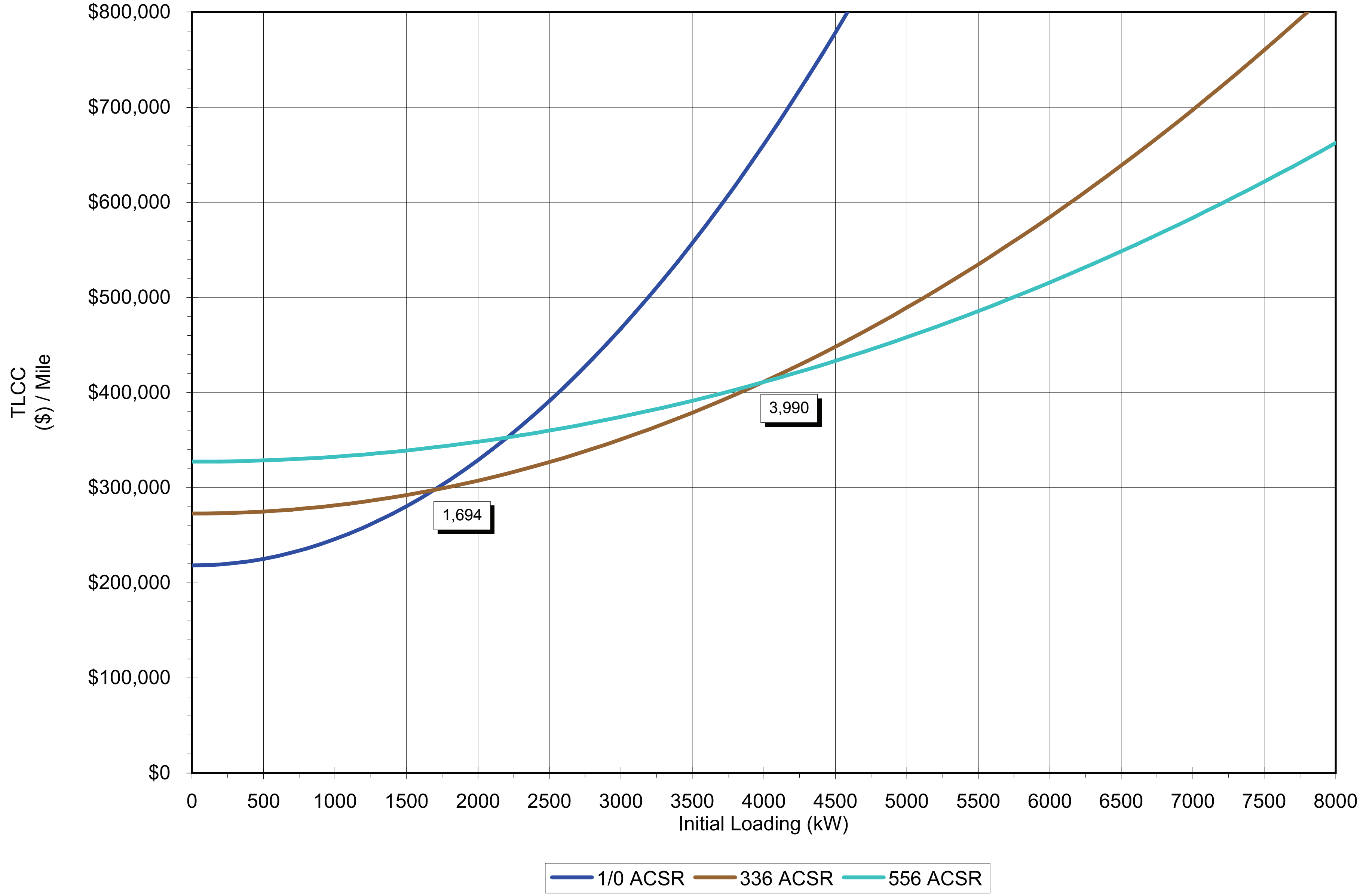
7.2 kV CONDUCTOR LIFE CYCLE ANALYSIS
(New Construction Legend and Imput Values)

0.00%	TOTAL	Total fixed cost. This is an optional replacement for O & M + TAX + DEP + INS.
6.61%	O & M	Operations and Maintenance Expense as a percentage of Average Net Distribution Plant calculated using RUS Bulletin 1724D-101A ***Electric System Long-Range Planning Guide*** based on *RUS Fixed Charge Calculation Guide*
0.10%	TAX	Property tax: annual Form 7, last year Part A, line 13(b) Plant the taxes were paid on: annual Form 7, 2 years ago, Part C, line 5 + line 22 Tax Rate: (Property tax / Plant) x 100, or estimated future tax rate
3.00%	DEP	Most Owners use straight-line depreciation where the depreciation rate is the reciprocal of the asset's life. Use annual rate for Coop, for classes of plant Depreciation rate on RUS Form 7 Part E Lines 5(f) and line 6(f)
0.00%	INS	Insurance as a percentage of Net Distribution Plant. Calculating the cost of insurance as a percentage of investment is difficult, and the result makes little difference, therefore, it can be ignored for most applications.
2.50%	INF	The annual inflation rate.
30	m	The loan amortization period in years.
7.2 & 14.4	KV	Line to ground voltage in kV.
99.00%	PF	Peak month power factor.
7.09%	INT	Cost of Capital (Calculated using *RUS Fixed Charge Guide*) used for Present Worth Calculation
2.23%	LGR	The annual rate of growth projected for the peak demand. (Use latest PRS)
30	ULC	Useful Life of Conductor
$0.00	$/KW	Monthly demand charge in dollars per kW per month. If $/KW is zero the following dependant inputs will also be zero:
0.00%	KWI	Demand charge inflation rate.
0.00%	CF	Coincidence factor - This factor represents the coincidence between the non coindedent peak for the line and billing demand.
0.000	RMO	The number of months the metered demand exceeds the minimum biling demand.
0.000	RAT	The annual demand ratchet expressed as a decimal.
0.000	N	The ratio of the average of the squares of the monthly kW demands for the months when the metered demand exceeds the minimum billing demand to the square of the peak month demand.
$0.0530	$/KWH	Energy charge in dollars per kWH per month.
2.00%	KWHI	Energy charge inflation rate.
57.00%	LF	Annual load factor.

Select Conductor Resistance Temperature

√	25° C (77° F) for Winter Loading or
	50° C (122° F) for Summer Loading

Conductor Life Cycle Analysis
Total Life Cycle Cost - Three Phase 7.2 kV

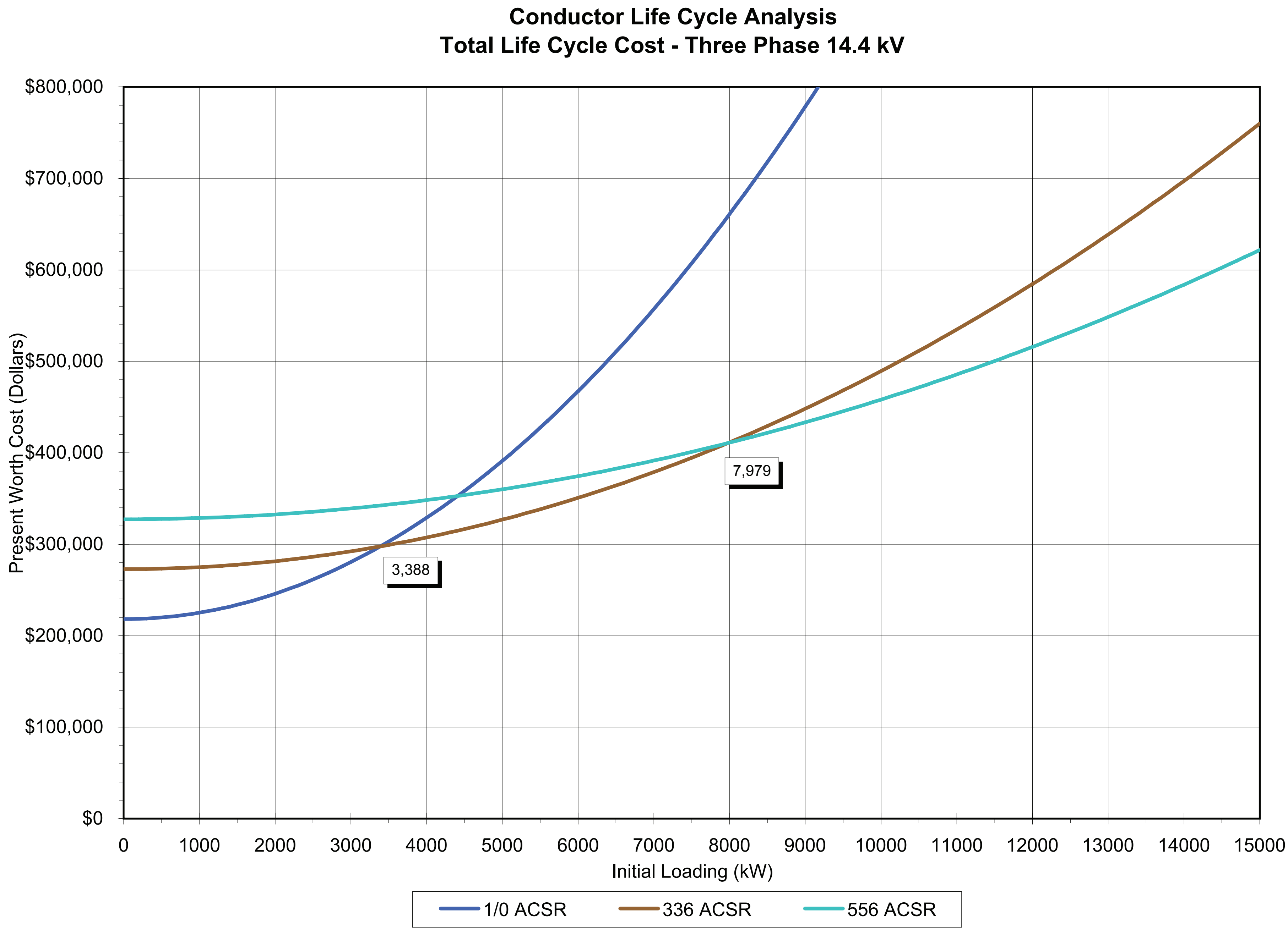


14.4 kV CONDUCTOR LIFE CYCLE ANALYSIS
(New Construction Legend and Imput Values)

0.00%	TOTAL	Total fixed cost. This is an optional replacement for O & M + TAX + DEP + INS.
6.61%	O & M	Operations and Maintenance Expense as a percentage of Average Net Distribution Plant calculated using RUS Bulletin 1724D-101A ***Electric System Long-Range Planning Guide*** based on *RUS Fixed Charge Calculation Guide*
0.10%	TAX	Property tax: annual Form 7, last year Part A, line 13(b) Plant the taxes were paid on: annual Form 7, 2 years ago, Part C, line 5 + line 22 Tax Rate: (Property tax / Plant) x 100, or estimated future tax rate
3.00%	DEP	Most Owners use straight-line depreciation where the depreciation rate is the reciprocal of the asset's life. Use annual rate for Coop, for classes of plant Depreciation rate on RUS Form 7 Part E Lines 5(f) and line 6(f)
0.00%	INS	Insurance as a percentage of Net Distribution Plant. Calculating the cost of insurance as a percentage of investment is difficult, and the result makes little difference, therefore, it can be ignored for most applications.
2.50%	INF	The annual inflation rate.
30	m	The loan amortization period in years.
14.4	KV	Line to ground voltage in kV.
99.00%	PF	Peak month power factor.
7.09%	INT	Cost of Debt (Calculated using *RUS Fixed Charge Guide*)
2.23%	LGR	The annual rate of growth projected for the peak demand. (Use latest PRS)
30	ULC	Useful Life of Conductor
$0.00	$/KW	Monthly demand charge in dollars per kW per month. If $/KW is zero the following dependant inputs will also be zero:
0.00%	KWI	Demand charge inflation rate.
0.00%	CF	Coincidence factor - This factor represents the coincidence between the non coindedent peak for the line and billing demand.
0.000	RMO	The number of months the metered demand exceeds the minimum biling demand.
0.000	RAT	The annual demand ratchet expressed as a decimal.
0.000	N	The ratio of the average of the squares of the monthly kW demands for the months when the metered demand exceeds the minimum billing demand to the square of the peak month demand.
$0.0530	$/KWH	Energy charge in dollars per kWH per month.
2.00%	KWHI	Energy charge inflation rate.
57.00%	LF	Annual load factor.

Select Conductor Resistance Temperature

√	25° C (77° F) for Winter Loading or
0	50° C (122° F) for Summer Loading



Conductor Life Cycle Analysis
Total Life Cycle Cost - Three Phase 14.4 kV
Present Worth Cost (Dollars)
$800,000
$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
Initial Loading (kW)
3,388
7,979
1/0 ACSR
336 ACSR
556 ACSR

SUBSTATION LOAD DATA ~ WINTER 2006/2007 BASE LOAD

No.	Substation	Owner	Primary Ø-Ø kV	Secondary Ø-Ø kV	Operating Ø-Ø kV	1 Trans Capacity[1] Base KVA	1 Trans Capacity[1] Full KVA	Units In Use	Units Total	Total Capacity[1] Full KVA	Total 2006/07 KVA	2006/07 kVA Allocated	Remarks	2009/10 kW ASI	2009/10 % of Rating 98% PF
1	**Charters**	EKPC	69	25	25	14,000	18,144	1	1	18,144	12,882	13,446		14,047	79%
2	**Flemingsburg**	EKPC	138	25	25	20,000	25,920	1	1	24,840	18,787	22,629	FN[1]	18,530	76%
3	**Hilda # 1**	EKPC	69	12.47	12.47	25,000	31,050	1	1	31,050	8,500	10,367		11,200	37%
4	**Hilda # 2**	EKPC	69	12.47	12.47	25,000	31,050	1	1	31,050	20,400	31,402		21,850	72%
5	**Hillsboro**	EKPC	69	25	25	14,000	18,144	1	1	18,144	8,410	8,766		10,370	58%
6	**Maysville**	EKPC	138	25	25	20,000	24,840	1	1	24,840	8,461	10,903		10,220	42%
7	**Murphysville**	EKPC	69	25	25	11,200	18,144	1	1	18,144	14,712	14,971	FN[1]	10,651	60%
8	**Oak Ridge**	EKPC	69	25	25	11,200	15,725	1	1	18,144	5,948	6,060		9,230	52%
9	**Peasticks**	EKPC	69	25	25	11,200	15,725	1	1	18,144	9,800	10,372		10,720	60%
10	**Plumbers Landing**	EKPC	69	12.47	12.47	11,200	15,725	1	1	18,144	7,344	7,802		12,080	68%
11	**Rectorville**	EKPC	69	12.47	12.47	3,733	5,242	3	3	18,144	10,416	11,145		11,810	66%
12	**Sharkey**	EKPC	138	25	25	20,000	24,840	1	1	24,840	10,935	12,651		10,000	41%
13	**Snow Hill**	EKPC	69	25	25	11,200	15,725	1	1	18,144	N/A		FN[2]	9,200	52%
											136,595			**159,908**	
	Direct~Serve Loads/Sustations[4]														
	Dravo[4]	EKPC									17,900	17,900		17,900	
	Inland Container[4]	EKPC									14,700	14,700		14,700	
	Inland Container # 2[4]	EKPC									12,200	12,200		12,200	
	Tennessee Gas Pipeline[4]	EKPC									21,300	21,300		21,300	
										Combined System Peak ~ KVA	**202,695**			**226,008**	

FOOTNOTES:

[1] Nameplate Rating With OA/FA/FA Installed

[2] New Substation Energized in Fall of 2007

[3] Load Is To Be Transferred From Flemingsburg And Murphysville To The New Snow Hill Substation

[4] Direct-Serve Loads/Substations Not Included Within This CWP Analysis

FME AUTO / STEP TRANSFORMER STATIONS ~ 740C 601

SUBSTATION	CKT	STATUS	STATION	CWP	#	SIZE (KVA)	PRI VOLT	PRI VOLT	LOAD (KVA)[1]	% Load[2]	FAULT AMPS	REMARKS
CHARTERS	**1**	REPLACE	AU64	TRANSFER	1	167	14.4	7.2	342	113%	524	188 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR48	~	3	333	14.4	7.2	714	71%	871	~
	1	EXISTING	XFMR49	~	1	333	14.4	7.2	187	56%	638	~
	1	EXISTING	XFMR50	LT[3]	1	333	14.4	7.2	57	63%	581	209 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR51	~	1	333	14.4	7.2	91	27%	589	~
	3	REPLACE	XFMR54	~	3	333	14.4	7.2	1,548	155%	936	~
	3	EXISTING	XFMR56	LT	2	333	14.4	7.2	0	93%	782	311 KVA AFTER LOAD TRANSFER
	3	REPLACE	XFMR57	~	1	333	14.4	7.2	533	160%	812	~
	3	REMOVE	XFMR43	~	1	333	14.4	7.2	219	66%	654	REMOVE AFTER LOAD TRANSFER
	4	REPLACE	XMFR44	~	1	167	14.4	7.2	301	180%	634	~
	4	EXISTING	XFMR166	~	3	500	14.4	7.2	897	60%	1,043	~
	4	INSTALL	?	612-01	1	333	14.4	7.2	219	66%	580	INSTALL FOR LOAD TRANSFER
	4	EXISTING	AU818806806	~	3	333	14.4	7.2	100	10%	354	~
	4	EXISTING	XFMR45	LT	1	333	14.4	7.2	205	16%	613	53 KVA AFTER LOAD TRANSFER
	4	EXISTING	XFMR47	~	3	333	14.4	7.2	920	92%	520	~
FLEMINGSBURG	**1**	REPLACE	XFMR27	~	1	333	14.4	7.2	485	146%	769	~
	1	EXISTING	XFMR29	~	1	333	14.4	7.2	193	58%	737	~
	1	REPLACE	XFMR30	~	1	333	14.4	7.2	344	103%	912	~
	1	REPLACE	XFMR31	~	1	333	14.4	7.2	481	144%	801	~
	1	INSTALL	?	612-03	1	500	14.4	7.2	0	44%	1,716	218 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR33	LT	1	333	14.4	7.2	235	27%	739	89 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR34	LT	1	333	14.4	7.2	294	58%	681	194 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR39	LT	1	333	14.4	7.2	232	92%	564	305 KVA AFTER LOAD TRANSFER
	1	EXISTING	XFMR38	~	1	333	14.4	7.2	109	33%	645	~
	1	REPLACE	XFMR41	~	1	333	14.4	7.2	326	97%	552	~
	1	REMOVE	XFMR36	307	1	333	14.4	7.2	458	138%	652	REMOVE AFTER CONVERSION
	1	REMOVE	XFMR35	306	1	333	14.4	7.2	503	151%	651	REMOVE AFTER CONVERSION
	2	REMOVE	AU37	309	3	1,000	14.4	7.2	3,830	128%	1,481	REMOVE AFTER CONVERSION
	3	REMOVE	XFMR330	311	3	500	14.4	7.2	1,716	114%	1,137	REMOVE AFTER LOAD TRANSFER
	3	REMOVE	XFMR118	LT	1	333	7.2	14.4	199	60%	~	REMOVE AFTER CONVERSION
	3	EXISTING	XFMR22	~	2	333	14.4	7.2	462	69%	928	~
	3	REPLACE	AU39	LT	1	167	14.4	7.2	331	107%	619	179 KVA AFTER LOAD TRANSFER
	3	REMOVE	AU-866495799	LT	1	?	14.4	7.2	271	?	~	~
	3	INSTALL	?	310	1	167	14.4	7.2	150	90%	554	AFTER 2PH CONVERSION
	3	INSTALL	?	310	1	167	14.4	7.2	100	60%	554	AFTER 2PH CONVERSION
	3	REMOVE	XFMR18	341A	1	333	14.4	7.2	175	53%	680	REMOVE AFTER CWP 341A
	3	REMOVE	XFMR19	312	1	333	14.4	7.2	171	51%	541	REMOVE AFTER CWP 312
	3	INSTALL	?	312A	1	333	14.4	7.2	232	70%	540	INSTALL AFTER CWP 312

FME AUTO / STEP TRANSFORMER STATIONS ~ 740C 601

SUBSTATION	CKT	STATUS	STATION	CWP	#	SIZE (KVA)	PRI VOLT	PRI VOLT	LOAD (KVA)[1]	% Load[2]	FAULT AMPS	REMARKS
	3	REMOVE	XFMR20	LT	1	333	14.4	7.2	0	0%	~	NOT USED
	4	EXISTING	XFMR5	~	1	1,000	14.4 7	7.2	492	49%	1,358	293 KVA AFTER LOAD TRANSFERS
	4	REPLACE	AU34	~	1	333	14.4	7.2	336	101%	1,008	~
	4	REMOVE	XFMR4	314A	3	1,000	14.4	7.2	3,782	126%	1,349	~
	4	EXISTING	?	612-04	2	333	14.4	7.2	464	70%	500	~
	4	INSTALL	?	314B	3	1,000	14.4	7.2	2,393	80%	~	~
	5	REPLACE	XFMR23	~	3	1,000	14.4	7.2	4,161	139%	1,457	CK LOAD; DISCUSS OPTIONS
HILLSBORO	1	REPLACE	AU2030824619	~	3	333	14.4	7.2	1,163	116%	1,152	~
	2	REMOVE	AU-606240562	328	1	333	14.4	7.2	30	9%	683	~
	2	EXISTING	XFMR58	~	1	333	14.4	7.2	248	74%	952	~
	2	EXISTING	XFMR59	~	3	1,000	14.4	7.2	0	~	1,332	TIE-AUTO
	2	EXISTING	AU-1963259189	LT	1	333	14.4	7.2	355	44%	688	148 KVA AFTER LOAD TRANSFER
	3	REPLACE	XFMR250	~	3	333	14.4	7.2	1,008	101%	1,215	EXCESSIVE FAULT CURRENT
	4	REMOVE	XFMR246	330C	3	333	14.4	7.2	1,929	193%	964	~
	4	REMOVE	XFMR247	330B	1	333	14.4	7.2	152	46%	500	~
	4	INSTALL	?	330A	3	500	14.4	7.2	1,140	76%	585	~
MAYSVILLE	3	EXISTING	XFMR65	~	1	333	14.4	7.2	229	69%	968	~
	3	REMOVE	XFMR63	332	1	333	14.4	7.2	88	26%	869	~
	3	REPLACE	XFMR62	~	1	333	14.4	7.2	421	126%	903	~
	3	REPLACE	XFMR14	~	1	333	14.4	7.2	461	138%	558	~
	3	EXISTING	XFMR64	~	1	333	14.4	7.2	265	80%	780	~
MURPHYSVILLE	2	EXISTING	XFMR74	~	3	333	14.4	7.2	456	46%	1,006	~
	2	REMOVE	XFMR73	334	1	333	14.4	7.2	403	121%	714	~
	2	REPLACE	XFMR81	~	1	167	14.4	7.2	185	111%	474	~
	2	EXISTING	XFMR82	~	1	167	14.4	7.2	131	78%	424	~
	2	EXISTING	XFMR72	LT	1	333	14.4	7.2	607	71%	686	238 KVA AFTER LOAD TRANSFER
	2	EXISTING	XFMR67	LT	1	333	14.4	7.2	262	79%	622	128 KVA AFTER LOAD TRANSFER
	2	INSTALL	XFMR68	335	1	333	14.4	7.2	500	75%	646	250 KVA AFTER ADDITIONAL AUTO
	2	EXISTING	XFMR69	~	1	167	14.4	7.2	132	79%	430	~
	2	EXISTING	XFMR70	~	1	333	14.4	7.2	217	65%	497	~
	3	REPLACE	XFMR75	~	1	333	14.4	7.2	477	143%	945	~
	4	EXISTING	XFMR76	~	1	333	14.4	7.2	120	36%	898	~
	4	REMOVE	XFMR90	338	1	333	14.4	7.2	228	68%	659	~
OAK RIDGE	1	REMOVE	XFMR93	339	1	167	14.4	7.2	52	31%	660	EXCESSIVE FAULT CURRENT
	1	REPLACE	XFMR95	~	3	333	14.4	7.2	1,072	107%	962	~
	1	EXISTING	XFMR97	~	1	167	14.4	7.2	25	15%	594	~
	2	EXISTING	AU-829774792	~	1	?	14.4	7.2	258	?	377	190 KVA AFTER LOAD TRANSFER
	2	REMOVE	AU60	341	1	167	14.4	7.2	399	239%	580	~

FME AUTO / STEP TRANSFORMER STATIONS ~ 740C 601

SUBSTATION	CKT	STATUS	STATION	CWP	#	SIZE (KVA)	PRI VOLT	PRI VOLT	LOAD (KVA)[1]	% Load[2]	FAULT AMPS	REMARKS
	2	EXISTING	XFMR92	~	1	333	14.4	7.2	209	63%	746	~
	2	REPLACE	AU40	~	1	167	14.4	7.2	478	286%	511	190 KVA AFTER LOAD TRANSFER
	2	REMOVE	XFMR91	344	1	333	14.4	7.2	273	82%	686	~
	3	REPLACE	XFMR94	~	1	167	14.4	7.2	160	96%	676	EXCESSIVE FAULT CURRENT
	3	REPLACE	AU8	~	1	167	14.4	7.2	305	183%	644	EXCESSIVE FAULT CURRENT
PEASTICKS	1	REPLACE	AU13	~	3	333	14.4	7,2	680	68%	1,723	EXCESSIVE FAULT CURRENT
	1	REPLACE	XFMR109	~	1	333	14.4	7.2	295	89%	1,702	EXCESSIVE FAULT CURRENT
	2	REMOVE	XFMR15	~	3	333	14.4	7.2	0	~	1,491	TIE-AUTOS; COULD BE REMOVED
	3	EXISTING	XFMR110	~	3	1,000	14.4	7.2	3,065	102%	1,868	~
	4	EXISTING	AU15	~	1	167	14.4	7.2	34	20%	606	~
	4	REPLACE	XFMR107	~	1	167	14.4	7.2	242	145%	590	~
	4	EXISTING	XFMR105	~	1	167	14.4	7.2	156	93%	587	~
	4	REPLACE	XFMR104	~	1	333	14.4	7.2	446	134%	714	~
	4	REPLACE	XFMR98	~	1	167	14.4	7.2	289	173%	591	~
	4	REPLACE	XFMR252	~	1	167	14.4	7.2	220	132%	590	~
	4	EXISTING	XFMR99	~	1	167	14.4	7.2	145	87%	532	~
	4	EXISTING	XFMR102	~	1	167	14.4	7.2	115	69%	481	~
	4	EXISTING	XFMR100	~	1	333	14.4	7.2	261	78%	574	~
PLUMBERS LANDING	1	EXISTING	XFMR25	~	3	1,000	14.4	7.2	0	~	~	TIE-AUTOS; COULD BE REMOVED
	2	EXISTING	AU133034184	~	3	???	14.4	7.2	45	~	?	?
RECTORVILLE	2	EXISTING	XFMR112	~	1	333	14.4	7.2	267	80%	710	~
	2	EXISTING	XFMR113	~	1	167	14.4	7.2	0	~	~	~
SHARKY	1	EXISTING	XFMR116	~	1	333	14.4	7.2	248	74%	905	~
	1	EXISTING	XFMR117	~	3	1,000	14.4	7.2	53	2%	1,508	TIE-AUTOS; COULD BE REMOVED
	1	INSTALL	?	612-05	1	333	14.4	7.2	135	41%	~	TRANSFER LOAD FROM HILDA 1
	1	EXISTING	XFMR251	~	1	333	14.4	7.2	255	92%	877	ADD 50 KVA FROM HILLSBORO
	4	REPLACE	XFMR115	~	3	1,000	14.4	7.2	4,897	163%	1,677	CK LOAD; DISCUSS OPTIONS
SNOW HILL	2	EXISTING	XFMR78	~	1	167	14.4	7.2	118	71%	652	~
	2	REPLACE	XFMR80	~	1	167	14.4	7.2	311	186%	597	~
	2	EXISTING	XFMR77	~	1	167	14.4	7.2	107	64%	584	~
	4	REPLACE	XFMR85	~	1	333	14.4	7.2	343	103%	841	~
	4	REPLACE	XFMR87	~	1	167	14.4	7.2	250	150%	573	~
	4	REMOVE	XFMR89	359	3	333	14.4	7.2	445	45%	~	~
					162							

[1] Assumes a 95% Power Factor and a 15% phase loading unbalance

[2] After Work is Completed

[3] LT = Load Transfer

Fleming-Mason Energy
Peak Day Weather Scenarios

Winter Peak Day Minimum Temperatures							Summer Peak Day Maximum Temperatures				
	Mild	Normal	**Extreme**					Normal	**Extreme**		
Degrees	10	-3	-12	-17	-25		Degrees	94	98	100	104
Probability	*99%*	*50%*	*20%*	*10%*	*3%*		*Probability*	*50%*	*20%*	*10%*	*3%*
Occurs Once Every		**2 Years**	**5 Years**	**10 Years**	**30 Years**			**2 Years**	**5 Years**	**10 Years**	**30 Years**
Noncoincident Winter Peak Demand - MW							Noncoincident Summer Peak Demand - MW				
Season	Mild	Normal	Extreme				Year	Normal	Extreme		
							2006	160	169	174	183
2006 - 07	193	205	213	218	225		2007	165	175	180	190
2007 - 08	197	210	218	223	230		2008	169	179	184	194
2008 - 09	203	216	224	229	237		2009	174	184	189	199
2009 - 10	208	221	230	235	243		2010	178	189	194	204
2010 - 11	213	226	235	240	248		2011	183	193	198	209
2011 - 12	218	231	240	245	254		2012	187	197	202	213
2012 - 13	224	237	247	252	261		2013	192	202	208	218
2013 - 14	229	243	253	258	267		2014	196	207	212	223
2014 - 15	234	248	258	264	273		2015	200	211	217	228
2015- 16	238	253	263	269	278		2016	204	215	221	232
2016 - 17	244	259	269	275	285		2017	209	220	226	238
2017 - 18	249	264	275	281	291		2018	213	225	231	243
2018 - 19	256	271	282	288	298		2019	219	231	237	249
2019-2020	260	276	287	294	304		2020	223	235	241	253
2020-2021	266	283	294	301	311		2021	228	240	247	259
2021-2022	272	289	300	307	317		2022	233	245	251	264
2022-2023	277	294	306	313	323		2023	237	250	256	269
2023-2024	281	299	311	318	329		2024	241	254	260	273
2024-2025	287	305	317	324	335		2025	246	259	266	279

Large Consumers > Than 300 KW

Name	Location	KWH	Account Demand (KW)	Billing Demand (KW)	Energy
PIONEER TRACE NURSING HOME	260765030	121,920	305	305	$6,979
WHITE HAROLD LUMBER CO	400323070	125,760	309	309	$6,978
FEDERAL MOGUL CORPORATION	200102020	156,240	325	325	$8,300
FOOD LION LLC SITE #780	400332131	161,280	351	351	$8,898
ROWAN CO BD OF EDUCATION	400332235	95,000	364	364	$6,076
B & W PALLET CO	400322036	99,840	367	367	$6,289
ROWAN CO BD OF EDUCATION	400332183	145,920	376	376	$8,414
TOYO SEAT USA CORP	260646052	137,920	383	383	$7,914
LOWE'S HOME CENTERS INC#1808	400332104	185,400	383	383	$10,097
FLEMING CO BRD OF EDUCA	260764002	115,800	408	408	$7,398
GREEN TREE FOREST PROD	330646066	107,160	441	441	$7,033
MAYSVILLE UTILITY COMM	140553025	228,400	452	452	$12,304
GREEN TOKAI CO LTD	190209101	202,800	478	478	$11,098
KY STONE CO	320206014	16,000	481	481	$3,614
FLEMING CO GYM	260765075	223,200	486	486	$14,181
MILLWORKS HAROLD WHITE	400322085	109,600	595	595	$8,066
TOYO SEAT USA CORP	260646021	261,200	656	656	$14,522
GREEN TOKAI CO LTD	190209100	330,800	698	698	$17,573
VALLEY VIEW HARDWOODS INC	400332078	181,200	792	792	$12,399
FAMILY DOLLAR SERVICES	390437020	1,106,400	1,894	1,894	$55,966
MITSUBISHI ELECTRIC MFG	190209103	1,395,153	2,801	2,801	$73,060
GUARDIAN INDUSTRIES CORP	400322153	4,779,579	8,281	10,000	$225,839
DRAVO LIME CO	200438043	85,560	12,449	15,926	$446,400
TENNESSEE GAS PIPELINE	340866015	6,365,491	25,000	25,000	$397,322
INLAND CONTAINER CORP	140553033	9,271,493	25,083	27,122	$814,696

OUTAGE DATA: AVERAGE ANNUAL HOURS OUT PER CUSTOMER

YEAR	POWER SUPPLIER		MAJOR STORM		SCHED.		OTHER		TOTAL	
2002	0.29		0.00		0.03		2.01		2.33	
2003	0.82		81.96	*	0.22		1.72		84.72	*
2004	0.25		0.00		0.10		3.15		3.50	
2005	0.04		0.00		0.06		1.97		2.07	
2006	0.28	*14%*	0.00	*0%*	0.02	*1%*	1.67	*85%*	1.97	
5YR AVG	0.34	*2%*	16.39	*87%*	0.09	*0%*	2.10	*11%*	18.92	

** February 2003 Major Ice Storm Devastated the FME System*

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **306*** **Scope:** **7.2 TO 14.4 KV VOLTAGE CONV** **Estimated Cost:** **$59,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	**1**	**CO14093**	**9.6**	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
67	**112.8**	**$3,522**	**11**	**124.2**	**$39**	**$3,483**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 307* **Scope:** 7.2 TO 14.4 KV VOLTAGE CONVERS **Estimated Cost:** $60,500

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	**1**	**CO14131**	**9.9**	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
60	**118.1**	**$2,421**	**30**	**123.0**	**$601**	**$1,820**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 309 **Scope:** 7.2 TO 14.4 KV VOLTAGE CONVERS **Estimated Cost:** $58,500

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	2	CO15372	2.5	1	4 ACSR	1	4 ACSR
			2.5	3	4/0 ACSR	3	4/0 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
140	123.8	$1,292	70	125.8	$431	$861

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **310** **Scope:** **1PH TO 3PH & KV VOLTAGE CONV** **Estimated Cost:** **$45,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	**3**	**CO25431**	**1.0**	**1**	**4 ACSR**	**3**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE
D3 INCREASE RELIABILITY
B6 EXCESSIVE VOLTAGE DROP

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
17	**117**	**$1,346**	**10**	**122**	**$250**	**$1,096**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 311 **Scope:** 7.2 TO 14.4 VOLTAGE CONV **Estimated Cost:** $172,500

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	3	CO16022	24.5	1	4 ACSR	1	4 ACSR
			6.0	3	1/0 CU	3	1/0 CU

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D4 PROVIDE ALTERNATE FEED TO MAJOR LOADS
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
65	119.6	$3,985	33	123.1	$1,437	$2,548

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **312** **Scope:** **1PH TO 3PH AND VOLTAGE CONV** **Estimated Cost:** **$26,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	**3**	**CO25431**	**3.0**	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
52	**115.6**	**$1,682**	**26**	**121.0**	**$418**	**$1,264**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 313 **Scope:** 7.2 TO 14.4 KV VOLTAGE CONV **Estimated Cost:** $75,150

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
FLEMINGS-BURG	4	CO15524	5.1	1	4 ACSR	1	4 ACSR
			1.2	3	1/0 ACSR	3	1/0 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
b5 OVERLOADED COPPER CONDUCTOR

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
27	121.9	$943	13	125.1	$228	$715

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 314 **Scope:** 3PH RE-CONDUCTOR & VOLTAGE CON **Estimated Cost:** $174,500

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH	EXISTING CONDUCTOR	PROPOSED PH	PROPOSED CONDUCTOR
FLEMINGS-BURG	4	CO15396	2.0	3	4 ACSR	3	4/0 ACSR
			3.3	1	4 ACSR	1	4 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
D4 PROVIDE ALTERNATE FEED

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
111	114.4	$34,953	42	124.8	$1,450	$33,503

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 328 **Scope:** 7.2 TO 14.4 VOLTAGE CONV **Estimated Cost:** $27,000

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
HILLSBORO	2	C09845	3.2	1	4 ACSR	1	4 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D3 INCREASE RELIABILITY

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
3.5	122.6	-	1.7	122.8	-	-

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 330 **Scope:** 7.2 KV TO 14.4 KV VOLTAGE CONV **Estimated Cost:** $42,750

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR	PROPOSED PH & CONDUCTOR
HILLSBORO	4	CO12131	3.5	3 1/0 ACSR	3 1/0 ACSR
				1 4 ACSR	1 4 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

F1 REDUCE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
73	116	$10,985	55	124.4	$5,596	$5,389

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **331** **Scope:** **1PH TO 3PH CONVERSION** **Estimated Cost:** **$76,500**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
HILLSBORO	**4**	**CO13535**	**1.7**	**1**	**4 ACSR**	**3**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS		
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	NET LOSSES ($/YR
26	**112**	**$185**	**23**	**119.8**	**$308**

ALSO, ADDITIONAL LOAD WILL BE PICKED UP FROM THE FLEMINGSBURG SUBSTATION.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **332** **Scope:** **1PH TO 3PH CONVERSION** **Estimated Cost:** **$259,500**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
MAYSVILLE	**3**	**CO24880**	**5.7**	**1**	**4 ACSR**	**3**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENT			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
89	**111.0**	**$33,170**	**30**	**121.0**	**$21,539**	**$11,631**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **333** **Scope:** **1PH TO 2PH CONVERSION** **Estimated Cost:** **$19,650**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
MURPHYS-VILLE	**2**	**CO30135**	**1.0**	**1**	**4 ACSR**	**2**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
76	**113.0**	**$7,407**	**14**	**124.5**	**$2,225**	**$5,182**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **334** **Scope:** **7.2 TO 14.4 KV VOLTAGE CONV** **Estimated Cost:** **$246,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH	EXISTING CONDUCTOR	PROPOSED PH	PROPOSED CONDUCTOR
MURPHYS-VILLE	**2**	**CO29718**	**11.8**	**1**	**4 ACSR**	**1**	**4 ACSR**
			1.5	**1**	**6A CWC**	**1**	**2 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
42	**108.9**	**$4,644**	**35**	**118.2**	**$1,180**	**$3,464**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **335** **Scope:** **1PH TO 2PH CONVERSION** **Estimated Cost:** **$23,310**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
MURPHYS-VILLE	**2**	**CO27652**	**0.7**	**1**	**4 ACSR**	**2**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
50	**122.1**	**$812**	**34**	**121.7**	**$312**	**$500**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 338 **Scope: 1PH TO 3PH AND VOLTAGE CONV** **Estimated Cost: $88,500**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
MURPHYS-VILLE	**4**	**CO26333**	**1.7**	**1**	**4 ACSR**	**3**	**1/0 ACSR**
			1.1	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION AND IN CONJUNCTION WITH PROJECT 359, ADDITIONAL LOAD WILL BE SHIFTED TO THE SNOW HILL SUBSTATION. RELIABILITY WILL BE IMPROVED DUE TO THE ADDITION OF AN ALTERNATE 3PH FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **339** **Scope:** **7.2 TO 14.4 KV VOLTAGE CONV** **Estimated Cost:** **$38,500**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
OAK RIDGE	**1**	**CO18206**	**5.5**	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D3 INCREASE RELIABILITY

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
7	**125.4**	**$11**	**3**	**125.8**	**$2**	**$9**

AUTOBANK NEEDS TO BE REMOVED FROM THIS TAP DUE TO HIGH FAULT CURRENTS.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **341** **Scope:** **1PH TO 3PH AND VOLTAGE CONV** **Estimated Cost:** **$169,500**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
OAK RIDGE	**2**	**CO18471**	**2.7**	**1**	**4 ACSR**	**3**	**1/0 ACSR**
			7.4	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
52	**115.1**	**$2,419**	**9**	**121.1**	**$422**	**$1,997**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

3PH CONVERSION

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **344** **Scope:** **7.2 TO 14.4 KV VOLTAGE CONV** **Estimated Cost:** **$62,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
OAK RIDGE	**2**	**CO15762**	**10.2**	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
D4 PROVIDE ALTERNATE FEED

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
37	**117**	**$933**	**10**	**121.2**	**$50**	**$883**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **348** **Scope:** **RE-CONDUCTOR 4ACSR TO 4/0 ACSR** **Estimated Cost:** **$91,200**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
PLUMMERS LANDING	**1**	**CO5491**	**1.2**	**3**	**4 ACSR**	**3**	**4/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 OVERLOADED CONDUCTOR
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION OF PROJECTS 348, 349, & 357, LOAD WILL BE SHIFTED TO PLUMMERS LANDING SUBSTATION FROM THE HILDA AND SHARKEY SUBSTATIONS. RELIABILITY IS INCREASED BECAUSE OF AN ADDITIONAL 3PH FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **349*** **Scope:** **1PH TO 3PH REBUILD** **Estimated Cost:** **$114,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
PLUMMERS LANDING	**2**	**CO4747**	**1.5**	**1**	**4 ACSR**	**3**	**4/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D4 PROVIDE ALTERNATE FEED
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES
B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION OF PROJECTS 348, 349, & 357, LOAD WILL BE SHIFTED TO PLUMMERS LANDING SUBSTATION FROM THE HILDA AND SHARKEY SUBSTATIONS. RELIABILITY IS INCREASED BECAUSE OF AN ADDITIONAL 3PH FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 353 **Scope:** RE-INSULATE & RE-CONDUCTOR **Estimated Cost:** $299,000

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
RECTORVILLE	3	CO21380	2.0	3	6HDCU	3	4/0 ACSR
			6.0	1	6HDCU	1	2 ACSR

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY
B8 AGED COPPER CONDUCTOR
D4 PROVIDE ALTERNATE FEED

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
91	117.5	$2,600	30	121.2	$34	$2,566

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: 356 **Scope:** 1PH TO 3PH **Estimated Cost:** $9,000

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
SHARKEY	**1**	**CO2013**	**0.1**	**1**	**4 ACSR**	**3**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B7 SECTIONALIZING CONCERNS WITH HEAVILY LOADED 1PH LINE
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

FUTURE SYSTEM BEFORE IMPROVEMENTS			FUTURE SYSTEM AFTER IMPROVEMENTS			
LOAD AMPS	VOLT DROP	LOSSES ($/YR)	LOAD AMPS	VOLT DROP	LOSSES ($/YR)	NET LOSSES ($/YR)
36	**124**	**$80**	**12**	**124**	**$11**	**$69**

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **357*** **Scope:** **1PH TO 3PH** **Estimated Cost:** **$98,800**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
SHARKEY	**2**	**CO8252**	**1.3**	**1**	**4 ACSR**	**3**	**4/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

B6 EXCESSIVE VOLTAGE DROP
D3 INCREASE RELIABILITY

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION OF PROJECTS 348, 349, & 357, LOAD WILL BE SHIFTED TO PLUMMERS LANDING SUBSTATION FROM THE HILDA AND SHARKEY SUBSTATIONS. RELIABILITY IS INCREASED BECAUSE OF AN ADDITIONAL 3PH FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **358*** **Scope:** **RE-CONDUCTOR** **Estimated Cost:** **$126,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
SNOW HILL	**1**	**CO11755**	**1.0**	**3**	**4 ACSR**	**3**	**1/0 ACSR**
			1.8	**1**	**4 ACSR**	**3**	**1/0 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D4 PROVIDE ALTERNATE FEED
D3 INCREASE RELIABILITY
F1 MUCH GREATER THAN AVERAGE LINE LOSSES

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION, LOAD WILL BE SHIFTED TO SNOW HILL FROM FLEMINGSBURG. RELIABILITY IS ALSO IMPROVED BECAUSE OF THE ADDITION OF AN ALTERNATE FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

FLEMING ~ MASON ENERGY COOPERATIVE

Kentucky 52 Fleming
Flemingsburg, Kentucky

2008 ~ 2009 CONSTRUCTION WORK PLAN
DISTRIBUTION LINE CONSTRUCTION PROJECT REVIEW

740C Code: **359** **Scope:** **7.2 TO 14.4 KV AND RECOND** **Estimated Cost:** **$63,000**

TYPE OF PROPOSED CONSTRUCTION

SUB	CKT	BEGIN SECTION	MILES	EXISTING PH & CONDUCTOR		PROPOSED PH & CONDUCTOR	
SNOW HILL	**4**	**CO16483**	**0.5**	**3**	**4 ACSR**	**3**	**1/0 ACSR**
			5.5	**1**	**4 ACSR**	**1**	**4 ACSR**

LOCATION OF PROJECT

SEE ATTACHED CIRCUIT DIAGRAM FOR DETAILS

REASON(S) FOR PROPOSED CONSTRUCTION (SDOC ITEM #)

D4 PROVIDE ALTERNATE FEED
D3 INCREASE RELIABILITY

RESULTS OF PROPOSED CONSTRUCTION

UPON COMPLETION AND IN CONJUNCTION WITH PROJECT 338, ADDITIONAL LOAD WILL BE SHIFTED FROM THE MURPHYVILLE SUBSTATION. RELIABILITY WILL BE IMPROVED DUE TO THE ADDITION OF AN ALTERNATE 3PH FEED.

ALTERNATE CORRECTIVE PLAN(S) INVESTIGATED

PROPOSED PROJECT IS CONSISTENT WITH CURRENT LRSS

Fleming-Mason Energy Cooperative, Inc.

2003-2006 Construction Work Plan

December 2002

Kentucky 52 Fleming

Flemingsburg, Kentucky

I hereby certify that this 2003-2006 Construction Work Plan Report 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. Registration No. 16457

STATE OF KENTUCKY
JAMES D.
BRIDGES
16457
LICENSED
PROFESSIONAL ENGINEER

December 18, 2002
Date

By: James D. Bridges, P.E.
James D. Bridges, P.E.

Distribution System Solutions, Inc.
Walton, Kentucky

Distribution System Solutions, Inc. 70 Old Beaver Road Walton, Kentucky 41094

Phone (859) 485-1041
Fax (859) 485-1041
Email: jdbridges@worldnet.att.net

November 13, 2002

Mr. Anthony P. Overbey
President and CEO
Fleming-Mason Energy Cooperative
Elizaville Road
Flemingsburg, Kentucky 41041

Re: 2003 Long Range System Plan.

Dear Mr. Overbey:

I have completed the Fleming-Mason Energy Cooperative *2003 Long Range System Plan.* The plan projects future electric load, examines system stresses and provides corrective recommendations over a twelve-year planning period. I believe that these recommendations will provide a sound guideline for the expansion of your electric distribution system.

I hereby certify that this Long Range System Plan was prepared by me or under my direct supervision. I also certify that I am a duly registered engineer under the laws of the State of Kentucky (16457).

Sincerely,

James Bridges, P.E.

James Bridges, P.E.
President, Distribution System Solutions, Inc.

STATE OF KENTUCKY
JAMES D. BRIDGES
16457
LICENSED
PROFESSIONAL ENGINEER

Fleming-Mason Energy Cooperative, Inc.

Long Range Plan

November 2002

Kentucky 52 Fleming

Flemingsburg, Kentucky

I hereby certify that this 2003 Long Range System Planning Report 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. Registration No. 16457

STATE OF KENTUCKY
JAMES D.
BRIDGES
16457
LICENSED
PROFESSIONAL ENGINEER

NOVEMBER 13, 2002
Date

By: James D. Bridges, P.E.
James D. Bridges, P.E.

Distribution System Solutions, Inc.
Walton, Kentucky

Fleming - Mason Transmission System

N

Legend

- EKPC Substation
- EKPC Generation Plant

EKPC Transmission

- EKPC 69 kV
- EKPC 138 kV
- EKPC 161 kV
- EKPC 345 kV

KU Transmission

- KU 69 kV
- KU 138 kV
- KU 161 kV
- KU 345 kV

0 1.5 3 6 9 12 Miles

East Kentucky Power Cooperative
4775 Lexington Road, PO Box 707
Winchester, Kentucky 40392

Revised September 24, 2007